The principal localities in Nova Scotia known publicly to contain specially large deposits of ore are Nictaux in Annapolis County, and the East River district of Pictou County. Other localities less known are Whycocomagh, George's River and Mira in the Island of Cape Breton, Guysboro', Arisaig, the Cobequid Mountains, Stewiacke and Clementsport in Nova Scotia proper. At all these points the indications are promising, but detailed information is wanting.

In the East River district of Pictou, there are spread over many square miles of territory, specular, red hematite, limonite and spathic ores, in deposits from four to forty feet in thickness, and varying in quality from a grade similar to that of the Newfoundland ore to one much higher. These ores require a rail carriage to Pictou Harbor of about nineteen miles, or would by the extension of the Sunnybrae Railway to Country Harbor, find, with a haulage of thirty-five miles, an outlet on the Atlantic.

As the mining would be more expensive than that of the Bell Island ore this district could not at present compete at Sydney.

At Nictaux, and Torbrook in Annapolis County, the presence of large quantities of magnetite and specular ore has long been known, and recent investigations have largely extended the limits of this field, until like Pictou it is bound to become an important addition to the world's supply. A haul of thirty five miles on the Dominion Atlantic Railway places this ore on tide-water at Annapolis. Much of the ore of this district is similar in character to that mined in Newfoundland, and is presented in deposits admitting of cheap and extensive mining operations.

The other localities referred to, are in several cases favourably situated for shipping; and exploratory work may show that they contain amounts and qualities of ore putting them on an economic basis approaching that of Bell Island. These brief remarks will serve to show that the opinions recently expressed that the iron ore resources of Nova Scotia have been overrated are not well founded. As a matter of fact the iron ore supplies of the proposed furnaces at Sydney are to be derived from sources practically foreign. The imposition of export or equivalent duties on Cuban or Newfoundland ores, no unlikely matter, would bring the Nova Scotia deposits into prominence as a source of supply, not only for the Sydney furnaces but also for exportation.

It can readily be understood that the imposition of such duties would be a temptation to a Government. It would yield a very considerable revenue, and would have to be borne by the companies affected until a point was reached when the output and exportation from these countries was threatened by competition from other sources. It is conceivable that conditions might be presented causing the promoters of these large undertakings to regret that they had not from the first relied upon native supplies of iron ore.

At present the vicinity of the Pictou ores to the coal fields of that county, and of the Nictaux ores to the Cumberland coal fields, warrant the belief that at both these points furnaces could produce pig iron at profitable rates. These rates of profit, while presumably not as large as those anticipated at Sydney, would in the opinion of competent authorities amply repay the investment of capital. In addition they could furnish unlimited quantities for export.

It is true that the Sydney plants contemplate the extensive manufacture and exportation of steel, but the development of the other localities need not at the outset call for equally immense amounts of capital.

If the continent of Europe calls for iron ore for steel making, etc, it is permissible to believe that a good opportunity offers to supply this demand by pig iron made here, as it undoubtedly can be, as cheaply as in England, etc., and presented more cheaply by means of the reduced freight of the pig as compared with the ore.

Mine Timbering.

From necessity mine timbering is largely a matter of "rule of thumb," a following of tried methods which experience has demonstrated to be safe. It is seldom possible to calculate the loads which will be thrown upon timbers below ground, since data are unavailable, but very often it is feasible to determine the directions of the strains, and in such cases much is gained by setting the timbers in accordance therewith. A truly scientific discussion of the subject can probably not be given. Certainly none has yet appeared in print. The treatment of this question in works on mining is distressingly vague, and there is usually a confusing representation of good and bad systems, offered without comment. We do not even find the paper on mine timbering by Wilbur E. Saunders in the *Mineral Industry*, Vol. VIII., any exception to the rule, though it is altogether the best of its kind in the English language. It is to be hoped that Mr. Saunders will make good this defect in his forthcoming book on the same subject.

The methods of timbering employed in most mines is far from being economical. The criticisms we would offer may be stated under several heads. First, there is a tendency to use too much material. Not that too many sets, or stulls, are used, but they are very generally too large, and of improper cross-section. For example, square columns are about one-fourth stronger than round ones of the same diameter, and yet round timbers are far more commonly seen in mines. Again, with increased length of timber, the area of cross-section is usually increased also, despite the well known fact that, where the longitudinal strength of the timber is availed of, the compressive strength per unit of area remains constant for the first 20 to 30 feet, beyond which there is a decrease amounting to about 40 per cent. at 70 feet. The safe load on a timber column is taken at 600 lbs. per square inch for heights under 20 feet which will apply to all the varieties of timber in general use. Cedar *(arborvitæ)* and aspen are the weakest of the common woods, showing an ultimate strength endwise of 4,400 lbs. per square inch, while red pine gives 6,300 lbs., white pine 5,400 lbs., black spruce 5,700 lbs., and white spruce 4,500 lbs. Another point which the timberman is prone to disregard is that the strength of the stick is proportional to the area of cross-section over which the load is distributed. For instance, if a post has an area of 12 inches by 12 inches, and the bearing on its head is confined to a space of 6 inches by 6 inches, the timber will carry no greater load than if its full cross-section were only 6 inches by 6 inches. Only 25 per cent. of the strength of the post is realized by such faulty application of the material. It is coming to be understood that the old method of square-set timbering for weak stopes, which was introduced in the Comstock mines by Philip Diedesheimer, and which subsequently came into wide use all over the world, is no longer economical; save in exceptional cases, since the means for providing rock for filling have been so enormously cheapened. Even where rock must be quarried on the surface for this purpose, and worked below by rock mills, its cost in the stope will rarely exceed 35 to 40 cents per cubic yard. Where the cost per set unit of volume, using timbers, will reach $5 to $6 or more, the same space can be filled with rock at a cost of less than $3.

An error of great importance is the use of freshly cut timbers. Not only is their strength from 25 to 50 per cent. less than seasoned timbers, but their life in underground situations is apt to be as much as 50 to 75 per cent. shorter. They are subject to rapid decay, and are peculiarly susceptible to fungus growth. It is also noteworthy that the longevity of timber is increased by maintenance of uniform conditions of dryness or moisture. This is an ideal difficult to attain in a mine, but in drifts and tunnels it is clearly undesirable to set posts so that they will absorb moisture from the floor, while they may be dry