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Inland Navigation.

REMARKS

ON THE IMPORTANCE OF

INLAND NAVIGATION,

FROM BOSTON BY THE MIDDLESEX CANAL AND MERRIMACK RIVER, IN THE PRESENT AND PROBABLE FUTURE STATE OF FOREIGN COMMERCE.

BY JOHN L. SULLIVAN.

Inland navigation having from causes incident to a state of neutrality, and great commercial advantages abroad, received but little attention of late years in America, its acknowledged usefulness may be deemed an adequate motive for any member of the community to offer remarks, which his experience and observation may enable him to make, in relation to an object so interesting to the public.

The writer of the following pages has been several years engaged in the construction of works to extend inland navigation by the Middlesex Canal, and Merrimack River; and believes, for reasons subsequently stated, that Boston is peculiarly concerned in their accomplishment and success. He proposes to give a brief description of the very extensive and fertile districts of the country with which an intercourse may be opened; and a view of the great accession of trade to this town to be obtained by the establishment of a system of transportation in that direction, by means of boats, especially propelled by steam engines; also some account of the river Merrimack and the works thereon; an historical sketch of the Middlesex Canal, with statements showing the amount of the various kinds of produce that have already passed it annually; prefaced by a few observations on the important uses of inland navigation, from well known examples of its effects on other commercial places.

The long period of unexampled success in commerce preceding the embargo, and a great increase of inhabitants, gave occasion for the erection of spacious wharves; a great number of additional stores and dwelling houses throughout this town; even where ships lately floated, these buildings now stand a monument of honorable enterprise, and of past prosperity.

The present interruption of trade necessarily throws much of this property out of use, and the question may be expected to arise in every mind—Whether peace will restore that active current of business which produced this state of prosperity? Will it bring back a state of neutrality, with all its advantages? If not; if war with France should follow a peace with England; or if a general peace should be made; by what means may the town of Boston prevent the depreciation of its real estate, the decline of business, (compared with what it was) and the deprivation of many of its inhabitants by emigration to New-York, and especially to the western states; to which they are strongly invited by a policy foreign and inimical to the interests of the northern states?

Fortunately Boston has resources not yet fully developed. Hitherto the skill and enterprise of her merchants have drawn from foreign countries, the riches that have raised the town to a very high rank of opulence and grandeur. It is supposed to contain more wealth in proportion to the number of its inhabitants than any other city in the world; and we think it may be made to appear, that causes similar to those which have operated so powerfully in favor of New-York and Baltimore, may be made to sustain Boston from decline, and even enable it still rapidly to progress.

We will advert for a moment to the local circumstances of the greatest commercial cities in Europe, to examine the causes that seem most to have contributed to their growth. And though not strictly connected with the subject of these remarks, it may not be irrelevant in speaking of the causes of the increase of places, to notice one circumstance in their economy that has a great, though silent effect. It is obvious that wherever great assemblages of men dwell, institutions for the preservation of health are required, both for the reception of the sick poor, strangers who are taken ill, and workmen whom accidents may have injured. Such benevolent institutions exist in every great commercial city, and have great effect in preserving and augmenting the population. The interior towns are continually pouring forth their youth to exert their various industry. The reputation of a city for healthiness, and for the means of speedy recovery from disease or accident, leads to a decided preference of it as a place of residence. The contemplated hospital is to be an institution for this purpose, and while it will gratify the hearts of its benevolent patrons, will promote the prosperity and happiness of this metropolis.

The value of real estate in a town situated as this is, will depend on its populousness; and this on the business or employment to be found there; and this again on the extension of intercourse and trade with the back country; the produce of which is here concentrated, and here convertible into the various commodities of other climes, necessary to the comfortable subsistence and improvement of the people.

