

MISCELLANEOUS INTELLIGENCE.

DOMESTIC.

Bytown and Prescott Railway.

This undertaking, which was commenced in the spring of 1851, and has, since then, quietly, unobtrusively, but surely, been advancing towards completion, is destined, ere long, notwithstanding the small share of public notice it has hitherto attracted, to rank as one of the most important lateral railways in the province. Whether viewed as a 'feeder' to the "Main Trunk," or as an *independent track*, connecting the commerce of the Ottawa with that of the St. Lawrence, and opening to the vast region watered by the former of these monarch streams, (which the old "voyageurs" loved to call "La Grande Rivière du Nord") a new channel of trade, via the Ogdensburgh Railway, to the several seaboard cities of the United States, its importance as a great public work can scarcely be over-rated. At some future period, we may lay before our readers a statistical sketch of the "Ottawa country," the capital of which—Bytown—bids fair to rival, in size and commercial importance, the most thriving of our Canadian cities. To us of this more favoured "West," comparatively little is known of that most interesting section of the country; but we have "facts" and "figures" before us to show that, whilst it is little behind us in the ordinary march of improvement and civilization, it has outstripped us in enterprize: its merchants and capitalists having boldly undertaken, not only unaided from any outward resource, but in the face of much selfish opposition, to commence the railway we are speaking of; and which, from all present appearances, is likely to be the first *completed* work of the kind in Upper Canada.

The distance, by this route, from the Ottawa to the St. Lawrence is 53 $\frac{1}{2}$ miles. For some 20 miles from Bytown, the road is laid parallel to, and within a short distance of, the St. Lawrence, passes through the flourishing village of Kemptville, and has its southern terminus near the eastern limits of the town of Prescott, opposite to the Ogdensburgh Railway Depot,—at a point where the St. Lawrence never freezes up. The country through which the line runs is of high agricultural capabilities—is rapidly improving—and as a *full wheat growing country*, we have seldom seen it surpassed, even in the western portions of the province. The features of the ground are highly favourable for the construction of a railway. There are to be no grades exceeding 30 feet in the mile, whilst more than half the road is level. Its lineal arrangement shows about four-fifths straight line, in tangents of from 1 to 7 miles. Upon the whole, its capacities, as a freight road, cannot be surpassed in the province, and are such as will admit of the timber of the Ottawa being deposited on the banks of the St. Lawrence in such quantities, and at such rates, as will make Prescott the great lumber mart, not only for a wide tract of our own country, but also for a large portion of the state of New York. The work of grading was boldly commenced last October, and is now well advanced. Much has been done with very little means,—the expenditure thus far having been wholly provided for by the two towns it is destined to connect. affording to many richer communities an example of courageous enterprize, which they would do well to profit by. We observe that the Municipal Councils of the several counties interested in the undertaking have petitioned parliament for aid to bring their work to a successful completion. They have watched whilst others slept, and we heartily wish them the success they merit. We look upon this undertaking as one of such real importance that we shall probably revert to it again, and enter more fully into the details of the project.

RAILWAY SUSPENSION BRIDGE OVER THE NIAGARA RIVER.—The Bridge will form a single span of 800 feet in length. It is to serve as a connecting link between the railroads of Canada and the State of New York, and to accommodate the common travel of the two countries. It is established by ample experience, that good iron wire, if properly united into cables or ropes, is the best material for the support of loads and concussion, in virtue of its great absolute cohesion, which amounts to from 90,000 to 130,000 lbs. per square inch according to quality. The Bridge will form a straight hollow beam of 20 feet wide and 18 deep, composed of top, bottom and sides. The upper floor, which supports the railroad, is 24 feet wide between the railings, and suspended to two wire cables assisted by stays. The lower floor is 19 feet wide and 15 high in the clear, connected with the upper one by vertical

trusses, forming its sides, and suspended on two other cables, which have 10 feet more deflection than the upper ones. The anchorage will be formed by sinking 8 shafts into the rock 25 feet deep. The bottom of each shaft will be enlarged for the reception of cast iron anchor plates, of 6 feet square. These chambers will have a prismatic section, which, when filled with solid masonry, cannot be drawn up without lifting the whole rock to a considerable extent. Saddles of cast iron will support the cables on the top of the towers. They will consist of two parts—the lower one stationary, and the upper one moveable, resting upon wrought iron rollers. The saddles will have to support a pressure of 600 tons, whenever the Bridge is loaded with a train of maximum weight. The towers are to be 60 feet high, 15 feet square at the base and 8 at the top. The compact, hard limestone, used in the masonry of the towers will bear a pressure of 500 tons upon every foot square:—

