
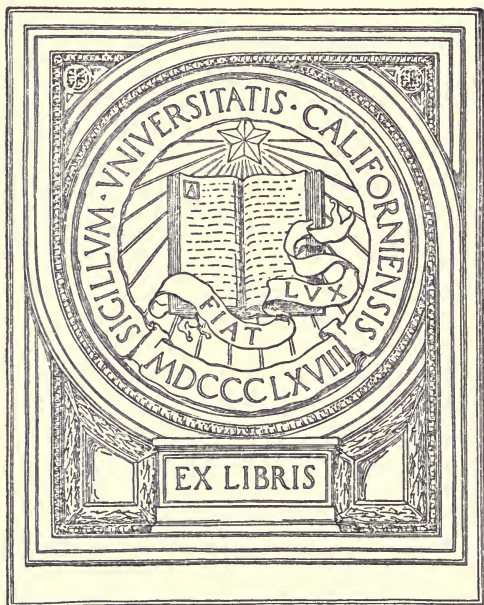


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CONSIDERATIONS  
ON THE  
GREAT WESTERN CANAL,  
FROM THE  
HUDSON TO LAKE ERIE,  
WITH A VIEW OF ITS  
EXPENCE, ADVANTAGES, AND PROGRESS.

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Second Edition.

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PUBLISHED BY ORDER OF THE  
NEW-YORK CORRESPONDING ASSOCIATION,  
FOR THE PROMOTION OF  
INTERNAL IMPROVEMENTS.

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1818.



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NO VINU  
AIRBORNE

*IN* presenting to the public the following Considerations on the Western and Northern Canals. I return my thanks to those gentlemen in the western part of the State, who have aided me in my work, by the communication of some important facts. It is hoped, that *A VIEW OF THE RESOURCES OF THE STATE OF NEW-YORK*, will be presented to the Nation, in the course of a few months, under the patronage of the New-York Corresponding Association. Through this channel, an appeal is now made to a liberal and enlightened community, for every detail and every species of information, which may tend to the accomplishment of this object. Communications addressed to the subscriber, or to the Chairman of the Committee of Correspondence for the Association, would be gratefully received.

**CHARLES G. HAINES.**

*New-York, October, 1818.*

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THE  
New-York Corresponding Association,  
FOR THE PROMOTION OF  
INTERNAL IMPROVEMENTS.

THIS Association has for its object, the acquisition and diffusion of all useful intelligence. connected with the Inland trade and navigation of the country. Its founders have indulged the hope, that by opening an extensive correspondence, with gentlemen of the first distinction, throughout the Union, and by embodying and sending forth, in a comprehensive form, the information which might be thus acquired, great and permanent benefit could be rendered to the American people, and much incitement given to that noble and munificent spirit of enterprize, in relation to Internal Improvements, which now distinguishes every quarter of the United States.

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## CONSIDERATIONS

ON THE

## GREAT WESTERN CANAL, &c.

THE interest which is excited throughout this country, and in the minds of some of the first statesmen and public characters in Europe, in relation to the great works of inland navigation, which are now vigorously prosecuted under the patronage of the NEW-YORK STATE GOVERNMENT, renders it necessary to give an occasional exposition of the progress and success of our vast but practicable undertakings.

Like all great projects, embracing in their scope the prosperity and welfare of states and empires, the Grand Canal from the Hudson to the Lakes, has come in for a share of obloquy and reprehension. By the weak and timid, it has been viewed as a visionary project of state grandeur; by the base and designing, it has been denounced as an attempt at popularity. Experience will detect the error and criminality of both imputations. When the great Colbert, in conjunction with the celebrated engineer, M. Riquet, undertook to connect the Mediterranean sea with the Atlantic ocean, by the Canal of Languedoc, to aid in building up the marine of France, and to fortify an independent commercial system; his plan was viewed by many with astonishment and derision. Yet does this canal stand as the most honorable monument of the illustrious reign of Louis 14th. But few great benefactors of their age, have received the immediate tribute of gratitude and applause due to their distinguished services. It is time that consecrates their deeds, as immovable landmarks in the history of civilization.



**INTERNAL NAVIGATION** will hereafter constitute one of the primary objects of our state and national policy. Many inevitable causes have heretofore detracted from that attention which is at all times due to its magnitude and importance. We are yet an infant nation. When we emerged from the conflicts of the revolution, we had a great national debt to pay, and a new government to organize and sustain. Foreign commerce afforded the natural and ready means to accomplish these ends, and it was pursued with success, to the exclusion of any regular system of internal trade. The tremendous commotions of the belligerent world, favored this exclusive policy, until the flagrant depredations of the European powers, and the war which they produced, swept our commerce from the ocean. Our commercial relations are now assuming a more permanent character, and we shall gradually extend them until they grasp the boundaries of the maritime world, by the bold and vigorous application of our internal resources.

Importance  
of Internal  
Trade and  
Navigation.

It is unnecessary in this place, to dwell with much detail on the vast importance of an extensive and vigorous system of inland trade. It is amply elucidated by almost every eminent writer, who has taken up his pen to instruct nations in their commercial pursuits. "The home trade," says Vattel,\* "is of vast use. It furnishes all the citizens with the means of procuring what they want, as either necessary, useful or agreeable. It causes a circulation of money, creates industry, animates labor, and by affording subsistence to a great number of subjects, contributes to render the country more populous and flourishing. In fine, this commerce being of advantage to the nation, it is obliged, as a duty to itself, to render it prosperous." Adam Smith observes in his wealth of nations,† "That good roads and canals and navigable rivers, by diminishing the expense of carriage, put the remote parts of the country more nearly upon a

\* Vide p. 69, Laws Nations.

† Vol. 1, p. 229.



level with those in the neighbourhood of large towns ; and on that account **THEY ARE THE GREATEST OF ALL IMPROVEMENTS.**" But commercial prosperity is not the only advantage to be derived from such means to promote internal trade :—While they lead to national happiness and national strength, they cement together a wide spread community, not only by the strong ties of interest, but also by every social tie that can unite an enlightened and powerful people. Who that has glanced his eye over the map of our extensive country—Who that remembers the strong local features that bear the everlasting impress of nature's own hand, but perceives the palpable necessity of such affinities ? Washington, Franklin, Jefferson, Rittenhouse and Adams saw it. The most distinguished statesmen of this and of every other country now see it. Our mountains must be politically annihilated. Our sectional barriers must be swept away by a moral arm, whose power is resistless. Our manners, our habits, our principles, our political maxims and our most pervading sympathies, must wear an aspect that is settled, uniform and consistent. Nothing but this, can perpetuate that union which is to guarantee our future national greatness. Nothing but this, can preserve those popular institutions which are sealed with our fathers' blood. Nothing but this, can carry us along to that height of glory which breaks upon our gaze through the vista of futurity, and beckens us to its cloudless summit. Nay, on this subject, we can almost hear the voice of distant generations, speaking in supplications loud as the thunders of a higher world. But let us quote the opinions of men whose names impart a consequence to their sentiments, that is worthy to be held in constant remembrance. The Duke of Sully, the celebrated minister of Henry IV. and one of the most profound men whom France ever saw, early perceived the importance of a vigorous policy to improve the internal trade of his country. He observed that France could easily draw to herself the commerce of the ocean and the Mediterranean, and see them

Advantages of Internal Trade to our Union.

in the middle of her provinces, by a canal navigation. We find in his memoirs the following judicious remarks: "The joining rivers and making roads, which render the communicating either of different provinces, or different parts of the same province, more easy and commodious, are perhaps the two most important objects to which a wise government can apply its attention in a time of peace. It is necessary that there should be some principal centre for the riches of the nation; but nevertheless, other cities should not fall a sacrifice to the capital; which being in the body politic what the heart is to the human body, constantly receiving the blood, and as constantly repelling it, even to the most extreme parts, they cannot be deprived of it without bringing languor on the whole machine. Much trouble might be saved in studying the nature of those secret springs, which give motion to the most minute branches of commerce, were due attention given to that simple and obvious principle, of only supplying the country people with the means of living in ease and plenty."\* But let us come home to our own statesmen, whose remarks may more immediately apply to ourselves. We shall first quote the words of Albert Gallatin. "The inconvenience, complaints, and perhaps dangers," says this able politician "which may result from a vast extent of territory, can no otherwise be radically removed, or prevented, than by opening speedy and easy communications through all its parts. Good Roads and Canals, will shorten distances, facilitate commercial and personal intercourse, and unite, by a still more intimate community of interests, the remote sections of the United States. No other single operation within the power of government, can more effectually tend to strengthen and perpetuate that Union which secures external independence, domestic peace, and internal liberty."† The next great man we shall quote is Joel Bar-

\*Sully's Mem. Vol. 3, p. 333.

† Report on public Roads and Canals, 1807.

low. He observes, that "Public improvements, such as roads and canals, are usually considered only in a commercial and economical point of light; but they ought also to be regarded in a moral and political light. The means to be relied on to hold this beneficent union together, must apply directly to the interest and convenience of the people. They must at the same time enable them to discern that interest; and be sensible of that convenience. The people must become habituated to enjoy a visible, palpable and incontestible good; greater good than they could promise themselves by any change.—They must have information enough to perceive it, to reason upon it, to know why they enjoy it, from whence it flows, how it was attained, how it is to be preserved, and how it may be lost."\* The immortal Fulton, the second Franklin of his age, has remarked with his usual discrimination and intelligence, "That when the United States shall be bound together by Canals, by cheap and easy access to market in all directions, by a sense of mutual interests, arising from mutual intercourse and mingled commerce, it will be no more possible to split them into independent and separate governments, obliging each to line its own frontiers with troops, to shackle its own exports and imports to and from the neighboring states, than it is possible now for the government of England to divide and form again into seven kingdoms. Here is a certain method of securing the Union of the States, and of rendering it as permanent as the continent we inhabit."† With these preliminary remarks and illustrations, we shall proceed to notice the state of our inland navigation.

No one need enquire what are the advantages of the state of New-York for Internal Commerce. The map of our state will answer the question and put curiosity at rest. Neither do we want ability to improve these advantages

\* Address to the Citizens of Washington City, 1809.

† Letter to Mr. Gallatin, Dec. 13, 1807.



which providence has planted around us. A state which rests her borders upon the ocean on one side, and on the other reposes upon the greatest chain of internal seas upon the face of the globe, diversified by interior Lakes and tributary streams, with a river whose tides and facilities for navigation can scarcely find a comparison; a state that contains a more extensive soil than Portugal, the United Netherlands, or England and Wales put together; a state that stands in the heart of the union, and could now sustain the whole population of the American Empire, and can yearly pay ten or twelve millions of dollars into the treasury of the nation, without inconvenience; whose splendid commercial emporium, catches the gaze of the foreigner as though it were gilded with the decorations of enchantment, and even now has a tonnage that no city in the world can equal but London itself; finally, a state, that presents a million and a half of wealthy, intelligent, enterprising and high minded republicans, attached to the union, the government and the laws.—We say, that such a state, does present no common spectacle. We are proud in its contemplation—we execrate the wretch who is not so. We are proud too, at the great and salutary end to which these resources are bent.

The people of this state early perceived the benefits of Internal Trade, and previous to the late war with England, the GRAND CANAL from the Hudson to Lake Erie was contemplated. Such an undertaking was alone suitable to a state of peace. It was accordingly postponed to that period, when more favorable auspices should await its prosecution. That period arrived, when DE WITT CLINTON was unanimously called to the chief magistracy of the state. The eyes of the people were fixed upon him, with an expectation that the Great Western Canal would be vigorously prosecuted to its final completion. The work will be prosecuted and triumphantly finished.

As we are presenting to the American people, some view of our internal improvements, it may be well to show *some-*

thing of the original calculations of the commissioners, concerning the Grand Canal; to take a slight view of its advantages; and give a correct detail of its state and progress the present season.

The length of the Canal, from the Hudson to the Lakes, is calculated at three hundred and fifty-three miles, according to the report of the commissioners appointed by the New-York Legislature, on the 17th April, 1816. They observed that in their opinion, “the dimensions of the Western or Erie Canal and Locks, should be as follows, viz:—width on the water surface, forty feet; at the bottom, twenty-eight feet, and depth of water four feet; the length of a lock, ninety feet, and its width, twelve feet in the clear. Vessels carrying one hundred tons may navigate a canal of this size—and all the lumber produced in the country, and required for the market, may be transported upon it.” The aggregate rise and fall is in feet 661 35, and the elevation of Lake Erie above the Hudson, is calculated to be in feet 564 85.—The number of locks will be seventy-seven. The canal has been divided into three great sections. The western section reaches from Lake Erie to Seneca River; the middle section leads from Seneca River to Rome, and the eastern, from Rome to the Hudson.

Dimen-  
sions of the  
Western  
Canal.

The average expense of the canal per mile, is estimated at \$13,800; being twelve hundred dollars per mile less than Mr. Fulton and Mr. Gallatin assigned, as an average expense for each mile of American canal.\* The whole expense of the great western canal, is calculated at \$4,881,738. Should it, however, proceed in a route south of what is called the mountain ridge, west of the Genesee River, then there will be a deduction in the expenditures, which leaves the whole estimated cost, as made by the commissioners, at \$4,571,813 00.

\* Vide Report on Canals, 1807.

These statements are taken from the report of the canal commissioners, made to the New-York Legislature, February 15, 1817. They have antecedently been laid before the public in various shapes; but we again submit them, after they have been partially tested. The last report which has been made by the commissioners, was submitted to the legislature on the 31st of January, 1818, and to which we shall more particularly refer in the course of our remarks. This report only confirms the correctness of all those which preceded it, and only proves, that the estimates were rather too high than too low. Sufficient it will be here to remark, that from experience and subsequent observation, the Grand Canal will even cost less than the commissioners and the state government have calculated. This we shall prove and illustrate.

We will now advert to some of the great advantages which must result to the state of New-York, to the western country, and to the nation at large from the Grand Western Canal.

