

THE STEEL INDUSTRY
OF
NOVA SCOTIA

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"THE STEEL INDUSTRY OF NOVA SCOTIA"

by

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INTRODUCTION

Steel is the basic material in the production of the entire mechanism of modern industry and transportation. Steel has been called the "core of capitalism". The very word is fraught with romance. It is the symbol of strength. The ramifications of its production include the ownership of mineral deposits, of coal mines, of huge plants - an integrated whole. The stress and conflict of the present economic era are reflected in the growth of the steel industry. The competitive system generated the desire and necessity of control, and in this process the introduction of huge amounts of capital followed. It was this necessity that led to the trust movement that involved the steel industry. To survive the ravages of competition, the huge corporations were evolved to secure control of the raw materials necessary for this basic industry. The significance of steel extends far beyond national boundaries. Control of raw materials has necessitated the scouring of the rocks of the world to uncover new supplies. It has been a potent factor in the war history of the past century. Steel has involved international finance in great conflicts for dominance of control, and the reverberations of these conflicts have torn the economic system. However, the steel industry, despite its ramifications, is not immune from the economic system. Since it is a basic industry, any dislocation of the economic forces is immediately reflected in the steel

industry. Consequently, the production of steel is a barometer of trade. As a result, the steel industry is either a "feast or a famine". It is characterized either by fierce intensity or by almost total inactivity. Under these influences, the earnings of "peak" periods must serve to enable the industry to weather the "troughs" of inactivity.

The successful production of steel is governed by competitive costs. The most potent factor in the cost of producing steel is the assembling of the raw materials. The two main raw materials required are coal and iron ore. The costs of mining these materials is of great importance. In the case of iron ore, the unit cost in terms of pig iron at the furnace is the criterion. These ores vary in iron content, e.g., per unit. There are certain definite limits to their economic development. The low relative value to their volume necessarily limits the range of transportation. Consequently the richer the unit yield the wider the transportation radius. The cost of producing coal, the pit-head cost, is the governing factor in that source of supply. In the development of coal and ore bodies, the conditions that surround the modern steel development demand that these deposits have certain qualifications other than being economically available. The first of these qualifications is that the deposits be of great extent. The heavy capital investment in iron and steel producing units of the present era necessitates the assurance of continuous supplies of

raw materials until the initial cost is amortized. In this connection, quantity takes precedence over quality. Other qualifications include the cost of transportation - the radius of rail haul is limited, but where water transportation is available, the radius is greatly enlarged. Ores from Newfoundland are charged in German furnaces. Then, too, the presence of certain chemicals in the raw materials affects their value. The cost of eliminating these chemical's beneficiation is often too expensive a procedure to warrant development. This is the case of the Canadian iron ores at present. As the richer and more adaptable ores are exhausted, these marginal ores will come into demand. The above qualifications on the cost of assembly modify one another to a great extent. It is a case of one definite advantage overbalancing other disadvantages. Ideal conditions for the development of an iron and steel industry would be a high grade metallurgical coal, available at low pit head cost, a rich iron ore from vast deposits, joined together by economical transportation facilities. Other factors complicate the situation. The labour question is of great importance, especially where different conditions prevail in two competitive areas. As these enter into the cost of the materials at the furnace, they may be included without further reference.

The advantage of the location of raw materials is a natural one. It cannot be modified to a great extent by artificial

factors. A successful iron and steel industry has to have the economic setting or it cannot survive. There are limits where artificial factors cease to exert any influence. However artificial factors within these limits can often eliminate disadvantages accruing from location. Under artificial factors can be classified methods of production and curtailment of competition by tariff protection.

The methods of production can often eliminate great advantages of natural location. The introduction of labour saving devices, the general efficiency of the productive equipment, the integration of the various processes and the continual research for methods of reducing operating expenses characterize various methods of production. Operating expenses in turn are qualified by volume production. The greater the volume of production, the greater the return and consequently the more rapid the amortization of the initial cost of the equipment. The continued research uncovers new methods that yield definite advantages. Obsolescence is continually threatening the productive equipment. However if the equipment can be written off and replaced by new technical developments, an extra advantage accrues to the particular project. The opposite results are the lot of the producer who cannot amortize his equipment. Volume production is governed by the market - the demand. This may be stimulated to a certain extent by artificial barriers to trade. However, the cost of production is the yard-stick. The lower the

cost of production the greater the competitive advantage and the greater the volume of business to the low cost producer. The low cost product can absorb the natural barrier costs of transportation and enter other markets. It is obvious that the ultimate cost of production is the determinant of the success or failure of a location. The general efficiency of the industry by eliminating waste strengthens this position.

In comparing the natural advantages of the steel industry of Nova Scotia with the above qualifications, one cannot help being impressed by the general coincidence. The industry is based on the coal that is available in immense tonnages within a twenty mile radius. The ore deposits in Wabana located at Bell Island, Newfoundland, contain a large portion of the available ore on the Atlantic seaboard. This ore is available at a moderate cost per unit of iron. The raw materials are connected by water, which enables cheap transportation in ocean vessels carrying 10,000 tons. The furnaces and plants are located on tidewater, with a definite advantage in location in respect to the European market. It is in the latter portion of the ideal qualifications - plant efficiency available to the capacity producer - that the Nova Scotia industry is found wanting. The history of the industry will show how the natural advantages of location were to a great extent eliminated by inefficiency -- in one form or another. The industry has its natural setting. The treatment on

the coal and ore deposits will show where the natural conditions attendant on these coal and ore deposits have tended to reduce the advantage of location. The tariff history will demonstrate the effect of the artificial barriers on the industry.

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SOURCES OF RAW MATERIALS:           The two principal raw materials used in the production of iron are coal and ore. There is also another raw material that enters into the smelting of iron -- limestone. Despite the proximity of these raw materials, there are several factors that tend to reduce the advantage of the location. These will be treated below in separate sections.

Prior to the utilization of coal as an ingredient in the smelting of iron, charcoal was the fuel used. The abundant forests provided the wood. The cutting was largely done in the winter time, when the hauling was facilitated by the snow. The work was chiefly done by the farmers of the district. The wood was charred in special kilns. The peculiar chemical qualities of charcoal imparted to the pig iron distinct characteristics that made the product valuable in special circumstances. However the development of steel almost totally displaced charcoal pig iron.

COAL:           The coal industry of Nova Scotia provided the foundation of the steel industry. In the past, it has undoubtedly been a great help to the steel industry in weathering the storms

of financial stress. There is, in this connection, a point on which considerable discussion has raged -- can the coal industry be separated from the steel industry, or are the two industries inextricably interwoven? The discrimination between the two industries is of vast importance to the labour interests, since a large proportion of the coal mines in Nova Scotia is controlled by the steel interests. The supply price of coal to the steel plants is the cause of grievance. The effect of reduced transfer price on the coal companies' earnings is naturally reflected on the wage agreements of the miners. The Royal Commission on the Coal Industry of the Province of Nova Scotia recommended that "the capital and other funds, as well as the operations of the coal companies should, so far as an accounting between operators and miners in respect of wages is concerned, be regarded as separate and distinct"<sup>1</sup>. However the scope of this thesis in regard to the coal industry is limited to a consideration of the coal mines as a source of raw material. It also is concerned with the comparative costs as a factor in the assembly of the raw materials.<sup>2</sup>

The Sydney coal fields, located on the Island of Cape Breton, are the source of supply of the iron and steel industry of Nova Scotia. These are old established collieries. From this area more than 130,000,000 tons of coal have been extracted since the

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(1) Royal Comm.- N.S. X1925-26 Report p.55

(2) For complete details - see Forsey E. "Social and Economic Aspect of the Coal Industry of Nova Scotia.

first workings began. The deposits are located on the north-eastern coast of Cape Breton. The workings are both subterranean and submarine, as the seams dip gently into the sea. Most of the mining to-day is carried on in the submarine areas, as the seams of coal on the land areas are largely exhausted.

"The Sydney has a frontage along the coast-line of some 35 miles and a maximum width inland of some nine miles. The land areas of the field consist of about 200 to 250 square miles. The extent of the submarine part of the field is still unknown. It has been proved for a distance of three and a quarter miles offshore, and as the strata throughout are free from serious faults or disturbances, so that the coal seams are regular and continuous, there seems to be every possibility that the field extends far beyond the present limit of economical mining. It is estimated that the quantity of available coal within five miles of the shore-line and recoverable under present economic conditions approaches 2,500,000,000 tons, of which about 70% is submarine. Figures much exceeding these are sometimes given, estimates differing according as different assumptions are made as to the distance the field can be economically worked seawards, and the minimum thickness of coal seam it will be profitable to mine"<sup>1</sup>.

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(1) Excerpts - "Canada - Geology, Mines and Metallurgical Industries" - 4-Ibid--pps. 31-32.

In the light of the above evidence on the extent of the coal deposits, there is no fear that there will ever be a fuel shortage in the steel industry of Nova Scotia. However, not all this coal can be classified as metallurgical coal. Some of it runs rather high in sulphur and for that reason it is useless for coking purposes<sup>2</sup>. The steel industry uses a large percentage of slack coal in its operations. Prior to the establishment of a large scale industry, a great deal of this slack was wasted. There was no local market to absorb it so it was simply left in dumps. Only fifteen per cent of the slack could be marketed. As a result the price was very low. The original price of slack was about 10 to 12 cents a ton. With the growing demand, the price gradually rose<sup>3</sup>. In 1899, the Dominion Iron and Steel Company made a contract with the Dominion Coal at \$1.20 a ton (slack - and "run of mine". In 1903, after the Dominion Iron and Steel Company had tried to run the coal properties on a lease, but without success, a new contract was made. The price was fixed at \$1.28 for fresh run of mine, with the option of supplying slack coal after 1907<sup>a</sup>. Difficulties over the coal problem led to the Courts. The Dominion Iron and Steel Company was forced to close down for a while due to the lack of fuel. Here is one example why the trust movement made such headway in the steel industry. Without control of the

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(2) See - History - Dispute between Dominion Iron VS. Dominion Coal.  
(3) Debates - 1925 - Cantlay p. —  
(a) See page 110 of this thesis. Section on History.

sources of raw materials, the position of a steel company is very precarious. Finally, in 1909, the Steel Company were awarded their damage claim. Shortly after a new contract was made at a contract price of \$1.55. In 1910, the Dominion Steel Corporation was incorporated to take over the holdings of the Dominion Iron and Steel Company and the Dominion Coal Company. From that time, the coal supply has been assured to the steel industry. In 1901, the Nova Scotia Steel Company amalgamated with the General Mining Association to insure a suitable supply of fuel.<sup>b</sup>

The costs of production in the Cape Breton fields are rather high, in comparison with the coal fields of West Virginia. The cost of labour is advanced as one of the reasons for the high cost in Nova Scotia, since the coal fields of West Virginia are not unionized. Labour represents 70% of the cost of mining coal. However the following contrast between the mines in the United States and the Cape Breton mines explains more thoroughly the difference in costs:-<sup>c</sup>

U. S. MINES.

CAPE BRETON MINES.

|     |                           |                                    |
|-----|---------------------------|------------------------------------|
| (1) | Subterranean              | Submarine                          |
| (2) | Thick seams 6 to 8 ft.    | Variable thickness 4 to 8 ft.      |
| (3) | Non-gaseous or nearly so  | Usually gaseous                    |
| (4) | Easy gradients            | Inclining 7 to 17 degrees.         |
| (5) | Strong roof               | Weak roof.                         |
| (6) | Absence of water.         | Wet mines.                         |
| (7) | Strong coal               | Friable weak coal.                 |
| (8) | Comparatively light cover | Variable to a maximum of 400 feet. |

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(b) See page 112 of this thesis. Section on History.

(c) Papers before Can. Mining and Metal. Soc'y - 1925 - Dunn p.513

The synopsis conveys the difference very markedly. The submarine workings are very wet, necessitating a large outlay on pumping equipment. The weak roofs have to be propped with timbers -- a costly process. The gaseous condition of the mines demands precautionary measures to prevent explosions. These include stone-dusting, extra ventilation and other measures. The steep pitch of the mine shafts necessitates special hauling apparatus and the maintenance of large power plants to supply the necessary energy. The friable coal of the Cape Breton mines runs a high percentage of slack -- about 30% -- and in addition, depreciates rapidly when banked. The unusual depth of the mines combines with the other costs to make the cumulative costs well above the West Virginia pit head costs. The following tabulation of costs over a period of years establishes this fact:-

Cost of Coal Production  
Nova Scotia.

|         |       |        |      |       |        |
|---------|-------|--------|------|-------|--------|
| 1912-15 | ..... | \$2.00 | 1921 | ..... | \$4.35 |
| 1916    | ..... | 2.40   | 1922 | ..... | 4.00   |
| 1917    | ..... | 2.75   | 1923 | ..... | 3.80   |
| 1918    | ..... | 3.20   | 1924 | ..... | 3.60   |
| 1919    | ..... | 3.45   | 1925 | ..... | 3.68   |
| 1920    | ..... | 4.45   | 1926 | ..... | 3.60   |

The same article declares that the cost in Great Britain is approximately the same as above. The cost of production in the West Virginia and Kentucky fields is "less than a dollar". While in the Pennsylvania district the "average is approximately \$2.25".(1)

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(1) F. W. Gray - "Coal Trade in Nova Scotia" - 1928 - p.418 -  
Annual Report - Canadian Institute of Mining and Metallurgy.

Table "C" of the Report of the Royal Commission of Nova Scotia on the Coal Mining Industry - 1932 - provides an index of cost of production based on 1926. By taking the above figure in the table, the money rate can be deduced.

Cost of Production  
Nova Scotia.  
Increase over 1926

|      |       |           |       |            |
|------|-------|-----------|-------|------------|
| 1926 | ..... | Base Year | ..... | \$3.60     |
| 1927 | ..... | 0.21 plus | ..... | 3.81       |
| 1928 | ..... | 0.41 "    | ..... | 4.01       |
| 1929 | ..... | 0.42 "    | ..... | 4.02       |
| 1930 | ..... | 0.46      | ..... | 4.06       |
| 1931 | ..... | 0.55      | ..... | 4.15 x (2) |

This is despite the increased use of the "longwall" system of winning the coal from 2% of the tonnage, mined in 1926, to 36% of the tonnage produced in 1931. (3)

In the face of these rising costs, the Commission advocated the closing of several pits, which were an undue burden on the operations as these were operated at a loss. The cessation of operations in these collieries will displace 2700 men. (4)

The Report points out that while costs can be temporarily reduced by reductions in wages, this method cannot be conceived as a permanent measure. "The aim must be to place the collieries upon such an economic basis that both operators and men will ultimately be able to participate fairly in more prosperous times". (5)

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(2) Royal Comm. - 1932 - Appendix "C" x F. W. Gray - Ass't to Pres. of the British Empire Steel. The figures are semi-official.

(3) Ibid. - p.26.

(4) Ibid. - p.21. (5) Ibid. - p.26

Other excerpts from the Report on the costs of production include the following:- "It is unreasonable to expect unlimited support to be given - (by the Federal Government) irrespective of cost efficiency at the pits. We venture to say that the need for decreasing colliery costs is, from every point of view, imperative."<sup>1</sup>

"It is expected .....to effect a saving of sixty cents per ton of the output. To effect these savings, it will not be necessary to expend much more capital than if the development were to continue on present lines. Had such a policy of long planning been possible earlier and had these economies been effective to-day, it is not, we believe, an exaggeration to say that a market for at least another million tons of output would have been available now, with adjustment of wages."<sup>2</sup>

The above reflection on the previous cost figures seems to indicate that these could have been lowered long before the date of the Report. The effect of lowered cost figures on the steel industry can be gathered from the following excerpt:-

"The requirements of the steel plants are the greatest help in evening up the disparity between summer and winter production; and how important this is may be gauged from the fact that over a period of thirty years, no less than 25% of the production of the Dominion Coal Company's collieries was used at the Sydney steel plant. But the steel plant requirements are for coal of selected quality and in recent years have been reduced by the partial operation of the steel works".<sup>3</sup>

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(1) Royal Com. - 1932 - p.23.

