

at New Baltimore by two locks combined, each 10 feet lift, 300 feet long, and 50 feet wide.

With reference to the expenditure of water, the loss by evaporation is assumed at $\frac{1}{4}$ inch per day, (it is said to range during the dry season from $\frac{1}{3}$ to $\frac{1}{2}$ of an inch per day) which, over a length of $12\frac{1}{2}$ miles of 120 feet wide, would give a loss of 240 cubic feet per minute.

The estimate for the loss by filtration, has been based on that of the old Erie Canal, (21 feet wide at bottom, 4 feet depth of water, and side slopes, each 8.94 feet long,) which, after investigation, is assumed at 50 cubic feet per mile per minute, giving for the Ship Canal a loss of 5,087 cubic feet per minute for the $12\frac{1}{2}$ miles.

For the lockage, 10,000 tons per day is the freight assumed to be passed, requiring 5,887 cubic feet per minute.

These items, together with leakage at waste weirs and locks, give a total consumption of 16,000 cubic feet per minute.

To supply this seems to be the most complicated point of the scheme, and the more especially, because it is proposed to elevate the Ship Canal so that its surface of water will be 20 feet above the surface of the river at extreme low water mark. This will make it necessary (in pumping) to elevate the water on an average of say 18 feet.

This recommendation is made with a view of avoiding the expense of excavating below the level of the water in the river, and to the protection of the works against the influence of freshets, so destructive to property in the locality.

It seems that in some freshets the rise of water in the river in front of Albany has been as much as 18 feet above low water mark; and it is contended that if the river levels were adopted, the banks would be subject to overflow, the canal be liable to filling up, and endless expense result in keeping the bottom dredged out. In consequence of this periodical rising of the waters, many important branches of manufactures for which the position of Albany would afford great inducements, cannot now be advantageously established there; for no business, subjected to active competition, will bear either land carriage to any point in the vicinity above these influences, or the elevation of the factories, and the consequent expense of lifting and lowering the raw material and manufactured article through the necessary space.

It is argued therefore that in addition to the other advantages, the high water level of the Canal Basin will yield an opportunity for the pursuit of many manufactures before prohibited.

Two modes of water supply are suggested,—one of elevating the water from the river by steam power, the other by building reservoirs on streams in proximity with the Canal, and thus saving during floods and the suspension of navigation, a sufficient amount of water for service during navigation.

The natural flow of the streams during the dry season is estimated at 2,000 cubic feet per minute, leaving 14,000 cubic feet per minute to be provided for two months,—12,000 during two months,—and 5,000 during two months,—the difference being due to the increased yield of the rivers during those periods of the season.

The estimated annual cost of this supply (including interest on cost of Engines and Pumps—\$90,000) is \$12,600.

The second plan would involve the construction of six reservoirs on the Normanskill river, the estimate for which is \$128,000; and the annual expense of working (inclusive of interest) \$35,967, shewing an excess of the cost of steam of \$6,633 over reservoir supply. The Engineers have prudently refrained from recommending either system as superior, satisfying themselves by the adoption of the highest estimate.

The total cost of the Canal, including supply of water, land damages, and Engineering, is estimated at \$2,450,000, which at 7 per cent. and adding annual current expenses of working and repairs, would represent an annual cost of \$246,500, or the amount which should be derived from the Canal to make the investment remunerative.

The estimate of revenue is based—1st on the rental or sale of the land (we fear a very questionable source) to the amount of

\$12,000 per annum, leaving \$131,000 to be derived from tolls. The present rate of tolls on the New York State Canals is four mills per 1000 pounds per mile: this on the ship canal would amount to 10 4-10ths cents per ton. Assuming 10 cents per ton as the toll to be levied, an annual aggregate trade of 1,315,000 tons would be necessary to make the investment pay as above. *This is less than half the tonnage of last year moving between the Erie and Champlain Canals and tide water* and as the continual growth of the trade may seem to be relied on, instead of 2 $\frac{1}{2}$ millions of tons as in 1852, the progressive increase would yield in 1856 4 millions, and in 1860, 6 millions of tons.

Relying on the advantages of making Albany the shipping port, whereby the cost of carriage (as in small bottoms) would be reduced, and that of transshipment with its depreciating results avoided,—and arguing that in consequence of their form ocean sailing vessels may be towed at a cheaper rate (proportionably to their tonnage) than canal boats, the projectors of this Canal depend, fairly enough, upon securing the larger share of the trade.

We are not inclined to an adverse judgment upon a scheme so enterprising, propounded in a report so skillfully and judiciously drawn as is this—but the course of trade does not always yield to the Engineer, charm he never so wisely—there are other influences beyond his control (as the combination of established interests and capital) which may offer insuperable difficulties to the diversion of so large an item in ocean traffic and the profits connected with the carrying trade, as that for which Albany would now compete with New York.

It may be said, with much plausibility and some truth, that with this canal ocean vessels may freight as well at Albany as at the mouth of the river, but is there no risk of loss of time and demurrage?

A vessel entering inwards at New York, brings a general cargo to be distributed through the length and breadth of the Union,—unloads, ships her outward freight, and is off again.

Run her up to Albany to ship her outward freight,—and if thereby she loses one trip in the year, she forfeits more than the profits made out of the river transit. We write diffidently, for we are not entirely at home on matters strictly commercial; yet what is it that justifies the authors of this Report in saying that “the Hudson is the natural channel of the trade of Canada West,” but that they mistake the course of trade for the path of nature? It is certainly no want of facile communication with the ocean which forces the trade of Canada West to the Hudson and New York, but precisely those attractive influences of capital and combination which, as they overcome in a great degree the advantages of our noble St. Lawrence and scarcely less noble canals, may hereafter offer an obstacle to the use of that at Albany, implying as it does the withdrawal of a profitable trade from New York.

We deny that the Hudson is the natural outlet for our trade; and as large sums of money have been expended in the improvement of the St. Lawrence, we may be pardoned for hoping that it may soon cease to be the artificial one; and that when Albany shall have intercepted New York for the ocean freights from the westward, our canals shall have claimed their own in the same service. Happily there promises to be enough for us all; and, therefore, eschewing any sectional jealousies, but without making any effort at generosity, we wish this scheme, so ably propounded, the highest success which its promoters anticipate. One matter, however, in connection with its construction, would seem to demand comment before we close. We perceive that the lockage is confined to two locks at the north and south ends, all of equal lifts, namely, 10 feet. We are not aware of the fall of the Hudson River between Albany and New Baltimore, but its velocity would lead us to conjecture that it must be considerable, and that provision must necessarily be made for it. It is apparent that unless the river line at both places be coincident, or the fall of the canal be made equal to the fall of the river, (neither of which is probable) the lift of the locks at New Baltimore should be greater than those at Albany, or intermediate lockage be inserted.