We have before taken a view of the principal advantages that must result to our union, and to our republican institutions, by attaching the various sections of the country more immediately together, by means of internal communication. Our Great Canal, in this respect, will produce a train of exclusive and permanent benefits, which could not, from local causes, pertain to any similar undertaking within the scope of ourselves, or of the nation. When you connect the Hudson with the Lakes, by such a communication, you virtually place the Atlantic seaboard and the great western interior by the side of each other. From the ocean, you can pass through this whole chain of inland seas, navigable to vessels of the largest burthen. Nor should we stop here—New-York and New Orleans could be brought, in point of intercourse, near each other. At trifling expense, and with no great effort of labour, you could open a communication by water, through which a vast commerce could be carried on



from Lake Michigan to the Illinois River, which empties into the Mississippi above St. Louis, and traverses nearly the whole extent of that rising and fertile territory, which will soon be admitted as a state among the other sisters of the union.\* Even in high waters, there is now a navigation for small craft, between the waters of the Illinois and the southern extremity of Lake Michigan through Chenango Creek. The Miami of Lake Erie, and the tributary streams of Lake Michigan, near the head waters of the Illinois, could easily be united, and a direct channel from Lake Erie into the Mississippi thus be opened. It may also be observed, that the sources of the Miami of Lake Erie, and the head waters of the Wabash, have about the same level, are near each other, and could easily be united without encountering the least obstruction. By this means, a communication could be opened with the Mississippi, through one of the most charming and fertile countries that the eye of man has ever visited, or his hands ever improved. Another passage from the Lakes to the Mississippi could be effected, by uniting the waters of the Miami of Lake Erie and the Miami of the Ohio, whose waters, at the sources, are nearly on the same level. That some of these channels will shortly be opened, no rational man can doubt, who recollects the character of that population who inhabit the country they will enrich. Three other great canals could easily unite the Hudson and the Ohio, by means of Lake Erie. First—by means of the Sandusky and Sciota rivers. The former which empties into the Lake, and the latter into the Ohio, have their waters from the same swamp. Their junction would hardly cost an effort. The second would be by uniting the Muskingum and the Cayuga Rivers. The former empties into the Ohio, one hundred and seventy miles below Pittsburg, and the latter turns its waters into Lake Erie. *Six miles* of Canal would unite them, and we believe

Connexion which might exist between the Hudson & the Mississippi.

\* Illinois is already admitted by act of Congress, but having only 40,000 people, she cannot immediately become a state.

that a company now actually exists to execute this purpose. The third communication would be between Lake Erie and the Alleghany branch of the Ohio. There are two ways by which this object could be effected; the first by joining their waters through French Creek, which would want about sixteen miles of canal—the other, through Lake Chetoughe to the Alleghany. A considerable navigation is now carried on through this Lake. The people on the borders of French Creek are very ardent in the project of a canal, that would unite the waters of the Lakes with the Ohio at Pittsburg, and are themselves capable of doing it, in a single season, if they are endued with that noble enterprize, which so generally distinguishes their western brethren. What systems of internal trade and navigation may yet spring from the completion of our great undertaking, even after we pass the shores of Michigan, is left for future enterprize and future events to determine. The mighty waters beyond this Lake are yet to be brought into requisition, for the great purposes of national grandeur and individual convenience.\*

Pause for a moment, and consider the mighty population which will yet cluster on the shores of this chain of Lakes, and the unnumbered streams which roll their tributary bounties into their bosoms! The great western world which reposes upon their wide-stretched shores, needs no description of ours, to enhance its value in the estimation of the American people. It will yet contain a population, unequalled by any in the world for industry, enterprize and independence; a population bound together by ties of union and interest, created and fortified by a grand system of internal improvements, of which the Great Western Canal will be the bulwark. In the animating spectacle here presented in perspective, we see a great republican community, cemented by the

\* On the ease and practicability of uniting the Lakes with the Western waters, see Mr. Galiatin's Report, and Beaujour's Travels in the United States.

Strongest considerations that ever influenced a political body—assimilated in manners, laws, sentiments and maxims, with their eyes fixed on their connexion with the seaboard, as the life and support of their prosperity and happiness. Yes, in this noble race of citizens, we see the cradle of liberty, laws, and the arts; we see the hallowed light of our liberal institutions beaming in its native purity, blended with the mild lustre of virtue, magnanimity and intelligence.

In a commercial point of view, the results and benefits of the Canal can scarcely be estimated, at this early stage of our history. The first advantage to be derived from its completion, is a national one—the diversion of a growing and important trade from Great Britain to ourselves. Mr. Weston, the celebrated Engineer, well observed in a letter to the Canal Commissioners some years ago, “that should the noble plan of uniting Lake Erie with the Hudson be carried into effect, we could fear no rivalry; and the commerce of the enormous extent of country, bordering on the upper Lakes, would be ours forever; and to such an incalculable amount, as would baffle all conjecture to conceive.” Even the country which is immediately interested in the Canal, will produce more from the richness of its soil, than all the Atlantic states put together. Its extent and fertility, warranted the Canal Commissioners in making this assertion some years ago. But two outlets remain for this produce: the one down the Lakes to the St. Lawrence—the other, under the present circumstances, by laborious land carriage to Albany, and from thence down the Hudson to New-York. What is the effect? Why, that a branch of the most profitable trade, flows to a British market, and enriches our natural enemy, the arrogant usurper, that would domineer over the whole world. What policy is England pursuing with her North American colonies? A policy whose end is to render them formidable to us in a commercial point of view. Hence we see her totally departing from the ordinary rigors and oppressions of her general colonial policy, in her gov-

Advantages of the Western Canal to the Nation at large.



ernment of the Canadas. Their taxes are light, their laws liberal, their privileges comparatively numerous, and the expences of the government have heretofore, at some periods, been a tax to the British Treasury. We must remember that the Canadas contain more square miles than our five largest states, and can sustain a great, hardy and formidable population, as much so as the population of the north of Europe. Dr. Franklin, when examined at the bar of the British House of Commons, previous to the revolution, called them a "vast country." It will be the policy of the British Cabinet, to increase their population to the utmost extent of her power. It has been frequently avowed in the British Ministerial Gazettes and Journals, since the late war, that the North American Colonies should be fostered and protected, as a check upon the alarming commercial greatness of the United States. Even the colonial governments, have gone so far as to express their alarm, through their official papers, of the New-York state government: nay, they have gone further, and are actually engaged in counteracting our policy, by making a canal of no small importance, at the present moment, which may sensibly affect our northern trade. What immense quantities of produce would find their way to Montreal in the course of another generation, without any countervailing diversion on our part, no mind can estimate; but enough is seen, to hold out the most imperious obligations to the government and people of the United States, to divert and command this trade. No one can hesitate to say what course it *will* take, when the Great Western Canal shall be finished.\* The Canal Commissioners in 1812, in answer to the doubts expressed by the government of Michigan Territory, in relation to the policy of

\* We understand that a work of 400 pages is now in the press, to prove that the Western Canal should be abandoned, for a Canal around Niagara Falls, and that this advocate for a trade with Montreal is an *American Citizen!*

erecting our Canal in its present direction, made it fully evident by the most irresistible and conclusive proofs, that it would be far cheaper to take produce to New-York than to Montreal, on the completion of the Canal, even were there a Canal cut round the tremendous cataract of Niagara, which we think will not shortly be done: but more than this, it will be even cheaper to take produce from above the Falls to New-York, than from Lewistown below the Falls, to Montreal. As it now is, and probably ever will be, the portage round the Falls, from one Lake to the other, must prove a formidable tax, even leaving out the difference of risk in going to the British, instead of the New-York market. The Fur trade which we shall command by means of the Canal, will prove of no minor consequence; and in fact, such are the incalculable and stupendous commercial advantages, which our project promises fair to secure, that we need not endeavor to render them more palpable. The import and export trade of New-York, through this great channel, will hereafter astonish the nation and the world.

The importance of opening a home market for produce, when we take into view the interests of agriculture, is strikingly important. Agriculture flourishes, in proportion to the encouragement it receives from consumption, and ready demand in the market. Home markets are greatly preferable to those of a foreign description, being secure from the fluctuations and inconstancy, which more or less, pertain to those distant resorts for the sale of our surplus productions. There is but little inducement to make improvements in this most essential of all branches of industry, if the distance and uncertainty of the market, creates an expense that absorbs the profits of labor. We have before referred to the doctrine of great political economists, where they lay down the advantages which result from encouraging the cultivation of the remote parts of a country, by facilitating and accomplishing the means of an easy and safe communication with

large cities. The correctness of their ideas are abundantly proved by their application to the great western country, that borders on the Lakes. There are those too who believe, with strong and prominent reasons for their faith, that the western country is yet to contain rich and extensive manufacturing establishments. Although it was a wilderness when Volney travelled through our country, yet he called it the Flanders of America, and foretold its future greatness as a manufacturing country. Should these predictions ever prove true, our canal will present a channel through which a great proportion of the fruits of this species of industry, and application of capital, can be wafted with ease and celerity to that rich mart of commerce, that will afford them a ready market. The abundance of coal which is supposed to lie in the vicinity of the lakes and the successful experiment which has been made in different kinds of manufactures at Pittsburg, by the application of steam, favors the soundness of these anticipations.

Our public lands have heretofore occupied no inconsiderable space, in the estimation of the national government.— Two considerations are intimately connected with them;— first, the pecuniary advantages to be derived to the nation from their sale; and secondly, the extent and character of the population which is to inhabit them. Both of these considerations will be materially affected by the western canal. It is a well authenticated fact, that under present circumstances, the national government labors under much disappointment, in relation to the expected revenue to be derived from the sale of these national domains. During the last session of Congress, a resolution was passed appointing a committee to enquire into the expediency of raising the price of public lands. The following is a part of the report which they submitted:—“ Indeed the committee feel somewhat apprehensive, that the United States, so far from being enabled to increase, will find themselves compelled to lessen the price of public lands, or to forego the golden



streams they indulge in, of enormous revenue to arise from their sale. It will be recollected by the house, that heretofore, the public has been the monopolist of land—that notwithstanding this advantage, not more than eight or nine millions of acres have been sold, for a sum less than 19,000,000 of dollars, and that too during a space of 18 or 20 years.”\* This is enough to show that the public lands are not productive of that pecuniary advantage, which was once expected. In relation to this subject, therefore, the Canal must be viewed with much interest. It has even been estimated by very discerning calculators, that should the national government, make the whole Canal from the Hudson to the Lakes, at an expense of five millions of dollars, the rise which it would produce in the sale of public lands, must remunerate the disbursements of the nation in ten or fifteen years. This estimate, in all probability, is very nearly correct. Certain it is, that their value must depend upon a disposition to settle them; and they must be settled and reclaimed from a wilderness state, by emigrants from the eastern section of our union, and other thick settled parts of the country. What are now the greatest objections to taking up and inhabiting these public lands? The difficulties and expense of emigration and the want of a ready market for surplus produce. Remove these objections, and the stream of emigration would be broad, deep and constant, as that great and majestic flood, sent forth from the Lakes, whose borders it would people. Towns, villages and cities would spring up, and emerge from the bosom of the wilderness, as though the soil was smitten by some potent and creative hand of enchantment. We know of no operation, in the scope of either state or national government, that could open so ready and so wide a door to national wealth and national strength. The character of the emigrants too will be much improved by our canal. A great proportion of the

\* Vide Report of Committee, Jan. 5, 1818.

population which has poured into the western country for the last few years, has been honest, enterprising, but needy, and forced upon adventure by necessity. Their object has been, subsistence and comfort for their numerous families. But when ready markets, with easy and regular transportation are opened to these countries, men of capital and men too of high standing, as agriculturists, will be induced to leave an old for a new and more genial soil. Foreign emigrants of large fortunes, will also be induced to cast a favorable eye on these tempting territories. It is now, that great capitalists begin to think of abandoning the troubled shores of the old world, to invest their property and rear their families in the new. The vicinity of the Lakes has already attracted many foreigners of this valuable description.

The late war with Great Britain, as well as the present war with the Seminole Indians, sufficiently proves, without going further back into our history, that we have nothing to expect from these savage tribes but continual depredation, while hanging on our borders, with feelings of jealousy and revenge, and ready to rush on murder and devastation, at the beck of England or Spain. Physical force on the frontiers, by means of settlements, which are better than standing armies, as well as trade and intercourse, must correct these evils, and remove these dangers from us. Whatever, therefore, tends to draw and sustain an enterprising population on our Lake frontier; whatever tends to increase our trade with the Indian Tribes, tends to our peace and security. And is the civilization of the Savages nothing, which must follow this state of things? Is it of no importance to redeem these unfortunate beings from that unhappy state of moral and intellectual degradation, which pertains to their ordinary condition? Constant intercourse can alone elevate to a more tolerable standing, their present depressed character. It is this alone which can subdue the wild and unchecked propensities of the savage soul, and mould it to the

dictates of civil restraint, and the precepts of morality. If luminae their cabins and irradiate their haunts with the mild and gladdening beams of civilization, and we shall no longer find the abodes of domestic tranquillity roused to terror by the soul-chilling war-whoop, or families falling victims to sanguinary massacre. We ought not here to forbear mentioning, by way of illustration, that a tribe of Indians in our own state, have been so far reclaimed by intercourse and example, as recently to have even instituted among them, a society for agricultural improvement. When the Western Canal shall be opened, and a vast and vigorous commerce carried on through the Lakes, fed by the territories in their vicinity, we cannot but hope, that great and beneficent effects will be extended by these means to our indian neighbors.

Candor enjoins, that in recounting the advantages of our undertaking, we should not omit the facilities it will afford, for the transportation of every thing of a naval and military nature, connected with the defence of our extensive frontiers. We wish not for war with Great Britain; we wish not for war with any nation, unless waged for future safety, and in vindication of our national rights. Should the day ever come, when the interest and policy of the United States and Great Britain should again clash; or should that great crisis ever arrive, when the empire of the maritime world shall be decided by the two nations, and the Lakes again become the splendid theatre of naval warfare; we shall not take it upon ourselves to say what would be the utility of our Canal, as a medium of transportation. But dismissing these benefits in perspective, as visionary and romantic, we must certainly admit that a military force is to be maintained in conjunction with some naval force, to guard our lake frontiers, while England holds the Canadas. On the late debate in Congress, Gen. James Tallmadge, jun. a member from the state of New-York, shewed, in his usual clear and luminous manner, the enormous expense of transportation to



the Lakes, under present circumstances. He stated, without contradiction, that the munitions of war for the armament on Lake Erie, were sent from the seat of government. The cost of a cannon at that place was \$400, while the transportation was from one thousand five hundred to two thousand dollars per gun ! The delay, too, in transportation, to be also considered in addition to the expense. He also stated, and from information derived from the war department, that while the House was then debating on the expediency of opening communications, that would lessen the price of transportation, the Government was paying \$127 per barrel for pork, to sustain the western garrisons. Gen. Tallmadge observed, that he spoke within bounds, when he asserted, that money enough had been wasted during the war, for want of military roads and canals, to turnpike the whole western country. If this remark be true, we do not hesitate to say, that had the Western Canal been completed in 1812, it would have saved enough to the nation, in the charges of transportation, to make three such Canals as ours. One of the late Aids of Gen. Harrison, and now a respectable member of the bar of New Orleans, informed us a few weeks since, that it cost the General Government \$100, per barrel for flour and \$60, per bushel for oats, at Fort Meigs, during the northwestern campaign, taking into view the forage for the horses on the way, and the horses that were lost. In these observations, we say nothing of the time which was sacrificed to an army engaged in active hostilities. Is it then of no consequence when viewed in relation to future exigencies ?

In young countries, most branches of knowledge keep pace with necessity. The collective industry of the people is exerted in pursuits, connected with the immediate wants of community. This is the case with ourselves. We cannot yet afford to strike off into those great ranges of experiment, which are attended with the consumption of time, labor and expense, for the acquisition of unproductive knowledge.