(2) Ibid. - p.23.

(3) F. W. Gray - "Coal Trade in Nova Scotia" - p.417

The indirect effects of enlarged markets for coal accrue from the necessity of the mines to operate continually, under conditions of large demand. Freshly mined coal has two great advantages to the steel industry. In the first place, the carrying charges, e.g., interest, on large supplies of banked coal added materially to the cost of the coal.<sup>4</sup> Secondly, the by-product yield from freshly mined coal is larger than from banked coal.<sup>5</sup> These are two advantages that indirectly accrue from the increased markets for coal.

The sum total of these economies is considerable. There is a promised saving of sixty cents per ton of coal, and there will be indirect savings possibly totalling ten cents a ton. This net saving of seventy cents a ton will offset the cost of washing the coal - 68¢.<sup>6</sup> Then, the bounties of forty-nine cents per ton of coal used in the production of steel give considerable aid in offsetting the spread in the cost of coal.

The conclusion to be reached at this point is that the coal supply has in the past been too costly, owing to inefficient methods, and while these did not affect the Dominion Iron and Steel Company directly<sup>7</sup> (since 1923 this plant received

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- (4) Algoma Steel Corp. Brief to Advisory Board on Tariff and Tax.-1928-Estimate that carrying charges amount to 10.81 cents per ton of coke. (One ton of coke equals one and a half tons coal).
- (5) Brief - This loss adds five cents a ton to the coke cost.
- (6) Evidence - Reference 2 - Iron and Steel - p.134 - Nov. 27-28-29 - 1928.
- (7) Evidence - Royal Comm. - N.S. - 1925 - Mr. Wolvin p.3102.

its coal at \$3.00 per ton) they militated against the future costs of coal. However, at the present there is an attempt to rectify matters and any betterment is sure to be reflected in the steel industry of Nova Scotia.

While there is no doubt that the steel industry of Nova Scotia benefited to a considerable extent at the expense of the coal industry, it must be remarked that the inefficiency in the coal industry made this appear much greater than it would otherwise have been. After all, it must be remembered that if the merger with the coal interests did not make coal available at reduced rates, there would have been no advantage to it. Consequently, if the cost of production to the Coal Company was higher than it ought to have been, the Steel Company was not benefiting. The danger of such a procedure is the future. To produce steel at competitive prices, the industry must be certain that the price of coal will increase on a general trend. Otherwise, a day will come when the cost of coal will be a barrier to the markets of the world for the Nova Scotia steel industry.

IRON ORE: The advent of large scale production changed the iron ore situation in Nova Scotia. A similar reaction was experienced in Ontario. To-day, as a result of the new set of conditions that sprang into existence, little or no iron ore is mined in Canada<sup>1</sup>. This condition is viewed with alarm by certain

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(1) 2478 tons - "Iron, Steel & Products - 1929.

sections of public opinion. Every now and then, there arises a movement for the development of native ores. The old "ad populum" argument -- Canada's vast natural resources -- is paraded before the populace. However, on closer examination, the native ores do not possess the necessary qualifications. Only ore bodies of first magnitude will support a steel industry. Three conditions govern the classification of such deposits: (a) the visible reserve must be of vast capacity: (b) the production must be consistent in quality: (c) production must be steady. In addition to these requirements, the factor of transportation must be considered. As a result of these definite requirements, native ores cannot be economically developed at present. Undoubtedly, as the deposits of first magnitude are exhausted, the ores of minor importance will be exploited. Many deposits are placed in the latter category because they are below the standard of iron content. This standard ranges from 25% upwards. Below this standard, competitive commercial costs must be compensated by other factors -- low cost of extraction, absence of chemical components that render the ore difficult to smelt, or low cost of transportation. Another method -- beneficiation -- can be used, if circumstances permit. By this term is meant "the raising of the quality of the ore as originally mined to the status of a commercially salable ore, in competition with other areas naturally endowed with the requisite quality characteristics."<sup>2</sup> It implies

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(2) Iron & Steel of Canada - 1926 - p.160 - July.

an additional cost to be added to the cost of the product. The success of this method of ore development is governed by competitive costs. The economic conditions existing in Canada to-day militate against the use of this method of development.

There is no cause for concern about this state of affairs. A survey of the steel industry of the world indicates that the same conditions exist, to a greater or lesser degree, in all steel producing nations. The iron and steel industry of Great Britain has utilized the ores of Bilbao, Spain and those of North Africa. Germany has placed considerable dependence on the ores of Newfoundland, North Africa, and Sweden. Even the United States, with the largest producing deposits in the world, e.g., Mesabi, draws some of its ore from Cuba and Brazil. The tendency is to draw on the large deposits. Under existing conditions, it is the exception rather than the rule to manufacture steel entirely from native ores. Canada is dependent on two main sources of supply for her iron ore -- the Lake Superior deposits and the Wabana deposits of Newfoundland. The Nova Scotia steel industry is dependent on the latter. With the acquisition of these deposits in 1894, the future of the Nova Scotia industry was assured with regard to the iron ore supply. It was the most important factor in the history of the industry.

Prior to the discovery of Wabana, the native ores were held in high esteem by geologists of the world. It was only the growth of the large scale industry that relegated them to a position

of unimportance. The presence of iron ore had been detected very early in the history of the country. In 1604, Sieur de Monts, Lieutenant Governor of Acadia, recorded the discovery of a quantity of iron ore on the shores of St. Mary's Bay<sup>1</sup>. This was the first of a series of discoveries that were to be made during the course of the following four centuries. The early enterprises depended upon these ores, which were smelted with charcoal in crude furnaces. The rapid development of the iron industry in Great Britain, during the first half of the nineteenth century, was reflected in the attention given the ores of Nova Scotia. Specimens of iron produced from these ores attracted great notice in the metallurgical world. Sir Wm. Fairbairn in his volume on "Iron, Its History, Properties and Processes of Manufacture", published in 1862, commented on the specimens on display at the Colonial Exhibition of 1862 - "In Nova Scotia some of the richest ores yet discovered occur in boundless abundance. The iron manufactured from them is equal of the very best quality, and is equal to the finest of Swedish metal"<sup>2</sup>. The enthusiastic report on the iron deposits of the Cobequid Hills by Sir Wm. Dawson, culminated in the Londonderry enterprise<sup>3</sup>. In 1875, Sir Wm. Dawson wrote of the iron ore deposits in "The Iron and Coal of Nova Scotia, a Source of

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- (1) Haliburton - "History of Nova Scotia" - p.12.  
(2) Fairbairn - "Iron, its History, Properties and Processes" p.34  
(3) Dawson Wm. - "Acadian Geology" p. 582.

Wealth to the Dominion."

"It is a remark often made that the iron ores of Canada, rich and magnificent though they are, suffer in their practical value on account of their distance from the mineral fuel required, in so great a quantity, wherever smelting processes are undertaken on a large scale. To a certain extent, better means of communication and larger and more economical working will remove this disadvantage. It should, however, be borne in mind that the great iron deposits of Nova Scotia, equal in extent and value to any others in the Dominion, are not so situated, but lie in close proximity to some of the greatest coal fields of the world. We need only glance at the Report of the Geological Survey of Canada for 1873-74.....to see that this is a fact. Even in Great Britain itself, their two great staples of mineral wealth are not in most enviable continuity, and the iron ores of Great Britain are in general neither so rich nor so accessible as those of Nova Scotia. This is most especially true in the case of the magnificent deposits of the Acadia Mines and with the still more extensive beds and veins in the county of Pictou".

The above was written at the time when Great Britain was the Colossus of the iron trade of the world. The effect on the Canadian people can be readily imagined. However the "ways of nature are unscrutable". The ores of the Acadia Mines were abandoned, because the known deposits proved unsatisfactory, and the expense in connection with further exploration was too great and the returns too doubtful<sup>1</sup>. The Pictou County ores also proved a disappointment as the actual experiments of the Ferrona blast furnace demonstrated. These ores were then displaced by those of the Wabana deposits.

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(1) Drummond - "Minerals and Mining in Nova Scotia" - p.68.

However, for many years there were people who were convinced that Nova Scotia was well adapted for the production of iron from domestic ore. At the time of the "Whitney Legislation", in connection with the formation of the Dominion Iron & Steel Company, the Attorney General concluded his speech on this triumphant note:-

"I expect to see great capitalists coming to other counties in this Province and building blast furnaces, and taking hold of the iron industry of Nova Scotia, so that in a few years our young men may see Nova Scotia, not at a standstill or a little Province of 400,000 people, but the very centre of the industrial life of this Dominion, of which it is part". (1)

The other famed deposits of Nictaux - Torbrook, the scene of early enterprises in the iron industry, enjoyed a longer lease on life. In 1912, a considerable sum of money was spent on development work, a spur line railway was built and a large shipping plant constructed. Only one or two cargoes were shipped and shortly after the workings were abandoned.(2)

Despite the optimistic reports of the geologists, the record of the past enterprises in the Nova Scotia industry which ended in failure is mute testimony that the ores were hard to smelt. It must be acknowledged that lack of skill also played a prominent part in these cases.

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(1) Drummond "Minerals and Mining in Nova Scotia" - p.64.

(2) Drummond - p.68

Drummond maintains that the native ores were very disappointing. He states that the Geological Survey had "been diverted from the opinion (that the ores were economically available) within the past few years" (1918)<sup>1</sup>. He quotes Col. Cantlay on this point:-

"In general, it may be said that the iron ore resources of Nova Scotia have been very disappointing, in view of the many evidences of the wide-spread existence of iron oxide. Moreover, with one possible exception (Nictaux) no deposit of the extent, or containing ore of the necessary quantity to warrant the establishment of, or to sustain, a modern iron and steel industry has yet been found. By this statement, the writer does not intend to assert that merchantable ore cannot be mined on a small scale and sold in the markets of the world".<sup>2</sup>

The early predictions of the geologists must be weighed in the light of the requirements of the early industry. Enterprises were launched on the assurance of ore beds containing high quality minerals. It was only natural that the quality of the ore fed to the furnaces was of first importance. The ore capacity of the furnaces was small -- a few tons a day -- and consequently the yield of the ores was the first concern. Slag losses reduced the yield per ton of ore charged, and the richer ores only produced the equivalent of present day practice - using lower grade ores compensated by greater efficiency from modern furnaces. Moreover the whole plant generally consisted of a single

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(1) Drummond - "Minerals and Mining in Nova Scotia" - p.64.

(2) Col. Cantlay - viz. Drummond p.67

furnace, whose ore appetite was small. With the application of the principles of mass production, the whole picture was changed. Batteries of furnaces replaced the single unit. Ore requirements rose to hundreds of thousands of tons per annum. Quantity replaced quality as the criterion of exploitation. Eckel, writing in 1921, on ore deposits, declares:-

"Tonnage and transportation are, therefore, the prime requisites; quality is still important for it affects the cost of the product, but, within limits, it is less important than the other two factors."

"The old order changeth, yielding place to new". And so with the native ores of Nova Scotia. Wabana was discovered. A new era dawned on the steel industry of Nova Scotia. Had there been no Wabana, in all probability there would be no Nova Scotia Steel Industry. There would have been no Nova Scotia Steel -- no Dominion Steel.

Just as the Wabana deposits of Bell Island, Newfoundland, provided the missing element for the growth of the Nova Scotia steel industry in the first years of the present century, so now all possibilities of future growth spring from the same source. The tendency of the modern steel industry of the world is to concentrate on certain deposits for the source of supply. These deposits dominate their particular market. The ores are generally brought to the coal supply for the simple reason that the ratio of coal to ore per ton of pig iron is one and a half to one. (1)

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(1) This varies with the chemical composition of both ore and coal.

Exceptions to this rule often exist as exemplified by the steel industry in Ontario, where both imported ore and imported fuel are employed in the production of pig iron. These conditions are governed by a series of special economic features - the location is in the pathway of the stream of ore that passes through the Great Lakes in very large quantities en route to the furnaces of the United States, and similarly benefits from the returning stream of coal that is carried by the ore boats on the back haul. In addition, cheap transportation is offered for the ore by the water route and the heavy volume of traffic that passes the route. The coal is imported from the United States where it is available at a competitive cost and transportation is both by rail and water. The rail transportation is not as costly as may be first imagined, because the main traffic is coal and ore, with rates to suit these products. The raw materials are imported into the area free (by means of a 99% drawback on coal). The finished products of iron and steel are protected by the imposition of a tariff. The location of Ontario is within the radius of the great iron producing region of the United States that extends below the border to Pittsburg. All this area is dependent on the coal fields of Pennsylvania, West Virginia and Kentucky, and the iron ore deposits of the Lake Superior region. The Nova Scotia industry depends on the local coal fields and the adjacent ores of Wabana. These ore deposits dominate the Atlantic market. Modern conditions of long ocean

hauls at competitive figures enable this condition to exist. As a consequence of this condition, there will be a tendency for the steel plants of the world to locate on tide-water as the local supplies of ore become exhausted, so that these ore supplies may be substituted. To date the drain upon the Wabana ore deposits has been very small in comparison to the reserves. (See table in Appendix). Such has not been the case in the Lake Superior region. Already beneficiation is being utilized to enable the lower grade ores to be used.<sup>(1)</sup> The exhaustion of the Lake Superior ore has been forecast.<sup>(2)</sup> The result of this should be the utilization of the Wabana ores in their stead. The location of the Nova Scotia coal areas suggests that instead of carrying the ores over long distances, the tendency will be to locate in Nova Scotia. However fantastic this process of reasoning may seem, the qualifications of Wabana ores seem to support it. Any future growth will be contingent on the ore reserves of Newfoundland rather than the coal deposits of Nova Scotia. To insure this future, the development of the coal deposits must be undertaken with the future possibility of an enlarged iron industry always in view.

The purchase of the Wabana Ore Deposits represented the culmination of unsuccessful efforts on the part of the present Nova Scotia Steel Company to secure a dependable supply of ores for

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(1) Advisory Board on Tariff and Taxation - Reference 2 - Report of January 29, 1929 - p.10 et seq.

(2) See table in Appendix.

the furnace at Ferrona. Considerable money had been devoted to prospecting ores in the district, but the results were far from satisfactory. Iron ore was known to exist for many years on Bell Island, but there had been no attempt prior to 1893 to exploit these resources. At that time, the property was owned by Messrs. Butler of Topsail, Nfld., who, after vainly endeavouring to interest other capital in the venture, finally, by devious means, aroused the interest of the Nova Scotia Company. The New Glasgow Iron, Coal and Railway Company (a Nova Scotia Steel subsidiary) acquired the property on a royalty basis in 1893 with the option to purchase the property at an agreed figure.<sup>(1)</sup> In 1895, the Scotia Company began to mine the ore - the first cargo loaded with ore left Wabana on Christmas Day 1895. At the outset operations consisted entirely of open cut mining, the earth being stripped from the top of the deposit as it lay in the ground, and the ore was carried to a pier at the south side of the island by an endless rope tramway.<sup>(2)</sup>

The location of the Wabana deposits is important. The very name "Wabana" is an Indian word which well describes the general location, meaning "the place where light first shines"<sup>(3)</sup> This is literally true as the mines are located on almost the most easterly land in America. Bell Island is located in Conception Bay,

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(1) Drummond - pages 206-217.

(2) Cantlay - Dominion Royal Comm. Evidence - 1914 - p.70.

(3) Ibid. - p. 71.

an inlet situated a few miles from St. Johns, the capital of the Dominion of Newfoundland. The bay provides a fine harbour for the vessels loading ore. It is simply delivered from the mine and dumped into the loading bins, from which the ships are quickly loaded.

