

export of coal is, it is but a small percentage of the amount consumed in her thousand industrial processes. Where would England be in the scale of nations did she but mine her coal and ship it to foreign countries there to heat the furnace, drive the factory engine, etc.

So important is the connection between the home consumption of coal for industrial pursuits and the accumulation of wealth or capital in provinces like Nova Scotia and British Columbia, that it would seem to be specially the duty of Provincial Governments to take every possible step to foster the home reduction of ores. It would be better that these Governments spent annually a round grant of money in prospecting and testing mineral lands, which could then be leased to responsible parties instead of being held by persons who are without means for development, and expect the prices of mines for prospect holes.

In the list of minerals the development of which would specially benefit Cape Breton, iron and copper ores may easily take the first rank. As regards the former, the presence of numerous deposits is well known. Analysis show that some of the ores rank as the best, as "Bessemer." Outcrops are known close to shipping points, yet a few thousand dollars represent all the practical attention they have received. Their value according to the owners is immense, yet where the beds are known in some hill side, enough work has not yet been performed to show a year's output in sight. The same with a single exception may be said of the copper ore deposits of the island. At numerous points outcrops of ore are known, a few trenches have been cut, yet nothing done beyond showing a prospect more or less promising. These prospects upon which capital would readily risk the money required for a proper test are held by the owners as representing great cash values. The only attempt at a legitimate development of a mineral deposit on the island is that of the Eastern Development Co., Ltd., the owners of the Coxheath Copper Mines. Here a prospect was submitted on reasonable terms to foreign capital. The first steps showed an improvement on the surface indications, which has continued. This company owns, on the felsite rocks of Coxheath Hills, three square miles of territory in which several thousand feet of cupriferous strata outcrop. The explorations show that the comparatively scanty surface indications of copper pyrites which merited attention only from their persistence along a well defined horizon, formed the surface of a highly mineralised belt extending over a large tract of country. This point alone is of interest as showing that expenditure of money and time is needed in examining mineral deposits as the condemnation of a single exposure on the ground of the property of mineral there visible may prove an unfair prejudgment of the value of the same rock a few hundred feet away. The company encouraged by the improvement visible as they worked on the vein prepared for development work. Gradually and cautiously during the falling prices of the metal they have pushed their main shaft until it has reached a depth of 300 feet, and during the sinking have cross-cut the bed rock with the result of showing several veins carrying copper in workable quantity with decided percentages of gold and silver. The principal vein varies from six to ten feet in width carrying in the vein about six per cent. of copper readily dressing to over ten per cent. The remaining veins, of which some six have been cut and tested at the different levels as in the case of the main vein, vary in width up to five feet and promise at several points as well as the large vein. The mine is well equipped with hoisting gear, air drills, pumps, shops, houses, etc. equal to the development being carried on and to a fair daily output. The eastern shaft has been sunk about 1000 feet from the main shaft, and is down about 150 feet on the main vein which at that point presents the same characteristics as at the main shaft.

In the southern lease the company has traced for nearly one thousand feet a large vein which has been opened on at one point to a depth of one hundred feet, showing as well as the main vein at an equal depth. Further explorations may show that this vein joins the others, and experts have expressed opinions that it may prove richer than those already tested. This cross vein has over two hundred feet of backs above water level drainage. So far the work of development has shown

large quantities of ore, readily accessible, and presenting no obstacles to treatment. The fact that there are over \$50,000 worth of available ore on the dumps which has accumulated from the levels and cross-cuts in the veins certainly proves the extent of the veins and their accessibility.

As for the second part of the enterprise, the treatment of the ore, it requires a modern outfit. So far as the accessory surroundings of copper smelting are concerned in this section, they are unusually favourable. The property can be readily joined to the Government railway system by six miles of road, and at the proposed junction ample ground has been secured for furnaces on deep water in Sydney Harbor. Coal is within a few miles by rail or water, flumes can be had at the furnaces, and the best labor of the continent is a characteristic of the people of Cape Breton. Ores from all parts of the Gulf of St. Lawrence region can be collected at this point, and with smelters here the numerous prospects of copper ore in the Island will undoubtedly furnish some mines ready to supply ores. The locality as a distributing centre for the manufactured article is unrivalled, being on the seaboard instead of, as is the case with so many mines, hundreds of miles from any shipping point.

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There is a marked improvement in the mica market, the demand for Canadian being steadily on the increase.

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The meetings of the Ontario Institute will be held by courtesy of the Provincial Government in the Private Bills Committee Room, Parliament Buildings, Toronto, on Wednesday and Thursday, 12th and 13th September. Afternoon and evening sessions will be held on both days,

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An apparatus for discovering internal flaws in iron and steel has, it is reported, been invented in Paris by a Captain de Place. Of course it is electrical, and consists of a small pneumatic tapper worked by the hand, with which the sample of steel or iron is tapped all over. With the tapper is connected a telephone with a microphone interposed in the circuit. One operation is required to apply the tapper, and the other to listen through the telephone to the sounds produced. Both are in electrical communication, and in separate apartments, so that the direct sounds of the taps may not interrupt the listener, whose duty it is to detect flaws. In applying the system, one operator places the telephone to his ear, and while the sounds produced by the taps are normal he does nothing. Directly a false sound, which is distinguishable from the normal sound, is heard, he signals for the spot to be marked, and by this means is able, not only to detect a flaw, but to fix its locality.

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All silver mining companies are keenly alive to the present need for bringing down the cost of production to the "irreducible minimum." The uncertain and varying value of the metal demands this of them; and unless they face the question they will be quickly shouldered out of the ranks of profitable producers. In an article in the *New York Times*, giving the history of American silver-mining, with the growth of the production and the temporary checks from declining prices, the author concludes that as transportation facilities and the mining methods are cheapened there will be a constant decline in the cost of silver production; that if the output is checked at 60c. per ounce because a few mines pay, this is probably only temporary; and that the steady reduction in the cost of mining indicates that there is no minimum price below which silver cannot be profitably produced which can be called fixed or absolute. This minimum, in fact, constantly changes, every reduction in the cost of transport and every cent taken off the cost of food and supplies at the mines, contributing towards reducing the cost of putting silver on the market. Electricity, as yet only partly developed, may further cheapen the cost of mining, enabling America to produce silver profitably, not at 60c. per ounce, but at 50c. or 45c. "The repeated congresses gathered to help silver will always fail," says the writer, "because they try to get a certain result from uncertain facts. The only way to control the price of silver is," he adds, "to curtail the production. There is no other way."