Engineers, therefore, for other than military purposes, are difficult to be found in our country. The demand will now be great for civil Engineers, since a noble spirit for internal improvements, by canal navigation, exists in all parts of the union. The importance of having able men of this description, is pointed out by every writer on the subject of inland trade. The want of them has often caused the loss of immense sums of money, and defeated many great and practicable projects in the line of their profession. Their qualifications are extensive, and much time and industry are requisite to their acquisition. Their mathematical attainments should be eminent; and their knowledge certain and circumstantial. Calculations the most abstruse, intricate and laborious, will be called into application. A good Engineer ought to be even something beyond this. Various branches of natural philosophy, especially that of mechanics, should come under his investigation. He should understand the principles and practice of drawing; be conversant with the history of Canals; the writings of all former Engineers; the various causes and operations of trade and commerce, and understand mineralogy and the science of agriculture. A Canal of more than three hundred miles in length, must necessarily bring into requisition a mass of talent and experience; that will prove a national advantage. Some of our Engineers are already highly accomplished in their profession, and bid fair to hold a proud comparison with the most celebrated men of the same profession in Europe. The nation at large will have a claim upon their services, and no doubt receive them when demanded.

If it creates surprise, that any one should look to the Western Canal for acquisitions and advancement in natural history, that surprise, upon reflection, must cease in all candid minds. We must recollect, that in relation to this science, our country, is yet, comparatively speaking, unexplored, and presents the noblest theatre to the mineralogist, that ever attracted the enterprise of genius or the perseve-

vance of industry. The country from the Hudson to the Lakes is possessed of the richest mineral treasures. That the range of the Canal will lay open the most important discoveries, we feel warranted in asserting; we can even appeal to present facts, without trusting to anticipation. In the town of Manlius, in the county of Onondago, two large beds of gypsum have already been laid open, by the excavations of the Canal. As soon as the middle section shall be finished, this gypsum can be afforded at Albany for about five dollars per ton, according to the estimation of intelligent men. Immense quantities of this article are now brought from Nova Scotia to the port of New-York, and carried up the Hudson River. This importation will soon be resigned for the gypsum found in our own soil. What other discoveries may yet be made, time will soon reveal. The one alluded to is of no minor importance. And lastly, in the train of these considerations, permit us to ask with becoming deference, if the munificence and enterprize of New-York, in undertaking a work to connect the Hudson with the Lakes, at an expense of five millions of dollars, has done nothing to rouse the slumbering energies of other states to their own internal improvements? We claim neither respect nor praise in making this appeal; but we do say with an assurance, that time and experience amply fortify, that stupendous projects, and vast undertakings in the policy of states and nations, lean upon and sustain each other by a kind of political sympathy. Human enterprise exists deep in the soul, and waits but for objects and occasion to call it forth.—When once directed to great ends, it seldom pauses until it erects to itself imperishable monuments, to mark the theatre and extent of its operations. When once a spirit of useful improvement, in any great branch of industry takes fire among a liberal and powerful people, it strikes out a bold, energetic and enlightened policy, that leaves its features on the history of the age. Look around among the states of the union:—Where is there a member of the confederacy that



does not turn with anxiety to the development of its internal strength? Where is there a liberal, high-minded state, that has not referred in language of praise, to the enterprize and liberality of the state of New-York? Pennsylvania is assuming an attitude suitable to her great strength, and seems deeply sensible of her interests. Virginia, Kentucky and Massachusetts, are putting forth their resources. Almost every state in the union has some favorite plan of inland navigation; and even some of our new states and territories begin to look at their rivers, and wish to see their waters blended by Canals, their distant boundaries approximated by intercourse, and to dream of the golden fruits of internal trade. These feelings spread through our union, as far as our eagle bends her circuit or hovers over her empire. Will may our sisters of the confederacy say, if New-York undertakes a Canal of more than three hundred miles, at an estimate of five millions, shall we remain inactive, and suffer an incubus to fasten upon our energies? Shall we suffer our years to waste away, our ambition to sleep in the shade, and our natural resources remain unimproved? No! other states feel like New-York, and reciprocate the spirit of liberality and enterprise, which she is proud to cherish and demonstrate to admiring nations.

The advantages which must result, immediately to the state of New-York, from the Great Western Canal, besides those heretofore generally pointed out, will flow from two sources—

First, from the artificial mill seats which the surplus waters of the Canal will create, and the numerous hydraulic uses to which they may be applied. It is proposed not to convey these privileges in perpetuity, but merely lease them, that their increase in profit and advantage may result to the state. Secondly, from the tolls and transit duties upon vessels and cargoes, in ascending and descending the Canal.

Advantages of the Western Canal to the State of New-York.

The extent and magnitude of the advantages to be derived from the first of these sources, must depend upon adven-

tious circumstances, and will not permit any thing like a definite calculation in dollars and cents. They have been found of much importance in Europe, and will unquestionably subserve many important ends in this country. The benefits to be derived from the second, deserves a more particular notice.

Shortly previous to the death of the ingenious and lamented Fulton, to whom the nation and the world owe eternal obligations of gratitude and respect, he made some enquiries, and gave some interesting data on the subject now under consideration. From examining the custom-house books, he calculated that 400,000 tons of freight were annually carried on the Hudson, although it is probable that the amount is now considerably greater. From the comparison which these data afford, between the country trading on the Hudson, and the immense country which must send her productions, and receive her supplies through the Canal—he came to the conclusion, that 1,000,000 of tons would be annually transported on it between Buffalo and Albany. The expense of transporting a ton over the distance between Albany and Lake Erie, by land, is now \$100—the expense of transporting a ton the same distance, through the canal, will be \$8 53, allowing \$5 53 for transportation, and \$5 per ton for toll. Taking Mr. Fulton's calculation to be correct, and allow the annual transportation of this 1,000,000 of tons by land at \$100 per ton, it would shew us a yearly expense of 100,000,000 of dollars for bare transportation. The transportation of the same quantity through the Canal, would be \$8,430,000 making an aggregate difference of \$91,430,000, or a difference of \$91 47 on each ton! In these calculations, we must not forget the time that would be turned to unproductive labor in the land transportation. This difference in the transportation would be added to the price of the commodities and merchandize transported, and operate with pernicious effects, and levy a burthensome tax upon community. But we shall be told that this reasoning is idle and vision-

ary; that not one half of this 1,000,000 of tons, would ever be carried over this extensive distance by land. This we sincerely believe—perhaps not a third of the quantity would ever be thus transported. And why? Because of the monstrous expense of land transportation. No—without the Western Canal, a great proportion of this 1,000,000 tons would pass through the St. Lawrence, and feed the treasury, and nerve the energies of old England.—There must be an outlet to the productions of that fertile and vast country, reposing on our inland seas; and there must be an inlet for the articles of merchandize which it wants. Without the Western Canal, they will be monopolized in a great measure by England, and this is one of the most conclusive reasons for prosecuting our works. When the Canal shall be finished, Mr. Fulton's calculations will be fully verified.

What could more strongly illustrate this position of Mr. Phillips, in his *History of Inland Navigation*, “That all Canals may be considered as roads of a certain kind, on which *one* horse will draw as much as *thirty* horses do, on the ordinary turnpike roads, or on which *one* man alone will transport as many goods as *three* men and *eighteen* horses usually do on common roads. The public would be great gainers, were they to lay out upon the making of every mile of Canal *twenty* times as much as they expend upon making a mile of turnpike road.”\* Nor must we here forget Mr. Fulton's assertion to Mr. Gallatin, “That on a road of the best kind, *four* horses and sometimes *five* are necessary to transport only *three* tons. On a Canal *one* horse will draw *twenty five* tons, and thus perform the work of *forty* horses; the saving, therefore, is in the value of the horses, their feeding, shoeing, geer, waggons and attendance.”†

Pursuing still further the first data afforded us by Mr. Fulton. we shall perceive that the annual toll on 1,000,000 of tons, passing through the Canal at £5 per ton, would give

\* *History of Internal Navigation*, Pref. p. 9.

† Letter to Mr. Gallatin, Dec. 8, 1817.



an annual revenue to the state of \$5,000,000 ; thus would there be more received into the state treasury, in one year, than the whole cost of the Canal? Well may we exclaim, that in no other way could the state invest her surplus revenue to such an unprecedented profit and advantage. But admitting for a moment, against our most settled convictions, that Mr. Fulton's calculation, and the calculations of the commissioners and engineers at a subsequent period, are too extravagant ; it is certainly rather indecorously detracting from their credit and reputation, as men of abilities and correctness, to reject one half of their computations as erroneous, and say for the sake of argument, that instead of 1,000,000 of tons, half the quantity, 500,000 tons should pass through the Canal—this would still give the state \$2,500,000. But advance a step further, and condescend to apply the principle of subtraction so far, as to reduce the number of tons passing the Canal yearly to 400,000, the number of tons passing on the Hudson at the time of Mr. Fulton ; then it still leaves an annual revenue of \$2,000,000. So turn the calculations as you will, garble, deduct, and equivocate as you please, and still the estimated revenue wears an astonishing magnitude. But 5,000,000 of annual income to the state is rather too moderate than too high an estimate. Leaving the name and authority of Fulton out of the question, whose calculations are quoted, in relation to Canals, by every great writer in Europe, and set down as scrupulously orthodox—leaving him entirely out of consideration, we ought not to forget that in all calculations concerning the future grandeur and resources of our country, we rather fall below than transcend the true degree ; for, in the words of the illustrious Burke, “ our growth outstrips the ordinary grasp of human anticipation.”

The extreme moderation of the Commissioners, in setting the toll at \$5 per ton, deserves remark, and goes far to fortify the correctness of their estimates. It will be recollected, that one hundred miles of lock navigation was opened

some years ago, between Albany and Utica, by the Western Inland Navigation Company. The rate of toll charged for this one hundred miles, has been \$5 20 per ton; even more than is calculated to be taken for the whole 353 miles of the Western Canal; nor do we know that this rate of \$5 20 has ever been a matter of reprehension and complaint. This illustration is conclusive.

But more completely to tear the scales from the eye of prejudice, let us take another view of the subject. The present annual receipts of our state treasury, are nearly one million of dollars; our expenditures little rising of half the sum; leaving a surplus of between four and five hundred thousand dollars for extraordinary purposes. Now, let us suppose, as we rationally can, that the receipts and the disbursements of the treasury, will continue to preserve the same proportion; and then, also suppose, that *barely one single dollar* per ton should be charged as Canal toll, from the Lakes to Albany; this would pay for the Canal in less than five years, and leave an annual surplus of twelve or fifteen hundred thousand dollars to the use of the state, for the promotion of other internal improvements, after that period. Five dollars per ton, however, is the probable toll that will be taken. This gives a transportation unrivalled for its cheapness, and will enable us to grasp at the whole trade of the Lakes.

The calculations heretofore made in relation to the Canal, are neither idle nor delusive. They are thus far borne out by time and experience, and rest on the broad basis of truth, reason and common sense. They are calculations that will stand, when those who have assailed them, cease to blush, for blinding their eyes to the light of truth, and pass down the stream of time, with all other opposers of noble schemes for the promotion of national glory and national happiness.

Let the candid of our own state—let the candid and enlightened throughout the nation, ponder and reflect on the

consequences that *must* flow from the completion of our grand undertaking. Let them observe the wonderful progress of the Canal, which we shall soon exhibit, and think of the streams of wealth that ere long must enrich our public coffers. With an annual revenue of five millions of dollars, uncalled for by any ordinary expense in sustaining the state government ; while marching in the high road of honor and prosperity, under the views and guidance of such men as now watch over the destinies of our state ; under the superintending genius of statesmen, whose talents and magnanimity cast a lustre over every feature of our policy, and would even raise a nation from ruins, or redeem her from misfortune, *what can we not expect !* We must confess, that we do look forward to the glory of our state, as well as our nation, with no vulgar emotions. We see our future surplus revenue expended in public improvements, worthy to stand as the monuments of an enlightened age, and to commemorate the actions of a high-minded people. A splendid era dawns upon us, and rolls on with rapid celerity, as the morning sun passes over the mountains and the valleys.— That the Western Canal will be finished in less than ten years, is as palpably certain as any human event that depends on human efforts ; and that its completion will afford a permanent revenue to the state, from four to six millions of dollars, which can be devoted to other internal improvements, and the encouragement of useful arts, is equally certain. It must bring payments into our treasury, that will enable us to connect the navigable waters of our state, by a system of internal communication, that will rival those of England and Holland. The immutable laws of nature, the fiat of the Creator himself, seems to enjoin it.—We shall not stop with the western or northern Canal. It is the avails of these works that are to perfect the vast chain of intercourse. Look at England, possessing a smaller territory than the state of New-York ; yet she has THREE THOUSAND MILES of Canal navigation, and within the last



twenty-five years, has expended on Canals alone, more than \$130,000,000 !\* It is by such vigor and liberality at home, that England holds her Forty Colonies, shakes her rod over the old world, wields a commerce that encircles the two hemispheres, and sends forth her flag to trace the boundaries of the globe. Not only do we see the future expansion of internal trade, in the consequences of our Western Canal, but we also see our manufactures springing up on every side, and gliding along the channels opened for their diffusion. In the abundance of our pecuniary means, by the same operation of causes, we perceive the future interests of agriculture, flourishing under the auspices of our state administration, robing our fields in the richest garb of luxuriance, and whitening our hills with the flocks of Andalusia. And may we not expect, that schools and seminaries for elementary education will be founded, and patronized with a proud liberality, that intelligence, the soul of liberty and independence, may spread through every grade and rank of society, until it shall even reach the poor savage tribes who live within our borders, and acknowledge the empire of our laws? Benevolent and humane institutions, to ameliorate the condition of the unfortunate, and smooth the rugged paths of life, will be called into existence by the parental voice of public authority. Nor will the arts and sciences be forgotten. The New-York State Government has long been distinguished for noble instances of favor and encouragement to the useful sciences, and to the fine arts. Surplus millions will not extinguish this honorable spirit of ambition. It was public encouragement, combined with the irresistible movements of popular pride and enthusiasm, that carried the Athenian Republic to the summit of her fame in the days of her Pericles, and rendered Florence the torch of a benighted world, under the government of her Medici. It is patronage and public favor, that invigorates

\* Vide Sutcliffe's Treatise on Canals, &c. p. 75.

and quickens the all-searching energies of human inquiry and investigation—that sharpens the ken of philosophy—that calls the Muses from heaven to earth, and gives them their groves, their fountains, their votaries. It is in fine, such encouragement as the New-York State Government will soon be enabled to extend, that elicits the loftiest efforts of genius, and renders a Republic immortal, by weaving the memory of her achievements, with the transcendant productions of her great and illustrious men.