The possibility of export markets led to the installation of more complicated and efficient machinery. Storage pockets were constructed to handle the increased production, and a horizontal ore conveyer was installed. Additional working faces were uncovered to permit the increase and the rail equipment was brought up to requirements. The export trade proved fair and held great potential possibilities. Shipments were made to Germany and the United States. The original equipment had been well planned and the augmented production was accomplished without any great stress. An ideal start had been made and the deposit had been secured on very favourable terms. Jeans says for \$120,000.<sup>(4)</sup> At the latter figure, it was a most fortunate investment. Four years later, in 1899, the Dominion Iron and Steel purchased the lowest of the three parallel beds which had been developed by the Scotia Company. The reported price of purchase was \$800,000.<sup>(1)</sup> The pier and shipping equipment was sold at a separate sale.<sup>(2)</sup> At the time, it was supposed that the

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(4) "Canada - Resources and Possibilities" p.124.

(1) Jeans - "Canada's Resources & Possibilities" p.124

(2) Report of Can. Inst. - of Min. & Metal. - 1927.

Scotia Company had parted with the major share of their holdings. However subsequent developments were to show that the submarine holdings of the latter Company were of tremendous size and greatly exceeded the land holdings of the Dominion Iron & Steel Company. On the sale of the portion of the holdings in 1899, the Scotia Company began to open up the middle or Scotia bed of ore, in order to insure a continuous supply. Development work proceeded swiftly, and when the time came to turn over the old beds to the Dominion Company, the new beds were ready to produce sufficient ore. Tramways had been constructed, a new pier had been built and the production went ahead without the slightest hitch in the deliveries, despite the sale of the original property.

Under the sale contract, the Dominion Iron & Steel Company secured the upper and lower of three beds of ore and also got a block of submarine areas lying next to the shore and containing about 3 square miles. The land areas of the ore beds overlap. When the Scotia land areas were exhausted, it was necessary to go through Dominion Iron & Steel Company's property. This more or less community of property was a strong argument used on behalf of the merger into the British Empire Steel Company's unit in 1921. In the submarine areas, each Company owns all the ores in its own holdings. So with the merger in 1921, the British Empire Steel had a monopoly on the ore supply.

In 1900, on the construction of the new pier and ore pockets, some fine equipment was installed. Aided by the handiwork of nature, a crevasse in the vicinity was turned with very little expense into a huge ore pocket. It was not until 1902 that the open face methods of mining had to be abandoned and shafts driven. In a short time, two mines were opened up and were being worked in the manner similar to coal mining. Of these two Scotia shafts, one was destined to the submarine areas. In 1905, the possibility of the submarine areas was fully realized and the addition of further areas to the existing holdings was made. The Scotia Company acquired in all some 35 square miles of submarine deposits and the Dominion Iron & Steel Company increased their areas to 5 square miles. Of these last submarine areas 3 square miles adjoin the shore, and the other 2 square miles adjoin the property of the Scotia Company - one mile in width at this point. The remaining Scotia holdings are beyond. So even in the submarine areas, access to the other holdings gave rise to a community of interest. (SEE MAP).

"The Upper Seam has an area of 70 acres on the land area and varies in thickness from nine feet at the Western end to four feet at the Eastern outcrop. The seam contains ore varying in quality from 56% to 51% and the silica varies from six to ten per cent. This seam, as the name indicates, is the highest seam in the series and is separated from the Scotia seam, which it

overlaps by about fifty feet of strata. Up to the present year (1914), the Upper Seam was owned and worked in a small way by the Dominion Iron & Steel Company. On account of the small distance between this seam and the lower one, operated by the Scotia Company, it was impossible for the latter Company to mine out all the ore in a large portion of their seam, for, unless sufficient was left as pillars to support the roof, the consequent caving-in would extend upward into the Upper Seam and make it impossible, or extremely difficult, to recover the ore by the ordinary process of mining. Accordingly, during the present year (1914) the ore in the Upper Seam in the land areas was disposed of to the Scotia Company, who will be able, after they have removed it, to recover a large portion of the ore contained in the pillars of the underlying mine. The Dominion Company still retains possession of the seam in the submarine areas for one mile under Conception Bay".

"The "Scotia", or middle seam, is owned in the land areas by the Scotia Company, and in the submarine areas (near shore) leased by the Dominion Iron & Steel Company. This seam varies in thickness from seven to nine feet and carries about 52.5% iron. It has been extensively worked on the land areas for the past 15 years and at present (1914) is practically worked out. In 1906, the Scotia Company, who also owned the second (outside) submarine areas opened negotiations with the Dominion

Company and in 1907 obtained permission to continue their Number Two slope into and through the inshore submarine areas of the latter Company to their own area, one mile distant from shore. The slopes driven under this agreement are to become the property of the Dominion Company, after the Scotia Company has completed return slopes or tunnels through the rock underlying the lower seam from their outside areas to a point south of the outcrop or lower seam. These slopes, commenced in 1906, reached the outside areas in January 1909. During the driving, the continuation of the ore beds through the Dominion property was conclusively proven and the seam made a substantial gain in thickness as well as in the quality of the ore. The "lower" or Dominion seam is situated 243 feet below the Scotia seam and outcrops about 2,000 feet south of it. The height of this seam varies from eight to fourteen feet. (1)

Below are adduced the reports of two London firms of engineers who examined the deposits in 1909 and 1911. Merricks, Crane & Company, London, conclude the report with the following:- "After a careful and thorough examination of the property, we have no hesitation in saying that it is of exceptional value. Not only does it contain a very large quantity of ore of good quality, but the thickness and regularity of the deposits, combined with the natural facilities for working, handling and shipping, enable the ore to be mined and delivered on board at a very low cost". (2)

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(1) Evidence - Dominion's Royal Comm.-Newfoundland 1914-p.70 et seq  
(2) " " " " " 1915-p.75-76

A. M. Strushberry, A.R.M.S., reports in 1911:- "The ore when mined is in admirable physical condition for direct treatment in the blast furnace. The continuous regularity of the deposits has been proved for 19,000 feet in one direction and 10,000 feet in another.....The middle seam has been opened by two parallel slopes 10,000 feet in length, proving the unbroken regularity of the beds over this distance.....The main ore body shows no sign of diminution in a distance of 19,000 feet in one direction and 10,000 feet in another.....The amount of water is small.....The roof is good and does not require to be timbered.....The faults are simple and are of little hinderance"<sup>(2)</sup> The phosphorous in the ores averages .8% to .85%. It was this high phosphorous content that confused the Dominion Iron & Steel when it built its early Bessemer plant.<sup>(3)</sup> The ores of Wabana are non-Bessemer ores. However, while this was disappointing in the early years of the Dominion Iron & Steel Company, the general trend of the steel industry has been from Bessemer to open hearth steel. Consequently these ores are ideal for the more general demand.

Estimates of the tonnage of the Wabana deposits have grown greatly as the workings have been extended and the consistency of the seams, both as to thickness and as to quality, has been maintained. The first estimate of the deposits was two hundred million tons. This was before any submarine areas were developed

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(2) Evidence - Dominions Royal Comm.-1915-Newfoundland-p.75-76

(3) See Chapter on History - p.107.

and at a time when it was unknown whether the deposits continued  
 (4)  
 under the sea. The next important estimate was given when the first submarine slope was being driven and the seam fulfilled all expectations. The quantity was placed at four hundred thousand tons. Later when the levels began to stem from the main slope in different directions ~~and~~ the seams were found to gain in thickness. The ore increased in some places to as much as thirty feet. E. C. Eckel, noted American geologist, who has devoted considerable time to study of the Wabana deposits places the reserve tonnage at 4000 millions of tons, with a duration of 4000 years on the present basis of production. He ranks the Wabana deposits third in the world supply of ores.

| <u>REGION</u>        | <u>ORE RESERVE<br/>MILLIONS OF TONS</u> | <u>ANNUAL SHIPMENTS<br/>MILLIONS OF TONS</u> | <u>DURATION<br/>YEARS</u> |
|----------------------|-----------------------------------------|----------------------------------------------|---------------------------|
| Brazil               | 7500                                    | none                                         | - -                       |
| Lorraine             | 5600                                    | 40                                           | 140                       |
| <u>Newfoundland</u>  | 4000                                    | 1                                            | 4000                      |
| Cuba                 | 3000                                    | 2                                            | 1500                      |
| Lake Superior U.S.A. | 2500                                    | 55                                           | 45                        |
| Southern U.S.A.      | 2000                                    | 6                                            | 333                       |
| Scandinavia          | 1500                                    | 8                                            | 188                       |
| Great Britain        | 1300                                    | 16                                           | 81                        |
| Spain                | 700                                     | 10                                           | 70                        |
| Northeastern U.S.A.  | 600                                     | 2                                            | 300                       |

(5)

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(4) Drummond - p. 215

(5) Eckel E. C. - 1920 - "Coal, Iron & War" - p.140

While the matter of 4000 years duration is of little concern to anyone living to-day, still it is reassuring in that the deposits can be exploited to the full demand of the market, without any fear of cessation of supply.

During the world war, development work on the deposits was greatly retarded. However on the cessation of hostilities, work was pushed with renewed vigour. Finally in 1919, the No. 3 slopes were completed. These were started in 1914, but were retarded by lack of labour during the War. The completion of these slopes insured the Nova Scotia Steel an uninterrupted supply of ores, as complete access to the submarine deposits has now been obtained. These new slopes were driven so that the No. 2 slopes, driven 4000 feet through the submarine ore deposits of the Dominion Iron & Steel Company, could be surrendered to the latter as per agreement when first driven. The No. 3 shafts consist of two parallel slopes each two miles long, and each with a cross section of 10'x17' at an average grade of about 13% from the main level of the Scotia submarine mine to the surface near the outcrop of the lower bed of ore. These slopes give access to the thickest section of the vein in the mine, two miles from the outcrop.<sup>(1)</sup> The normal output is about 1200 tons per day on these new slopes. The equipment of the Wabana Mines is of a high calibre. Power utilized is both electric and compressed air. Water pumping

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(1) R. E. Chambers - "No. 3 Slopes of Wabana" - Iron & Steel of Canada - March 1920.

equipment is also provided, although the quantity of water in this mine is not great. Hauling facilities have been developed to a high degree of efficiency. Mechanical loaders are used to a great extent in the Wabana Mines. Local conditions adapt themselves to the efficiency of the latter, as the great height of the seam, the width of the passages and necessary tremendous blasts provide ample working space and plenty of material for the shovels to load. The ores are loaded into mine cars by mechanical shovels. The load is then transferred into larger cars which are hauled up to the deckhead and thence to the stockbins. The hoist up the slopes is about 13,000 feet and the twenty ton cars travel about 3500 feet a minute. The haul to the shipping pier is in tramways and the distance is about two miles. The loading equipment is very elaborate and the ore can be loaded at the rate of 2000 tons per hour. The harbour is excellent and a ship with a carrying capacity of 13000 tons can lie afloat at all tides. While the output of these deposits has not in the past exceeded 1,500,000 tons, the present development has a capacity of about 3,000,000 tons without difficulty. "In spite of the fact that they are submarine, Wabana ore is probably the cheapest iron ore available for delivery at eastern Atlantic, or in German or in European ports. These ores can be mined and shipped at a low cost". (1)

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(1) Handbook for Empire Mining & Metallurgical Congress - 1927.

The strategic position of the deposits is responsible for the export trade as it is practically mid-way between the iron centres of the two continents. The distance from the principle markets is as follows:-

| <u>PLACE</u>   | <u>DISTANCE FROM WABANA</u> |
|----------------|-----------------------------|
| Sydney, N. S.  | 415 miles                   |
| New York       | 1110 "                      |
| Philadelphia   | 1240 "                      |
| Glasgow        | 1900 "                      |
| Rotterdam      | 2300 "                      |
| Middlesborough | 2350 " (1)                  |

The development of the export market for the Wabana ores was retarded by the outbreak of the World War. The immediate period of years that followed the cessation of hostilities was also unfavourable for the growth of this trade, which is chiefly with Germany. However, by 1928 considerable progress had been made and for the first time in the history of the deposits, the quantity of ore exported to Great Britain and Europe exceeded one million tons.<sup>(2)</sup> The future for this ore trade is very bright, and should provide, as a result of enlarged volume, even cheaper ore for the furnaces of Nova Scotia. The government of Newfoundland levies an export tax on the production of the ore that is used in the Nova Scotia furnaces, the other ore destined for Europe and Great Britain is free.

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(1) Evidence - Dominions Royal Commission - 1914-p.74 Newfoundland

(2) See Table on shipments of ore from Wabana - 1896-1930 in Appendix.

The ore situation as regards the steel industry of Nova Scotia is the brightest aspect of the whole situation. The ore deposits compare most favourably with the ideal ore deposit. Costs of assembly at the furnace are very favourable. The ore deposits are an invaluable asset to the steel industry of Nova Scotia. This value, however, will be realized only as the demand for ore increases to raise the output of Wabana to five or ten million tons per annum. The value of these ores to the coal industry of Nova Scotia lies in the fact that if the deposits did not exist, there would be no coal used in the smelting of ore, as no ore would be smelted.<sup>x</sup>

The third of the necessary raw materials is limestone. This is used as a flux in the smelting of the ore. Consequently, it is essential for the production of pig iron. For years the steel industry of Nova Scotia used native limestone. This was quarried in different parts of the Province, as near as possible

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x The following general references were used in the section on Iron Ores of Wabana.

Eckel E. C. - "Iron Ores" - 1914.

" - "Coal, Iron and War" - 1920.

Evidence - Dominions Royal Commission - 1914 - Newfoundland Page 70 et seq.

Cantlay - Journal Can. Mining Institute-vol.xiv pp.31-35

Iron and Steel of Canada - Interim Excerpts.

N.S. Mining Society - Reports.

Mineral production in Canada - Ottawa - yearly.

to the scene of the smelting operations. However, of late years the local supply has been found inadequate and a considerable quantity had to be imported. The Nova Scotia steel industry depends on the deposits of Port au Port, Newfoundland, for over two-thirds of its total supply.<sup>(1)</sup> The other refractories used in the blast furnace lining - dolomite, silica, etc., are obtained largely from native sources. The Dominion Steel and Coal Corporation operate a dolomite quarry at Marble Mountain, N. S., and have at the works in Sydney a brick plant for making special silica and other brick for lining the blast and open-hearth furnaces.

The by-products that the coke ovens produce aid materially in reducing the cost of coke-making. Special recovery apparatus of a very elaborate nature is designed to extract these by-products. Nova Scotia coals as treated at Sydney, are said to yield about ten gallons of tar, five to six pounds of ammonia, which is recovered as ammonium sulphate, and various other light oils that can be mixed to produce benzol, toluol, etc. The gas yield per ton of coal is about 11,000 cubic feet, the half of which is used to heat the ovens. The other half is used for industrial purposes in the plant. This gas is very valuable for that reason. It is used in soaking pits, and in some instances is used in the open hearths. The utilization

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(1) Advisory Board Tariff - Taxation - p.130 - Nov.

of these gases is important in the interests of efficiency. The most important by-product of the Nova Scotia industry. The Dominion Tar and Chemical Company at Sydney absorb all the production. Another product is available - basic open hearth furnace slag, which on account of its high phosphorous content is unexcelled as a fertilizer. The sale of this yields a small revenue. (2)

The by-product plant is very important. The great development of these plants in other countries have made them an important incidental production process in the industry. Large savings are effected by this medium. The equipment at Sydney, installed in 1919, is of the finest available. However, only the crude products are extracted, being sold in this state to Chemical Companies.

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(2) A. W.G. Wilson "Development of Chem. Metal Industries
Iron & Steel of Canada - Interim Excerpts.

HISTORY OF THE EARLY INDUSTRY

Prior to 1897 Nova Scotia had been called the cradle of the Iron Industry in Canada. This is only true in the light of present day developments, since the first roots have blossomed into huge plants at Sydney and New Glasgow. The St. Maurice Forges of the Province of Quebec smelted the first ores and produced the first iron in Canada. In 1737, Louis XV authorized "La Compagnie des Forges" to erect an iron-works at St. Maurice (three miles west of Trois Rivieres) and for this purpose advanced it 100,000 livres and claimed no rent or dues.⁽¹⁾ This initial enterprise was the forerunner of several others in the Province of Quebec. However, technical changes and the lack of raw materials forced Quebec to withdraw from the primary industry.