There is scarcely a commercial city in the world of any magnitude, that does not to

its intercourse with foreign countries by the ocean, unite an extensive communication with the interior by inland navigation. For example, Bordeaux by the Garonne and the Languedoc Canal, Nantz by the Loire and the Canal of Orleans, Amsterdam by the Canal of Utrecht and the Rhine, St. Petersburg by the Canals of Russia extending to the Caspian sea, and many others might be mentioned, in Sweden, Holland and Italy. But one of the most striking instances of its effects is Liverpool; which, from being a small fishing town, rose with surprising rapidity to great commercial importance, notwithstanding the natural inconveniences of its harbor; in consequence of its relative situation to the Duke of Bridgewater's canal. This great work, after exhausting the large resources of its projector, its shares being at the lowest ebb of credit, was finished by a loan from government; and it is well known to have immediately become of immense benefit to the public, and productive of an ample revenue to the proprietor. This canal commences at the river Mersey, ten miles above Liverpool. It opens a direct communication with the city of Manchester by one level of more than thirty miles; and passing through that city penetrates the county of Lancaster. The success of this canal gave an immediate spring to enterprise of this kind; others were soon formed to unite with it, connecting several of the manufacturing towns together; enabling them to forward their various merchandize; to receive raw materials and provisions, at reduced expense; and to manufacture at lower prices, or less cost. Bristol, which had before been the most convenient port to Birmingham, began to decline, and London felt the diversion of trade into a new channel. These cities soon found it expedient to have recourse to canal transportation, the advantages of which, notwithstanding the excellence of the roads in England, were now so well realized, that scarcely any natural obstacles to canalling were allowed to be insurmountable: mountains were perforated to give them passage, and rivers were crossed on iron aqueducts often of stupendous elevation; till at length the whole island of Great Britain has been intersected by more than one hundred canals, measuring in extent several thousand miles, carrying prosperity into every section of the country.

In the north of Europe, where winter is far more severe than in the New-England states, a number of noble and useful works of this kind have been formed.

In our own country, what circumstances have most promoted the growth of our seaport towns? Charleston, (S. C.) communicates with the Santee by a canal. Baltimore is near the mouth of the Susquehanna. Philadelphia commands the Skullkill and Delaware. But New-York, whose growth has been most remarkably rapid, has a more extensive intercourse with the interior by the Hudson. These advantages are so sensibly felt in that city, and thro' the state, that after a fruitless application to the general government for that assistance which good policy might have prompted it to afford, (as nothing could tend more to increase the value of the national lands, and cement the union of the western with the Atlantic states,) the state government it is said has resolved to rely on its own credit and resources, to construct a canal from lake Erie to the Hudson, (a distance of about three hundred miles) through the middle of the state; probably at the cost of five millions of dollars; a sum, though large, not to be compared to the advantages it will afford. Some idea may be formed of the trade of New-York with the interior, from the fact that above four thousand vessels, that average seventy tons burthen, constantly ply on the North River, and make a trip to Troy or Albany about once a week. Let it be recollected that lake Erie is 250 miles in length, and communicates with lake Huron 200 miles and lake Michigan 280 miles in length, &c. and from lake Erie it will be easy to open a communication by water with the Ohio. The benefits of such an extensive range of inland navigation, must raise New-York to the first rank among the cities of the world. And its neighbors, Philadelphia and Boston, will lose much of their trade by the powerful attractions of this great emporium, unless correspondent measures should be adopted to participate with her in the trade of the interior.

The canals undertaken a number of years ago to unite the Skullkill and the Delaware above Philadelphia, and the Delaware with the Susquehanna, were interrupted; but they are now, we understand, resumed.—We also see it announced to the public, that commissioners (one of whom is the chief justice of the United States) are appointed in Virginia to ascertain how far the inland navigation of that state may be improved and extended.

Boston, without natural advantages similar to those of the southern states, has notwithstanding risen (comparatively) to higher rank and opulence by the enterprise of its merchants in every branch of foreign commerce. But, like other places, this town will find it necessary to have recourse to the means that nature and art have placed within reach. A good harbor alone is not sufficient to command trade; and the active capital of the merchant will be em-

ployed wherever profit can be found: witness the great number of ships at New-York owned in Massachusetts. Dr. Smith observes with great truth, that "the ordinary revolutions of war and government, easily dry up the sources of wealth which arise from commerce only; that which arises from the more solid improvements of agriculture is much more durable. Agriculture and commerce are inseparably united in this country, and will flourish or decline together. A good harbor, a city where wealth, intelligence, and commercial skill are found; and an extensive, fertile, well peopled back country, are the requisites to permanent and progressive prosperity."