While referring to the advantages resulting to the nation, and to the state, from the Western Canal, we ought not to forget its effects on the prosperity of our own city. Her natural advantages for extensive commerce, are far greater than we ourselves appear willing to believe. By nature, she is the depot of four states, including our own; and the great Canal is rendering her the emporium of a country at the west, of itself sufficient to form an empire. Compared with other leading commercial cities, on our continent, New-York, in many important points, stands even destitute of rivalship. New Orleans, although destined for a mighty mart of trade, must struggle with a combination of difficulties, that centuries cannot remove. Industry, enterprize and liberality, will raise around her ten thousand monuments of commercial grandeur; yet will the formidable obstacles to her prosperity, erected by the fiat of creation, stand by their side, and sustain a forbidding contrast. Salubrity of climate, and healthiness of situation, are important requisites to a great commercial city. The dangers which all emigrants, and even natives, must encounter at New Orleans, will materially diminish her other physical advantages. Besides this, she stands one hundred and twenty miles from the mouth of the Mississippi, whose channel is filled with many serious obstructions, from the peculiar nature of the alluvial soil through which it passes. The rise of the tide affords few or no facilities to an ascending navigation; and the singular bend in the river, called the English Turn, sometimes ope-

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rates as a detention of ten, fifteen, and twenty days, to vessels passing up to New Orleans. In fact, the entry from the ocean, into any great place of trade, which is liable to consume twenty, thirty, and even sixty days in its passage, must hold a check over the prospects of any commercial city. If we turn to Montreal, who pretends to hold a competition with New-York for the trade of the Lakes, we shall here find a city nearly five hundred miles from the ocean, situated on the cold and inclement borders of a vast continent, and locked up from the commercial world, for more than one half of the year, by the freezing over of the St. Lawrence. An ascending navigation from the mouth of the St. Lawrence to Quebec or Montreal, must always be long, tedious, and often attended with difficulty. Montreal has even drawn her supplies of merchandize, to a considerable extent, through the city of New-York, for some winters past; and the Northern Canal from the Hudson to Champlain, will increase this reliance upon American importations, which can always pass through New-York to Canada, under the privilege of a drawback on the duties paid to our Custom House. Philadelphia too, must compete with some strong natural objections incident to her situation. She stands nearly one hundred miles up the Delaware, which, like the St. Lawrence, is closed for several months in the year, and insulates this commercial capital from the maritime world. Viewed in relation to the natural advantages of the other great trading capitals of the American continent, not to make invidious comparisons between ourselves and our sister cities, in whose prosperity we feel a deep interest, New-York must hold a proud if not a pre-eminent rank. The ranges of human discovery cannot shew the scite of a commercial city, presenting a greater number of physical advantages, if we consider human life in all the bearings, which local position can affect and influence. We have a harbor, capacious, secure, and open at all times of the year to vessels of the



largest burden. Resting on the shore of the ocean, we have only to lift our banner and spread our canvass, and we find the broad bosom of the deep. The superiority of our situation is subject to no ordinary changes of nature ; it is permanent as the constitution of the universe. These are our advantages on the side of the seaboard. When we turn to the interior, our favorable attitude for extensive commerce, is still more apparent. Our noble river opens a tide navigation of one hundred and sixty miles into the heart of the state. At the termination of this natural facility to trade, we have a country that admits of nearly four hundred miles of canal navigation, which connects the city of New-York with 17,00 miles of Lake coast, in our own territory, opens to us our whole western world, besides affording a communication by artificial means, with the waters of the north. Owing to these circumstances, we must ever command nearly the whole trade of New Jersey, Connecticut and Vermont ; by a communication with Montreal, through the Northern Canal, attract a portion of the trade of Lower Canada, above that place ; and by the Western Canal, lay the foundation of a commercial greatness, whose future magnitude must surpass calculation, when made under the influence of appearances and objects that now surround us. By this improvement, New-York must, according to the most sober and rational calculation, draw to herself the trade of a country, containing a sufficient number of square miles to sustain fifty millions of people, if we take the population which France and England give to each square mile, as a rule of computation. We shall have the commerce of a country whose salubrity of climate, and richness of soil, would even support the clustered population of Italy. When this immense trade, like the fertilizing floods of the Nile, shall roll down the channels which nature and art will have formed for its passage, and when the returning equivalent which it will demand, shall seek the same course, to reward the toils of industry, it is not for us to say, what will be the future extent of our city. In enterprize, wealth, popu-

lation and splendor, she will stand the London of America—a monument of magnificence, worthy to attract and command the wondering admiration of the world. If at this day, we cannot lift our minds, and expand our views to the contemplation of this era, at no great distance from us; let us at least make those efforts to produce it, that may vindicate our character from a disgraceful lethargy, in the eyes of other generations, when it shall arrive. It is by aiding the State Government, in every liberal undertaking, for the promotion of internal commerce, and agriculture, that New-York is to become a commercial emporium, second to none on the globe. Nature has willed it; let not man trifle with her mighty designs.

The great roads and water communications which can hereafter be connected with the Western Canal, in our own state, will we hope, at a future period, be circumstantially described, by a plan, already devised to accomplish the object.— For the present, it may be remarked, that the country through which the Canal will pass, is capable of affording a system of communication, reaching the line, from the north and south side, of incalculable importance. A union between Lake Ontario and the Western Canal, could be effected at various places. They might be connected by the Niagara, Genesee, and Seneca Rivers. It is practicable to remove the impediments incident to the navigation of these streams, and render them important channels of trade. On the south side of the canal line, the Genesee river drains a large tract of country, and would afford an easy transportation to the place of its intersection. Seneca and Cayuga Lakes, owing to their singular and extended shape and direction from north to south, together with the streams that supply them, may be considered as affording important advantages to the country in their vicinity, and as so many branches of the great communication, whose importance they serve to enhance. Our other small Lakes and streams, including the tributary waters of the Mohawk, will form

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striking features in our future inland trade. The contemplated Canal between Seneca Lake and Tioga river, which will constitute the junction between the Western Canal and the Susquehannah, presents an improvement that imports weighty consequences to the States of New-York and Pennsylvania. It will immediately give rise to a profitable trade in the articles of salt, gypsum, coal and iron. An infinite number of great roads, leading to the Canal, could be easily made. One leading from the Canal line at Seneca, to Hamilton, on the Allegany branch of the Ohio, would alone prove of immense importance, especially to the hundreds of thousands who are now emigrating to the western country. It would also open an important and direct trade between New-York and Pittsburg, even if the Canal should be advanced no farther than the present contracts stipulate. Another great road from the same point on the Allegany river to Buffalo, at the termination of the Canal, would afford results of essential magnitude. With the road from Genesee to the Allegany river, you could easily open another road that should pass round the heads of Crooked, Cayuga, and Seneca Lakes, and reach the Ithica turnpike, that runs from the head of Seneca Lake to the north-east branch of the Susquehannah—thus striking out with a minor exertion of our ability as a state, a chain of communication, that would meet the wants of a growing portion of our country. As we pass east of the Seneca Lake to the Hudson, we find a great tract of territory spreading out, with important posts, which could be easily connected, to extend, increase and invigorate our inland commerce. Many important roads are already made, and many more will soon be opened and completed. In fact we know not our own state, nor shall we know its resources, until our present policy, springing from enlarged and liberal views, and supported by the energies of an enlightened community, consummates the astonishing work which it has begun, with boldness and success.



These are our views. Gangrene is the heart that cannot reciprocate—mean the soul that cannot feel them!

Having pointed out some of the prominent advantages which must result from the Western Canal, we shall give a view of its present state and progress. We shall speak from facts, in relation to the advancement of the works, which are drawn from authentic sources.

When the Western Canal was first seriously contemplated, as a practicable object, two considerations naturally arose in the minds of its projectors—the DISTANCE and the EXPENSE. On these two subjects, much was said and written. Those who were too weak, or too prejudiced to perceive the grandeur and utility of the design, maintained the doctrine with a zeal that might have honored even a good cause, that the obstacles connected with these two formidable barriers were insurmountable; that the making of three or four hundred miles of Canal, would even baffle the whole collective energies of the nation, at this early stage of our history. Twenty millions of dollars was the round sum frequently set down as the probable cost. It was said, that none but a powerful empire, with a surplus population and overflowing wealth, should dream of such vast schemes.—Limited means and paucity of numbers were instanced, as unanswerable arguments, to consign over the execution of this grand and magnificent plan of internal trade, to some distant age of our republic. Yes—this was the reasoning of the day; although this same Western Canal, once so indicative of folly and romance, is now held up by the same hostile few, as a project to catch popular favor, to subserve individual elevation and aggrandizement. Such are the conflicting absurdities of prejudice; such the prevarications of little minds when struggling to defeat great ends!

The board of commissioners, to whom the legislature entrusted the superintendance of the work, was composed of some of the first statesmen in our country, combined with practical men in affairs of internal navigation, who held the

highest rank in their profession. With coolness and deliberation, they explored the route with every circumstance of requisite minuteness ; they laid off the three great sections, made every necessary calculation, and placed their views before the legislature and the public. In relation to estimates of the expense, a punctilious regard was paid to correctness. And what was the result of their observations and estimates ? Why, that with regard to the expense and practicability of making the Canal, for the whole distance of the route, not a solitary doubt could rationally exist.— They found the soil and face of the country possessing properties and features peculiarly favorable ; and the details of expense, when combined in one general calculation, fell below their anticipations.

Finances  
of the State

In reference to the disbursements necessary to complete the Canal, no doubt now remains—the question is settled. And indeed, no candid and discerning man, who ever knew and had studied the resources of the state of New-York, entertained the least apprehension on this head, or doubted her capacity to make two such Canals, in the same space of time allowed for the one in contemplation. We do not hesitate to say, that New-York could now raise more ready money in a given time, than the whole United States, at the organization of our national government. The last war proved something like a test to her wealth and power, when at the darkest hour of our perils, she stepped forth, and nobly sustained the sinking credit of the nation. Let her come forward now and pledge her faith, and twenty millions of dollars would be at her command. It was never contemplated to lay any direct taxes to advance and accomplish the Canal. Certain taxes, which have, or might come into the treasury, in the ordinary course of things, have been relied upon. It has been rather the setting apart of certain taxes as a permanent sinking fund, upon the strength of which loans are to be obtained, redeemable at a distant period, with a semi-annual payment of interest, than any increase of public

burthens. The taxes are light and equitable, and have come regularly into the treasury of the state. No difficulty is or can be experienced on this ground. As for loans, we have but to ask and receive. The state has only to open her books, and eight times the sum demanded is offered. The manner in which the late canal loan of \$250,000 was taken up, will reflect all the light on this part of our subject, that the most fastidious and sceptical could demand. Notice having been given, that proposals would be received at the comptroller's office, to take up the loan of \$250,000, to bear six per cent interest, the following were the proposals sent in :—

New-York State Bank,	104 52.	
Utica do.	103 62.	
Ontario do.	103 50.	
Wm. Edgar, jun. esq.	103 18 pr. ct.	
T. Fowler, esq.	103 18 pr. ct.	Loans,
Mechanics' & Farmers' Bank,	103 pr. ct.	
Messrs. Le Roy, Bayard & Co. and Messrs. Prime,		
Ward & Sands,	102 $\frac{1}{2}$ pr. ct.	
S. Flewelling, esq.	102 $\frac{1}{2}$ pr. ct.	

The State Bank being the highest bidder, of course took the loan.

What do these proposals shew? Plainly and simply, that the public securities of the state, for the payment of Canal loans, are more than 4 1-2 per cent above par—or to speak in other words, for every one hundred dollars of public security, bearing an interest of six per cent, one hundred and four dollars and fifty cents are given. Thus, for the PRIVILEGE of holding the security of the state, for the sum of \$250,000, the New-York State Bank comes forward and gives the sum of \$11,250. The state makes itself liable to pay to the State Bank, at a future day, \$250,000, with an interest of six per cent, which is below the legal interest of the state: For thus making herself liable, she receives, in ready cash \$261,250—an advance nearly sufficient to pay the



interest on the whole loan, for the first year. The state wish to obtain by loan this sum of \$250,000, and the whole amount of the offers made to take this sum up, leaving out the advance, is \$2,000,000. Now, should the state offer security for this whole amount, bearing six per cent interest, the offer would be immediately embraced, and two millions of dollars be ready for the Canal works. Those who are conversant in stocks and money concerns, will pardon us for this minuteness in explanation; we do it to suit the most simple comprehension, not to instruct those, to whose superior knowledge we should bow with deference.

In the teeth of these facts, will any man, or any body of men, still absurdly contend that New-York is not capable, in point of financial resources, to connect the Hudson with the Lakes? Shall a state, which in wealth and power is an empire of herself, shrink from five millions of dollars, when she can raise it by lifting her hand? The amount of capital invested in buildings, going up this very summer in the City of New-York, is more than enough to make the Grand Canal. The yearly interest which the Canal Commissioners required the state to pay, on the whole Canal loan, was \$270,000. The single City of New-York this year, pays an *extra tax*, assessed by the Corporation of \$250,000 for her own improvements, coming near to the full amount which the whole state is to furnish. Let us hear no more on this head. It is but insulting a state like ours, to doubt her means to connect her own waters at an expense that bears so little proportion to her ability. New-York neither asks nor will receive any aid beyond her own boundaries. There was a day when she thought that the national government would see the policy of taking up this great Canal, as a national work. That matter is now at rest. New-York has reason to be proud and rejoice, that she of herself has commenced the undertaking, and is able to finish it. She knows her strength, and she knows also how to apply it. If on the constitutional question, involving the appropriation of money

By the national government, to open Roads and Canals, she has felt a zeal and warmth ; it has not been for herself alone but for other states, less rich in population and wealth. If her statesmen have felt with the Clays and Baldwins of the west, and the Lowndeses, the Tuckers and the Calhouns of the south ; they have felt for the grandeur of the nation, not for the treasury of their own state, which is amply competent to every exigency of our policy, however bold and munificent. Every doubt in relation to the EXPENSE of making the Western Canal is now removed, and removed forever, if indeed any heretofore really existed.

The distance over which the Canal is to pass, and the impediments supposed to be connected with it, next deserve consideration.

In undertaking to open three or four hundred miles of Canal, much previous preparation was necessary. The New-York Legislature made the first appropriation for this object, on the 15th April, 1817. The first contract was dated on the 27th June, 1817, although no labor was done until the following 4th of July. Even after the contracts were made, as the contractors found their own implements and tools, some time was requisite for proper arrangements. Progress of the Canal last season. Owing therefore to the lateness of the season, and the great rains which inundated the country, embracing that part of the Canal route for which the contracts were made, the progress of the works was much retarded at the beginning. Fifteen miles of the distance, were however finished the last season, and many new contracts made for the present year. Considerable sums of money were advanced to the contractors, during the last winter, that they might be better enabled to purchase provisions, and prepare for the commencement of operations at the opening of the spring. Although the progress of the works last season was not astonishingly great, yet it should not escape reflection, that much important information was obtained, by the engineers and com-

missioners. Some considerable saving in expense was also made. In the articles including tools and implements, in the Canal estimates, there was a saving of \$75,000. It was found that Bridges could be erected for \$350, instead of \$500 each, which was the sum originally fixed upon in the calculations; and that grubbing and clearing uncleared land, could be done for \$1200, instead of \$1500 per mile. These deductions in the whole length of the Canal, would create no inconsiderable diminution in the aggregate expenditures; and should the estimates hereafter be exceeded in other respects, here will be a counterbalance.