In 1787, definite action was taken in Nova Scotia for the establishment of an iron-works. The presence of ore deposits had been common knowledge for a long time. Sieur des Monts, Lt. Governor of Acadia, had discovered a vein of ore at St. Mary's Bay, west of Digby, in 1604, while surveying the coast for Henry IV of France. Outcrops of ores had been discovered at various spots

(1) Bartlett - "The Manufacture of Iron in Canada". p.9.

in the counties of Digby and Annapolis. However, no attempts had been made to smelt these ores. Consequently, in 1787, three prominent members of the Nova Scotian Assembly, Thos. Barclay, Thos. Millage and Alex. Howe, representing Annapolis County, were appointed a Committee by the Assembly to investigate and to report upon the propriety of granting bounties toward the erection of a furnace for smelting native ores and their manufacture into bar iron. The report of the Committee recommended such a procedure and named a bounty of about £40 on the construction of a smelting furnace and a bonus of £80 for the production of any quantity of iron made from native ores.⁽²⁾

These bounties, while small in comparison to those of the St. Maurice Forges and the subsequent Federal Bounties which were introduced in 1883, acted in the desired manner. Prospecting parties were soon circulating through the district. The tendency to confine activities to the counties of Digby and Annapolis was due to the fact that many deposits of ore had been unearthed in that section. The first fruits of the enterprise soon followed -- (March 2, 1790). "A specimen of the iron from the works lately established in Wilmot was presented (to the Assembly) by Major Barclay. It was stated by Major Millage that the present works could manufacture about 30 tons per annum, and were expected soon to double that output. Bog ore was plentiful there and they had a never-failing stream of water and had also wood in abundance"⁽³⁾

(2) Galnek - "History of Annapolis County". p.346.

(3) Beamish Murdock - "History of Nova Scotia".-Vol.3-p.81

The next enterprise to undertake the smelting of iron chose the tide-water of the Moose River as the centre of its operations. An association promoted by two Americans, Messrs. Alger and Jackson, was formed, and was named the "Annapolis Mining Company". On its incorporation by the Legislature in 1825, the Governor was authorized to grant a charter which contained several noteworthy features. It was capitalized at £10,000 consisting of 100 shares of one hundred pounds each. To insure the sale of the shares, the Governor permitted the introduction of a limited liability clause, under which the shareholder was liable only to the extent of his participation. In addition, two bounties of six hundred pounds each were offered for the manufacture of a certain quantity of hollow ware and bar iron.⁽¹⁾ The Acadian "Reporter" of 1825 stated that shares of the Annapolis Mining Company were selling at a considerable premium and that the success of the venture was therefore assured.⁽²⁾ This last indicates that the project was launched auspiciously with the confidence of both Province and people, lightening the burden of financing and organization. This condition seems rather exceptional in contrast with contemporary efforts both in Nova Scotia and in the Province of Canada to float Companies for the building of canals. It will be remembered that the original

(1) Haliburton - "Nova Scotia" - p.162

(2) "History of Annapolis Co." - Galnek - p.245.

Company chartered to build the Lachine Canal, could not raise the required capital by the sale of securities, and that similar difficulties confronted the promoters of the Welland project. The analogy here drawn is perhaps somewhat out of proportion; nevertheless it was introduced to show the confidence that was vested in the project, whose future could not be compared to that of canals.

Galnek wrote that the promoters of the Company, Messrs. Alger and Jackson, were "possessed of much scientific knowledge and were experienced mineralogists". They had made a thorough examination of the mineral deposits of the district and were convinced of the feasibility of the scheme. ⁽³⁾ Haliburton describes the site of the enterprise as follows:- "The associates immediately purchased an extensive and valuable vein of ore, situated about three and a half miles from the mouth of the Moose River, and another of equal importance at Nictaux, in the upper part of Annapolis Township, with one or two of smaller extent in other places. The local superiority of the former place gave it a decided superiority over any other part of the country, being distant only eight miles from Annapolis, twelve from Digby and fifty from St. John, N. B., accessible by water and affording a good anchorage. They therefore selected the

(3) History of Annapolis Co." - Galnek - pp. 244-245.

eastern bank of the Moose River as the site of their buildings, and erected a large smelting furnace, coal houses, stores, etc. The extensive forest at the head of the river supplied them with an abundance of charcoal".⁽⁴⁾

The initial costs of assembling and erecting this collection of properties aggregated £30,000.⁽¹⁾ The original capital had to be increased to more than twice its original figure to enable the works to be completed. In 1828 the Company turned its attention to the manufacture of bar iron to secure the bounty on that product. During the three previous years, the production of hollow ware occupied the total capacity of the equipment. However, the enterprise was handicapped by a multiplicity of causes, the greatest of which was the competition of the English iron-masters.⁽²⁾ On this score, Haliburton remarks "The quality of the ore has now been ascertained and the only part of the experiment yet to be decided is, whether they can compete with the English ware, or whether the cost of production will not exceed the value of the article when manufactured, a result which must depend very much upon the economy and skill with which the establishment is managed".⁽³⁾ The above excerpt hints that difficulties were encountered in the initial smelting of the ores -- a difficulty that has persisted in furnace practice to the present day. The English producers had the advantage of the newest technical improvements, which considerably lowered their costs. Chief among these was

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- (4) Haliburton - "Nova Scotia" - pp.162-163.
(1) Gesner - "History of Nova Scotia" p.254.
(2) Haliburton - "History of Nova Scotia" - 1829-p.163.
(3) Gesner - "History of Nova Scotia" p.255.

the "hot blast" which had introduced fuel economies as high as fifty per cent. Consequently the Annapolis Company was handicapped: with a powerful blast and the best of charcoal not more than thirteen tons of iron could be produced a week, while English and Scotch producers averaged three times as much. The inefficiency of the labour, which was largely unskilled, defied any substantial economies or consistency of the quality of the product. Local fluxing materials also proved useless and these had to be brought from across the Bay of Fundy. Finally in 1831, the furnaces with their molten contents were allowed to cool. This made them unfit for further use and they were consequently abandoned.

The failure of the project may be attributed to a conglomeration of causes -- technical, economic and political. Reference to the latter is found in the Nova Scotia Mines Report, 1877 -- "operations ...were suddenly suspended, owing to political causes, but not before excellent iron had been produced, both pig iron for foundry purposes and refined bar-iron"⁽²⁾. Gesner wrote of the political causes "that they were aggravated" by the American interests". The skilled tradesmen were all Americans and they refused to make any other product but pig-iron which they desired to be shipped to the United States for manufacture. As a result of the dissention that arose on this point of policy, the Americans withdrew not only their money interest but also their actual experience. Deprived of the necessary operating skill,

(2) N. S. Mines Report 1877 - p.43

it is not surprising that the furnaces were choked. In connection with the blocking of the furnaces, it was remoured that it was a piece of sabotage.⁽¹⁾

Thus were the aspirations of the growing colony shattered as were the hopes of the stockholders. Its consequences to the community were also great. The small community that had arisen on the site of the works was paralyzed by the failure of the enterprise, and the iron mines were thrown back to the exportation of the ores as the only outlet. These exported ores were returned as finished products. In view of all the above causes, it is evident that the failure of the enterprise can be traced almost wholly to the lack of skilled labour. The project was too short lived to allow any conclusion to be drawn on the effect of English competition.

In 1857 or 1858, these works were re-opened under the control of an association from Bangor, Me. The furnaces were rebuilt and operations were resumed. These renewed operations enjoyed considerable success for a short while. However in 1862, monetary conditions with the fluctuations in the price of gold made the enterprise unprofitable.⁽²⁾ (The N. S. Mines Report of 1877 places the date of resumption of operations at 1861). In 1872, 100 tons of iron were produced and shipped to Boston. Operations were resumed for about six weeks in 1873 and in the following year control passed into the hands of the New York -

(1) Gesner - "Nova Scotia" - pp. 254-255.

(2) Galnek - "History of Annapolis County" - p.245

Nova Scotia Mining Company. However no smelting has been under-
(3)
taken in that section since that date.

Clementsport, Annapolis County, was the scene of another early venture in the history of iron production in Nova Scotia. In 1831, a charcoal furnace was erected to smelt the ores of that district. This furnace was in blast intermittently for over thirty years. It is interesting to note the dimensions of the furnace and also the fact that a "hot-blast" was used. This had been invented in 1828 by James Beaumont Neilson. Up to this time the air necessary for the combustion of the fuel had been blown into the furnace cold. With the hot blast the consumption of fuel per ton of iron when burnt with air heated to a high temperature, was less than one half of what it was when using the
(4)
blast at atmospheric temperatures. The introduction of the hot blast was at the time of such immense value as to constitute undoubtedly one of the most marked epochs in the advancement of
(5)
the iron trade. It is remarkable that the Clementsport furnace had been equipped with the new blast with such celerity, especially when the location of the furnace in a far-off colony is considered. This fact leads to the conclusion that English interests were associated with this project. The furnace was thirty feet high and was built of stone. The blast had a pressure of $1\frac{3}{4}$ to 2 lbs. per

(3) Woodman J. E. - "Report on the N.S. Ore Deposits"-1909-p.40
(4) Bell - "Notes on the Manufacture of Iron and Steel" - p.14
(5) " " " " " " " " " " " "

square inch, which was produced by a breast wheel 30 ft. in diameter, turned by water power. The blast was heated by burning the waste gases of the furnace in a hot blast oven. The furnace charge consisted of about 750 to 800 lbs. of ore, 120 lbs. of limestone and 16 bushels of charcoal.⁽⁶⁾

Pictou County entertained its earliest venture in 1828. The General Mining Association were the sponsors of the iron smelting project. It is interesting to note that the coal leases, which furnished the chief business of the Association, were granted by George IV to his brother the Duke of York. The Duke had developed a great taste for jewellery and for sumptuous living. However, his tastes were of a greater capacity than was his bank-roll. To placate his creditors who placed payment above prestige, he traded the grants of the coal areas for his bills. Consequently the General Mining Association was formed to operate these leases. On the opening of the Albion Coal Mines in Pictou County, it was thought feasible that some of the coal could be used for the smelting of iron ores. While this was a new departure in the Nova Scotian industry, which had hitherto used charcoal as a fuel, the use of coal in the smelting of iron had come into general use in England. In 1788, about four fifths of the annual quantity produced in England (68,300 tons) was smelted with coke. Consequently the General Mining Association decided to experiment. A fund of £1,000 was set aside for this purpose.

(6) Harrington - "Report of the Geological Survey of Canada" - Vol. 1-1873-74.

By 1829, the furnace was completed and tests of various ores were made. A foundry was added in the same year. Several skilled ironworkers were brought to Nova Scotia from England to direct operations. However, the product of clay ironstone, a by-product of coal mining operations, and East River (at New Glasgow) ore was not very ductile. Its chemical composition consisted of an excess of phosphorous and a lack of silicon that made it useless for foundry purposes. The output was about 8 tons daily of hard white iron.⁽⁷⁾ The attempt to use clay ironstone, a by-product of coal mining operations savoured of English practice.

After producing 50 tons, the furnace met a sudden end as a working unit. One night the furnace crew went on a spree with disastrous effects to the fires. Not to be outdone, these "went out" too and in the morning the metal had cooled fusing the whole in a solid mass. The structure stood till 1855 as a monument to the "curse of drink".⁽⁸⁾

Two more failures dot the graveyard of the early iron industry in the counties of Annapolis and Digby. In 1855, the Acadian Mining Association decided to smelt the ores of Nictaux and to shape these into workable forms.⁽⁴⁾ To carry on this work, two blast furnaces were built at Nictaux Falls. Another ghost of the past arose to haunt these developments. The actual experimentation with the ores seems to have been deferred till

(7) Poole H. S. - "Can. Mining Review".-Vol.XII p.204-"Iron Making in Nova Scotia".

(8) "Canadian Engineer" - Vol. 11 - p.104

(4) C. O. MacDonald - "Coal & Iron Industries of Nova Scotia" p.233

after the furnaces were built. Then it was found that the high phosphoric content of the ores rendered them useless for the production of foundry pig iron. Since steel processing was not the practice of the early Nova Scotian iron industry, the product was worthless as there was no demand for it. The inevitable suspension of operations followed. This project expired from the not uncommon symptom of starting an iron making project without assaying the ores. Perhaps the science of metallurgy and chemistry were inadequately developed at that time; yet if the former examples are any criterion the fault seems to be incumbent on the promoters. By 1874, the furnaces had been demolished by the inhabitants of the surrounding country for their brick content. (1) The enterprise benefited the community at least to a small degree. The other abortive attempt to manufacture iron was made at Bloomfield in Digby County. The plan of utilizing the bog ores of this district was conceived and in 1860 a blast furnace was erected to smelt the ores. Charcoal was the fuel. Undoubtedly the prevailing high prices of pig iron made the scheme lucrative. Its subsequent intermittent operation indicates that production was governed by changes in the price level of pig iron. Consequently the decrease in the prices of pig iron after 1880 led to its permanent abandonment and the inefficiency of the equipment is amply demonstrated by the fact that it was not operated even with the added impetus of the Bounties of 1883. (2)

(1) Harrington - "Iron Ores" Geological Survey of Canada Report-1874
(2) Gilpin - "N.S. Dept. of Mines Report" 1880.

The scene of operations now shifts to Londonderry, N.S. and the pages of history unfold the humble beginnings of a venture that was destined to grow to large dimensions and then to wither into oblivion. The Cobequid Hills of Colchester County were found to contain extensive deposits of iron ores. The initial discovery was made by George Duncan of Truro, N. S. Several surveys of these deposits were made by noted geologists of the day with a view to exploitation and development. The first of these surveys was headed by Sir Wm. Dawson and Dr. Gesner in 1845, Again in 1849 the enthusiastic reports of J. L. Hayes and Sir Wm. Dawson led to the formation of the "Acadia Mining Company", sponsored by English interests and led by a Nova Scotian, Chas. D. Archibald. The Company acquired several ore deposits and a large tract of forest to supply the wood to the charcoal kilns. The first iron was made in a Catalan forge in 1850. The subsequent erection of a blast furnace in 1852-53 led to the abandonment of the forge. The new blast furnace produced pig iron of the finest quality and the greatest optimism for the continued success of the enterprise prevailed. The ore was almost pure peroxide of iron and the proximity of large tracts of forests, capable of supplying large quantities of charcoal, contributed to the ideal conditions. The product proved to be of the highest quality and its adaptability to almost any process of manufacture, coupled with its great

(3) Dawson - "Acadian Geology" - p.582

ductility and great powers of resistance caused it to be in great demand⁽¹⁾. The high esteem in which the product was held may be gathered from the following excerpt concerning its purchase by the War Office:- "The difficulties which the government has had to encounter during the last two years in obtaining a sufficiently strong metal for artillery are likely to be removed by the use of Acadian pig iron. Large quantities have been purchased by the War Office, and experiments are now in progress under the direction of Lieutenant Colonel Wilmot, Inspector of Artillery, and the writer, which seem calculated to establish the superiority of this metal for casting every description of heavy ordnance"⁽²⁾.

The equipment of the original plant was very well balanced and was capable of efficient production. Catalan forges, a puddling furnace, a blast furnace, a heating furnace and a hydraulic trip hammer comprised the mechanical equipment. Production in the early years was not great. From 1850 till 1857 about one thousand tons of iron had been made from about four thousand tons of ore. From 1857 to 1861 production was greatly augmented, the tonnage for this period being four thousand tons of iron from nine thousand tons of ore. The efficiency and resulting economy during the latter period reveals a vastly improved furnace practice, with an improvement

(1) Bartlett - "The Manufacture of Iron in Canada" - pp.42-43.
(2) Fairbairn Wm. - "Iron, its History, Properties and Processes of Manufacture" - p.34

of ore yield from 1 to 4 iron to ore, to approximately 1 to $2\frac{1}{4}$. In 1861 the production of bar iron was 1200 tons with a value of twenty-four thousand pounds (£). The ores used to produce this iron were hematite yielding 47% iron and brown and red oxide of iron yielding 40% iron. To produce one ton of pig iron required 160 bushels of charcoal and 200 bushels of limestone, used as a flux. This was obtained locally. The re-heating furnace required $3\frac{1}{2}$ cords of wood to convert one ton of pig iron into a ton of bar iron. The output from the plant for the years 1862 to 1867 shows the general trend of the period, also the limitations as compared to the modern blast furnace:-

<u>YEAR</u>	<u>PIG IRON</u>	<u>BAR IRON</u>	
1862	1150 tons	945 tons	
1863	1251 "	911 "	In 1865 the labour force was on the average 250 men and boys and 25 horses.
1864	1663 "	1198 "	
1865	1784 "	1633 "	
1866	2214 "	1093 "	
1867	2068 "	421 "	

The above figures show the continued demand for pig iron with the gradual increase in its production. Prevailing high prices of pig iron made this period very profitable for the owners. The slackening in the demand for bar iron may have been the result of the abrogation of the Elgin Reciprocity Treaty or may have been caused by the resumption of American production with the cessation of the Civil War.^x The original furnace continued in blast until

x My own observations.