That Boston has such a back country to supply, and to be supplied from in return with produce for consumption and exportation, and the materials for building houses and ships, will now be shown.

This district lying in a direction north-west from this town, comprising about two thirds of New-Hampshire, and full half of Vermont, embracing in the latter the counties of Caledonia, Chittenden, Essex, Franklin, Orange, Orleans, and Windsor, and most of Addison, containing at least 136,000 inhabitants; in the former the counties of Rockingham, Hillsborough, Grafton, Coos, and part of Cheshire, containing 150,000 inhabitants, together amounting to a population of two hundred and eighty-six thousand, according to the last census, is every where increasing. The greater part of the trade of the most western of the counties of New-Hampshire, with those of Vermont, now goes to New-York, though four hundred miles distant, by Connecticut river, which intersects this district. The centre of this range of country is distant only one hundred and fifty miles from Boston; for one hundred miles of which, water carriage may be afforded by means of the Merrimack river, and Middlesex canal, and for the remaining distance there are good roads already formed, or now forming. The town of Windsor in Vermont lies about as far north on Connecticut river, as Concord in New-Hampshire does on the Merrimack. The country between is very populous and productive, containing the towns of Hopkinton, Hennica, Ware, Hillsborough, &c. On the highest land between the two rivers, there is a very large pond called the Sunapee lake, from which Sugar river takes its rise, and runs into the Connecticut not far from Windsor. From the lake, on a small rise of the water there is an outlet eastward into Contocook river, which joins the Merrimack between Concord and Boscawen.—There are other places deemed favourable to a union of the two rivers, but this is the most practicable place; the face of the country presents no considerable obstacle to such an enterprise. From Windsor, roads diverge and cross the state to lake Champlain. From Boscawen the town next above Concord, one turnpike road leads to Hanover, another, after following the river to Salisbury, leads near Plymouth across a well settled country to Haverhill, Coos.—At both places they cross the Connecticut by bridges, and continue a northwestern course to Canada. The travel in this direction was great enough to induce the formation of these roads.

We might enlarge on the articles of export from Vermont. Every merchant knows that it supplies vast quantities of provisions, butter, cheese, flaxseed, ashes, &c. and the state is known to contain some of the most useful minerals, especially iron. At Thetford, about eight miles above Hanover, copas is made in considerable quantities.—Cotton factories are establishing in various places.

Besides the counties on either side of the Merrimack from which great supplies of timber have been and will continue to be brought, we may ultimately calculate on the trade of that part of New Hampshire, lying on Connecticut river, above the Moosilook, or Franconia mountains, and a considerable population that has extended into Canada in that direction. From this district a road is making through the notch of those mountains directly to Plymouth, by which a saving of fifty miles will be made in the route to Boston. In addition to this the fertile shores of the Winnipischoe lakes, must supply a great amount of trade to Boston by the channel of the Merrimack. From this river at Salisbury to the largest of the lakes is 23 miles; there are three intermediate sheets of water from four to six miles length, and from one to three broad. The shores of the whole are computed to measure two hundred miles. A coast of this extent, occupied in a great degree, either with cultivated grounds or well timbered lands, may be expected to afford much business. The fall from the lake to the Merrimack, as recently measured, viz. to Sanburnton bridge within four miles of the river, is forty eight feet, and the navigation thus far might be opened by five locks.—From thence to the Merrimack the fall is one hundred eighty-three feet; the ground however is very favourable the greater part of the way for preserving a level nearly to the river, to which a descent might be made without locks; but by one of those methods common to canals in hilly districts.

Although the trade above described from Vermont and the western parts of N. Hampshire has principally gone to New-York, still a portion of it has come to Boston by

the roads parallel with the Merrimack and the Middlesex Canal; and a part of this by water, as far as that river is now navigable with boats.