Progress  
of the Ca-  
nal the pre-  
sent season.

The Canal works were resumed early the present season, and have been prosecuted with an energy and success, that have transcended the highest expectations. Even the most ardent and sanguine have been disappointed. Every circumstance and result coincides with the former views and conclusions of the Engineers and Commissioners, excepting an unexpected ease and facility in advancing the stupendous design. The Commissioners, very properly, have first undertaken the completion of the MIDDLE SECTION; because the completion of this line, which communicates with the Mohawk, will afford immediate advantages on its being finished, and of itself, would stand the greatest work of the kind in the new world, and rival the Canal of Languedoc. Nearly *four thousand men*, with fifteen hundred horses and cattle, are now vigorously employed on this part of the route. We feel warranted in asserting that the whole distance between Utica and Seneca river, making not far from ninety miles, will be completed the present season. We believe, that the 10th of December next, the period at which the present contracts are to be performed, will shew to the world two hundred and thirty miles of navigation into the heart of our state, by means of this middle section, and the Mohawk River; a channel of commercial intercourse, that traverses one of the noblest countries on the face of the globe, cultivated by a people unsurpassed for enterprize, in-



dustry, and intelligence. This channel too, will soon be crowded with merchandize, yield an annual revenue to the state, that will aid us in completing the remaining portion of the Canal, and impart life and vigor to commerce, agriculture, and manufactures. Then will the people begin to feel the effects of our policy. Then will they see the giant efforts of a single season, animating every species of labor, bringing the energies of the community into more active operation, and greatly enhancing the value of real estate. Another season will give the people an earnest of that unparalleled prosperity that awaits them.

The season thus far, has been peculiarly favorable, and every opportunity is embraced to improve it. Experience now fully proves, that the magnitude of the distance, over which the Canal must pass, no longer presents any discouragement. Such is the favorable nature and quality of the soil, that on the middle section, for sixty miles, between Utica and Salina, not more than one half mile will want puddling; and even that this half mile will want it, is problematical. When we consider the expense of puddling in England and elsewhere, there is much cause to congratulate ourselves on this important fact. It has also been ascertained, by one or more of the Engineers, that so few rocks and stones are found on the whole extent of the summit level, that \$500 will be sufficient to remove every obstacle of the kind.

Favorable nature of the route

A fact worthy of much consideration has also been ascertained, respecting the ice in the Canal, at the opening of the spring. That part of the Western Canal, which was finished last year, was found to be free of ice some two or three weeks sooner than the waters of the Mohawk River, or those of Lake Oneida and Ontario. As this excited some degree of surprise, enquiries were made touching the same fact as pertaining to other Canals, and it was found to be generally, or perhaps universally the case. The Middlesex Canal, is found to be clear of ice ten days or two weeks

sooner than rivers and large bodies of water in the vicinity. From the most accurate observations, made by one of the Engineers, upon the general breaking up of the waters in the neighborhood of the Canal, he came to the conclusion, that we might uniformly expect that it would open every season, two or three weeks sooner than the contiguous bodies of water. This is owing to the numerous small springs which ooze through the sides of the Canal, as well as to the warmth of the soil acting upon an extended and narrow surface of ice.

Another circumstance is worthy of observation. Those people who have made contracts and performed them, are generally anxious to enter into new ones. The Commissioners state in their report to the last session of the Legislature, that many applications had been rejected, on account of the Contracts. great number received. One of the Engineers has stated, that when a section is laid off and subject to contract, that the Engineers are thronged with applications. In the village of Eldridge, where a distance of 15 miles was to be let out, there were no less than fifteen applicants for the job, each anxious to undertake to complete it. What could more satisfactorily prove, that while the expenses of the Canal keep within the estimates of the Commissioners, the people themselves grow rich by performing the labor? Every dollar, paid out by the Commissioners, goes into the pockets of the people, and is retained among ourselves. It is not paid to the European or to the East Indian manufacturer, to swell the history of our luxuries; but it is merely a circulation of capital in our own community, that enriches individuals, and through their enterprise, increases the wealth of the state.

It may afford satisfaction to observe, that the work thus far has been faithfully performed, under the immediate eye of the Engineers. No contracts are paid until the works are carefully inspected, and found unexceptionable, in point of execution. Some one of the Engineers travels the line

under contract, from one extremity to the other, giving advice and correcting errors. Great credit is due to them for their fidelity, their talents, and unwearied application.

Ten years were first allotted as the period necessary, for connecting the Hudson with the Lakes. Less than eighteen months from the commencement of the works, will show us more than one fourth of the whole Western Canal in a finished state, if the present season continues favorable. Mr. Briggs has already, made considerable progress in laying off the EASTERN SECTION, including the line from Albany to the middle section; and no doubt remains, but that long before the time shall have expired, which by many was once deemed necessary to complete the middle section alone; our hardy yeomanry will have finished both the eastern and middle sections, and show us their excavations and the embankments, beyond the waters of the Genesee; and thus finishing the last link in this mighty chain of inland navigation.\*

\* The following extract of a letter from one of the first Civil Engineers in Europe, will shew what sentiments are entertained of our Great Canal abroad. It is taken from a letter directed to Gov. CLINTON, President of the BOARD OF CANAL COMMISSIONERS, from A. KINGBORN, Esq. of North Britain. SIR JOSEPH BANKS has also recently made inquiries and expressed much admiration of our noble work.

### EXTRACT.

*"St. Boswell's Green, 12th April, 1818.*

Honored Sir—Sometime ago the right honorable the EARL OF BUCHAN, most obligingly put into my hands, the plan, profiles, reports and estimates of the proposed Inland Navigation, from Lake Erie to the Hudson, and from thence to Lake Champlain, requesting my observations on them.

I have attentively and with much pleasure examined the whole, and from the particular and minute description of every part of the line, I have every reason for believing that the surveys have



And are there any who still doubt the practicability of the Great Western Canal? Will any one have the presumption and arrogance to assert, that the people of the state of New-York are a weak, effeminate, degraded, race of beings, incapable of exertion, and destitute of pride, of energy, of honorable sentiments? For any one must virtually assert this; who charges them with being unable to accomplish their plans of internal improvement. Let it be remembered, that such is our population, between eighteen and forty years of age, that if the whole Western Canal was laid off to-morrow in equal proportions, and a portion assigned to each man, there would be but *half a rod* for each individual to complete, in the course of TEN YEARS! If we have arrived at that humiliating stage of degeneracy and indolence, that each one of our citizens between the age of 18 and 40 cannot make or procure to be made, one rod of Canal in five years, or half a rod in ten years, which shall be 40 feet wide and four feet in width; then we may as well forget our high standing in the union, renounce the glory which we won at Bridgewater, at Plattsburg and Erie, and take up the wretched character of the Gentoos, or watch the waxing and waning of the moon, like the miserable inhabitants of the Pacific Islands, and prepare for a long and cheerless life of ignominy and bondage.

The Great Western Canal will be finished. It is the voice of the people that declares it. If four thousand men cannot advance the works with sufficient rapidity, eight

been made with due attention, and that the choice of the ground has been well considered.

In regard to the estimate of the expense, and the calculation of the probable amount of the products which may be conveyed on the Canals, and from which must arise the remuneration to the state, I am incompetent to judge—but from the very luminous and distinct reports of the Canal Commissioners, of 15th February, and of the joint committee of the Legislature of New-York, dated 19th March, 1817, I cannot think these gentlemen at all too sanguine in their expectations on this part of the subject.”

thousand can. If 5,000,000 of dollars cannot defray the expenditures, \$15,000,000 will. The state of New-York will never rest, till she sees the waters of the Lakes mingle with the ocean that washes her coasts. Her interest, her pride, her glory demand it. Her faith is pledged, her will is spoken, her arm is put forth, and whoshall arrest it!

We should not here forget the grateful tribute of respect, due to those high minded men who first projected the Canal. If there is honor attached to the character of national benefactors, they will hereafter receive it, in the enthusiastic recollection of a magnanimous people. Of those who participated in the conception of the design, and hastened the commencement of its execution; some have passed on the stage of existence, before its success was tested by experience, while others remain, to advance its accomplishment, and receive in the expression of public sentiment, the just appreciation of their services. We must record the names of **LIVINGSTON**, **MORRIS**, and **FULTON**, among its departed patrons and projectors. Their sun has set; but the star of their immortality has arisen, and expands its lustre amid the luminaries of ages.

Having presented our views of this cardinal object of our present physical exertions, so deeply interesting to our pride and our interests, and so important to the welfare of posterity; we shall conclude our remarks, by some reference to the works of other nations of a similar nature, and the lessons of wisdom which we should draw from their experience.

The Great Western Canal will hereafter be viewed as a **NATIONAL WORK**, and as the greatest national work, of the kind, that this or any other country will ever produce, although undertaken and finished by the state of New-York alone—:So it is now considered in Europe. Our closing observations will therefore be national.

We are yet a young nation and have scarcely begun to act on the high theatre of empires. Before us is the volume

of six thousand years. Before us are the rise and ruin of states, their march in civilization, their various forms of government, their laws, policy, and manners. From these venerable stores of antiquity, from these deep fountains of knowledge and experience, in the conduct of nations, it becomes us to draw the richest lessons of instruction.

Our civi-  
lization as a  
Nation.

Not only have we a vast and fertile country to receive and repay our efforts in industry and enterprise ; but we also have another advantage peculiar to ourselves. Other nations, distinguished on the roll of fame, have wasted the earlier part of their history, in emerging from a savage state. They have waded through one revolution after another, until the fire which threatened to consume, left them cleansed and purified. But it is the fortune of the American republic, to commence her career in a new world, with all the ambition and foresight, incident to a high state of civilization. We have no mountains of ignorance to roll away, no pillars of superstition to break down, no monuments of barbarism to demolish. We have a greater mass of intelligence in the American community, than is possessed by any other nation on the face of the universe. The gates of knowledge are thrown open, and the paths to which they lead, wider than the eye can extend. Our government is every way calculated to call forth and protect the collective and individual energies of the people and lead them to new species of industry and improvement. In population and in national wealth, we are increasing on a ratio, that will hereafter be presented to the world, without a parallel.\*—

\* Calculations have been made, that if our population should increase for years to come, in the same ratio, that it has for the last century, the following would be the result :

In 1820		we should have	10,098,177
1830	-	-	13,769,726
1840	-	-	18,769,567
1850	-	-	25,582,919
1860	-	-	34,869,520



"Population," says an elegant and interesting writer,\* "is connected with national wealth, and liberty, and personal security are the great foundations of both; and if this foundation is laid in the state, nature has secured the increase and industry of its members; the one by desires, the most ardent in the human frame, the other by a consideration, the most uniform and consistent of any that possesses the mind." With these advantages, should we not look upon other nations, and embrace those objects of policy, which they have found intimately interwoven with their happiness and prosperity?

What then has contributed most largely to national happiness, within the scope and operation of human governments? Has it been war, covering the earth with a sea of blood, or has it been the promotion of peace and industry, and the encouragement of all the useful arts in life, that subserve the exigencies of nations, and the wants of individuals? Certain it is, that the historians of every age, have pointed out those eras of mankind, as the most happy and enviable, which have exhibited the greatest degree of improvement in the useful arts of life. Sources  
of National  
happiness: It is commerce, agriculture, and manufactures; it is the arts and sciences, combined with humane and benevolent institutions, forming one great system of national policy, and resting on the broad basis of national freedom, that forms those memorable and illustrious epochs in the annals of the world, on which the

1870	-	-	-	-	-	-	47,527,165
1880	-	-	-	-	-	-	64,779,525
1890	-	-	-	-	-	-	88,294,493
1900	-	-	-	-	-	-	120,345,394

This ratio certainly falls rather below the standard of rational calculation, when we reflect on the immense tide of emigration pouring into our country, in addition to the increase of our numbers.

\* Ferguson on Civil Society.

historian, the philosopher, the poet, and the philanthropist, delight to dwell. They stand like mountains, covered with eternal verdure, in the dreary wastes of the desert. “If we advert to fact,” says an intelligent writer, “and consult the records of history with regard to the state of different nations, we shall find that civilization and commerce have very much depended on the facility with which the inhabitants of remote districts have maintained intercourse with one another, as well as with distant countries. As the ocean serves to connect distant countries; navigable rivers and canals unite the different provinces and districts of the same country; and as navigation, by means of the ocean, produces an intercourse and mutual exchange of productions between the different kingdoms and nations; inland navigation, in like manner, facilitates a communication between different parts of the same kingdom or nation, and consequently promotes civilization, trade and industry. On the other hand, those nations who have been destitute of the means of inland navigation, either by rivers or canals, have remained from one age to another in the same barbarous and uncivilized state. The observation is exemplified in the state of all the inland parts of Africa, and of that part of Asia, which lies at any considerable distance north of the Euxine and Caspian sea, and ancient Seythia, and the modern Tartary Siberia.\*”

If commerce, agriculture and manufactures, and the useful and refined arts of life, are so important to the welfare and happiness of mankind; and if these blessings are so immediately dependent on a chain of internal intercourse, by rivers, roads and canals; the conclusion is strong, that such intercourse is vitally essential to the welfare of nations. If the history too of the most civilized ages of the world enforce this conclusion, the dictates which it carries with it, are still more imperious. Let us turn to facts and evidence.

\* Ree's Enclo. Art. Canal.

The Chaldeans and the Babylonians, had sufficient discernment to see the importance of canal communications. They took the waters of the Tigris and the Euphrates and carried them throughout the regions of their fertile country. Even ancient writers go so far as to assert, that they actually divided the river Euphrates in one place, and presented this great column of water, in two channels. The ancient people of India, also had the sagacity to see the advantages of such improvements. They had one canal of one hundred miles in length, and by some it is supposed to have been the partial execution of a plan to unite the Indus with the Ganges. Notwithstanding the mouths of these two vast rivers are 1500 miles from each other, their sources approach the same tract of country, and would meet if extended a little further west, in the same converging direction. The remains of several other works of the kind are found; but they remain as the almost obliterated ruins of former magnificence. The early history of India is lost in fable, and nothing but a faint and fading beam of her ancient opulence and glory remains. Not so with Egypt. She stands in ruins, but the evidences of her former grandeur exist. No country in ancient times excelled Egypt in civilization, and all the branches of useful industry. Egypt, we are told, had above six thousand miles of canal navigation, which traversed every part of her renowned and delightful kingdom. She connected the Nile with the Red Sea, by a canal of 150 miles long, two hundred feet wide and navigable for the largest ships. This one canal gave her the commerce of Persia, India and Arabia, and the kingdoms of the African coast; and again enabled her to scatter the fruits of her commerce to all the nations bordering on the Mediterranean. Rollin tells us, in his ancient history, that "the villages which stood thick on the banks of the Nile eminences, had each their canals." According to an ancient traveller, the banks of the largest canals were crowded with cities, towns and villas, or robed in perennial verdure, interspersed with groves and vineyards, and embellished with all that art

Canals of  
other coun-  
tries.