Cost of Production per ton of pig iron at Londonderry-1873			C.O. MacDonald - p.240.
2 tons ore	\$5.00		
1/3 " limestone	.36		
147 bu. charcoal @ $7\frac{1}{2}\phi$	11.02		
Labor & Salaries	2.80		
General Expenses	1.50		
	<u>\$20.68</u>		

1874 and its total production is estimated at 45,000 tons of pig
(1)
iron.

With the proposals of an Intercolonial Railway and the subsequent surveys, the Company focussed all attention on obtaining railway communication. In 1864, Mr. John Liversy, representing the iron works, exerted himself to get the railway as close to the plant as possible. The location of the plant was six miles from tide-water and the only means of transportation was by team. This mode of transportation was slow and uneconomical. Moreover the harbour facilities at Great Village were very treacherous due to the rapid fluctuations of tidal level in Cobequid Bay. Consequently the transportation problem was very important to the Iron Works. Mr. Stanford Fleming in his "History of the Intercolonial Railway" states "Mr. Liversey continually urged, both privately and publically, the importance of a route passing close to the Iron Works, in which he was interested". The working season of 1865 was occupied in surveys. Every pass in the Cobequid Mountains, within the limit of the iron district was examined and every effort made to secure a practical line
(2)
near the Iron Works. For a while the controversy grew very warm. Fleming favoured a route that did not run close to the Iron Works, while many Nova Scotians wished a line to pass close to it. On the consummation of Confederation, the controversy was

(1) "Mineralogy of Nova Scotia"-1868. Letter from E. A. Jones, Manager at Londonderry to Dr. How, the author.

(2) Fleming, Stanford - "History of the Intercolonial Railway" p.

carried to Ottawa and finally a compromise was effected. The route surveyed and adopted was three miles from the Iron Works. A connection was made by a branch line, built by the Iron Company. Fleming continues "Thus the controversy was ended: and hence arose that gigantic and conspicuous sweep, which the railway traveller will observe on the southern flank of the Cobequid Mountains, where the line describes nearly a half circle. So marked is this feature in the location that the popular voice has applied to it the term "The Grecian Bend", which possibly may be retained as long as the railway endures.⁽³⁾ Thus had the Iron Works bent the wishes of others to its view, while it in keeping with its product remained almost adamant. This is the first of a series of political controversies that have involved the Iron industry, and which have generally ended in favour of the industry.

In October 1873, the "Acadia Iron Mines" was purchased by the Steel Company of Canada (not to be confused with the Corporation of the same name organized in 1910, with plants in Quebec and Ontario). The Company was promoted "by a few English Capitalists" and at the time was acclaimed as "the most pretentious enterprise of its kind in Canada"⁽¹⁾ It was capitalized at \$2,500,000. The terms of purchase of the property were £82,000

(3) Fleming, Stanford - "History of the Intercolonial Railway"-p.

(1) Bartlett - p.10

in cash, and £120,000 in founders' shares. It was proposed to manufacture steel products. In view of these plans, Dr. Siemens inventor of the "direct" process was paid £8,000 for "the right to use his patented processes for the production of iron and steel and their subsequent working into merchantable form"⁽²⁾. All new equipment was built with the view of manufacturing railway products. However this was not done for any length of time and a large portion⁽³⁾ of the plant was soon discarded. Bartlett attributes this last to the "sudden stoppage of the proposed construction of the Canadian Pacific Railway by Sir Hugh Allan". Evidently the project was organized to supply the rails for the railway and had every prospect of a prosperous future, under these conditions, as it was the only steel plant in Canada. The Pacific "scandal" and its political consequences proved very costly to this venture. Once again had steel and politics been allied - this time to the detriment of the steel industry.

The property of the Company was very extensive and the equipment represented the last word in steel making equipment. In addition to the cost of the properties probably an additional \$1,250,000 was expended in enlargement and improvements. Additional⁽⁴⁾ ore deposits were prospected and developed. Two large blast furnaces, designed to make coke pig iron, were constructed. Equipment

(3) Bartlett - p. 10

(4) Canadian Mining Manual-1895-1897-p.74. C.O. MacDonald-p.41

for the utilization of the Siemens processes were installed: two rotators and a melting furnace, with regenerative gas producers. (These stoves were the first set of brick stoves erected on the continent of North America⁽⁵⁾). The railway equipment of the Company was enlarged, spur lines were built to carry the ore from the mines and running rights were acquired on five miles of the Intercolonial Railway⁽⁶⁾. Coal was procured from the mines of Pictou and Springhill; although deposits had been found on the property of Company, they had not been developed. The mineral-bearing areas covered fifty-five square miles of Colchester County⁽⁷⁾.

Aside from the disappointment of losing the proposed rail business and the consequent handicaps to financial success, technical difficulties beset the enterprise. The Siemens process experiment did not succeed as expected⁽⁸⁾. Tons of valuable machinery were rendered useless by the failure of the railway plans to materialize. The melting furnaces and gas producers were dismantled. To replace these, puddling furnaces were built and a foundry installed⁽⁹⁾. Steel products gave way to iron.

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- (5) Bartlett - p.42.
(6) Journal of Iron and Steel Institute-p.596-1875
(7) Bartlett - p. 43
(8) Woodman - opp. cit. p.153.
(9) Bartlett - p.43.

FOOT-NOTE: Around 1875, the Pictou Coal and Iron Company was organized to mine coal and ore, to manufacture iron and to construct railways. The project hoped to develop some deposits of Bessemer ore that it controlled, but inability to raise the necessary capital caused it to disappear. Can.Engineer-Vol.2-p.104

The new blast furnaces being of a coke using type, had to be fed a fuel which the Company did not produce. Its valuable wood lots, which had hitherto been a great asset, as they provided the charcoal, were relegated to an unimportant position. Moreover the necessary coal and coke had to be hauled a distance of 35 to 50 miles by rail -- an expensive procedure. Furthermore, the coke problem was precarious. The Company did not have any coke ovens, and only one mine produced the correct metallurgical coal and incidentally owned the only coke ovens in the Province. Finally when an explosion paralyzed operations at this colliery, the Iron Works had to suspend operations for lack of fuel. The loss from this source can be better imagined than described. At last, to eliminate this source of inefficiency, the Company purchased a mine and installed a battery of coke ovens. However the product of these ovens was inferior, owing to the high sulphur content of the coal. Probably no satisfactory coal washers were available at that time. Only the charcoal furnace was a satisfactory producer during all this period.

The output consisted of bar iron, nail plate, car axles, car wheels, castings and pig iron. This schedule was not of a very profitable nature. The original steel output would have conferred a definite advantage on the undertaking, but the huge losses

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- (1) Colliery Guardian - Vol.81-p.367.
 - (2) Donald - "Can. Iron & Steel Industry" - p.106
 - (3) "Canadian Mining Review" - Vol.V-pps.899-1876.

incurred could not be successfully shouldered. Despite the introduction of the National Policy in 1879 and the Bounty Act of 1883, (46 Vic.Cap.14) liquidation could not be averted and in 1883, the Steel Company of Canada, Limited, ceased to exist as a going concern.⁽⁴⁾

For four years, the property of the Steel Company of Canada was deserted and neglected, despite efforts on the part of the receiver to dispose of it. Finally in 1887, the property was acquired by the Londonderry Iron Company. It was incorporated by a special charter of the Dominion Government and was capitalized at \$1,000,000 -- Preferred Stock \$400,000, Common Stock \$600,000.⁽⁵⁾ With this reduced capitalization and the added financial aid of the Bounties, the venture held fair promise of success. The main product of the plant was bar iron and a large proportion of the pig iron output was utilized in this direction. However in 1891, the reduced duty on scrap iron caused the almost total substitution of scrap for pig iron in making bar iron and as a consequence the Company ceased operations in this direction.⁽⁶⁾ Subsequent changes in tariff policy and the introduction of a bounty on puddled bars led to the resumption of these operations in 1894. Puddled bar duties were reduced and scrap iron duties increased to \$4.00 per ton.⁽⁷⁾ The bounty on puddled bars was \$2.00 per ton. (See Tariff Section).

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- (4) Canadian Mining Manual - 1897 - p.75)
(5) " " " p.74 "Londonderry Iron Works"-part 2).
(6) Journal of Iron & Steel Ass'n.-Vol.23-p.268)
(7) See Tariff Section.

The product was of a high quality and could compete on this basis with the best available. For foundry work, it formed an ideal component to mix with Scotch foundry pig iron because of its great ductility.⁽⁸⁾ This uniform quality was attributable to the single source of ore. However in 1894 these deposits were becoming exhausted. Additional deposits were leased on a Royalty basis in the Nictaux-Torbrook ore district, where production was under the direction of the Torbrook Iron Company.⁽¹⁾ The mixture of ores affected the quality. Consequently the uniformity of product which buyers had been previously assured of was not available. As a result, the product no longer enjoyed the distinctive advantage of being sold on a quality basis and so came into competition with the cheaper grades. The prevailing low prices of pig iron made the competition very difficult for the Londonderry product. Additional processes were installed to offset this condition and to enable a large proportion of the output to be used at the finishing plants -- the pipe, axle and forge foundries and the rolling mills.⁽²⁾ In 1890, the works were partly rebuilt and were placed under the control of a new Manager who produced more economical results.⁽³⁾ The output of pig iron at

(8) Donald - p.107.

(1) Canadian Mining Review - Vol.V-p,8.---Canadian Mining Manual 1897. Pt. 2 - p.74.

(2) Bulletin of the Iron and Steel Assoc. Vol.XXIV1-p.268

(3) Monetary Times Vol.XXIV - p.193.

(4)

Londonderry conveys an idea of the scale of operations.

1888	15,600 tons	1892.....24,750 tons
1889	19,000 "	1893.....21,200 "
1890	16,500 "	1894..... 8,100 "
1891	18,300 "	1895.....16,000 "
		1896.....10,497

(The low output of 1894 was due to the lowness of water and to an inferior grade of metallurgical coal).

A brief survey of pig iron prices throws considerable light on further developments. Prices from 1888 were largely influenced by the competition of imports from England and the U.S.A. Until 1892, British imports almost completely dominated the market in Canada but ever since that time they have been ousted by American products. In 1895, imports of pig iron from Britain were 5,666 tons, from the U. S. A. 32,597 tons. In 1896 Britain 6,521 tons, U. S. A. 32,529. In 1892, Scotch iron imports (5) were 22,913 tons, while in 1896, 2,454 tons.

COMPARATIVE PRICES OF SCOTCH, N. S. and AMERICAN PIG IRON.(6)

<u>YEAR</u>	<u>CANADIAN AT N.S.</u> <u>FURNACE</u>	<u>No.1 SUMMERLEA (SCOTCH)</u> <u>At Dock MONTREAL</u>	<u>AMERICAN AT</u> <u>CHICAGO</u>
1888	\$16. - 18. per ton		\$17.20
1889	17. - 18. " "	\$20.50 - \$24.00	15.80
1890	18. - 19. " "	25. - 21.	16.75
1891	16. - 17. " "	21. - 21.50	15.00
1892	15. - 16. " "	19. - 18.25	14.00
1893	13. - 14. " "	19. - 18.	13.00
1894	12. - 13. " "	19. - 20.	10.50
1895	11. - 15. " "	18.50 - 20.	9.50
1896	14. - 13. " "	18.50 - 20.	10.50

(American prices - average of monthly prices).

(4) Canadian Mining Manual 1897-pps.74-77 Part 2, also

C.O. MacDonald p.247.

(5) Canadian Mining Manual 1897-pps.74-75.

(6) " " " 1897 p.76.

Even though the Londonderry Company took full advantage of the tariffs bounties to maintain their prices, their unfavourable (1) location militated against profitable operation. This location had been the site of the previous Acadia Company, in 1850 and thereafter, the location had always been governed by this precedent. To put the product to market necessitated a haul of 750 miles to Montreal, which was not at all conducive to reduced costs. Moreover the additional costs of ores prevented any drastic reductions in operating expenses. Undoubtedly the enterprise was a parasite. Yet even as such it could not survive. Owing to the complexity of the situation, the financial problem was acute. The prevailing low prices of 1894-95-96 were disastrous to the Company. Output could not be maintained. Inventories that were on hand had to be written off at these lower prices. In 1895, the deficit totalled \$60.306. The election year of 1896 saw a reorganization of the financial structure and a slight increase in prices made earnings a little more hopeful. However the rejuvenation was short lived. Late in 1896, the "infant" that had been nourished by bounties, tariffs and governmental favour died a natural death, which had long been forestalled. The cause of failure was largely economic. The necessary juxtaposition of raw material, with the means of placing the product on the market cheaply was lacking. The organization was largely a makeshift and undoubtedly the country benefited when

(1) Iron Age - Vol.57-p.863.

this misbegotten industry joined its predecessors in the graveyard -- already well dotted with the remains of blast furnaces -- whose foundations were built on the sands of uneconomic conditions. ⁽²⁾

To this jeremiad must be added the rise and fall of the Pictou Charcoal Iron Company. This industrial venture arose from the favourable reports of a prospecting party, headed by M.E. Sjostedt. Bridgeville was the site chosen for the erection of the furnace. The Company was incorporated by the Province with an authorized capital of \$200,000. ⁽³⁾ The original plans called for the production of charcoal iron and products of semi-manufactured state. ⁽⁴⁾ It might be inquired why charcoal iron; since ^{coke} pig iron was an established product and since coal could be procured in that very district. Many factors contributed to the choice; owing to the ruthless devastation of the forests in iron producing countries in the earlier days of the iron industry, coke pig iron had almost totally replaced pig iron (that had been smelted with charcoal). Costs under the coke method were substantially lower. However the peculiar qualities of

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- (2) The Londonderry works were abandoned until 1903 when the blast furnaces were again lit. The Drummond interests were associated with the move. The furnaces were abandoned when the bounties dropped in 1908. In that year the property was sold to the Canada Iron Corporation. The furnace was never operated since that date.

	OUTPUT	
1903-4	13585	
1905	18614	
1906	- - -	
1907	18836	C. O. MacDonald - p.247

- (3) Canadian Mining Manual - 1897 - part 2 - p.79
(4) " " Review - Vol.17 - p.30

the charcoal product led to a continued demand for certain purposes -- for car wheels, axles, stoves, etc. Consequently it had become a quality product and costs of production did not exert so powerful an influence. Despite local opinion at the time, that past enterprises of that type had not been successful in the Province and various reasons advanced to back this view, the promoters were of the opinion that lack of transportation facilities, and not inherent conditions, were responsible for the past performances. Bridgeville was contiguous to large supplies of raw materials and in addition an outlet for the product was provided by the Nova Scotia Midland Railways, which connected with the Intercolonial. In addition, a substantial bonus was⁽¹⁾ given for locating there. Several deposits of brown hematite were acquired and 8500 acres of timber lands, within a radius of twenty miles, were procured as a source of fuel. However the erection of the blast furnace and necessary buildings with the battery of charcoal kilns was retarded by the failure to attract sufficient capital. This can be attributed to the lack of confidence on the part of local investors in the project, and also to the financial panic in Great Britain, precipitated by the failure of the Barings, with a resulting stringency of funds.