This enables us to speak from experience and information of the comparative ease, convenience, and cheapness of conveyance by land and by water. For this purpose we select three principal articles. 1st. Pot Ashes, or other articles by the ton. 2nd. Timber. 3d. Cattle or Beef.

And in the first place, pot ashes or other articles of merchandize, after being conveyed by land carriage from a great distance, to the town of Merrimack, fifty miles from Boston, are there put on board boats, descend the river twenty three miles, and thence by the canal, free of all other expenses, for six dollars a ton; and a ton is carried back in the same way for seven dollars. Now it would cost at least thirty dollars to carry and bring a ton the same distance by land. Indeed if the expense were the same, water carriage would be preferred. This is proved by the fact that goods have been sent to Haverhill, Coos, by Connecticut river, first to Hartford, exposed to the sea risk, and from thence exposed to the hazards of the river:—This circuitous route is about five hundred miles, generally requiring six weeks, and costing sixty dollars a ton.—Connecticut river is easy though hazardous to descend—therefore at present the principal trade takes that course; and wherever the produce of the country is disposed of, the supplies in return will be purchased.

2dly. Cattle, when driven so great a distance as to Boston, lose from 5 to 10 per cent. in weight, and the quality of the beef is much injured. Experiments have been tried to ascertain the difference, and it has been found repeatedly, that when a pair of oxen of equal quality have been separated, one slaughtered one hundred miles in the country, and the other driven to market; the former on inspection here has been deemed the first quality, the latter the second quality, making a difference of two dollars a barrel. Hides both of domestic and foreign origin are carried into the country to be tanned—the expense of the transportation of the first is of course lost. The barrels are made in the country, and sent down empty. Salt, which makes but a small part of the weight of a barrel of beef, could if conveyed eighty or an hundred miles into the interior by water, would, together with the other considerations, make it for the interest of this great branch of trade to kill at that distance. Therefore a decided preference would undoubtedly be given to that route to market which would afford the farmer and the trader these material savings; besides the expenses of the journey, and of keeping in this vicinity till sold; as well as the loss and disappointment often attending the necessity of selling under circumstances of embarrassment and competition. It is not irrelevant to repeat here, that for every additional barrel of beef that the facilities we speak of would lead to this market, an equal value of some imported merchandize must go into the country.

3dly. In the articles of timber and lumber, so great a saving is made by water carriage, that otherwise they could not be conveyed any considerable distance to market; the greater part of their value is acquired by this facility, which will be apparent to those who may recollect to have seen rafts, containing more than an hundred tons, drawn down the canal by a single horse. White oak timber was much higher in Boston before the Middlesex canal was opened, than it has been since; indeed the supply is now so abundant, that a number of ship yards have been established in its vicinity, and large supplies have been furnished to the navy yard. In fact, the real yellow pine timber was not to be had before, unless from the southern states.

There is no part of the United States where the best white oak timber can be so easily and so abundantly supplied, for the construction of a navy, as from the centre of New Hampshire, by the Merrimack and the Middlesex canal. At present it comes from a distance of 100 miles, and in a few years it is probable a still greater range of country will be opened around the Winnipischoe lakes, by means of locks and canals. If to this be added the junction of the Connecticut with the Merrimack, the hills of Vermont will contribute to this best mean of national defence. At this moment large contracts for timber are made for the navy.

In the year 1810 a number of cargoes of plank and timber were sent to Liverpool, and paid a handsome profit. With due caution, as to the dimensions and quality of these articles, this branch of trade will be very advantageous whenever it shall be renewed.

It results from what has been said, that the Middlesex canal, and the smaller canals round the falls on the Merrimack, ought to be very good property; and that the transportation by land, as well as the circuitous and expensive route by the Connecticut to New-York, and sometimes to Boston, should be wholly discontinued; and there can be no doubt it will be so when the remaining obstructions to navigation on the Merrimack, which are now trifling, compared with the great works already executed, are removed.

