

in its raw state, while she employs her own reserves in the manufacture of iron and steel, and in other industries at home.

So far as Canada is concerned the question is different. Her industrial activity may be said to have only just begun. This has been materially aided by a policy of protective tariffs, but this cannot accomplish all. The fuel question must necessarily be in the end the determining factor. Mr. Meachem has correctly stated the matter. No great progress in commercial lines is possible without cheap fuel. Canada is peculiarly situated in this regard. Her best coal deposits are located in the extreme eastern and western portions of the country. The great centres of her population lie in Quebec and Ontario, which are destitute of coal. On closer examination we see that much of Quebec is favorably situated with regard to the coal supplies available in Nova Scotia, but Ontario is completely cut off. Coal can move but a short distance by rail before its price becomes prohibitive. The coals of Ohio, Pennsylvania, and West Virginia can be laid down at moderate prices at Lake Erie ports, and thence it can be transported cheaply to Canadian ports on Lakes Erie and Huron, and even to points around Lake Superior. It is a significant fact that coke can be delivered at Midland on Lake Huron more cheaply than at points on Lake Ontario, and the Midland blast furnace is undertaking to compete in the sale of its pig iron as far east as Montreal, using Connellsville coke as fuel, and this is apparently more economical than to use charcoal, in spite of the large forests of hard woods so easily accessible around Georgian Bay. This fact regarding the relative cheapness of imported fuels, and the existence of abundant water power in the same region, would appear to determine a tendency for the shifting of the manufacturing centre of Canada towards Lakes Huron and Superior. This will be materially aided by the recent discoveries of valuable iron ore deposits on Lake Superior, and north of Georgian Bay and Lake Nipissing. Still it is not to be expected that the manufacturing interests of Central Canada can be concentrated in any narrow belt. The raw materials should be worked up nearer the great centres of population. In this connection it is pertinent to point out that the policy of the Canadian Government has not been wise in respect of this fuel question. The exports of Canadian coal have nearly doubled in ten years, being 830,537 tons in 1899. It has probably nearly reached its maximum, and it may be said that this exportation represents a surplus produced at points where it could not be consumed at home. There is no occasion for restricting this, and the point to be considered is how to obtain supplies of fuel more cheaply at points where it can be profitably utilized. Certainly one way would be to remove the duty from this commodity altogether. Although not onerous it is nevertheless a burden, and a wholly unnecessary one. The revenue derived from this source is insignificant, while the increased revenue from larger prosperity, and more remunerative employment for the people, would be immensely important. Another burden operating with discriminative hardship upon Lake Ontario ports is the toll of 20 cents a ton plus 5 cents per ton on the tonnage rating of the vessel, charged for passing the Welland Canal. Certainly the best interests of the country are not subserved by such a tariff as this which gives to a single group of Pennsylvania miners and to a single railroad corporation a monopoly of the bituminous coal trade of a lake on which are situated some of the largest cities in the Dominion. From an economical standpoint the policy pursued in this case is without excuse.

There is much hope of relief in the efforts which have been making of late to utilize the deposits of peat which are very extensive in Ontario. England is already turning to the peat bogs of Ireland for supplies of fuel to partially replace coal, and modern plants for its manufacture are being established. How far this will improve the situation still remains to be seen. In the address previously quoted.

Mr. Meachem affirms that "peat, however compressed, does not answer to the call, for though it may be suitable for household purposes it falls far short of yielding the required heat for manufacturing, smelting of ores and metals, and raising and maintaining steam." This may be true so far as smelting is concerned. It is certainly not applicable in its raw state, and the problem of making a satisfactory peat charcoal for such uses has not been solved. But for manufacturing purposes it should prove acceptable, the prime question being that of cost. If it can be put on the market at a price per unit of available heat, no greater than coal, there should be no obstacle to its employment on a large scale. It should certainly make a rich producer gas, and the tendency in large industrial establishments is more and more toward an abandonment of solid fuels in favor of the more economical and efficient application of the same heat energy through the medium of a gaseous combustible. In this form it is available for all the operations of iron and steel metallurgy except reduction in the blast furnace.

The great difficulty in the use of peat has always been the high cost of drying and briquetting. This problem, it is simultaneously announced in both Canada and Germany, has been satisfactorily solved. At the works of the Trent Valley Peat Fuel Co. in Canada it is claimed that the total cost of manufacture will not exceed \$1.00 per ton. Such a result would admit of placing it on the market in competition with coal. If the peat bogs of Ontario can be utilized, an immense relief of the industrial difficulties of the country will be experienced.

The Iron Ore Supplies of Nova Scotia.

The profitable manufacture of steel to-day is firstly a question of the cheapness of iron ore; secondly of its quality. We see for example a large development of Lake Superior ores, of high grade, and of lower grade ores in the Southern States and in Germany. The radius therefore of transportation of a cheap and high grade ore is greater than that of an equally cheap but lower grade ore.

This rule applied to Nova Scotia explains the dependence of the proposed Sydney steel works on the Bell Island ores of Newfoundland. Cheap surface quarry work, a few minutes haulage to the pier, and a short water carriage, enable the ore of this locality to be presented to the Sydney Furnaces at an extremely low rate. The ore has about the following composition:—

Metallic Iron.. .. .	54.37
Silica	11.57
Alumina..... .. .	4.55
Sulphur03
Phosphorus71
Titanic Acid25

This ore is king on the North Atlantic coast, not from its quality but on account of its cheapness. This pre-eminent qualification, assuming the uniformity of the ore in size and quality, will gradually decrease as the cover of rock increases.

A reference to a report of Dr. Harrington's, issued by the Canadian Geological Survey some years ago on the Iron Ores of Canada, bears testimony to the high quality of the Nova Scotia ores as well as to their extent. Since the date of this report additional discoveries of ore have been made until to the unbiassed observer the resources of the Province in this respect appear most promising. It is true that hitherto deposits have not been found permitting of extensive quarry or opencut operations as at Bell Island or in some parts of the Lake Superior district; but the deposits generally speaking are normal in their mode of occurrence as compared with those from which the great bulk of the iron ore of the world is derived.