Those of  
Asia.

Egypt.



and taste could invent, to heighten the luxuriant and enchanting scenery. The internal trade of Egypt, at the most prosperous stage of her history, was indeed astonishing for its extent, and her foreign commerce was not less so, considering the age in which she flourished. There are many curious remains of former canals in Greece; but none of any extraordinary magnitude can be traced out in the face of the country. A great canal was contemplated to pass through the Isthmus that divides the Ionian and Ægean seas, and connect their waters. Wars and caprice, so incident to the fortunes of this interesting portion of the globe, blasted the grand design. Here we will leave the ancient and come to the modern nations—saying nothing of the Romans, who chose rather to promote what trade they encouraged by roads, than by canals.\*

\* Gibbon observes, that “all the cities of the Roman empire, were connected with each other and with the capital, by the public highways, which, issuing from the Forum of Rome, traversed Italy, pervaded the Provinces, and were terminated only by the frontiers of the empire. If we carefully trace the distance from the wall of Antonius to Rome, and from thence to Jerusalem, it will be found that the great chain of communication from the northwest to the southeast point of the empire, was drawn out to the length of 4,880 Roman miles.\* The public roads were accurately divided by mile stones, and ran in a direct line from one city to another, with little respect for the obstacles either of nature or personal property. Mountains were perforated, and bold arches thrown over the broadest and most rapid streams. The middle part of the road was raised into a terrace which commanded the adjacent country, consisted of several strata of sand, gravel and cement, and was paved with large stones, or in some places near the capital with granite. Such was the solid foundations of the Roman highways, whose firmness has not entirely yielded to the effect of 15 centuries”—*Decline and Fall Roman Empire*, vol. 1.

When we consider that the Roman empire, at this period, em-  
\* 3,740 English miles.

We shall begin with China, although if we consult her own chronology, with any faith in its accuracy, she would not only be ranked as a modern, but also, as the most ancient of nations. No kingdom in the world excels China for canal navigation, excepting Holland, and perhaps even Holland in proportion to her size, does not go before her. She has a large or principal canal running through every province, and scarcely a village or town can be found, without the advantages of a canal or an arm of the sea. She has a canal navigation from one end of the kingdom to the other, with only one slight interruption, making a distance of 1800 miles. The "Great Canal" ran from north to south, embracing the cities of Canton and Peking, and according to some writers is 825 miles long, while others make it 1200 miles. It is 50 feet wide, passes through 41 large cities, and is supposed to have ten thousand vessels constantly employed upon it. In the southern provinces of China, there is a vast canal, passing through a large tract of country, one hundred feet wide. On this canal, it is said, there are at some periods, from three to four hundred boats at one time, in a single fleet. Small canals branch out from the large ones, and the whole present a wonderful system of internal trade, unequalled on the face of the globe. "The home market of China," says Adam Smith, "is perhaps in extent, not much inferior to the market of all the different countries of Europe put together:" and Mr. Phillips observes, in his "History of Inland Navigation," to which admirable work we are indebted for a great part of the facts on this part of our subject, "That China owes a great part of her riches and fertility to these numerous canals, which are of the greatest utility, for the transportation of the produce and merchandise of one province to another." Such is her attention to canals, that they are conducted through

China.

braced an extent of sixteen hundred thousand square miles, and a population of 120,000,000, who but must wonder and admire!

gardens, groves, and pleasure grounds, and even the Emperor's domains rest under no exemption.

Spain. From China we pass to Europe, and begin with Spain, who has made some improvements in canal navigation, and projected many bold undertakings, which the defects of her government, the degraded state of her people, and the corruption and inertness of her ministers have defeated. Had the millions of her own subjects, who have been sacrificed in the mines and butcheries of South America, been devoted to objects of domestic improvement; we might now present her as a far more gratifying spectacle of internal happiness and prosperity. The two canals which commence in Navarre and terminate in the Ebro, have been productive of great advantage. "The province of Arragon (through which they pass) is already planted with thousands of olive and other trees: the cities and towns which formerly were condemned to drought and scarcity, are now supplied with fish and water by these canals." A canal has also been commenced, which is to begin forty-eight miles north-west of Madrid, and extend until it strikes a canal leading from the Mediterranean to the Atlantic ocean. It is called the canal of Castillo, and will be 420 miles long when finished. Sixty miles have been completed; but it is not probable that a king whose boldest efforts consist in the restoration of the Inquisition, will think of completing the splendid design, worthy of the reign of Charles 5th. Some other canals of minor consequence have been made in Spain, and others projected. Enough has been done to show their importance, as well as the degraded state of the Spanish kingdom, that permits them to remain unfinished and go to ruin.\*

\* "Spain," says Mr. Vattel, "is the most fertile country in Europe, but the worst cultivated." He might have added, that in the times of the Moors and Goths, she is said to have sustained 30,000,000 people, and now, in her civilization, she cannot support one third that number. O! the effects of bigotry and priestcraft!



France has made many noble improvements in canal navigation, and nearly rivals England and Holland. She has about thirty canals and 2000 miles of canal navigation. At the commencement of the reign of Napoleon, twenty other canals were projected, which, according to the calculation of the Engineers, must have passed over a distance of 500 miles more. How far these works were advanced during the wars, conquests, and military adventures of the emperor, we are not able to say. The canal of Languedoc, referred to in the first part of our considerations, is among the most remarkable canals of the world. It was begun and finished in sixteen years, under the patronage of Louis 14th. It reaches from Narbonne to Thoulouse, has 11½ locks, is 11½ feet wide, including the towing paths, and connects the Atlantic and Mediterranean. It passes 720 feet under a hill, and cost \$2,397,600. Its length is nearly 200 miles. The completion of this great work, so honorable to the prince, the country and the age, is productive of benefits that baffle calculation.

France.

To treat in detail of the Canals of Holland, would be a task almost as great as the compilation of her history. One third of this extraordinary country has been reclaimed from the ocean, and there was a day when her internal and external trade, gave her the command of the maritime world. Her canals are as common as her roads, and instead of coaches and chariots, her nobility themselves, pass by pleasure boats, in making their tours of diversion through the country. No nation on the globe can equal Holland for the relative extent and utility of canal navigation.

Holland.

We have before adverted to the inland trade of England. She has 240 canals, making 3000 miles of artificial navigation. She has made 1000 miles of canal during the last 60 years. Such is the importance of these improvements, in the estimation of the British government, that we find no less than 16½ statutes passed for their promotion and regulation. The trade of England is too well known, to occupy

England.

any portion of our remarks. She is the greatest commercial power that ever existed, and has found her canal navigation of the last consequence to her commercial prosperity. Mr. Phillips has written a history of her canals, containing about 500 pages.

Sweden. Sweden and Denmark have made some improvements in this species of navigation. The Swedish government, some years ago, projected a canal to unite the Baltic and German ocean. The works have been commenced but not completed. It was intended to guard the foreign commerce of Sweden against the depredations of the Danes and other powers. In Denmark, a canal has been projected and commenced, which is intended to unite the Baltic with the Northern Sea. Denmark. It is to be 27 miles long, 100 feet wide, 10 feet deep, and navigable for vessels of 120 tons burthen. A part of it is already finished, and wants but enterprize to be completed.

Russia. We shall conclude by noticing the canals of Russia.—When Peter the Great returned to his Court, from Holland, his mind was fully impressed with the importance of inland navigation, from viewing the example of the Dutch. He therefore projected the most stupendous plans of internal improvements. He intended to unite the Black Sea with the Baltic; the Baltic with the White Sea; the Caspian Sea also with the Baltic; and lastly, the Caspian with the Black Sea. Take the map of Russia and you may view the extent and grandeur of these mighty plans. Many smaller communications were also contemplated coeval with these. Peter died like Hercules, in the midst of his giant works; but his plans have been followed, to a great extent, and no doubt will be finally executed. The Caspian and the Baltic have been joined by a canal communication, and Petersburg, the centre of canal conveyance, is now a vast emporium of commerce. Russia has many important canals, which we cannot designate here. Through two of her largest channels, 8,412 vessels pass in a single year. From the frontiers

of China to the Gulph of Finland, she has 4,592 miles of internal navigation, with the exception of sixty miles portage. From the city of Astrachan on the shores of the Caspian, she has a direct navigation to Petersburg, passing a space of 1,431 miles. Here is enough to show the character of the Russian policy. It is the internal and foreign commerce of Russia, that has rescued her from the state of the neighboring Tartars and Scythians, and given her a proud rank among the empires of the earth.\*

Here is a slight index to the policy of other nations.— Shall we deem it worthy of an extensive and decided adoption? Here is no place to point out, in detail, the local advantages of the United States for canal navigation. It was done with ability in the report of Mr. Gallatin in 1807, and will probably again be done by Mr. Crawford, in his report; at the approaching session of Congress. To every person of the most partial observation, it is evident that no country in the world, ever presented natural advantages for internal trade and canal navigation, so bold, so noble, so striking as our own. It has been said with propriety, “that the United States might be rendered a great cluster of Islands,” by artificial channels of conveyance. Look at the streams which swell our Lakes on the north, and to the Lakes themselves; look at the noble rivers that roll into the ocean along our seaboard, and the tributary floods that mingle with the Mississippi on the west; trace out the sources and directions of these waters, and you behold the grandest theatre for internal improvements, that nature ever formed in the beneficent majesty of her works. Shall we suffer these natural advantages to remain unimproved? Shall we, like Spain, make such exertions as show the importance of their continuance; and then suffer our streams to roll on like the Ebro; the Guadalquiver, the Tagus and the Duero, unimproved by the creative arm of industry? When we look at the face of our

U. States;

\* Vide Cox's Travels and Tooke's view of Russia, &c.



country; when we see her embracing all the climates and all the soils of the globe, with resources whose improvement would enable us to sustain five hundred million of people; when we consider the nature of our civil institutions, and the character and discernment of our citizens; when we recollect that in commercial enterprise, we have already supplanted Spain, Portugal and Holland in the ranges of their trade, and that we can challenge England to a competition;\* and lastly, when we reflect to what an incalculable degree internal navigation throughout our country, would aid this commerce; cannot, and will not indulge a single disheartening apprehension.

Another consideration gives us the most animating satisfaction—we mean the lively interest which the American people are now taking throughout the union in the opening of roads and canals. For ten years past, the spirit for Internal Improvements has been gathering strength. Let it continue, and fifty years will show the world an inland trade in North America, only exceeded in extent by that of China. We cannot here forego the pleasure of expressing our gratification, at the very liberal sentiments which appear in every quarter of the nation, concerning the GREAT WESTERN CANAL. The public journals and gazettes have mentioned its progress with every mark of admiration and patriotism.—

\* The last number of the Edinburgh Review, has an interesting article concerning the India Trade. Among other things, it is stated that America is supplanting England in this commerce; that she supplies the markets of the continent 70 per cent cheaper in some articles; makes her voyages shorter, and has now 12,000 tons of shipping in this trade—two thirds as much as England, who has 18,000 tons. Now all this, *is the truth, but not the whole truth*: for be it known to the gentlemen of the Edinburgh Review that instead of 12,000 tons, we have at least 25,000 tons of shipping in the East India trade. The single port of New-York alone, is supposed to have 10,000 tons of shipping in this commerce. Well may the blind begin to see!

This attention, liberality and respect, we shall always feel proud to return to other parts of the country.

One thing we would here recommend, as an important auxiliary in the promotion of our designs in this respect—that CORRESPONDING ASSOCIATIONS be established in every state of the Union, to ascertain, from time to time, the state, progress and practicability of internal improvements throughout the country. Let these societies correspond with each other, extend and interchange all useful intelligence, and occasionally imbody information and lay it before the people. It is an important consideration, to know ourselves. Such an association has been formed in the city of New-York, under the patronage of our present Chief Magistrate, combining men of the first respectability and talents.

Corresponding Societies.

Our advancement in improvements must be two fold.—First, the states will look to themselves, bring forth their respective resources, and apply their surplus revenue to objects of utility. Secondly, the National Government must soon feel the necessity of cultivating the resources of the nation, on a great national scale.

Finally, we see no clouds hanging over our national prospects. It depends upon ourselves, whether we shall eclipse the grandeur of European nations, by seeking elevation in the wise improvement of our own resources, unconnected with any thing like the pride, the folly and the corruption of kings and their courts. True national greatness must rest on the happiness of the people, guarded by magnanimity and honor. It is not by military exploits, that nations earn the proudest page on the records of immortality. It is not by spreading desolation, and scattering the seeds of human misery, that they are entitled to the smiles of Providence, or the encomiums of posterity. We read of the victorious march of Sesostrius, while he laid waste the plains of Asia with six hundred thousand men, with no other sensation than that of involuntary indignation at his cruelty; but our ad-

Conclusion.

admiration is excited, and we call the Egyptians a great people, when we see them connect the Nile with the Red Sea, and command, by one master stroke of policy, the commerce of the oriental world. While the triumphal arches erected to the victories of Louis the 14th, have passed away as the shadows of a dream, and his military adventures go to swell the melancholy page of human folly; the canal of Languedoc will commemorate his dynasty, as a brilliant era in the history of France, and hand down his name, covered with a fadeless lustre, to the latest epoch of civilization. And while we view the actions, and study the genius of Peter the Great, we forget the frosty laurels gathered in his winter campaigns, when we strike upon his design to unite the Caspian with the European seas. We hope that our country will look for a permanent glory, that shall be kindled on the altar of public good, and spread the light of its blaze amid the vicissitudes and revolutions of time. Her military renown should rest on the victorious defence of her shores and her freedom, and her national fame be inseparable from objects of national utility. And when foreigners shall cross the ocean to visit our shores, if we cannot point them to spots like Blenheim, Leipsic, and Waterloo; may we show them the monuments of a nation's greatness, around which the imprecations of posterity will not gather, as they smite them with their chains and curse their founders!



THE  
**NORTHERN CANAL,**  
FROM THE  
**HUDSON TO LAKE CHAMPLAIN,**

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SUCH is the attention which the Great Western Canal continually engrosses, and such the curiosity and interest which it excites, that all minor objects of policy seem lost in the glare of this magnificent design. But little has been said of the Northern Canal, which is to connect the Hudson with Lake Champlain, although five years ago it would have commanded much attention, and been viewed with lively considerations as a great undertaking. As this canal is to have an immediate connexion with the Western Canal, and thus in a short time open a communication from the waters of the Champlain to the banks of the Mississippi and the Missouri, it ought not to be omitted in our views of the internal navigation of our state.

