

the G. T. R., and the street railway companies be politely but firmly directed by the Government toward the steel rail industry in Canada? It would be but a trifle for interests like these alone to lay the foundations for utilizing the great idle riches which lie dormant in our vast Dominion from the Atlantic to the Pacific, in suitable places for smelting."

THE Americans are certainly paying a great deal of attention to their new navy, and reports of the construction and testing work connected with each new ship are copied widely by the daily press as well as the scientific papers. To man and operate a modern navy requires a skill which is not attained in a day, and one difficulty the American Government finds is to get competent engineers to run their new vessels. Large sums are lost every month through breakages caused by unskilful engineering. The latest addition to the American navy, the "Columbia," built as a commerce destroyer, is thus described by the *Scientific American*: "She may be able to run away from any heavy fighting ship. In war her competitors would be the fastest ships of the British navy. Among these, at present, are the reserve ships 'Campania' and 'Lucania,' of the Cunard line, ships which day in and day out maintain speed approximating to the highest obtainable by the 'Columbia' on her trial trip, ships which from the conditions of their service are always kept in the best possible condition for instant service. Each regular trip consists of a run of some 3,000 miles, in which runs a gain of five or ten minutes over the record is eagerly striven for. It is not improbable that the 'Columbia,' driven under forced draught, straining every fibre under the action of the machinery, stripped and in the most perfect condition for a few hours' run with selected coal, will earn for her builders a premium of \$400,000. After all this she will not have been properly tried. She should be manned with a crew from the American navy, she should be coaled under ordinary conditions of quality of fuel, and her trial course should be the same as that of the Cunard ships or of the German or American line vessels—the course of about 3,000 nautical miles across the ocean. Then we could establish her true rating, and the trial would show whether she could compete in war with the 'Lucania' and 'Campania,' with the 'Furst Bismarck' or the 'Paris.'" As illustrating the progress and possibilities of marine engineering, it is interesting to note that while the American nation was singing its pæans in praise of the latest addition to its navy of that remarkable cruiser, the "New York," the British Admiralty had made provisions for the construction of two ships, as yet without peers in naval architecture. The engines of the "New York" are designed for 16,500 horse power, and her speed placed at 20 knots. The "Columbia" and "Minneapolis" mark a great advance, with their engines of over 20,000 horse power. The British cruisers, already named the "Powerful" and the "Terrible," are to have engines of 30,000 horse power, and to have a speed of 25 knots. In addition to this rate of speed, the armor protection and batteries will be correspondingly heavier and the fighting capacity of enormous volume. And so the modern marine engineer makes advances over previous achievements, with the possibility, by no means remote, of the next naval combat in history shattering at one broadside the latest productions of science, and sending enough scrap iron to the bottom of the sea to bankrupt a state or a nation.

DEVELOPMENT OF CANADIAN IRON MINES.

The present Canadian iron tariff has not been by any means universally popular either among the iron merchants or the iron manufacturers of the country, and it is to be feared that the schedule of duties framed upon only a partial view of the great interests involved. Without going into the question of the inequitable bearing of the duties on some lines of manufactured iron, it will no doubt be confessed by the Government that it was a mistake to bring into being a scrap iron industry while leaving the very source of a really prosperous iron trade—the development of our mines—at a disadvantage. The Government must extricate themselves from their own dilemma. They have put their hands to the plow, and no matter what the interests of tariff reform may demand in other directions, they cannot turn back on the iron question till those who have taken hold of the mining industry have had a fair field.

To show the essential importance of opening up our latent wealth in iron mines, it is only necessary to give a few facts regarding the bearing of such development, not only upon our manufacturing industries, but upon the agricultural interest itself—an interest which at first sight might seem to be only indirectly concerned. At the Radnor Forges in Quebec this winter there are 860 men and 550 horses employed in chopping wood for fuel, teaming, etc. Three-quarters of these men are drawn from the farming community of the region around, these farmers finding employment at a time when little else could be done by themselves or horses. And as to the profitable nature of the employment, we learn of a farmer who from this work cleared a forty-acre lot and made enough to pay for the land and put up a house in 1892, while in 1893 he had the whole forty acres in oats, which he sold to the company. This company paid during the past year \$50,000 in freight and \$250,000 in wages. Thus it will be seen how direct the iron mining industry bears on agriculture, not to speak of the bearing it has in creating trade and commerce, which would influence agriculture in a scarcely less vital way.

Canada is now using up about 500,000 tons of iron products annually, of which four-fifths are imported. If we could produce half of this at home, we should add \$5,000,000 to the annual wage bill paid out in the iron trade, and the capital required in the operation of an industry of such magnitude would be, at a conservative estimate, \$20,000,000. In the production of the pig alone for such a trade 12,000 men would be directly employed. The more the question is looked at from the standpoint of the general interests of Canada, the more evident it will be that in the iron trade, all protection, whether incidental or specific, is useless which does not begin at the mine. The old fisherman's proverb is that it is worth while to throw a sprat to catch a mackerel, but the Government in coddling the scrap iron interest above the mining have reversed the proverb, and thrown the mackerel to catch the sprat.

While the burden of rectifying their past mistakes falls upon the Dominion Government, no doubt the Provincial Governments may each aid the development of new iron mines by setting apart a fund to be used in prospecting. Besides lacking in enterprise, the owners of mining lands are in most cases too poor to do effective prospecting, and a moderate sum might be very profitably spent in this direction by most of our provincial governments.