In 1892, a second-hand furnace was installed, using a brick shell instead of the conventional iron casting, together

(1) Donald - p.90 - \$20,000 and 20 years free from taxation.

with the necessary blowing engines and other accessories. The rated capacity of this unit was 5000 tons per annum. The charcoal plant consisted of twenty-two brick kilns with a capacity of 600,000 bushels. Success did not favour this project. From the outset all manner of difficulties impeded progress. Prevailing low prices of iron affected the operations. The product did not come up to projected specifications and had, as a result, to come into competition with the coke iron. In 1894, a puddling plant was constructed to take advantage of the bounty that had been introduced. As a remedial measure, a steel converting plant followed in 1895, designed to produce a high quality agricultural steel.⁽²⁾ However the Company, wallowing in a sea of difficulties, could not continue; operations were suspended in 1896. The causes of failure are easily discernible. They run true to form as in previous cases. Lack of capital had necessitated the installation of inferior equipment; the raw materials were not up to the expectations of the promoters; the lowness of price, which was only partially relieved by the protective tariff; the usurpation of the place of charcoal iron by steel; all these factors contributed to the failure of this project while the predominant causes are those inherent in the raw materials and location. The introduction of the bounties on puddled bars, together with the

(2) Canadian Engineer - Vol. 3-p.263.

pig iron bounties, failed to help the Company. Such protection only prolonged the finale and consequently it was a wasteful
(1)
procedure.

This concludes the early history of the industry -- the history of those projects that have failed without exception. From this point on, the history concerns only two Companies -- Scotia Steel and the Dominion Iron & Steel.

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(1) Canadian Mining Manual - 1895-1897-p.79

RELATION OF TARIFFS AND BOUNTIES  
TO THE IRON & STEEL INDUSTRY

In correlating the physical history of the iron industry in Nova Scotia with the tariff and bounty policy of the Dominion, two broad divisions are necessary. The first, covering the period from the inception of the industry to the introduction of the National policy of 1879. The second from 1879 to the present day. The first period can be further sub-divided into three small sections -- (a) From the start to 1847 - the repeal of the Imperial duties. (b) From 1847 to the consummation of Confederation, 1867, which period includes the Elgin Reciprocity Treaty of 1854-1866 with the United States. (c) From Confederation to the introduction of the National Policy, 1879. The second period also yields to a clarifying sub-division - (a) 1879-1897. Under the Conservative regime featuring the policy of protection and the introduction of the Bounty System in 1883. (b) 1897-1932 the expansion of the Bounty System, featuring the development of the preferential tariffs. Subsequent developments and adjustments with the expiration of the bounties. The War period 1914-1918 and the post war tariffs, all more or less on the same general principles of protection. Finally the revision of 1930 and the readjustment by the Conservatives in the fall of the same year.

A-Until the National Policy - 1879:

(a) Until 1847. During this period, the fiscal policy of the Colonies was controlled by Britain. This was supplemented

by additional duties levied by the colonies themselves. Britain, in return for the privilege of fixing the "Imperial duties", gave the products of the colonies preferential treatment. The chief articles concerned were grain and lumber. With regard to the iron trade, a feeble start had been made in Nova Scotia, which by the end of the period had almost collapsed. Most of the imports of iron were from Britain, which at the time was in a period of ascendancy that gave undisputed world leadership in that branch of industry. The position of the industry in Britain was the result of a series of technical inventions and adaptations that had improved the quality, while lowering the cost. In the infant industry of Nova Scotia, conditions were almost the reverse. A complexity of fundamental conditions - lack of technical equipment and experience, scarcity of skilled labour, ore and fuel conditions, coupled with the nature and extent of the market, militated against the success of the early industry. While the only protection afforded was the cost of transportation, even this was but little on account of the insular location of the province, coupled with the lower rates afforded by lumber boats returning with iron products as ballast. However, it cannot be said that the competition was the direct cause of the demise of the early enterprises. The production never even started to fill the demand, being confined rather to local limits. Again, the

quality products of the English trade were far superior to the local product. The "Imperial Duties" levied on the imports of foreign nations were fairly high. In 1842, these duties were as follows:-

|                       |            |
|-----------------------|------------|
| Pig iron              | 7½%        |
| castings, nails, etc. | 15%        |
| wire                  | 20% to 30% |

The effects of these duties were nullified by a virtual monopoly of the iron trade by Britain. The protective spirit is evidenced (1) by the extension of subsidies to the industry.

(b) 1847-1867. Soon after the repeal of the Corn Laws, fiscal freedom was bestowed on the colonies. In 1846, there was an amending Act (9 & 10 Vic.c94) which gave to the Legislatures of British North America power to enact tariffs and duties compatible with their needs. Under this new freedom, the colonies hastened to repeal the "Imperial Duties" and new tariff acts were passed. Of all the colonies, Nova Scotia levied the lightest duties. Since the iron industry was of minor importance, in comparison to the fish, lumber, and coal trades, with the dependant carrying trade, it is not surprising that the duties were for revenue only. With the passage of the Reciprocity Treaty, trade in the Maritime Provinces waxed profitable. The majority of the principal products were on the free list under the Treaty, so that an iron schedule was of little importance. This was in keeping with the size of the industry. However, during this period,

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(1) See "History of Early Industry" of this thesis.

several projects were launched in the iron industry, of which only one survived any length of time. The latter, the Londonderry enterprise, was started solely on its physical merits, and not because of protective tariffs.

Of this period, Porritt writes:- "New Brunswick, Nova Scotia, and Prince Edward Island, like the United Provinces, secured their fiscal freedom in 1846, but between then and Confederation in 1867, import duties in the tariffs of these provinces never exceeded twelve and one-half per cent. This was the highest rate of duty levied in New Brunswick. In Nova Scotia, duties never exceeded ten per cent, while in Prince Edward Island, they were never for long more than  $7\frac{1}{2}\%$ . All these duties were for revenue only and the Maritime Provinces were never in conflict with the Colonial Office as to the aims of their tariff legislation. <sup>(1)</sup> Donald "Canadian Iron and Steel Industry" has a table that disagrees slightly with the above: moreover it shows the relative rates of all provinces.

| <u>ARTICLE</u>   | <u>CANADA</u> | <u>N.S.</u>       | <u>N. B.</u> | <u>P. E. I.</u>  |     |
|------------------|---------------|-------------------|--------------|------------------|-----|
| Iron & Hardware  | 20%           | $12\frac{1}{2}\%$ | 15%          | $7\frac{1}{2}\%$ |     |
| Iron Bars & Rods | 10%           | 5%                | 15%          | $7\frac{1}{2}\%$ |     |
| Iron Plates      | 10%           | 5%                | 15%          | $7\frac{1}{2}\%$ | (2) |

From the above table, it can be seen that the rates in Nova Scotia, even with its embryo iron industry were well

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(1) See "History of Early Industry" of this thesis.

(2) Porritt E. - "Sixty Years of Protection in Canada" p.204

below those of the Canadas. These are the rates given just prior to Confederation. In the Province of Canada (at that time) <sup>(4)</sup> coal, ore, and pig iron were on the free list.

(c) 1867-1879. Examination of the rates prevailing during this period discloses no great changes in the tariff policy in relation to the iron industry. A considerable number of raw materials and primary products of the iron industry were placed on the free list in 1868. Under 31 Vic. (1868) C. 44, pig iron, scrap iron and steel, iron ore, cast steel, rolling mill products, coal, and coke were on the free list. A rate of 15% <sup>(1)</sup> was levied on the "not elsewhere specified" list. In 1870, blooms and billets were added to the free list. In the same year coal <sup>(2)</sup> and coke were removed from the free list and subjected to a duty. However they were restored to the free list in the succeeding year, <sup>(3)</sup> (1871). Despite a slight raise in the general tariff rate from fifteen to seventeen and a half in 1874, the iron and steel schedules were unaffected until 1879. During this period, in 1873, the Steel Company of Canada was formed to acquire the plant at Londonderry. The original plans called for the manufacture of steel rails and railway iron and steel. The incentive for organization was the hope of gaining a large share of the rail requirements of the Allen contract of the Canadian Pacific, which however culminated in the "Pacific" scandal of 1873. The tariff policy offered little inducement for the new industry. Perhaps

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(4) Donald W.J.A. - "Canadian Iron and Steel Industry". p.66

(1) 31 Vic.-c.44

(2) 33 " c. 9

(3) 33 " c.10

the plan was to organize first, and then through the political connections that Allen had attempted to weld, make a bid for tariff protection. The iron and steel industry, particularly the primary industry, received no protection during this period. Yet there had been in Nova Scotia no definite changes in either direction on this account. The first few years after Confederation saw abnormally high prices on pig iron, caused largely by the scarcity on account of the Civil War in the U.S.A. Operation was continuous owing to the increased demand.

B - From 1879 - 1932:

(a) 1879-1897. The adoption of the National policy in Canada also marks the political marriage of the iron and steel industry to the tariff. Prior to this date, the relation was a casual one -- more of a nodding acquaintance. Now it became closer, more direct; the tariff assumed the role of the "rich uncle" nursing a nephew whose health had been undermined by his own gallivantings. To trace the rise of Protection is beyond the scope of this thesis; it suffices to say that it had been in the embryonic stage for almost thirty years. However it sprang into life with intense vigour in 1879. The application of the protective principle to the iron and steel industries during this period was very comprehensive. However when the history of the industry in Nova Scotia is coupled with these measures,

the general result is rather disappointing. Only one glowing example featured this otherwise murky period -- the growth of the Nova Scotia Steel Company. It must be pointed out that the national policy is not solely responsible for the growth of the "pioneer of the steel industry in Canada". The inability of Londonderry to survive, despite the tariffs, proves that protection had to be coupled with efficiency in all branches.

The object of the protective duties in the iron and steel industry as introduced by the Conservatives in 1879 was to enlarge the industry. To achieve this end, protective duties were levied on imports. The iron and steel schedule was fairly comprehensive and embraced some thirty specific articles. The primary industry received protection of about fifteen per cent. Many items, previously on the free list, carried duties of ten per cent or more. Under 42 Vic. (1879) c.15, pig iron was made dutiable at \$2.00 per ton: blooms, billets and slabs, muck and puddled bars, carried an ad valorem rate of  $12\frac{1}{2}\%$ ; iron and steel wire carried  $15\%$ ; scrap iron and steel  $12\frac{1}{2}\%$ ; rolled and hammered bars  $17\frac{1}{2}\%$ ; railway fishplates and frogs  $17\%$ ; stove castings and car wheels  $25\%$ ; bars, nuts, nails  $30\%$ ; locomotive steel tires  $30\%$ , etc. Coal, both anthracite and bituminous, carried a duty of fifty cents per ton. This specifically protected the product of Nova Scotia Mines. It is not illogical to deduce that some of this protection aided the iron industry in Nova Scotia, which was just renouncing charcoal

for coke as a fuel. The above items constituted the revision that was to stand, with minor changes, until 1887. A reduction of the duty on blooms, billets and slabs was effected in 1880, from  $12\frac{1}{2}\%$  to 10%. Steel ingots were admitted free, with the provision that when they were produced in Canada, a duty of five dollars a ton would be placed on them.<sup>(1)</sup> In 1881, a little more tariff "tinkering" was done. Rolled beams, channels, and angles were reduced from 15% to  $12\frac{1}{2}\%$  and wrought iron tube was sharply increased to 25% -- from a previous 15%.<sup>(2)</sup> In 1882, the free list was augmented with the addition of several items -- old scrap iron and steel, galvanized iron, 15 guage steel wire and under, steel rails, bars and fishplates.<sup>(3)</sup> The shipbuilders of New Brunswick were allowed a full drawback on iron imported for use in the construction of ships.<sup>(4)</sup> Materials used in the construction of the Canadian Pacific Railway were also allowed drawbacks.<sup>(5)</sup>

In 1883, the famous Bounty System was introduced. The reasons for the adoption of this method of protection were:- to avoid the readjustment of the whole schedule (which would have necessitated the calling together of the manufacturing interests with a great deal of quibbling at the hearings, etc); to offset the reductions on scrap iron; to provide a stimulus, a direct cash stimulus to the industry. Another reason was that evidently

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- (1) 43 Vic. 1880 c.18.
  - (2) Debates - 1881 - Feb. 18.-pps.48-49.
  - (3) 45 Vic. 1882 c.6.
  - (4) Debates - 1879 - p.1449.
  - (5) 45 Vic. - 1882 c.7

someone thought that it would be a good idea.

The Bounty Act (43 Vic. 1880 c.14) provided for a cash payment per ton of pig iron and was designed to cover two three-year periods -- \$1.50 per ton for the first period, and \$1.00 per ton for the second. Further "tariff tinkering" followed in 1884, when the duties on steel were increased from \$5.00 per ton to \$3.00 per ton, plus 5%. Steel and iron angles, beams, plates and knees for ships were put on the free list. Wire rods were reduced from 15% to 5%. 1885 saw further tariff changes in the iron and steel schedule:- the free list was augmented by coke for manufacturing purposes, skate steel, sheet steel for spades and shovels, and hoop iron for manufacturing tubular rivets.<sup>(1)</sup> In 1886, the expiring bounty of \$1.50 per ton on pig iron was extended to 1890, replacing the scheduled bounty of \$1.00: the \$1.00 was provided from 1890-92.<sup>(2)</sup> Reductions in scrap iron were introduced, but the duty on wrought iron tubes was again jumped 10% to the 35% level. Most of these items did not affect the Nova Scotia industry as it was largely concerned with the primary products, which were directly subsidized by the bounties. However, despite the high protection and the institution of the Bounty System, the Londonderry enterprise tottered into insolvency in 1883. The production of steel -- the first in Canada -- was achieved successfully by the Nova Scotia Steel. The first ingots were cast in 1883. Accordingly, in 1884 the protection on steel was increased -- a direct advantage to

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(1) Debates - 1885 - Mar.3, p.59.

(2) 49 Vic. 1886 c.38.

this Nova Scotia concern. The above additions to the original schedule and the institution of the Bounty System culminated in 1887 with a general revision.

The general situation at the time of the revision had become acute. The industrial aspirations of Nova Scotia had not been realized, while those of Quebec and Ontario were responding to the National policy. Murmurs of discontent began to trickle up from Nova Scotia; discrimination in favour of the other provinces was alleged; the everrunning sore of Maritime rights became swollen by the agitation. Equitable treatment was demanded. On May 8th 1886, a repeal resolution passed the House of Assembly of Nova Scotia recommending the repeal of Confederation and the creation of a Maritime Union, or failing this, withdrawal of Nova Scotia only. A provincial election was fought on this issue and the policy of the Government (Liberal) was sustained. July 15th, 1886, was the election date and the result was that 30 members were returned in support of Repeal to 8, who were opposed to it. However, in the Federal election of February 1887, there was a turnover in public opinion in Nova Scotia, the majority of members elected supported Confederation and the Dominion against Repeal. The subsequent revision leads one to suspect that campaign speeches promised tariff changes for Nova Scotia. Despite the outcome of the Federal election, the political cauldron was still seething.

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(3) Journals of N. S. Assembly - p.147 et seq.

But the higher protective duties to the iron and steel industry, which at that time was confined totally to Nova Scotia, punctured the political bellows and the flame sank into an ember. The new revision was designed after the tariff schedule of the United States. Ad valorem duties were supplanted by specific and compound duties. Moreover, the railroad industry was not overburdened by the tariff. Pig iron was dutiable at \$4.00 per ton; scrap was removed from the free list and assessed \$2.00 per ton; railway fishplates carried a duty of \$12.00 per ton; and bar and rolled iron was taxed \$13.00 a ton. Compound duties were levied as follows:- Nuts, washers and bolts carried one cent per lb. plus 25%; bridge-building shapes were taxed one-half cent per pound plus 10%. The duty on steel ingots was raised further from \$3.00 plus 10% to 30%. Iron and steel forgings were taxed 1½ cents per pound with a minimum duty of 35%. The last two items with the increased duties, accrued almost exclusively to the Nova Scotia Steel, who were the pioneer steel producers and whose original venture had been the Nova Scotia Forge Company. The increased pig iron duties were enjoyed by the reorganized Londonderry venture. Bituminous coal was left as before but anthracite was placed on the free list as a gesture to Ontario.<sup>(1)</sup> Labour as a class was to be benefited by the adoption of the American iron and steel schedule as a model for the revised tariff.<sup>(2)</sup> Protection was granted directly as the amount of labour contained in the product; least on

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(1) Debates 1887 - pps.402,501 et seq.

