

ter was drawing to a close. That was far from his view of what the future holds in store. But he did want to make it clear that successful metallurgical experimentation was bringing about important changes in the method of treating ore particularly the peculiarly complex ores such as are found in the Kootenay and Boundary Districts of British Columbia.

*Dr. Hodge Speaks on the Iron & Steel Industry of B.C.*

Chairman Thompson called on Dr. E. T. Hodge, Professor of Geology, University of British Columbia, who took for his subject the iron and steel industry in British Columbia. He said that as it was admitted, apparently, that nothing could be of more benefit to the Pacific Northwest than the development of its magnetite deposits. It was strange that some action had not yet been taken. The natural resources were available. There had been considerable discussion as to the quality of the ore as well as in regard to its quantity. As to the latter point there was no doubt that there was sufficient available to supply a fairly good sized plant for fifty years. In regard to the matter of quality the ores of British Columbia were magnetite for the most part. Of these deposits there were many. It was possible that some of the magnetites of the Northwest would be difficult to handle because of their copper contents, but this was no longer a serious problem, inasmuch as it has been proved that copper was not a detriment to steel. There was no doubt however, that for the most part the British Columbia iron ores were exceptionally pure, and the only question of a serious nature that he could see was whether it was more desirable to adopt the electric smelter or abide by the old blast-furnace practice. For his part he was of the opinion that the blast-furnace was of the most service in an industrial way and that electric smelting as a main factor in a large iron and steel industry was not yet established.

It having been established that the ores available of the required purity, it was well to glance at other features in the consideration of such an enterprise. Plenty of good metallurgical coke could be secured. It was said that the coal of Vancouver Island was not desirable, but he doubted this. Vancouver Island coal has been subjected to some experiments and he did not think that it could be definitely said that it was not good coking coal. Certainly, however, the coal of the Nicola Coalmont-Princeton Valley was a fine metallurgical coal. In fact, there could be none better. Coal dust, too, had been used to advantage in the blast furnace, so that there did not seem to be any cause for doubt in respect of fuel.

There was lots of flux. Many belts of first class limestone existed in British Columbia. There was fluorite, a large deposit of which has just been opened by the Canadian Consolidated, and there were refractories. Everyone had heard of the magnesite of the State of Washington, which unfortunately now appeared to be inactive owing to the European situation. There also were good deposits of a similar nature in British Columbia. He knew of one in the Cariboo District a short distance from tidewater. Chrome, too, was found in this Province, there being deposits at Cascade and on Scotty Creek. Manganese had been found close to Kaslo and on Vancouver Island. It, therefore, would appear that those minerals necessary for purification purposes were present in the Northwest in ample quantities. It was apparent from what he had outlined that there could be produced without difficulty such alloys as Ferro-Chromite, Ferro-Magnesite, Ferro-Silicon, and Ferro-Tungsten. In regard to the latter,

Dr. Hodge said that he had knowledge of deposits of scheelite in the Cariboo District.

In short, the speaker declared that it was his opinion that the time for talk had passed and that for action had come. A plant should be established, he said, of from 200 to 300 tons per day capacity. Perhaps there might be some difficulty as to labour but Pittsburgh had started without trained men and had succeeded. There were a great many mechanics employed in the shipyards and it was possible that some of these might be available. In regard to the market he did not think that there would be any difficulty in finding or developing enough to take care of the production of such a plant as he had in mind. For instance there is an exceedingly large tonnage of sheet iron used for canning purposes in the Pacific Northwest. Moreover, too little attention was given to the possibilities of the Oriental trade, from what he had been able to gather, the accounts commonly heard of the extent of the Chinese iron deposits were exaggerated. It seemed to him that the Pacific Coast had an opportunity of developing a large trade intercourse with the Orient.

*Desirability of Bonusing Steel Manufacture Urged.*

If the possibilities were as stated how was it that no company had as yet embarked in the industry? The explanation, Dr. Hodge thought, lay in the very large amount of capital which would have to be invested and the fact that it would take a rather lengthy period before the industry was established on a paying basis. An iron and steel industry, he declared, should be treated by the Government in the same way as a railway. Railways were bonused or subsidized by the Government because they had the effect of opening new country, bringing about development, and materially aiding the advancement of an unexplored country. Why not apply the same principle to a steel industry? It was in much the same position. Much capital was required to start it and some years would have to be spent in putting it on its feet but, when it was established, the result in the employment of men, in the initiation of subsidiary industries, and in the general welfare of the country was inestimable. He believed, for these reasons, that the British Columbia or the Dominion Governments, or both, should subsidize the industry in this Province, just as they had done various railways. What had been done in the way of bonuses, etc., did not go far enough. If there was further delay others would seize the opportunity which, there was no doubt, was available at the present moment. (Applause.)

Some discussion followed. Mr. Armstrong, of Spokane, thought that there was an important future for electro smelting in British Columbia and Washington, because of the variety of the rarer alloys which they had been found to possess. Mr. Thompson, of Vancouver, emphasized the purity of the magnetites of British Columbia which were low in sulphur and without copper for the most part. As to magnesite, he said that Dr. Hodge had neglected to refer to the very large deposit of it at Atlin, B.C. He was sure that there were 1,000,000 tons of first-class hydro-magnesite lying on the surface a short distance from the town of Atlin. Rock Magnesite also occurred in that section. Mr. Thomson spoke of the bounties which had been offered by the British Columbia Government on pig-iron produced locally and to the efforts which had been made to induce the Dominion Government to do something to assist those who might contemplate launching an iron and steel industry.