

cargo. The accommodation for passengers is to be of three classes, rates not exceeding the following fares respectively,—cabin, £21; 2nd cabin, £12 12; and steerage, £6 6s., every requisite being found, and a mail and mail officer being carried free of charge. The freight from Liverpool not to exceed 60s. per ton measurement, nor the freight of produce above that demanded by sailing vessels. For this service the contractors are to receive £21,000 sterling per annum, to which sum the St. Lawrence and Atlantic Railroad Company and the City of Portland are to contribute £5000 stig., leaving the balance (£19,000 stig.) as the annual Provincial charge.

By the Straits of Belle Isle the distance from Liverpool to Quebec is nearly 400 miles less than that to Boston, which, with smooth water from the Straits to Quebec, and vessels of equal speed, will give a saving of 2½ days in the voyage. We may, therefore, hope to establish an improved mail line for the Province, and perhaps ultimately when our Railroads shall have been completed, instead of paying for transit of our mails through the States be enabled to make a profit on the carriage of an American Mail to the west. One great improvement resulting from the contract will be the erection of proper lighthouses throughout the Lower St. Lawrence and the Straits of Belle Isle, whereby the character of the navigation will be improved, insurances reduced, and the whole shipping interest served. We can imagine nothing more judicious than the completion of the contract and the manner of it—the realization of the enterprise and its success is fraught with advantages direct and indirect affecting every interest in the Province.

After recommending an expenditure of £30,000 on the rapids of the St. Lawrence, with the view of obtaining a safe and facile channel throughout, for vessels drawing 10 feet of water, an improvement well worth the outlay, the Commissioners proceed to consider the propriety of the construction of the proposed canal at the Sault Ste. Marie. As in the case of the Champlain Canal, however, so in this. They no sooner state the cost than they drop the subject. A survey has been made and an "ad interim" report submitted by Mr. S. Keefer, but all to no purpose—the Commissioners will not be tempted or driven to a judgment. We are glad to see that Mr. Keefer insists upon Lockage of the fullest capacity for the largest class of steamboats on our lakes. The obstacles and inconveniences, nay, we may even say, the positive losses resulting from a contrary course on other canals, prove the wisdom of at once making a permanent sufficient provision in these particulars; besides, if the estimates may be relied on, and we infer that they may, the extra expense is unworthy of consideration: for while the cost of this canal 120 feet wide, with locks 230×55×9 will be £100,000, that involved in a width of 150 feet with locks 100 feet longer, 11 feet wider, and with one foot additional draught of water, viz: 350×66×10, would only be £20,000 more, or £120,000.

In the estimate of "Prospective Revenue," we find some interesting information in connection with the Mining Companies of Lake Superior. The population now engaged on the *South side*, numbers 2500. Thirty-seven Mining Companies have been there formed, of which fifteen have commenced operations, and will produce this year (1852) about 2000 tons of copper, worth at Pittsburgh £120 per ton. Two Iron Companies (also on the *South side*) expect to produce 1000 tons of "blooms" this season (1-52) which sell at Detroit for £16 5s.* per ton. "The proprietors of the Iron Mountain are sanguine in their expectations of transporting 100,000 tons (!) of this ore eastward immediately upon the opening of the canal. They expect to be able to manufacture it into railway bars at the cost of £7 10s. per ton, and thereby to revolutionize the iron trade."

This Iron has, it is said, been ascertained by experiment to possess an ultimate tenacity when rolled into bars of 8982 lbs. upon the square inch—while that of the best Russian is but 79,000 lbs., and of

the best English 57,000 lbs.;—and in its native state to contain 69 per cent. of pure Iron.

We trust these "sanguine expectations" may be realized, and the truth of these experiments substantiated. But why so much about the operations on the *South shore*, and nothing, positively nothing, about those on the north? Did Mr. Keefer see too much or too little of these North shore operations?—perhaps both;—perhaps he saw too much of *how little was doing*, and thought it more prudent or more charitable to give our companies the go-by. Strange, that in an estimate of the "Prospective Revenue" of a *Canadian Canal* at the Sault Ste. Marie, the only references made to the sources whence that revenue is to be derived, should be in connection with "*the South shore!*" Have they on the North shore no "sanguine expectations" on a large scale? no realizations on a small one? We were prepared to hear (whenever we heard *anything* in connection with our Superior Mines but "*calls!*") that *very little* had been done, but we are now obliged to infer, from Mr. Keefer's silence, that *nothing is expected!*

We have thus given an abstract of this important and valuable Report, venturing our own impressions in relation to such parts of it as seemed to demand comment, and if we have extended our notice to an unusual length, we rest our excuse on the public interest of the subjects, and the very great difficulty (to which we have before referred) of obtaining a copy of the document.

Improved Railroad.—Mr. Carpenter, of Rome (N. Y.) has made an improvement in the ordinary iron railroad, calculated greatly to diminish the liability, if not utterly preclude the possibility of a train running off the track, under any circumstances. The improvement consists of a middle rail of iron or wood, running the whole length of the track, precisely in its centre, and raised a foot or so above the side or bearing rails. Friction rollers are attached to the engine and cars beneath, to play upon the sides of the middle, or guiding rail, whereby the motion of each car is steadied, and any tendency to fly the track at once arrested. Experienced and competent engineers concur in the opinion that the adoption of this invention would add greatly to the safety and security of railroads, and prevent a large class of accidents to which we are now exposed. As they now are, it is left to chance and good luck whether or not we are carried safe. If nothing happens to it—if nothing is thrown upon the track, by accident or by design—if no stone or rock should happen to roll down upon it from along its numerous banks—if no limb from a tree, or a rail or stake from a fence, is blown upon it—if no animal get upon it—if no child, in its innocent sport, should place a strip of board upon it (as was recently the case in England, thereby throwing the cars off and killing five persons)—if none of these, and numerous other similar unforeseen and unavoidable casualties should occur, we may be carried along safely enough on railways as now constructed. With this improvement the speed may be increased to almost any extent, with entire safety, so far as there would be any danger of running off. In short, without it a railroad is incomplete, so much so as a ship without a rudder or a carriage without a tongue. We are informed by Mr. Carpenter that the only objection made to his improvement, is the cost of it; and yet he is fully of the opinion that it would be a matter of economy, and for the manifest interest of railway companies to adopt his improvement. It would not only prevent a large class of accidents, but it would prevent the wheels from wearing as they now do, the friction being much less.—*New York Tribune*.

Although the above paragraph has recently appeared in several of the American and English journals, yet it occurred to us that a similar improvement had been proposed in Canada several years ago, and upon enquiry we found, that in the spring of 1847, a patent was secured by Mr. Sandford Fleming, of Toronto, for a centre rail railway. Mr. F went farther than to insure the safety of the train, by guide wheels acting on the middle rail; he also proposed to have horizontal driving wheels revolving against the sides of it by which the locomotive and carriages were propelled. A model was constructed on this principle, which, we are told, elucidated the mode of propulsion satisfactorily; but it must be admitted that there are difficulties to encounter before the details of this proposed system of locomotion could be properly carried out; yet if the extra cost of an additional rail was not sufficient to preclude its adoption, the liability of trains to run off the track, would doubtless be greatly diminished, and consequently the safety of passengers and property, in the same ratio, increased.

* This price must be a misprint in the Report, it does not agree well with the statement further down that the proprietors of the iron mountain expect to furnish railway bars at £7 10s. per ton.