We will indulge in a comprehensive view of its *length, expense and future advantages.*

When the Canal Commissioners in company with their Engineers, explored the route of the Northern Canal, they

found the soil to admit of two lines, over which it might pass without any formidable obstacle. The first would be twenty-two miles in length, commencing at the mouth of Fort Edward Creek, following the ravine of Wood Creek, to Whitehall. The second would commence six miles further down the Hudson, at the mouth of Moses-Kill, and extend by the natural channels of this Kill, Dead Creek and Wood Creek to Whitehall. The former route would make the Canal twenty miles long; the latter will lengthen the distance six miles, and make the Canal twenty-six miles in length. The former route as it appears from the last report of the Canal Commissioners to the New-York Legislature, has been preferred.\*

Length of  
the Canal.

It has been thought proper to increase the dimensions of the Northern Canal and make it as large as the Canal from the Hudson to Erie—40 feet wide on the water-surface, 28 feet at the bottom, and the depth of water  $\frac{1}{2}$  feet; the length of a lock 90 feet, and its width 12 feet in the clear. So reasonable and correct were the original estimates, that even this increase of its dimensions will make no increase in the expense. We shall, therefore, quote the original calculations.†

Dimen-  
sions.

The expense of the Northern Canal, from Fort Edward to Whitehall, is estimated at \$250,000. Whether it should commence at Fort Edward Creek or Moses-Kill, would create no essential disparity in the expense.

Expense.

When the waters of Champlain shall be thus united with the Hudson, it is proposed still further to improve our northern inland trade by facilitating the navigation from Fort Edward to Waterford through the Hudson, by artificial works. There are several interruptions in the navigation of this distance. It is therefore proposed to construct a dam across the Hudson, at the head of Fort Miller Falls, and

\* Vide Report of Commissioners, Jan. 31, 1818.

† Vide Report Canal Commissioners, 18th March, 1817.

cut a canal round the Falls, which could be supplied with water from the river above. Another dam is to be constructed across the Hudson at Saratoga Falls, and another at Stillwater Falls, and canals cut round each of these descents. Then a canal is to be cut from Stillwater Falls to Waterford, at the confluence of the Hudson and the Mohawk, which will unite the Northern and Western Canals. The canal between Waterford and Stillwater Falls will be 12 miles in length. A company was incorporated many years since, to open this canal navigation between the Hudson and Lake Champlain; but they did little more than survey the route, and ascertain as far as possible, the magnitude of the undertaking. Mr. Gallatin, in his Report of 1807, estimated the distance between Waterford and Skeensborough or Whitehall, to be fifty miles, and the expense of opening the whole Champlain navigation, at \$800,000. The Canal Commissioners make the whole expense, including the Canal from Moses-Kill to Whitehall before alluded to, at \$871,000. The works now contemplated are much bolder than those which formed the basis of Mr. Gallatin's estimates.

Some reference to the advantages which must result from this connexion of the Hudson and the northern waters, may here be expected.

The first advantage deserving notice will be the diversion of a profitable trade from Quebec and Montreal to New-York; and the cities and villages higher up the Hudson.— Those parts of Vermont which are situated in the neighborhood of Lower Canada, have heretofore been in the habit of sustaining a commercial intercourse of no small importance with the British colonists, owing to the convenience and facilities of trade arising from the contiguity of their situation. Trade must and will be regulated by convenience and profit, unless you interpose the arm of coercion or restriction. It is only by holding out those inducements that constitute inclination and interest, that you can expect to cross its ordinary and older channels. Should an easy, safe

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ges.

Diverting  
the Trade  
from Cana-  
da.



and cheap transportation be opened to those parts of Vermont which border on Lake Champlain, and a ready market present itself within our own limits, but little question arises what course their trade would take. At least one half of the trade and profits which now flow into Canada, would be brought home to our own state. Lake Champlain is about 200 miles long, from north to south. It receives half the streams that rise in Vermont, and many which have their origin in Lower Canada. The country on its borders is daily improving in agriculture, and increasing in population; and if their trade is secured at this early period of our commercial history, by permanent means, its unbroken continuance may be relied upon. The effects of the Northern Canal, in this respect, will be immediate. Nor is this all; the Northern Canal will even levy a contribution upon Lower Canada herself. We must recollect that for about seven months in the year, the river St. Lawrence, through which all the trade of the Canadas passes, is frozen over, or so full of obstructions that navigation through its waters is suspended. Thus, for more than one half of the year, there would be a strong temptation for the people of Lower Canada to open a trade with the city of New-York. Every article of merchandize passing from this country into Lower Canada, would yield a tax to the National Government, and extend a profit to our own citizens, at the expense of the consumer in Canada.

Timber.

The canal, too, will be of much importance from the trade in lumber and timber which it will promote. These articles are already becoming scarce in many parts of our country. Mr. King, in his late speech in the Senate of the United States, observes, that "The timber of the country is becoming scarce, and more and more an object of public concern. The forests upon the frontier of the Ocean; and on the great rivers leading to it, are nearly destroyed. In other countries, and even in Russia, the improvident waste of their timber, especially in the neighborhood of their great

iron works, has become a subject of national solicitude.—Masts, spars, pine and oak timber fit for naval purposes, and for other numerous uses for which timber and wood are wanted, were far more abundant, and of better quality formerly, and within the memory of men now living, than they are at the present day; and a little care and economy in the use of our timber, even now, would confer an important benefit on posterity.”\* If the timber which covers the mountains and country in the vicinity of Lake Champlain and Lake George, is not of that valuable description for naval purposes which is found in the southern extremity of the Union, and more especially in Mississippi and Alabama, it is of much value to a commercial people, and to the towns and cities on the Hudson. The Canal Commissioners assert in one of their reports, that “within that tract of country embracing the borders of Lake George, and the timber land north and west of the great Falls in Luzerne, there are annually made and transported to the south 2,000,000 of boards and plank; 1,000,000 feet of square timber consisting of oak, white and yellow pine, besides dock logs, scantling, and other timber to a great amount.”† The lands of our own state, in the vicinity of the contemplated Canal, are, to a considerable extent, rough, unfit for a high state of cultivation, and covered with an excellent growth of timber. The increase in the value of lands which this canal would produce, where they are situated near its line, should not be lost to our view in the consideration of its advantages.—When we recollect the rapid growth of the cities and villages on the Hudson, and the country beyond its tide waters, and in the immediate vicinity of the new Canal; and when we also remember, that according to the most accurate calculation, more than 2000 new buildings are erecting in New-

\* Vide Speech of Hon. Rufus King on the Navigation Act. It is a speech replete with intelligence and elevated national feelings, and worthy of this distinguished statesman.

† Rep. Canal Com. 18th March, 1817.

York the present season, and the timber, boards, other materials of wood, necessary to supply a demand so great ; and when we look at the demands for the different kinds of timber to subserve mercantile purposes, even in the city of New-York alone ; we cannot but think that the lands in the vicinity of Lake Champlain and Lake George, and in some of our northern counties heretofore deemed of little value, will now be rendered of much pecuniary consequence to their proprietors.

The establishment of the Naval Depot at Newburg, on the River Hudson, reported to have been authorised by the Government of the United States, will increase to a great extent, the importance of this canal. Every thing necessary for extensive ship building, which can be found on its borders, or contiguous to the waters connected with it, will find a ready and permanent demand, at this important post. It is probable, from the fine harbor of New-York, and from its being in the centre of the Union, that this depot will be one of the largest in the United States, and afford an immense consumption of timber necessary for naval purposes.

When this Canal shall be opened, we believe, as the Commissioners early perceived, that a trade of a new character will arise, between ourselves and the people of the north-westerly parts of Vermont. The sale of pot and pearl ashes has heretofore, and will hereafter be a source of profit to this quarter of the country. The transportation of these heavy articles over a considerable distance by land, is a great drawback upon the profits which they afford. The Northern Canal must open to them a ready market, and an easy, safe, and rapid conveyance. These articles can be exchanged at either extremity of the Canal, at Whitehall or Waterford, for articles of merchandize, or for salt or gypsum, which will hereafter be brought down the Great Western Canal in quantities sufficient to supply any consumption.—The salt works in our western counties will hereafter be carried on upon a large scale, and gypsum will be afforded at \$5 per ton at Waterford, and perhaps for a less sum.

Pot and  
Pearl Ash-  
es.



The greater part of Vermont is a fine grazing country ; but the expense of transportation, has, in a considerable degree, heretofore prevented the cultivators of the soil from selling beef and pork, or from considering them important articles of trade. When this canal is completed, the whole country in the vicinity of Lake Champlain, will send the articles of beef and pork, to the ready and constant markets, which will be found at Troy, Albany, and more especially in New-York, the great place of exportation.

Beef and  
Pork.

The fine marble in the state of Vermont, which lies in vast quarries in the vicinity of Lake Champlain, and is found to possess the richest qualities, would find an immediate demand by this improvement in our northern navigation. The extensive marble works in the flourishing village of Middlebury, a few miles from Lake Champlain, and situated on the banks of Otter Creek, afford a sufficient specimen of its intrinsic properties. It is of various hues, of a fine grain, bears an exquisite polish, and is found to withstand the most intense heat without any unfavorable effects. This marble has been worked for several years past to great advantage and profit, by the MIDDLEBURY MARBLE MANUFACTURING COMPANY, and has been sent in considerable quantities to New-York, Boston, Philadelphia, Montreal, and even so far south as Georgia. It is used for monuments, and for all the ornamental purposes of building. It may hereafter become an article of much importance.

Marble.

The country through which the Northern Canal must pass, is said to be stored with rich and valuable minerals, and it is calculated that extensive iron works will hereafter be erected in the neighborhood of the mountains near Lakes George and Champlain. Should this be the case, this country, by means of the canal, might become an important place for the manufacture of iron.

Iron.

The Northern Canal may also produce many important benefits in point of national defence, in case of future exigencies. Naval and military stores, and materials of every

description essential to purposes of defence, could easily be distributed along this part of our northern frontier with ease and safety, thus sustaining an uninterrupted water conveyance between our seaboard and the Canadian borders.— Had this Canal been made previous to the last war, the saving of expense to the nation would have been of no inconsiderable consequence.

These are some of the future advantages connected with this branch of our Internal Improvements. Most of these benefits have before been suggested to the public, by the Canal Commissioners, and we pretend to no merit in bringing them forward here with our brief illustrations. It will promote the interests of agriculture, by opening ready markets, and easy, cheap, and ready conveyance; it will promote domestic trade, by drawing articles of merchandize from our own seaboard, instead of the Canadian cities. It will advance the value of real estate, promote manufactures, and draw rich mineral treasures from the bowels of the earth. It will create new sources of industry, and confine the profits of our labor to ourselves.

The whole of the Northern Canal is under contract, and it is expected that one half of the distance will be completed before the approach of winter, if the season continues favorable. The remaining portion will be advanced to a state of completion with the same energy that marks its present progress. As there are no doubts nor cavils concerning this work, argument is unnecessary. It is not to be presumed that the state of New-York, while directed in the application of her means by her present Chief Magistrate, and while able to make a Canal of 353 miles long, and connect by the noblest work of the age, the great Lakes and the ocean, will permit a spot of disgrace to rest on her character, by not connecting the Hudson with Lake Champlain, at a trifling expense, when her faith and her resources are pledged in the undertaking.

## MR. DARBY'S LETTER.



[*THE following letter, which was, a few days since, written by WILLIAM DARBY, Esq. in answer to certain inquiries submitted to him by the Secretary of the New-York Corresponding Association, contains much important information, and is subjoined here, as a valuable appendage to the foregoing pages.*]

NEW-YORK, October 11, 1818.

MR. C. G. HAINES,

Sir—Yours of the 25th ult. was duly received, but the pressure of my private business on my return from a tour of nearly five months, prevented an earlier attention to your communication. You request my opinion in the first instance upon—

“What canals and water communications could be connected with the line of the great western canal, in our state, for the promotion of internal improvements.”

The most obvious, and by far the most beneficial water communication that can be made between the great western canal and circumjacent rivers, is the contemplated canal between the head of Seneca Lake and the Susquehanna. If the two canals were now completed as far as Seneca Lake and Cayuga river, the inhabitants of Pennsylvania and New-York states, would exchange their heavy but invaluable articles of coal, gypsum, salt, iron, pot metal, &c.

Three obvious points of water connection, between the great western canal and lake Ontario, present themselves—by the Niagara, Genesee and Oswego rivers, all of which



are obstructed by cataracts of more or less depression from the lowest part of the plane of the canal to the surface of the lake.

Before proceeding farther in this investigation, permit me to make a few geographical remarks. The commercial facilities naturally existing between the Atlantic states and the valleys of the Mississippi and St. Lawrence,\* may be divided into three great divisions; which we will designate as the Northern, Middle and Southern. All that part of the continent of North America, watered by the St. Lawrence river and confluent branches, to the north of the Falls of Niagara, must have a commercial outlet and inlet by that great river, through Montreal and Quebec.—South and Southwest of the Rapids of Ohio, at the town of Louisville, the produce of human industry will pass to New-Orleans, and the articles of necessity and luxury, not found in the country, will be purchased in that city. Between the Chute of Niagara and that of Louisville, from the Allegany mountains to the sources of the rivers of Lake Superior, will form the middle commercial district, and New-York, Philadelphia and Baltimore, will divide the profits of exchange; Cincinnati, Pittsburg, Detroit and Buffalo, will be in the middle, what Kingston and York, in Upper Canada, will be in the northern, and what Louisville, St. Louis, Natches and Natchitoches will be in the southern division. Partial intercommunications may, and no doubt will, daily occur in commercial exchange between the points of contact of these natural sections, but these interchanges must be viewed as exceptions to a great permanent rule formed by nature herself.

In examining the subject of any improvement, MAN ought to seek what is practically useful, and not exhaust upon idle fanciful speculation, what is due to attainable objects of

\* By the valleys of the Mississippi and St. Lawrence are here meant, all the region watered by the tributary streams of these mighty rivers.

real utility. A water route from the Atlantic ocean to the immense western waters, has now arrested the attention of the most enlightened citizens of New-York and Pennsylvania ; and the subject is one, upon which the pens of the ablest politicians or economists of these great states, may be most beneficially employed. It is an object worthy the deepest reflection of a public mind, at once rich in experience and strong in moral youth. It is to be regretted that in the developement of our natural advantages, local prejudices, party and personal animosities should impede the progress of rational research. It is wretched logic, to confound questions of national interest, with the trifling views of faction, or the narrow conceptions of corporation politics.

Since receiving your communication, I have met with two works on a similar subject ; one, " A topographical description of the province of Lower Canada, and on the relative connexion of both provinces, with the United States of America." By JOSEPH BOUCHETTE, Esq.

