The Organization and Development of The Dominion Coal Co. Ltd.*

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The outcrops of the overlying Cape Breton coal seams still reveal in more than one place, the evidence of earl" working, usually attributed to the French. The character of the work as regards neatness, in some places, makes it probable that it was done by them rather than by the coal smugglers, who, under the restrictive policy more or less rigidly carried out after the cession of the Island to Britain, defied the prohibition and attacked the coal seams where they were accessible to the open sea, for the supply of the scattered inhabitants of this addition to British territory.

The French work was lawfully carried on, so far as is known by the Government, and with a shipment made to Martinique as early as 1725, Cape Breton probably leads the rest of the continent in developing an export business.

The business, however, was never continuously prosecuted until the formation of the General Mining Association in 1825. This corporation now justifies in a vigorous maturity the sound principles on which it was based, and in Mr. Brown still enjoys the benefits of hereditary administrative ability.

After the relinquishment of its monopoly of the coal and mineral lands in Nova Scotia, there grew up, with all the vicissitudes of commercial enterprises, mining company after mining company, occupying the areas to the southerly side of Sydney Harbor. Many of these were started with a view to supplying the American market. Some have continued in operation through the hardships incident to the disappearance of this market and the development of a new one in the St. Lawrence.

A few years ago there were in this area between Sydney Harbor and Cow Bay nine working collieries, operated by almost as many corporations or firms. Each was an independent entity, not only in regard to mining, but also to the transportation and marketing of its product; none of them with a shipping port open all the year round; but all of them enjoying to an almost equal degree the advantages of a situation immediately on the sea-board, of seams of coal phenomenally regular, freedom from gas and water, and an adequate supply of labor indigenous to the soil, between whom and the management long intercourse, based upon the sound principles of mutual respect and good will, had established most satisfactory relations.

Within recent years their business had been constantly increasing, which had necessitated outputs far in excess of those for which the pits had been originally designed. Remember that the great prosperity of this trade was owing to the existence of the reciprocity treaty with the United States. Unite with these conditions the belief existing in New England in many minds that coal areas so situated were the natural source of supply for the north-eastern United States, and that sooner or later, natural tendencies would overcome obstacles placed in the way of their development by fiscal legislation, and it is obvious that the advisibility of uniting these various properties under one management must have presented itself to every mind interested in or familiar with the industry of this locality.

Those familiar with the local history will recall more than one attempt in this direction; and at least one pleasant gentleman, (who was represented by his local sponsor as having the requisite number of millions of dollars in his pocket), who paid us a visit, and departed, with no other material result than the postponement of the addition of a bathroom to the house of one too-confiding manager.

A somewhat settled scepticism took possession of those locally interested as to whether such a scheme, desirable as it might be in the abstract, would ever be consummated, although the game of "collieries" and their relative value was the regulation amusement whenever the mine managers gathered about the hospitable board of their Dean. This was from time to time varied by discussion of the possibilities of advancement in the working of the mines, aud the marketing of their product, which this project afforded.

It is only fair to say in reference to those in charge of the properties which have since been amalgamated under the ownership of the Dominion Coal Company that they were by no means ignorant of the advantages of consolidation. It was seen that one company could afford to make outlays in seeking new markets, could establish improved loading and discharging plants, could obtain concessions, which were not within the reach of any one of some eight companies. More than this, even had any one of these companies been disposed to make the necessrry outlay, the volume of its business was not sufficient to give a remunerative return. Moreover, in Cape Breton, as elsewhere, the possibility of an opening of the American markets from time to time recurred, and whenever the game of the "collieries" above referred to did not afford a sufficient scope for the post prandial activities of the managers, a more than satisfactory warmth was invariably imported into their meetings by a discussion of the effect of "Free Coal."

It was seen by one camp that whatever might be the effect of an opening of the United States market, that effect would be very different if the New England market was to be competed for by a number of small companies rather than by one large company with local affiliations of value; for in the United States, Cape Breton would meet in competition southern coal operators already in possession of a market of large consumption, for the satisfactory supply of which adequate and expensive facilities had been provided.

Such was the condition of affairs in 1891, when rumors of a new syndicate aroused the somewhat sated curiosity of the operators, then in the enjoyment of a very prosperous season, although somewhat disturbed by an active controversy with the Local Government in reference to tenure of their properties.

It is unnecessary to go into personal details of the way in which these beginnings proceeded to consummation in the formation of the Dominion Coal Company Limited. The more picturisque personal aspect of the matter was fully exploited in the press.

This matter was brought to the attention of Mr. Henry M. Whitney of Boston. His turn of mind, his previous successful experience in similar enterprises and his connections were such as to commend this enterprise to him, and to ensure success in the precarious and difficult task of organizing and getting into operation a new company. It was favourably considered by him to the extent that he had taken some definite steps in the matter when he learned of the controversy with the Local Government, and the short and uncertain tenure, at all events as regarded rental, under which mining properties in Nova Scotia were held. The objection was fatal. He considered it unwise to invest in property so held, and it was evident that his point of view would be universal among capitalists.

The state of the case was presented to Mr. Fielding the leader of the Local Government, who, looking at the matter in a broad and businesslike way, introduced into a mining act then before the Legislature, in the Session of 1892, a clause enabling the Government to alter the tenure of mining leases,—so that this objection was removed,—and it is now possible to hold mining property in Nova Scotia for a reasonably long term at a fixed rental.