(2) Canadian Mining Review - Vol.15-p.172.

raw materials, and most on the finished product. The development of this primary industry, it was hoped, would be reflected by greater activity in the supplementary trades -- mining, quarrying, transportation and building. The effects would even spread to agricultural communities, if the growth of the charcoal iron industry demanded a large supply. It was also pointed out that the primary producer had only one method of reducing costs in hard times and that was by wage reductions, which was undesirable because the producers of raw materials would be affected. In addition, it was (3) asserted that the tariff was partly a revenue measure. Undoubtedly, additional revenue was most welcome to alleviate the expenses in connection with the construction of the Canadian Pacific Railway and the large expenditures on the enlargement of the canals.

By 1890, further alterations were made to the iron and steel schedule. The bounty on pig iron was raised from \$1.00 to \$2.00 per ton and the date of expiry was postponed five years to 1897. At the same time, the duty on spades and shovels was raised 5%. Scrap, wrought iron and steel was taxed at \$2.00 per ton -- as were butt ends of blooms and steel rails, imported as raw material. A horizontal increase of 3% was applied to light hardware -- washers, rivets, bolts, hinges, and wrought iron and steel nuts.

The next general revision of the tariff occurred in 1893. This was brought about by a general demand for a reduction of the

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(3) Debates - 1887 - p. 1208.

duties, especially those of the iron and steel schedule. Agricultural interests demanded reductions on the finished products. The revision tended in this direction. Duties were reduced on the finished products, but little or no change was made in the primary products of the iron industry. The principle of regulating duties, according to the work content was apparently forgotten. Pig iron remained dutiable at \$4.00 per ton and the levy on wrought scrap iron was increased to \$3.00 for 1895 and to \$4.00 thereafter. The following items were reduced:- puddled bars from \$9.00 to \$5.00 per ton; bar iron from \$13.00 to \$10.00; barbed wire from  $1\frac{1}{2}$  to  $\frac{3}{4}$  of a cent a pound; iron and steel screws from 35% to 30%; farm implements from 35% to 20%; spiegeleisen from 10% to 5%. However, bounties on certain items tended to offset these reductions. The bounty on pig iron was continued for five years for furnaces then built and was to be paid for five years for new furnaces on the beginning of operations. A bounty (1) of \$2.00 per ton was given to puddled bars. To compensate for the reduction of protection on billets, a bounty of \$2.00 per ton was enacted. A proviso was stipulated that these be made in (2) Canada from Canadian pig iron made from Canadian ore. The acquisition of ore deposits outside of Canada, as Wabana in the case of the Nova Scotia Steel, led to a slight revision in the bounty stipulations. In 1896, the bounty embraced the proportion of the pig iron made from Canadian ores. The general revision of

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(1) Iron Age - Vol.51 p.430.

(2) Donald "Can. Iron & Steel Industry" - p.103.

the bounties on the accession of the Liberal Government in 1897 followed the same principle, but in a much more material manner.

Reviewing the period 1879-1897, in which the policy of protection had been vigorously applied, the results as reflected by the iron and steel industry of Nova Scotia are rather disappointing. As was pointed out in the history of the industry (3) during this period, the two attempts at Londonderry and the Pictou Charcoal Iron project at Bridgeville failed to respond to the stimulus of protection. However, the period gave birth to the Nova Scotia Steel, which prospered under the combination of the right conditions. Examination has shown that fundamental conditions were responsible for the failures. Locations were poor, supplies of raw materials below standard, technical equipment deficient. The protection that should have been applied to transportation charges was absorbed by inefficiency.

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(3) See "History of the Early Industry".

P A R T 1.

THE NEW ERA IN NOVA SCOTIA IRON and STEEL INDUSTRY.

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The sad tale of the early industry has recounted the failures of the iron and steel industry in Nova Scotia. The new era will paint a picture of the application of mass production to the industry, of the introduction of modern finance with its mergers and with its complementary practices of ballyhoo and advertising; covering a period of thirty odd years, the last twenty of which have witnessed the feverish activities of war production and the rise and fall of the huge merger of the British Empire Steel Corporation. The destiny of that huge enterprise will be traced up to the time of its reorganization, through a period of post-war conditions that intensified the shortcomings of the "frenzied finance" as typified by the British Empire Steel Corporation. The subsequent reorganization, with its substantial alterations, opens new vistas that may or may not be a benefit for the industry in Nova Scotia.

A sharp contrast is presented between the two steel Companies of the Province in their earlier days. For that reason, it is necessary to trace the history of the Nova Scotia Steel Company from its humble beginnings up to the point of comparison with the Dominion Iron and Steel Company, which did not go

through a period of slow growth, but which came to life from the paper propositions of the promoters.

The Nova Scotia Company preceded the Dominion Iron & Steel Company by some twenty-five years and during that period, it had prospered. This unique performance undoubtedly suggested the Dominion Iron & Steel Company project to the promoters. In 1872, the foundations of the Scotia Company were laid, not with the trumpetings of the press and acclaim by the financial world, not by the lump investment of millions of dollars, but quietly and unostentatiously sponsored by the meagre savings of two metal workers. These two men, Fraser and Mackay, with a total capital of \$4000.00 built a forging plant at New Glasgow that bore the inspiring title of the "Hope Ironworks"<sup>(1)</sup>. At first, operations were confined to forging the necessary metal accessories for the wooden shipbuilding trade of the Maritimes, and in addition railway axles. Under skilful direction, the business prospered from the outset, and the increasing trade necessitated expansion. Consequently in 1878, the business was incorporated under the title "The Nova Scotia Forge Company"<sup>(2)</sup>. The scene of operations was transferred to Trenton, just outside the limits of the town. Raw materials consisted chiefly of wrought iron scrap, which was forged into various shapes to suit the demand. The business

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(1) C. S. Cameron - "Steel Industry of Canada"  
C. O. Macdonald - p.251 et seq.

(2) Can. Mining Manual, part 2 - 1897 viz. N.S. Steel p.97

prospered and grew. The constant demand for the output necessitated large quantities of raw material. To insure this last requirement, further expansion was necessary. A distinct forward step was to be taken. The Nova Scotia Steel Company was formed in 1882. It was capitalized at \$160,000<sup>(1)</sup>. While it was a part of the Forge organization, it was organized as a separate Company, so that in event of its failure, the original business would not be involved. This method of financial organization became a distinctive feature of the Scotia policy. The plans of the new Steel organization were ambitious. Steel was to be manufactured by the Siemens-Martin process. This was a forward step in that steel had not been made in Canada as yet. Despite the failure of the proposed steel industry at Londonderry, under the personal direction of Dr. Siemens, the directors of the New Glasgow concern aggressively pioneered the new field and did not hesitate to use capital for experimentation. Success beamed on this effort, partly in the guise of the National Policy. The works, also located at Trenton, produced the first steel ingot on July 25th 1883, -- the first steel ingot produced in Canada, pioneering the path for the million ton production of a later date. The original equipment included a 15 ton open hearth furnace, gas producers, a reheating furnace, and a rolling mill with two trains of rolls. The capacity of this plant was about 9000 tons per year.

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(1) C. S. Cameron - "Iron & Steel Industry of Canada".

Products ranging from steel plates to machinery steel were made from imported hematite pig iron and steel scrap. In addition, a nail factory was established in 1884 to make nails. The new industry was indeed successful and provided the sister forge Company with most of its raw materials. In return, the shops of the Forge were occupied to a considerable extent in making machinery and effecting repairs for the Steel Company. When the Steel Company was an approved success, the original Company arranged for a merger. The financial policy of the Company had proven successful in the first venture. This conservative policy was a protection against losses and any difference on money rates, borrowed by the firms, could be set down as a premium on the insurance against failure.

The effect of the National policy on the Steel Company cannot be denied. The protection received certainly helped to get the industry started. Moreover it was able to indirectly help the Forge Company, which did not receive any large amount of protection on its marine supplies, owing to the draw-back that was in operation. The integration of the two plants had introduced a new phase into the industry of the Province and the resulting success cannot be attributed solely to the National policy. Efficient management was the keynote, for it had insured the gradual expansion that did not over-estimate the demand. In addition, the ability to gauge the future of the industry led them

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- (2) C. S. Cameron - "Iron & Steel Industry" + Canada and Its Provinces - Vol.9  
(3) Canadian Mining Manual, part 2, Vol.1897-p.97 et seq.

into the steel industry and on to success.

On January 1st 1889, the Nova Scotia Steel and Forge Company was incorporated to embrace the two formerly separate organizations. The organized capital was \$1,000,000.<sup>(1)</sup> Rapid extensions of plant to insure more diverse production, with consequent higher protection, followed, and the resulting economies of greater integration were gratifying. Production embraced a wide range of articles:- railway fish plates, plough plates, nail plate, bars and angles, merchant steel in rounds, flats and squares, rivet steel, tramway and pit rails. Business was on the increase. However, a new problem confronted the directors. The dependence on external sources for supplies of raw materials, which had lent itself favourably to small production, began to be a source of trouble in connection with the greatly increased business. Moreover the elimination of the pig iron producers' profits and the availability of bounties suggested further vertical integration and promised more and greater economies. The combination of the direct and the indirect benefits pointed the next logical move to the directors. This was the manufacture of pig-iron.

Following the original financial policy, the parent organization sponsored the New Glasgow Coal, Iron and Railway Company, which was incorporated in 1890.<sup>(2)</sup> It was an ambitious

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(1) C. S. Cameron + "Industrial Canada" Vol.2-p.328.

(2) Ibid - also Debates 1894 p. 2346

project and included the erection of a furnace, the purchases of deposits of ores, and the building of the necessary railway to join these materials to the furnace site. Consequently, the iron ores of the district were prospected and the most favourable were acquired. The railway was built to connect the iron mines, the coal mines at Stellarton (not one of the properties) and the blast furnace site at Ferrona -- north New Glasgow. Ferrona was favourably located at the junction of the Company's road and the Intercolonial. A coal washer was built and a battery of coke ovens installed and the foundations of the blast furnace laid in 1891. The furnace was blown in the following year. It was the last word in furnace design and its product was of a high standard. Soon after the oft appearing ghost that had jinxed many previous endeavours -- lack of ore -- began to haunt Ferrona. The outcome of this last condition was most auspicious. It led to the purchase and development of Wabana in 1894,<sup>(3)</sup> the importance of which has been stressed as the most important event in the recent history of the industry. The Wabana ores made available several deposits of local ores, previously useless, by mixing to produce<sup>(4)</sup> a fine foundry iron. Consequently the investment in these mines was not lost. Despite the depressed conditions of the iron trade during this period, the furnace at Ferrona was proving a success.

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(3) Drummond "Minerals & Mining in Nova Scotia" - pps.209-212, Viz. Chap. on "Iron Ores this thesis.

(4) Canadian Mining Manual - 1897 - Vol. 2. p.35.

The keystone of this success was the integration of the whole industry at New Glasgow.<sup>(5)</sup> The increasing demand for structural steel as fabricated by the Steel and Forge unit was reflected in the demand for pig iron. Moreover the unchanging quality of the Ferrona product was a guarantee to outside buyers, as it was to the steel producing unit. In a word, the integration furnished a certain fixed market while the surplus production was of a high quality well able to compete in the domestic market. Moreover the bounties aided materially to weather the depression of the nineties.<sup>(1)</sup> The purchase and use of Newfoundland ores had considerably lowered the bounties on pig iron, but the general quality of the ore more than compensated for this. However the ability to withstand financial depression was a mark of great strength at this time. The time was ripe for the actual merger with the Steel Company. The figures below, giving the output of Ferrona during those crucial years, show a great degree of stability:-

PIG IRON PRODUCTION

|      |       |        |      |
|------|-------|--------|------|
| 1893 | ..... | 22,500 | tons |
| 1894 | ..... | 28,142 | "    |
| 1895 | ..... | 17,331 | "    |
| 1896 | ..... | 20,470 | "    |

The furnace had a capacity of 100 tons a day, so that on the average, it was in operation at capacity figures about 220 days per year, which, when allowing for repairs and re-linings, is a pretty fair average during a depression. (2)

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(5) Can. Mining Review - Vol. 2 - page  
(1) " " " Vol. XLV - p.4.  
(2) Can. Mining Manual, part 2, p.36.

The amalgamation was incorporated as the Nova Scotia Steel Company in 1894 and the actual physical union began on January 1, 1895. The authorized capital of this Company was \$5,000,000.<sup>(3)</sup> The ramifications of the Scotia Company embraced the mining of ore, for sale or for use in the Company's furnace, the production of coke, the production of pig iron, the processing of steel and conversion into salable shapes:- for forgings, axles, and railway supplies, for agricultural shapes, and also for bolts, spikes, nails, and the lighter structural shapes. Mild steels were produced almost exclusively. Consequently no steel railway rails were offered. This may be due to the lack of protection, as steel rails were free at this time.

The only raw material that was lacking at this time was coal. And it was the search for supply of coal at the time that had a great influence on the future of the Nova Scotia industry. The two principal effects were the removal of the primary plant of the Scotia Company to North Sydney, and the formation of the Dominion Iron and Steel Company. But first, the development must be traced. On the acquisition of the Wabana ore deposits, the directors of Scotia realized that large quantities of coal must be produced to insure the future of the industry.<sup>(4)</sup> The mines of Cape Breton naturally beckoned to these men as the source of coal supply. The only objection to the Cape Breton coal was the high sulphur content -- much higher than in the coal they were using at

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(3) C.S. Cameron pamphlet, also Canadian Mining Review, Vol. 14  
p. 256.

(4) Drummond - p. 225.

the time. However, the coal washer at Ferrona was most efficient and suggested experimentation with the Cape Breton coal. By this means, some of the slack coal formerly wasted could possibly be used for metallurgical coke. Trials proved the success of the process and consequently the Scotia Company began to negotiate for coal properties in Cape Breton. The renewal of the bounties was an added incentive to speed up production. Coal was a necessity. The negotiations with the Whitney Syndicate failed.<sup>(1)</sup> (See the Birth of DISCO). Since the Dominion Coal Company were unwilling to sell or merge, the Scotia directors turned to the General Mining Association, who held most of the remaining coal leases in the Cape Breton district. Negotiations were carried to London, England, the headquarters of the General Mining Association. Finally an option on the property was secured.<sup>(2)</sup> Meanwhile in 1899, the Scotia Company sold four-fifths of the land deposits at Wabana to the Dominion Iron & Steel Company for \$800,000,<sup>(3)</sup> while the purchase price for the entire deposit had been \$120,000 but five years previously. This also gave the Scotia Company some money to negotiate with and consequently the coal properties were taken over from the General Mining Association. The mines were therefore acquired as a going concern and were immediately consolidated with the main Company. The properties, leases and titles of the Mining Association were acquired in 1900.

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(5) Drummond - p.225.

(6) Drummond - p.226 - 16,000 tons used in first trial.

(1) Drummond - p.226-7.

(2) Monetary Times - Vol.34 p.618. Drummond p. 221.

(3) Jeans J. "Canada - Resources and Possibilities" - p123.