	Weight of Bridge.
Weight of Timber, - - - - -	910,130 lbs.
Wrought Iron and Suspenders, - - - - -	113,120 lbs.
Castings, - - - - -	41,332 lbs.
Rails, - - - - -	66,740 lbs.
Cables between Towers, - - - - -	531,100 lbs.
	1,678,722 lbs.

	Weight of Rail-road Trains.
One Locomotive, - - - - -	25 tons.
27 double freight Cars, each 25 feet long, and of 15 tons gross weight, - - - - -	405 tons.
Making a total gross weight of 430 tons which will fall upon the cables when the whole bridge is covered by a train of cars from end to end: and to this 15 per cent weight of pressure as the result of a speed of 5 miles per hour, which is a very large allowance, - - - - -	61 tons.
Add weight of superstructure, - - - - -	782 tons.
Total aggregate maximum weight, - - - - -	1,273 tons.

The tension of cables, which result from a weight of 1,273 tons and an average deflection of 59 feet, is 2,310 tons. Since the assumed maximum tension can but rarely occur, it is considered ample to allow four times the strength to meet this tension—that is 8,960 tons. But assuming 2,000 tons as a tension to which the cables may be subjected, five times the strength to meet it is allowed, and an ultimate strength of 10,000 tons provided for. For this purpose, 15,000 wires of No. 10 will be required. At each end of the upper floor the upper cables will be assisted by 18 wire rope stays, and their strength will be equivalent to 1,440 wires; the deducted leave the number of wires in the four superior cables 13,560, the number of wires in the four superior cables 13,560, the number of wires in one cable 3,390, diameter of cable 9 $\frac{1}{4}$ inches. The rail-road bridge will be elevated 18 feet on the Canadian, and 28 on the American side, above the present surface of the bank, and above the present structure. It will be the longest railroad bridge, between the points of support, in the world.—*St. Catharines Journal*.

CANALS OF CANADA.—The gross revenue derived from all the Canals of Canada, for 1851, was £79,999, the expenses were £27,335. The number of vessels which passed through the Canals for the same year was 18,871: the total tonnage, 1,973,841.

CANAL TOLLS.—The tolls collected on the Welland Canal during the month of July last, was £768 2 3s 8d, against £5909 7s. 6d. in the same month of last year. The number of vessels passed through was 750, being an increase of 60 over July of last year, and of 262 over the same month in 1850.

NEW CHURCH.—The result of the competition by W. Thomas, Messrs. Cumberland & Storm, and J. Sheard, in preparing designs for the erection of an Irish Presbyterian Church, at the corner of Queen and Mutual Streets, in this City, has been the adoption by the committee of the design of W. Thomas, Esq., Architect. The Church is of the Norman or Lombardian style of architecture, with two staircase towers and spires on the principal front, to Queen Street, to be erected of white brick, with open timbered roof to the interior, and with circular apsis at the north end. The size of the body of the Church is 81'0" by 55'0", and will give an accommodation of 612 sittings on the ground floor.

We are gratified to learn that Sir Chas. Lyell, who stands at the head of modern geologists, arrived at Halifax by the last Steamer, and immediately proceeded to visit the County of Albert, in this Province, now becoming celebrated for its mineral wealth. As this Province requires only to be better known, to take a much higher rank than has hitherto been given to it, we look upon the visits, and the publicity given to the opinions of such gentlemen, as of very great importance. The opinion of Sir Charles will go far to settle the much disputed coal or asphaltum question, as if this mineral is in the place where it has been formed, it will belong to the coal family, and on the other hand, if it has been melted and ejected into its present situation, it will be entitled to the name of asphaltum.—*Nova Scotia paper*.