

THE BEST MEANS

OF EMPLOYING THE HYDRAULIC POWER OF THE LACHINE RAPIDS NEAR MONTREAL.

THE subject of employing the immense hydraulic power of the Lachine rapids has, for some years past, engaged the attention of engineers and manufacturers. These rapids being in the immediate vicinity of the city of Montreal, and comprising a fall of about forty feet in the distance of two miles, are calculated to be equivalent to five million horses power, and of a more equable character than any other stream in the known world. The sources from whence the St. Lawrence river is supplied are so extensive that it is entirely free from the freshets or droughts common to other rivers, and runs a uniform stream the whole year round. In this respect the St. Lawrence is without a rival amongst the great rivers of America, being supplied during the summer, when smaller streams are getting dry, by the melting of the snows of the far North-west, and the great interior lakes or seas of central North America, of all of which it is the only outlet to the ocean.

These circumstances render the Lachine rapids far superior as a hydraulic power to any other known, both for volume of water and its constant uniform flow. And, when it is considered that these rapids form the terminus of the Ocean navigation of the St. Lawrence, that just below them is the Port of Montreal, in which lay vessels of all countries, from the coasting brigantine to the ocean steamer of three thousand tons burthen; that just above them, and connected with the Port of Montreal by the Lachine canal, commences the great chain of inland navigation from Montreal to Chicago, that here also is the Victoria bridge, and the great Central Station, depots and machine shops of the Grand Trunk Railway,—it may be safely asserted, that in no other locality in North America can be found so many facilities for the establishment of mills and manufactories, and so abundant a supply of hydraulic power to work the same.

A project for employing the fall of water at the Lachine rapids, for hydraulic power and other purposes, has been laid before the mercantile community and the public generally, through the untiring zeal and energy of the Hon. John Young and others, by which, it is proposed to construct a canal from the river St. Lawrence above the rapids to extensive docks to be erected just below the Victoria bridge, and dividing the fall (about forty feet) into two levels, to dispose of the hydraulic power thereby created, at these localities, for milling and manufacturing purposes, and the residue to form the source of supply for the docks above mentioned.

Leaving out of view for the present the question of docks, which might be supplied by water from the Lachine canal when enlarged, there are many grave objections which may be urged against the project of employing the hydraulic power of the Lachine rapids by means of a canal as before mentioned. In the first place, the proposed canal would have to pass through some of the most costly farming land on the Island of Montreal, and which would rapidly increase in value as it approached the city, where the cost for land alone would be enormous. Secondly, the cost of constructing a canal of the proposed dimensions, viz. about four times the sectional area of the present Lachine canal, a considerable part of which would have to be cut in the hardest limestone rock, would be so great as to make it scarcely possible for all the available water power and sites for mills and factories to make it pay any dividend on the cost, and if it were used for the passage of vessels and craft, it would come directly into competition with the present Lachine canal, which is sufficiently capacious for all the present requirements of the forwarding business, and is likely to be so for some time to come. Thirdly, the slow rate at which the water must necessarily move in such a canal, renders it extremely liable to freeze to such an extent in winter as to seriously interfere with the working of the hydraulic powers located thereon. The formation of *frazil*, also, at the entrance of the canal, during intensely cold weather, would have the same detrimental effect as at the entrance of the Water Works aqueduct, situated in the same locality, where it (*frazil*) has several times seriously interfered with the supply of water to the city.

Instead of pursuing any further the subject of the costliness and other disadvantages of the proposed canal, it may be desirable to take a glance at the Lachine rapids themselves, and endeavour to ascertain if the hydraulic power proposed to be carried into the city

by such expensive means could not be more advantageously employed on the spot. And here, singularly enough, may be found a means of employing the hydraulic power of the rapids (which seems to have been entirely overlooked) to an almost unlimited extent. Here are situated, a cluster of Islands, in the very midst of the rapid, dividing it in two in fact, through its entire length, and containing in superficies between four and five hundred acres of land. Through and amongst the channels between these islands the water runs with immense velocity; and by building a series of stone piers with cutwaters to turn the lake ice, (something like those of the Victoria bridge) at the edges of these channels, mills can be erected thereon over the same, and by using undershot wheels, the hydraulic power of the whole of the channels could be used by the mills or factories built over them, all the year round. The same system of piers, with mills erected on them, can be extended right across the north channel of the river, (which is not navigable) from the islands aforesaid to the Montreal shore, and the spaces between these piers would form a series of mill races, with power amply sufficient to drive all the mills or factories built over them. Nor need this plan be confined to one range of establishments, for the run of rapid water is of such a length, that half a dozen, or for that matter, fifty such ranges of mills and factories could be worked by the water passing under them, and the space between each range would form a bridge and means of communication through the entire distance from the islands to the north shore of the river. It may be desirable to remark here that the largest of these islands extends from the mill sites above mentioned down to smooth navigable water, and affords every facility for the landing of goods from steamers or river craft, or for rafts of timber; while on the Montreal shore the Grand Trunk Railway track can be brought up to the very doors of the mills.

As the rapidity of the current prevents the water from freezing here to any extent, there is nothing to hinder it from being employed during the whole year. The ice shoves and floodings which cause so much damage at Montreal and below, never take place here, and the navigable channel of the river being on the south side of the islands, no interruption to navigation would be caused by the carrying into effect of the proposed works, while the great bulk of the lake ice above also descends through the south or navigable channel.