In order that a more correct idea of those

obstructions may be conveyed, as well as that the magnitude and importance of the works accomplished be fairly appreciated, it is proposed, in the next place, to give a more particular description of the present state of Merrimack river; and then to shew by calculations founded on sure data, that the several canals will be both profitable to the proprietors; and highly beneficial to the public.

But as the Middlesex canal has been in operation several years, and is the most important link in the chain, we shall first give a sketch of its history, and hope to satisfy, even the most prejudiced, that although it has not yielded an income equal to the interest on its cost, and notwithstanding a dividend of profits has not yet been declared, it will, at no very distant period, remunerate the liberality and patience of its enterprising projectors.

Had the Merrimack discharged its waters into the ocean at Boston, the obstacles to its navigation by boats would have been long since overcome; and its advantages, like those of the Hudson, would have appeared in the greater trade and prosperity of the town. It may now be considered as having its outlet at Charlestown, by means of the Middlesex canal. The course of the river from the mouth of the Winnipischoe, and from its western branch, is southeasterly till it comes within twenty-seven miles of Boston; it then suddenly bends to the north-east and reaches the sea at Newburyport. After running in that direction about fifty miles, Concord river takes its course northerly through the county of Middlesex, and in Billerica crosses a level country at an elevation of one hundred and seventeen above the tide at Boston, and thirty feet above the Merrimack, which it joins a few miles below the Middlesex canal.

This stream being abundantly copious to feed a canal in both directions, the country between the river and the town of Boston being unusually level, a correct knowledge of the districts to which it would lead, together with a conviction of the public benefits of inland navigation, originated the project of cutting the Middlesex canal.—The projectors were incorporated in 1793. Of its practicability there could be no doubt. But in order to ascertain the precise ground best adapted to its formation, and to make as accurate calculations as the nature of canalling admitted, the projectors employed a land, well known as an experienced engineer, then at Philadelphia, was employed to survey the ground, take the levels, make his estimate of the expense, and give his candid opinion on the undertaking in general. His survey and report (which are on the records of the corporation) shew that his impression was highly favourable to the undertaking in all respects.

The canal was thenceforward prosecuted with vigour, and finally completed at the expense of 528,000 dollars, in assessments; and 85,000 dollars, derived from the income; comprehending the expenditure of about 300,000 dollars by the corporation on the Merrimack canals and locks. The Middlesex canal is twenty seven miles in length, and thirty feet wide. There are seven aqueducts over rivers and streams, and twenty locks. Four of the levels are each preserved for above five miles; the other four from one to three miles; it terminates in Charlestown mill pond, an extensive artificial basin; which, while it serves the original purpose, accommodates the rafts and boats. The corporation owns the mills at Charlestown, and others at Billerica, and other valuable real estate. It has also a privilege, of which it has not yet fully availed itself, of converting Concord river into a canal, twenty-three miles of its extent thro' the towns of Billerica, Carlisle, Bedford, Concord and Salsbury. The grant of the Middlesex canal is a perpetuity. The original design comprehended not only a communication with the Merrimack, but the formation of canals and locks round the several falls on that river. Unfortunately it was not in the power of the corporation to execute these works at the same time the canal was forming. In the year 1814 the canal was opened; and during the years 1805, 6, and 7, the transportation upon it was as great as could have been expected, at its commencement, under the circumstances of its novelty and limited communication with the interior, from the obstructions and falls in the river. In the year 1808, the proprietors established a system of management analogous to those of canals in Europe, provided for the collection of toll in cash, before the delivery of the article on which it accrues, and took measures to commence the works on the Merrimack, necessary to this river's being made navigable for boats.

But in the year 1808 the embargo suspended business, and the canal suffered of course in common with other institutions; and although in 1809 it was raised, the injurious effects of this measure continued to be felt. The income of the canal however increased. In 1810, when commerce revived a little, the receipts rose to above 50,000 dollars. In 1811, in consequence of the restrictive measures of government, the toll declined again. But as some evidence of the nature of this property, in 1812, notwithstanding the war, and the consequent suspension of ship building, exportation of