The other, " A Sketch of the Internal Improvements already made by Pennsylvania ; with observations upon her physical and fiscal means for their extension ; particularly as they have reference to the future growth and prosperity of Philadelphia." By SAMUEL BRECK, Esq.

Whoever reads attentively these two treatises, will I regret to say, find very nearly as much liberality from Mr. Bouchette, respecting the United States in general, as from Mr. Breck, when contrasting the city of Philadelphia with the neighboring cities of New-York and Baltimore, and particularly New-Orleans. The latter writer indeed appears in one point to extreme disadvantage, he seems to consider Pennsylvania as an incidental or secondary object, when included in the same prospect with her commercial capital ; Mr. Bouchette, to his credit, extends his views to the causes which may lead to the aggregate prosperity of all the Canadas, and does not confine his anticipations to Quebec.

To a reader unacquainted with the relative political posi-

tion of affairs on this continent, both of these writers would appear to be inhabitants of countries environed with rival and even hostile states. This spirit of rivalry is as injurious as a generous emulation would be beneficial to the progress of improvement. The inherent principles of human nature will, however, operate, maugre all that sophistry can oppose to their progress. Men will carry their superabundance to the best markets, whether in New-York, Philadelphia, Baltimore, New-Orleans, or elsewhere.

Mr. Breck, page 43, anticipates the time when the commerce of the waters of the Missouri and Mississippi, beyond the mouth of Ohio, will come to Philadelphia; in fine, that an era will arrive when human beings will toil 1600 miles mostly up stream, to obtain a worse market than they could find by floating down stream half the distance. If this prophecy is ever realized, the old proverb, "go farther and fare worse," will receive a very remarkable application.

I notice Mr. Breck's work as it embodies much of the common place philosophy on the subject upon which I am now descanting. To consider that gained to Pennsylvania which is lost by New-York, or *vice versa*, is just about as correct, as it would be for an individual to desire a palace for a residence with mud-walled, thatched-covered hovels, to decorate the prospect from its portals. In fact, the advance of any city or state of our common country has a reflective effect; the science, wealth, and liberal institutions of any part, must shed their kindly beams upon the whole, and the illumination must be stronger in direct ratio to approximation to the centre of light.

But to return to our subject. The relative territorial extent of the three great commercial sections of the central parts of our continent, is as nearly as I estimate them, as follows:

	sq. MILES.
Valley of the St. Lawrence below Niagara,	210,000
Middle or central section,	320,000
South and southwestern section,	1,200,000



Each of those grand divisions have their appropriate advantages, which it is, and will continue to be the duty of the inhabitants respectively to improve. Of the three, the greatest number of practical and indispensable canals and roads, can and will be formed in the middle or central section. Until the completion of the great Western Canal between the waters of the River Hudson, and those of Lake Erie, that between the Seneca Lake and the Susquehanna river, and that between the Hudson river and Lake Champlain, no others ought to be ever seriously thought of by the citizens of this State.

Your second inquiry is, "What Great Roads could be united to the line of the Western Canal, in our state, for the promotion of the same object?"

This latter inquisition would admit of a much wider range than the former, if pursued in all its details; there is scarcely five miles upon the whole line of the canal, from which useful and necessary roads may not be drawn; but of these, two obtrude themselves to immediate notice. One to the village of Hamilton upon the Allegany river, in Cattaraugus county, and the other between the towns of Buffalo and Hamilton. The lately perceived importance of these two latter places, has prevented their having excited the interest they so eminently deserve. The proper point of contact with the canal, or its confluent waters, by the Hamilton road, is something difficult to fix with precision. Geneva, and Canandaigua, present each some respective advantages of position when contrasted with each other; and have either a decided superiority, as points of departure, over any other places in this state. I have visited both these towns, and from information there received, have no doubt but that excellent roads can be formed, from each to Hamilton, at no extraordinary expense. If I was called upon to dictate a plan upon this subject, I would direct the formation of a turnpike road from both Geneva and Canandaigua, in the direction towards Hamilton. These roads should converge

somewhere in the northwest angle of Steuben county, at or near the village of Dansville, or Arkport, and run thence to Hamilton by Angelica. No roads that could be possibly formed in this state, in addition to those already made, would produce so great and immediate benefits, as these I have traced. If this route was laid open by good roads, it would, even independent of the Grand Canal, become *instantly* the thoroughfare between the New-England States and the Ohio Valley. To those who are acquainted with the extent and mass of the tide of emigration now setting southwest, and annually increasing, the advantages of such a route will be apparent. Much embarrassment is now experienced by emigrants from Massachusetts, New-Hampshire and Vermont states, for the want of a direct and easy means of transportation to Pittsburgh. No part of the western territory of New-York is so thinly peopled, as the country included in Steuben, Allegany and Cattaraugus counties; good roads would tend greatly to encourage settlement.

Though not equal in importance or necessity with the roads from Hamilton to Canandaigua and Geneva, yet a good solid road from Hamilton to Buffalo would be of great utility and convenience to the people who inhabit the extreme western section of this state. In a military point of view, the latter road would be of incalculable advantage in a war with Great Britain, in opening more extensively than at present exists, lines of ready communication with our interior and Canadian frontier.

It is much to be desired, that a good road was also carried from Hamilton to Pittsburg. In execution of such a work, the people of New-York and those of Pennsylvania ought to act in concert; both parties are deeply interested, though the former rather more than the latter, as the country upon the Allegany is yet but thinly inhabited. From the influence of frost in the winter and heat in summer, many of our rivers are rendered useless as channels of communications, often half the year. This is the case with all our interior streams

north of Maryland. Durable roads are therefore as indispensable as canals, and in places where heat may exhaust or cold congeal water, roads and canals ought to be formed co-existent, and made in their turn subservient to the facility of human intercourse, and the augmentation of human enjoyment.

The road from Utica to Sackett's Harbor, though already open, demands very extensive improvements. I travelled this route in the second week of last May, and found many parts in a wretched state. The season was indeed extremely inclement—a time therefore that the roads could not be expected to afford pleasant travelling—but if they are well formed and preserved with care, they will at least always secure safe conveyance. It would be waste of time to point out the very high importance of a good road, solid at all seasons of the year, from the interior of the state of New-York, to the most exposed and by far the most valuable military and naval station on our Canadian border.

The following are the stationary distances of each of the proposed roads, as near as I have been able to estimate.—The distance and stations upon the road from Utica to Sackett's Harbor, were taken from the former to the latter town. The others are taken from Eddy's Map of New-York, a very meritorious work lately published.

	MILES.
From Utica, over the alluvion of the Mohawk river, - - - - -	1 1-2
Height of land between the Mohawk and Lake Ontario, - - - - -	3 1-2—5
Village of Trenton, - - - - -	8—13
Sugar Creek, one of the head branches of Black River, - - - - -	23—36

Thus far the road is now tolerable, but from Sugar Creek it follows, generally, the valley of Black River, and is in many places barely passable, in the spring season.



Martinsburg, seat of justice for Lewis county, - - - -	1½ 3-4—50 3-4
Lowville, - - - -	3 1-2—5½ 1-4
Deer River, a large and impetuous branch of Black River—a good wooden bridge where the road passes, Watertown on the left bank of Black River, - - - -	10—6½ 3-4
Brownville, right bank of Black River, - - - -	16—80 3-4
Sacket's Harbor, - - - -	4—8½ 3-4
Sacket's Harbor, - - - -	8—92 3-4

A direct road runs from Watertown to Sacket's Harbor, distance 8 miles, but at the time I travelled the country, this latter road was pronounced impassable. I was therefore obliged to take the more circuitous route by Brownville, and of course Black River twice. Good bridges have been formed over that precipitous stream, at Watertown and at Brownville.

*Route from Geneva to Hamilton.*

Height of land between Canandaigua and Crooked Lakes, - - - -	30
Arkport, - - - -	20—50
Angelica, - - - -	20—70
Hamilton, - - - -	30—100

*Intersecting route with the above, from Canandaigua.*

Naples, - - - -	20
Arkport, - - - -	23—43

From the foregoing it will be seen, that the distance from Geneva is 100, and from Canandaigua, 93 miles to Hamilton. The land distances could be shortened by passing by water, from Geneva, through the Seneca and Crooked Lakes, and from Canandaigua, by the Canandaigua Lake. If the proposed roads were made, it is probable they would intersect near the Conhocton branch of Susquehanna, or between the Conhocton and Arkport. Diverging roads could be easily formed from the main lines to the heads of Canandaigua, Seneca, and Crooked Lakes, and thus open still more exten-

sively the channels of transportation in a very improvable and improving country.

From the head of Crooked Lake to Bath or the Conhocton, is only about 5 miles. From Bath, rafts and boats can be and have been conveyed down the Conhocton into the main stream of Tioga, and finally into the Susquehanna river.

*Route from Hamilton to Buffalo.*

	MILES.
Cattaraugus Creek, - - - - -	30
Buffalo, - - - - -	30—60

This distance is measured upon the map direct ; it is not, however, probable, that a road could in reality be made in less than 70 or 75 miles between Buffalo and Hamilton. The face of the country from the Allegany river to Cattaraugus creek, and for some considerable distance north of the latter stream, rises into high hills. The road would cross the table land between the waters of the Ohio and those of Lake Erie. It may not be irrelevant to remark, in this place, a circumstance of considerable import in the investigation of the subject of the connexion between Lake Erie and Ohio river. By actual admeasurement, as reported by Mr. Galatin, Brownsville, or rather the Monongahela river at that town, is elevated 850 feet above tide water in Chesapeake Bay ; and by careful measurement made in preparing for the commencement of the great western canal, the surface of Lake Erie is elevated 565 feet above the tide water in the Hudson river at the city of Albany. From this data, the Monongahela at Brownsville, is 285 feet higher than the surface of Lake Erie. I am well acquainted with the Monongahela river between Brownsville and Pittsburg, and cannot be induced to consider the waterfall from the former to the latter place above 45 or 50 feet perpendicular ; which estimate, if correct, would yield a fall of nearly 250 feet from Pittsburg to Buffalo. This statement will be relieved from all improbability by a very cursory glance upon a map of our continent. The much greater distance from Pitts-

burg to tide water in the gulf of Mexico, than from Buffalo to tide water in St. Lawrence river will be apparent. It has been found from actual survey, as marked upon Eddy's map of Niagara river, that the difference of level between Lake Erie and Ontario is 334 feet. Supposing the gulf of St. Lawrence and the Hudson river at Albany to be on a level, and the difference cannot be considerable, there are 565, less 334, or 231 feet as the fall of water from the bottom of Lake Ontario to tide water in St. Lawrence river; a prodigious depression for the distance, and amply accounts for the rapidity of the rapids at Grand Gallop, Point Iroquois, Rapid Plat, Grand Saut, and St. Mary's Rapid below Montreal.

Assuming the above heights and depressions as correct, there will be about 250 feet from any intervening point more depression to reach the waters of Lake Erie than those of the Ohio at Pittsburg. The dividing ridge approaches in Cattaragus county, near Portland, within less than five miles of Lake Erie. Sailing along that Lake, within about three miles from the New-York shore, this ridge appeared to me to be 1000 feet high; some of its points I was then led to believe at least 200 feet still more elevated than the general range of the hills. About 20 miles S. W. of Buffalo this ridge first appears distinctly visible from Lake Erie, and and continues in view beyond the town Erie, and from thence gradually retires into the state of Ohio; in clear weather it, however, remains in sight from the Lake, even opposite the mouth of Sandusky Bay. Huron and Cayahoga rivers indent it, and when opposite the mouths of these streams it disappears, but in the intervening space rises prominent above the adjacent country.

Your third and last subject of inquiry is, "What advantage does New-York possess over New-Orleans, for supplying the country, north-west of the Ohio river, with goods and merchandise?"

To this interrogatory, I would answer briefly, that as



matters now stand it would be nearly, if not altogether as cheap, to ship goods and merchandise from the former, to the latter city, and have them thence transported, by water to Cincinnati, or even to Pittsburg, as it would be to convey them by the embarrassing land and water routes now existing between the Hudson and Ohio rivers. The completion of the canal from the Mohawk to the Seneca, and a good road from thence to Hamilton, would, if nothing else was done, change the face of affairs. New-York would then enjoy the benefits of her nearer approximation to the water of the Ohio; she would be enabled to counterbalance, by her existing capital, the superior local advantages of New-Orleans; and she would forever preserve her now relative rank amongst the cities of the United States. If a direct water communication was open with Lake Erie, the resources of the state and this city would be still more enlarged. We have been in the habit of undervaluing the regions watered by the confluent waters of the Canadian Lakes. The real fact is, that in many respects the countries, contiguous to the great chain of interior seas, are superior to most parts of our continent of equal extent. The soil is generally good, and every where produce, in abundance, the Cereal gramina. To the west of Niagara, as far as Lake Superior, the climate is mild. All the shores of Lakes Erie and Michigan, and great part of those of Huron, will afford fine settlements. With but very few exceptions those regions are healthy and supplied with excellent water.

Let the produce of their labour pass where it may, the number of human beings that are now daily passing Buffalo will soon dissipate the forests and supply their places with towns, villages, farm-houses, fields, meadows, orchards, and gardens. The beautiful and highly cultivated lands of the strait of Erie, are now a specimen, of what in forty years will be the landscape from Niagara to Chicago.

It is a very gratifying anticipation to behold in our fancy, the epoch to come, when this augmenting mass of population

will enjoy, in the interior of this vast continent, a choice collection of immense marts, where the produce of the banks of innumerable rivers and Lakes can be exchanged, on or near the shores of the Atlantic Ocean for the conveniences of Europe, and the luxuries of the Indies.

In the Edinburgh Review, for June, 1818, when speaking of Mr. Morris Birkbeck's tour in America, and the stream of population passing from the borders of the Atlantic Ocean into the region we now call relatively western: occurs this remarkable passage:

“Where is this prodigious increase of numbers, this vast extension of dominion, to end? What bounds has nature set to the progress of this mighty nation? Let our jealousy burn as it may; let our intolerance of America be as unreasonably violent as we please; still it is plain that she is a power in spite of us, rapidly rising to supremacy; or, at least, that each year so mightily augments her strength, as to overtake, by a most sensible distance, even the most formidable of her competitors. In foreign commerce she comes nearer to England than any other maritime power, and already her mercantile navy is within a few thousand tons of our own! if she goes on as rapidly for two or three years, she must overtake and outstrip us.”

Such are the impressions already made in Europe by our existing state, such the views of our future progress! *The bounds that nature may have in preparation, to limit the prosperity, wealth, power or science, of the people of the United States will never be seen by either you or me. With sentiments of sincere esteem, I am, dear sir, yours,*

WILLIAM DARBY.

CHARLES G. HAINES, Esq. }  
 Cor. Sec'y. of the Soci- }  
 ety for the Promotion of }  
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*When says 1/181*



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