It may be necessary to remark, in explanation, that the uppermost cluster of Islands are elevated but little above the general surface of the water, which renders it necessary to build the piers before mentioned of such a shape as will withstand the shocks of any lake ice which may be driven against them by the force of the current, but there being neither shoves nor floods in the locality, the piers need only be built of sufficient height above the water to admit of the requisite diameters being given to the water wheels, including the height necessary for raising the same during the short time, each season, that the lake ice is passing.

If the commercial policy of Canada could be established on the basis of reciprocal Free Trade with the United States, so as to open a market of sufficient area for manufactured goods, the water power, the local and commercial advantages, and the manufacturing facilities possessed by the city of Montreal, would place her in a few years far ahead in these respects, of any other city in North America. Her magnificent water power, now running to waste, would be fully employed, and become a mine of wealth to the city, greater than all the metallic deposits of the country of which so much is heard and so little seen, while the broad river, now so little occupied, would be alive with craft of all kinds.

Stock Market.

There has been more activity in stocks this week. Bank of Montreal has been held to some extent at quotations. A small amount of Ontario Bank has been placed at 96, and City Bank at 98. There is a demand for Merchants Bank and Molsons Bank at quotations. Bank of Upper Canada still continues to fall in price. Government five per cents have been sold at 84. Sterling Exchange has an upward tendency, 110½ to 110½ being the rate to-day for Bank Bills. Merchants' Bills from 109½ to 110.

The Gold Market for the week.

NEW YORK.	HIGHEST.	LOWEST.
Friday.....June 9.....	138½	137½
Saturday....." 10.....	137½	137½
Monday....." 12.....	142½	138½
Tuesday....." 13.....	142½	142½
Wednesday....." 14.....	143½	142½
Thursday....." 15.....	147½	143½

THE DETROIT CONVENTION.

THE arrangements for the Detroit Convention are progressing most satisfactorily. The preliminary meeting in Toronto for Wednesday next, of Canadian delegates, will be largely attended, and, no doubt, productive of good results. We believe the Toronto Board of Trade intend entertaining their colleagues hospitably during their stay in that city. Mr. Hickson, the acting manager of the Grand Trunk Railway is taking a most active interest in the Convention and its object, and has provided passes for all the delegates, both to Toronto and Detroit.

The Montreal Board of Trade and Corn Exchange, have each adopted the suggestion to increase the number of their delegates.

As there is an apparent need for statistical information upon the Reciprocity question, we have arranged to send a Canadian Delegate out of Montreal a copy of the "Report on the Trade and Commerce of Montreal for 1864," which contains the main figures necessary to a complete understanding of the subject.

THE DRY GOODS TRADE.

Bankage, Beak & Co.
Wm. Benjamin & Co.
John Dougall & Co.
Gilmour, White & Co.
Lewis, Kay & Co.
Thomas War & Co.
Hunderloh & Stevens
Ogilvy & Co.
Ringland, Ewart & Co.
A. Robertson & Co.
Stirling, McCall & Co.
William Stephen & Co.
Thomson, Claxton & Co.
Alexander Walker.
George Winks & Co.

THE past week has been one of more than usual activity for this season of the year. Orders have been coming forward freely, so much so as to quite exhaust the supply in some classes of goods. The difficulty to satisfactorily execute orders is much felt. The retail trade in Western Canada is in a flourishing condition. In some sections a large business is being done. The moneys being distributed for the purchase of Wool is telling with good effect on all branches of business—more especially on the dry goods portion.

The price being paid for wool is high, the demands for the American market causing a keen competition. For the purposes hinted at in a former article, the Americans require all the Canadian wool they can obtain, and in consequence there is a possibility of wools ranging still higher than prices now paid.

The position of the Canadian manufacturer is not improved by this state of things, and as the price paid for Canadian goods has not advanced in the same ratio as the raw material, the profits will be small. We question if there will be any profits at all. Nor is there any prospect of this state of things being improved, possibly, for some time to come. Foreign wools have been imported and used successfully in the manufacture of our heavy goods, and it would not surprise us if some speculative firm were to start into existence making the importation and exportation of wools a special business. In this way our manufacturers could be supplied with raw material equally suitable for their requirements, and much more economical. One thing is certain our manufacturers must purchase their raw material at prices more closely approximating to prices obtained for their goods or there will soon be few manufacturers remaining. In the vain attempt to produce certain classes of goods at a certain price the standard of our Canadian goods is being lowered—an overstock of inferior goods will soon be the consequence. We have been assured by a large manufacturer, that with wool at forty cents per pound, the net cash cost of goods, made from clean stock, weighing fourteen oz., is sixty-seven cents. As a number of large lots of Canadian tweeds have been sold this season at prices under above quotation, it follows either that some rubbish is used in the composition of the goods, or a ruinous loss must attend the manufacturing of the same.

The supply of English woollen goods is not large in our market, and there has been enquiry for some classes which were found difficult to obtain. Owing to the unsettled state of the British markets there is no speculative demand.

Cottons are in short supply, grey cottons especially. Some of our large houses do not hold a single piece. Supplies are coming forward by next steamer. Prints, no assortment in the market. In better class goods the market is quite bare, some houses do not hold a piece of any kind. Denims, stock quite exhausted no assortment. Printed Muslins, stock very low. Dress Goods: difficult to sort up in any desirable goods for this season of the year, stock very low. In all classes of desirable goods, requisite for this season of the year the market is quite bare.

Since writing the above, we have information from the West that wool is still keeping up, say from forty-one to forty-five cents. The quantity sold has been immense, and nearly all purchased for the American market. The season is nearly over.