

Now, there is no such thing as anthracite iron made in Canada to this day, although it was promised to us at that time to induce us to impose these heavy burdens upon ourselves to secure it. In regard to charcoal iron, he urged the same thing in very strong terms. He proposed to encourage the production of this iron by a heavy duty and pointed out that, as a result, we would all be engaged in this manufacture in a short time. As a matter of fact what is the state of things to-day? Not a single ton of charcoal iron is made in Canada to-day. Plenty of charcoal is made in Canada in the western peninsula of Ontario; but it is exported to the United States and used to smelt iron taken from American mines.

Mr. CHESLEY.—I beg to correct the hon. gentleman's statement. They are making charcoal iron in Quebec now very successfully. They made over 7,000 tons last year.

Mr. CASEY.—I accept the hon. gentleman's statement, as he seems to be well informed upon these subjects, but we have had no official statement to show that the manufacture is going on, and I was not aware of the fact. But I have seen that in Ontario, of which I am now particularly speaking, no iron industry has been started and our charcoal is being exported to Detroit to smelt iron on the other side of the line, instead of bringing the ore over to be smelted here with our charcoal.

Mr. CASEY.—Mr. Chairman, when you left the Chair at six o'clock I had been quoting from the prophetic indulgence by Sir Charles Tupper as to the prosperity of the iron industry, especially the pig iron industry, and the tariff which he then proposed, and I will have to trouble the House with another quotation or two. After dealing with charcoal iron, Sir Charles Tupper said:

"Well, Mr. Speaker, twenty years ago iron rails were made in Toronto and Hamilton, and within the next twenty years we will make all our own rails.

He went on to say that the Government proposed to exempt steel rails from the tax, and continued:

"I propose that they shall come in free as they have done in the past, because we consider that should be made an exception. I do not hesitate to say that the adoption of this policy, in my judgment, will place Canada in a position where she will be able to provide her own rails, and that at no distant day she will be able to supply as any country in the world. Why should we not do so? Show me any country possessing as many miles of railway as Canada does that does not manufacture its own rails? It cannot be done. There is no country in the world with 12,000 miles of railway in operation that does not manufacture the rails used there."

Now, sir, in spite of my assurance, we do not make our own steel rails yet; I do not know that we are making any rails at all. If we are making any, they must be very few indeed. It is only where we have an almost prohibitive custom barrier against the importation of iron that we are making anything in the way of iron as raw material for manufacturers. We are not making rails, for there is no duty to enter into competition with the world. Sir Charles Tupper went on to refer to certain steel industries that looked promising, using words which I quoted at another time and which I need not now repeat. Then, sir, after promising grand prosperity to Nova Scotia, Quebec and Ontario from the growth of the iron industry, he asks:

"And what does the rest of the Rocky Mountains need. I tell you that in British Columbia you have one of the magnificent deposits of iron ore on Texada Island—430 miles long and 5 miles wide—that is to be found in any place in the world, rich in the highest degree in iron, and it will have the Nanaimo coal held to furnish fuel to put these furnaces in operation at an early day, lying within 30 miles of Texada Island. I say, that with the prospect of opening up trade with America, with China and Japan, although I am not a prophet nor the son of a prophet."

I notice that he did not deny the possibility of his being the father of a prophet.

"I believe that at no distant day you will have in the province of British Columbia an iron industry built up which will compare favourably with that of any other industry in this country."

Now, sir, we still have the iron ore at Texada Island; we still have the coal at Nanaimo—and the coal is being mined, but not being taken to Texada Island to smelt the iron—we have our attempt to open trade with Australia and China and Japan; but we have no smelting industry in British Columbia. I am sure that the hon. gentleman is interesting in Sir Charles Tupper's speech and refer finally to his estimate of the addition that would be made to the population. I quoted a while ago remarks which show that he expected twenty thousand men to be employed in making pig iron—which would mean an increase of 100,000 to the population. Now, seven years afterwards we have about a thousand men employed in this industry.

"Now this estimate of an increased population of 100,000 souls does not take into account the manufacture of castings and forgings, cutlery and edged tools, hardware, machinery and engines, or steel rails. Were we to manufacture these articles now, my friend, and there is no reason why we should not steadily progress to that point—the population of the province would be increased of 100,000 souls with no less than trebled."