Mr. Whitney then proceeded to carry on the enterprise. He associated with himself the banking firm of Kidder, Peabody & Company; the property was examined by experts, and satisfactorily reported upon; options on the properties were obtained, and in due course closed; a special charter, based on the legislation before referred to, was obtained; and on the eve of a period of great financial stringency, which unfortunately still obtains in the United States, the Dominion Coal Company was organized, and all its securities disposed of to the public, the number of Canadian, and particularly Nova Scotian, shareholders being an additional guarantee to the promoters of the soundness of the enterprise on which they had embarked.

So much for the organization of the Company. As for its development, the only safe way is to leave this to time. This much may be said for the aims of its management:

Already we have approaching completion, or under contemplation, a railway and piers looking to the concentratiom of its shipping business, the building of central workshops which will increase the efficiency of the various subsidiary industrial operations, which, in an isolated locality, such as Cape Breton, are unfortunately inseparable from coal mining. We are building dwelling houses of a good type at our new openings, which should make the conditions surrounding employment with the Company desirable.

The value of local labor is fully recognized, and this labor will, we trust, be adequate to provide for the output which development of the trade will make necessary. For a part at least of this increase in business, we shall have to meet in competition coal produced by the most approved modern methods, and we are therefore introducing machinery which will render greater the economic value of each miner, and thus enable us to meet the demands of an increasing trade without going beyond our natural territory for the supply of labor.

The advantages of consolidation have been seen in enabling us to deal more effectively with the transportation question and the marketing of our coal. Opinions have varied considerably as to the economic value of Cape Breton coal. This much is certain;—extremes on both sides are incorrect. What we believe, and what all our experience of the last year tends to prove, is that it is a good fuel; and those in New England who have tried it within the past twelve months seem in every case to be satisfied with the result.

Almost every form of administrative and economic error has been illustrated in the history of coal mining in Cape Breton. So too have been illustrated, with equal vividness, in the same little field, the principles which lead to success. To keep abreast of the progress of the art, to satisfy one's customers, and to establish relations of mutual confidence and goodwill with one's working men, are, beyond a doubt, the aims of all the enterprises represented in this room; and it lends color to a hopeful view of the future of the Mining Societies here assembled that their members may not immodestly congratulate themselves that what they have in the past achieved is the best guarantee of the attainment of these ends.

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The Introduction of Endless Haulage into Cape Breton.*

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The three methods of mechanical haulage which have been introduced into mines and used in connection with cables or wire ropes are:

1st. Plain rope haulage—in which the load only requires to be hauled, the empties running back by gravitation and taking the cable with them.

This is of course the simplest and most economical so long as it satisfies the requirements of the mine, and is able to deal with the tonnage raised in a given time; but it is clear to any one acquainted with mining that as the workings proceed farther from the shaft or other exit, the rope must continue to travel faster in order to cope with its work, and finally the speed required to maintain the output will of necessity be greater than is either safe or practicable. It is probable that this safe limit is reached at about 8 to 10 miles per hour on any average mining road.

2nd. The next system in vogue is the main and tail rope, by means of which the full journey is hauled out and the empty journey is hauled in. This was devised to meet the difficulty presented by a varying grade, and can be adapted to work over alternating grades perhaps better than any other system. It further possesses the advantage of only requiring a single track the same as plain haulage. Its limitations are, however, precisely the same as in that system, it breaks down when the distance becomes so great that the rope requires to run more than about 10 miles per hour.

3rd. The third system, "Endless Haulage," succeeds just where the other two fail,—distance presents no difficulty, of course within reasonable limits, and so far as practical working is concerned it is as easy to haul 1000 tons of coal per day along a road 5 miles by this system, as it would be to haul the same tonnage a distance of ¼ of a mile by either of the other systems, assuming the grade to be the same as the average of our Cape Breton mines, viz:—3 inches in the yard, or 1 in 12.

This brings us to the essential difference between endless haulage proper and every other system—whereas they haul a full trip or journey at a time, consisting of from ten to twelve trams, direct from a given station to the shaft, and then take a corresponding trip of empties back. The former knows nothing of trips or journeys, but continues to travel perpetually as its title indicates, and the trams are attached and detached singly at any point required to facilitate the constant delivery of coal to the shaft. The advantages of this are obvious—instead of being all hurry and skurry to handle the journey when it arrives and start the empties back, necessitating a larger staff of men just at the moment of its arrival than are required again until the next trip comes in, the endless rope keeps delivering constantly and uniformly one tub at a time, never varying its speed or rate of delivery so long as the workings supply the coal.

My experience leads me to the conclusion that any stated tonnage of coal can be handled at its destination by half the number of men on this system, as compared with any other system of haulage I am acquainted with.

The next great advantage is that the speed of the rope (which in practical working I limit to 2 miles an hour) is so slow that the wear and tear is reduced to a minimum, and the liability to accidents arising from the trams jumping the rails, knocking out timber, and otherwise damaging the road which is so prevalent with high speeds is practically done away with, as it is possible if the signals are perfect to stop the rope at any point in a travel of 3 to 5 feet.

The third principal advantage of endless haulage is that so slow a speed is required only a small engine is necessary with high gearing—say 1 to 7, or even 1 to 8. With this gearing I have hauled 1000 tons a day with a 12 in. diameter cylinder single engine up a slope dipping 2 inches in the yard a distance of 4200 feet.

The disadvantages are:—

1st. That a double track is an absolute necessity to work the system efficiently, and if the roof is bad this means much timbering and increased cost of maintenance—and:—

2nd. Greater attention to detail in the working. I do not mean to create the impression that this system is impracticable with a bad roof—it is all a question of cost—but I do argue that where the roof is good it is unquestionably the best system known.

The greatest objection to its use comes from those who have not mastered my second requirement "*attention to details*" that is the whole secret of its success or

*Paper read before the Mining Society of Nova Scotia.