Let us see how the production has increased; let us see how the employment for men has extended. Sir Charles Tupper states that our consumption of pig iron, leaving steel rails out of the question, was 250,000 tons in 1887. Last year, according to the statistics given in this House, we used 1,150,000 tons of pig iron. Instead of the business increasing, instead of the consump-

tion of pig iron increasing, it has decreased to the extent of 117,000 tons, if the figures given by Sir Charles Tupper in 1887 and by the Finance Minister now are correct. Now, Mr. Chairman, this is the last quotation with which I need trouble the House. I have gone into it at some length for the purpose of showing how fallacious were the promises by which we were induced to place these burdens upon our shoulders. The production of pig iron has increased less since that time than that. We were promised a very large increase in population in connection with the making of this iron. It has not come to us; we have not had that benefit. We have only employed one-twentieth of the men we were promised would be employed in that industry. We were promised that this would be a heavy burden on the consumer. We find that it has been so heavy a burden that it has retarded very seriously the development of industries using pig iron. And, I say all this, the ordinary consumers of iron, amongst whom the farmers, I think, hold the first place, who were promised a market for their productions in return for the burdens laid upon their shoulders, have been obliged to bear those burdens, but they had not had the additional market which was then promised to be a failure, for we are not securing a home market for Canadian produce. For all these reasons, Sir, I cannot see that we are in any way justified in maintaining these heavy burdens upon the people. It is purely a tax for the benefit of four concerns mentioned by the Minister of Marine and Fisheries—Londoners, Ferrons, Radnor and another Londoner, who are the owners of the institutions employing about a thousand men we are taxing the country in one shape or another to the extent of over \$600,000. It is, as I have said with regard to the tax on coal oil, one of those instances in which the most private negotiations and consultations between the Government and the parties interested should be laid before the House, and the people should be made to see to us for whose benefit these taxes have been imposed. It has been clearly shown that they are not imposed for the benefit of the country at large.

Item agreed to.

Commercial Mining.

By MR. F. DANIELS POWERS, F.G.S., M.A., I.M.E.

(Australian Mining Standard.)

That a large percentage of the world's population is interested directly or indirectly in mining may be accepted as a truth. Whether that interest is confined to the fuel and light employed, or the various metals and rocks used in everyday life; whether we spend our money in mining ventures, or whether we gain our living by the actual extraction of minerals from their natural repositories, it all tends to help on to modern civilisation, and adds to our comfort and welfare.

At present we have to deal with what are sometimes termed "market miners"—that is, those persons who are concerned, not in the practical winning of ores, but who, having assisted to find the necessary capital for working them, are naturally interested in the successful carrying out of mining operations; and who tend to point out a few ways by which good money is frequently lost, rather thrown away, in so-called mining, to the detriment both of the legitimate industry and of the capitalist. The reasons people give for investing or speculating in mineral properties are about as various as the temperaments of the individuals themselves. "I can see their man ought to be allowed the advice of the Stock Exchange to his sons, to make money honestly if they can, but I make it still in selecting a means for making money, some find a pleasure in the excitement consequent on risk. It may be they are comfortably off, and have no immediate necessity to invade the commercial ranks, but wishing to add to their comfort, or requiring a larger income to carry out some ambition, they look to mining to assist them. Others, again, who have lost fortunes, hope by a turn of the wheel to recoup themselves. Such people think and speak of mining as a means of gambling, and in the way they affect their arrangements they are not far wrong, but they forget that the same argument would hold good for any other industry, if presented in a similar manner. I seldom consider it desirable to throw away good money carelessly away by the excitement of a bet, and I believe in a manner that would astound them if applied to their ordinary daily life, and since the chances are against them no cool-headed onlooker is surprised to note their frequent ruin.

It is on occasions such as these that unprincipled men, taking time by the forelock, and applying their knowledge, not so much of mining as of human nature, appeal to the cupidity of mankind, and by flattery the vanity of their victims, as well as by taking advantage of their ignorance, seize the opportunity of swindling them. When at last it is forced upon a man that he has become undeniably entangled in the meshes of a rogue, and that he has exchanged his money for an inadequate amount of experience, he seldom considers it desirable to throw away good money after bad, or to expose his folly by means of a prosecution, and so the depredator escapes scot free. In Melbourne, during the late silver boom, even the little street arabs denied themselves the pleasure of their favorite game, pitch and toss, so as to be able to speculate the pennies thus saved in impossible silver mines.

Whether rich or poor, high or low, there is one failing common to all, and that is the laxity with which they

carry out their mining transactions, which lay them open to the machinations of any sharper who crosses their path. The reason of this is not far to seek. The public do not believe there is much known or to be unknown about minerals, and look upon anything to do with them as governed by laws of chance. Being ignorant of geology themselves, or nearly so, they cannot understand how anyone else should be able to deduce facts from the examination of rocks, and their knowledge of scientific matters is, as a rule, too slight to encourage them to take a lively interest in any explanation offered. The very fact of anything connected with mining requiring an explanation is sufficient to condemn it in the eyes of many, and should a technical word or expression slip in by any chance, it is at once construed as a desire to confuse the hearer, under cover of which it is supposed the geologist hopes to back out. It is this want of faith and the knowledge that some rich finds have been discovered by pure accident, that make people look upon mining as a lottery. Since no two mines are exactly alike, it is impossible to draw up a code of precautions that will suit all cases; still, they have some things in common, and it is as well that these should be known.

Given a valuable mineral deposit, there are many circumstances that may crop up to nullify its worth. The value of a mineral, like other commodities, depends on its supply and demand, and the difficulty of attainment governs that supply, for if easily obtained, competition is sure to set in, the market will become glutted, and, although the price of the metal may be better than at any other time, the fall in value must come sooner or later. There are several substances the present market values of which are greater than gold, but to start a mine for some of these would be a dead loss, as a few ounces per year is all that the world consumes, and a greater output would at once diminish their value. The utility of a metal is not shown by its abundance, but by its scarcity. Other qualities, e.g., weight, ductility, color, magnetic properties, etc., suggesting it to be found in sufficient quantities. So we find that iron, though much cheaper than gold, is at the same time more useful. We thus clearly see that before investing in mines, we should be satisfied that not only does the metal sought fetch a fair price, but that there is a market for the quantity that we require.

The value of necessary substances may be increased by reducing their output, but a small supply does not necessarily mean a higher value, as the demand of any particular substance may be limited. The value of a deposit is greatly influenced by its locality; many minerals are worthless in the places where they naturally occur, but, if they are taken to a place where they can be easily repaid the cost of extraction and transport, a locality where they can be utilised; on the other hand, an ore that would pay handsomely if found near the sea coast might be utterly useless from a commercial point of view if its deposit was situated in some arid spot. A former valuable deposit, the quantity of which remains as good as before, may become valueless for a time owing to similar localities being found in other parts of the world under such favorable conditions that they can be wrought more cheaply. For instance, the Norwegian apatite deposits have given way to the Canadian ones, and these in turn have given place to the Florida phosphate deposits.

The value of a deposit may be greatly increased by working it at a proper time, and, therefore, it is somewhat advisable to have a reserve of money on hand, or to put on more men to increase the output when the price of metal rises. Valuable minerals are the natural wealth of the country in which they are found. As a mineral is removed so its supply becomes diminished; even in cases where fresh crops are formed—e.g., salt, lake, soda, etc., the deposit becomes impoverished, and the formation of new crops is slow. It is more easily wrought portions of mineral deposit being taken first, the last part robbed is more expensive to win owing to difficulties that have to be overcome, which depend on circumstances, such as the greater depth from which the ore has to be raised, the necessity for artificial ventilation, increased flow of water to be drained, the softness of the stone, or the hardness of the rock. A faulty method of opening up a property, perhaps owing to the lack of funds to commence with, may hamper a mine throughout its life, and oblige one to waste, or bury for ever, pillars of valuable mineral, which does no good to the individual, and is a dead loss to the country. Losses are made that are worthless to-day may in the future, with improved appliances, be worked on a scale of a gigantic scale, and the salvation of a property. The same argument holds good for new processes, increased supply of water in dry countries, better means of transport, etc., therefore such stone should not be stowed away in accessible places from which it will later on have to be re-mined.

An interesting and instructive chapter might be written upon errors committed in the performance of mining operations, how some men have a mania for sinking shafts in mountainous districts where adits could be more advantageously driven, or where others, to gain a few feet more "locks," commence an adit from the summer level of a creek, which at every fresh flow into and drowns out the shaft. But, although the prosecution of such engineering facts is outside the province of this article, the effects are not, for the results of such misplaced energy may be offered to you for hard cash, or, in other words, you are asked to pay for the blunders of those who have sunk money in next to useless work. Since those who cause unmineral-like excavations to be made are solely responsible for such work, they should be the ones to suffer from the loss of the money being so uselessly expended, the scapegoat. We are generally informed in prospectuses