The new Corporation -- the Nova Scotia Steel and Coal -- had a capital structure of \$6,030,000 -- \$5,000,000 common and \$1,030,000 preferred at 8%.<sup>(4)</sup> On the common stock issue, the Report of the Royal Commission (Nova Scotia Mines) 1925, names \$2,000,000 as promotion stock.<sup>(5)</sup> Concerning the 8% payable on the preferred stock, which seemed rather an index of doubt in the Company in view of contemporary issues at 7%, it may be remarked that most of this stock was closely held by the original directors. Moreover 8% had been the ruling rate on the preferred of the old Company and it was maintained by tradition.<sup>(6)</sup>

The acquisition of the coal properties in Cape Breton, the primary plant was moved to Sydney Mines. Most of the ores used in the furnaces came from Newfoundland. The distance to New Glasgow was far greater than to Sydney Mines, so great savings could be effected in transportation. Then too, the coal supply was contiguous. The equipment at Ferrona was in need of replacement, so the move to Sydney Mines did not necessitate the abandonment of any valuable machinery. The pig iron and steel billets would be produced at Sydney Mines and then shipped to Trenton for finishing.<sup>(7)</sup> Moreover a generous grant by the town of Sydney Mines with freedom from taxation for twenty years was an added inducement.<sup>(8)</sup> By 1902, the construction of the plant was under way. Operations were not interrupted as the plant at Ferrona was kept in operation.

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(4) Jeans J.-p.

C. S. Cameron - p. Monetary Times - Vol.35-p.197.

(5) Report Royal Comm. N.S. - 1926 - p.53.

(6) "When the Nova Scotia Steel Company was first formed, much of the stock was given away, and anybody could buy it for 7 or 8¢ a share".-Debates-1920-p.1967.

(7) Monetary Times - Vol.26 - p.346.

(8) " " " 87 p. 37.

Everything was rosy at the time. The plants at Trenton and Ferrona were booming. The equipment was taxed to capacity. Coal could hardly be mined to meet the demand. Wabana was producing large quantities and supplying in addition the European markets, and thereby providing an attractive source of income. The new blast furnace at Sydney Mines was blown in on August 30th, 1904. The furnace at Ferrona was immediately abandoned. To supply the coke, 150 by-product ovens were installed. Three 40 ton Siemens-Martin basic open hearth furnaces completed the primary equipment. In 1905 a rolling furnace to be used as a mixer was added to the steel equipment. Additional ore deposits were procured to safeguard against exhaustion -- 1905, submarine at Wabana -- 1907, areas in Brazil. Development work on the ore mines at Wabana necessitated additional machinery, which greatly reduced costs per unit of iron extracted. A line of ships was leased for the carrying of ores to Sydney Mines. Meanwhile the secondary plant at Trenton had not been neglected. In 1908, a new forge building was erected and equipped with the latest machinery. Additional coal supplies necessitated the opening of a new mine at Sydney Mines in the same year. In 1910, the whole equipment of the Company was subjected to a general over-hauling. The primary plant was remodeled and equipped with the latest devices. Similar changes

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- (9) Jeans J. p. 123 et seq.  
(10) Monetary Times Vol.38-pps.116-195, 227-28.  
(1) C.O. Macdonald-p.95-96.  
(2) Commercial & Financial Chronicle-Vol.83-p.210.  
(3) Monetary Times-Vol.36-p.417.  
(4) Can. Mining Journal-Vol.39-p.61  
(5) Monetary Times-Vol.44-p.544.

were effected at Trenton which had to be enlarged to keep track  
(6)  
of the demand. Two new rolling mills were installed with the  
necessary devices and a new power plant was put in operation to  
help reduce costs. By 1911, the forge had been overhauled and  
(7)  
equipped to handle the heaviest of steel forgings. It was the  
finest mill in Canada at the time and its capacity production was  
very valuable in the production of steel shell forgings during  
(8)  
the War.

The numerous changes in the Scotia equipment were  
effected in an effort to reduce costs, on the expiration of the  
bounties. The best method was to diversify production. Consequently,  
the directors of the Steel Company launched a new Company designed  
to use the products of the parent Company. It was incorporated  
(9)  
in 1912 as the Eastern Car Company, located at Trenton. It was  
designed to manufacture steel railway cars of any type. The plant  
was of the latest type and its rated capacity was 25 cars per day.  
The Great War furnished a good deal of business for this Company,  
which shipped cars to France, Russia and Italy. Besides it  
(10)  
delivered large quantities of cars to the Canadian Government.  
However, the type of product has caused production to be governed  
by the fortunes of the railways. To insure adequate capacity on  
the primary end, the open hearth capacity was increased in 1913  
by the addition of a 50 ton furnace. A new mine was also opened.

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- (6) Monetary Times - Vol. 44 - p.122.  
(7) Canadian Mining Journal - Vol. XXXI p. 325)  
(8) D. Carnegie "Munitions Supply in Canada" - p. 19.  
(9) Capital stock - \$750,000 Preferred - \$800,000 Common.  
(10) Annual Report - Scotia - 1920.

At Trenton, a rivet and bolt mill was installed to supply the wants  
(11)  
of the Car Company. Shortly after, on the outbreak of the World  
War, the Scotia Company pioneered the field of munition steel.

The operations of the Scotia Company had been almost  
entirely free from vicissitudes during the period just reviewed.  
The enlarged operations and the shift of the primary plant to  
Sydney Mines had entailed a large expenditure, but conservative  
operation had enabled the Company to maintain favourable earnings.  
In addition, the bounties had netted the Company considerable  
revenue. The amounts paid during 1906, 1907 and 1908 were  
respectively \$150,966.72 - \$179,210.33 and \$147,934.41. These  
payments represented about 50% of the usual dividend on the Common  
stock. Dividend payments averaged 4% from 1901 to 1904. No  
payments were made in 1905 and 1906, despite the earnings that  
were on the average. These were "ploughed into" the maintenance  
account to defray the costs of repairs effected. (1)  
From 1907 to 1909, the dividend rate on the Common stock was  $2\frac{5}{6}\%$ . (2)  
The Common stock was increased by 20% in 1909, involving a sum of \$1,000,000  
which was paid as a stock bonus. This was given in compensation  
for the withholding of dividends in 1905 and 1906, when no dividends  
were paid although the earnings were \$559,906.63 and \$960,281.03  
respectively. These earnings had been turned into the property and  
the additional issue of bonus stock represented the equity which

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(11) Monetary Times - Vol.47 -p.2223.

(1) C.O. MacDonald - "Coal and Iron Industries of Nova Scotia  
p.98.

(2) Poor's Manual - 1925 - p.1230.

had been increased by these earnings. From 1910 to 1913, the same policy of making improvements out of earnings was continued, yet the dividend rate was, on the average,  $5\frac{5}{8}\%$  indicating that the Company was in excellent financial condition. In 1914, Scotia returned  $4\frac{1}{2}\%$  on the common stock, but further dividends were withheld until 1917, when  $2\frac{1}{2}\%$  was paid. In 1917, control of the Scotia Company passed into the hands of American interests. An issue of <sup>(3)</sup> \$5,000,000 was floated and a stock dividend of \$2,500,000 was paid.

During the War period, Scotia added greatly to the prestige of the steel industry of Nova Scotia. At the outbreak of the War, the Imperial Munitions Board applied to Canada for co-operation in the supplying of steel for shell manufacture. The specification called for "acid steel" of which there was no production in Canada, but on closer examination of the specifications Col. Cantlie, a member of the Shell Committee and President of the Nova Scotia Steel and Coal Company, found that the requirements specified "forged steel of the best quality". Previous practice had not included the use of "basic steel" in the production of shells, so that the British War Office refused to accept "open hearth" steel. However, experiments were made at the plant of the Nova Scotia Steel at Trenton, N. S., and after a few days hectic work a steel was produced which qualified. The War Office accepted the steel at once and confirmed the previous order for shells, made from

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(3) Moody's Manual - 1918 p.1157.  
Poor's " -1925 p.1231.

"open hearth" steel of the "Scotia" standard. This was the first success. While the experiments were being carried on to prove the quality of the steel, another department of the Scotia Company was preparing the equipment for the forging of shells. The huge hydraulic press that had been installed in 1912 was of the greatest importance in this process. The press had been originally designed to forge ships' frames and other large units. However it was converted to the new requirements, and by an ingenious arrangement it was altered to forge four shells at one operation. Additional small presses were rushed to New Glasgow. On September 21, 1914, the Nova Scotia Steel Company was advised by the War Office to proceed with the forging of 200,000 shells. The results of the two experiments were of the greatest importance in the history of the munition supply of Canada. The results of the work even crossed the sea to England, where the process was further improved to include the use of open hearth steel in the manufacture of high explosive shells. The process that the Nova Scotia Steel Company had developed was made available to all steel producers, and the methods, together with the fullest information, were thrown open to all Canadian shell manufacturing concerns for inspection. This achievement will always stand to the credit of the Nova Scotia steel industry, and it cannot be classified but as an exhibition of patriotism, emanating from the efficiency of the Nova Scotia Steel Company. (1)

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(1) D. Carnegie - "History of Munition Supply in Canada"-pps. 18-25.

During the years 1914-1918, the Nova Scotia Steel Company expended almost \$2,000,000 for plant and equipment, necessary for the forging and finishing of shells. Almost the entire output was devoted to the production of shells and the total tonnage of war material produced was 166,379 tons of finished steel. A shipyard was erected in 1916 and four ships were built for the Imperial Munitions Board. The Eastern Car Company, subsidiary of the Nova Scotia Steel Company, produced during the War, 13,853 cars, of which 4100 cars went to the French Government, 4400 cars to the Russian Government and 2963 cars to the Canadian Government. The cessation of hostilities did not handicap the Scotia Company to any great extent, as most of the special equipment had been amortized. The remainder, while in need of repairs and overhauling was easily adapted to peace time production. (2)

PRODUCTION OF PIG IRON AND STEEL INGOTS.

|      | <u>PIG IRON</u> | <u>INGOTS</u> |            |
|------|-----------------|---------------|------------|
| 1914 | 24678           | 53334         |            |
| 1915 | 73110           | 97072         |            |
| 1916 | 81507           | 129903        | Gross Tons |
| 1917 | 86153           | 127808        |            |
| 1918 | 92174           | 58238         |            |

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P A R T 2.

THE LAUNCHING OF THE DOMINION IRON & STEEL COMPANY.

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The date of incorporation of the Dominion Iron & Steel Company and the establishing of the steel plant at Sydney, officially mark the beginning of the other branch of the present Nova Scotia steel industry. To give a true conception of the initial stages of that Corporation, the background of negotiations that resulted in the birth of the Dominion Iron & Steel Company must be scrutinized. The state of mind of the people at that time must be considered -- Canada had come into its own. Nationality had developed. This state of affairs clothed the people of Canada in a cloud of optimism. Nova Scotia, too, was hopeful. Industrially ambitious, the people of that Province thought that the time had come. Politicians acclaimed a new era for the Province and the people believed them. It was the day for the promoter -- and he failed them not.

The background of the Dominion Iron & Steel Company can be found in the Dominion Coal Company, and Mr. H. M. Whitney, its President. The Dominion Coal Company had been formed in 1893, through a union of the operators of the south of Cape Breton. H. M. Whitney had promoted the formation of this Company.

Its capital structure included \$3,000,000 preference shares and \$15,000,000 common stock of which \$12,500,000 was promotion stock. (1) Under the new regime, production increased rapidly, much wasteful competition was eliminated, and several unprofitable mines were closed down. Marketing of the product was systematized and the product was distributed to the St. Lawrence and New England markets. Shipping facilities were improved to handle the increased production. H. M. Whitney in his connection with the New England Gas and Coke Company, provided the foreign market. The reductions in duty in 1894 greatly helped this trade. However, the effects of this market were discounted before full realization by the enactment of the Boston Smoke Nuisance Act of 1896. (2) The local market at that time could not begin to absorb the total production. In winter, the St. Lawrence market was closed to water-borne coal. Consequently the winter output had to be banked until the opening of navigation. Obviously, local markets were needed for the continuous operation of the mines. The high fixed charges, especially maintenance costs, demanded intensive operations at certain periods, to return any earnings on the investment. Seasonal fluctuations were more economical to operators than short shifts or partial operation, since with the latter type of operation the mines must be ventilated and pumped as under capacity production. Consequently, a

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(1) Royal Commission on Mines - N.S. - 1925, also

(2) Forsey E. - "Econ. & Soc. Aspects of N.S. Coal Industry.

domestic outlet for the product was very desirable.

The Nova Scotia Steel Company offered just such a market locally. They, on the other hand, were looking for a dependable source of coal supply. An outlet of this type was doubly advantageous to the Coal Company, as it enabled large quantities of slack coal, which previously had been largely wasted, to be sold. Slack coal could be used in the production of blast furnace coke. Thus, iron smelting offered a market that was lucrative. This discovery by Mr. Whitney was the embryo of the Dominion Iron & Steel Company. However, the idea took some time to develop. The Dominion Coal Company lost no time in entering into negotiations with the Scotia firm. As a result, a series of experiments that established the suitability of the Cape Breton coal as a metallurgical fuel was undertaken. <sup>(1)</sup> The first shipment of 16,000 tons was dispatched to Ferrona. It was washed to remove the excess of sulphur, coked in the ovens and fed to the blast furnaces for a week. Results were very satisfactory. A second shipment at a later date of 50,000 tons confirmed the first experiment. Negotiations became more intense. The directors of Scotia wished to contract for sufficient coal to supply two blast furnaces to be located on Cape Breton Island. H. M. Whitney then outlined his plan. He proposed a merger and the erection of a large plant. The idea of two furnaces did not appeal to him. He desired to erect four blast furnaces and ten open hearths. This large expansion did not meet with the assent of the more conservative board of the

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(1) Drummond - p. 226.

Scotia Company, whose financial policy was to proceed slowly, waiting till the new addition justified inclusion into the  
(2)  
parent Company. As a result, the negotiations were broken off. Mr. H. M. Whitney, fortified by the knowledge that the coal was adaptable, set out to formulate his plans. In retrospect, it seems rather unfortunate that the Scotia Company did not embrace the new scheme. Safeguarded by a conservative management, the initial days of the Dominion Iron & Steel Company would have been less wasteful. The ore areas would have been common property and the coal areas would have been operated to a greater advantage. However, speculation triumphed and the industry as a whole suffered and is still suffering. The experienced directorate of the Scotia Company would have tempered the special optimistic enthusiasm of the promoters and would have contributed valuable experience.

The failure of the negotiations with the Scotia Company did not dampen the ardour of H. M. Whitney. A syndicate  
(3)  
was formed to launch the new Corporation. The coal deposits were already controlled -- the next move was to acquire some ore deposits. Finally the greater section of the Wabana land deposits  
(4)  
was purchased from the Scotia Company. The Dominion Coal Company had taken an option on these deposits in 1894, but the affairs of the Dominion Coal Company at the time, being menaced by

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(2) Drummond - pps. 225-29.  
(3) C.S. Cameron - pamphlet.  
(4) Jeans J. - p.123

financial troubles and the weight of adverse popular opinion,  
(5)  
did not permit the exercising of the option. The actual purchase of the Wabana deposits was the ideal move for a promoter. The owning of a mine, prospected and developed, was a great attraction to timid capital. And incidentally the property was to come in handy for the operation of the iron and steel industry. Nor was the value of the mine under-emphasised in the Prospectuses. The uninitiated was thereby attracted -- that class of people who love to put their money in "a hole in the ground". And besides here was "quid pro quo" or something that resembled it -- an added attraction to the foreign investor, who was an important factor in the sale of the securities.

Finally, the preliminary promotion work was completed. On June 22, 1899, the Dominion Iron and Steel Company was incorporated with extensive powers. It was capitalized at \$25,000,000. The nucleus of operations was Sydney where the plant was to be built. While still in the embryonic form, the promoters secured the largesse of the three governments -- Federal, Provincial and Municipal. The Federal Government helped the launching of the enterprise. The bounties, which were slated to lapse in 1902, were extended until 1907. This extension provided a cash bonus on production, estimated in the circulars at \$8,095,000 for the period  
(1)  
1901-1907. The estimated sum was an added incentive for the sale of the securities then being launched. The Provincial

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(5) Drummond - p.227.

(1) Ca. Annual Review - 1901 - p.93.

Government granted the privilege of paying dividends on preferred stocks during the construction of the plant. The last procedure was introduced merely to maintain the price of the stock. Dividends are supposedly the result of earnings out of the production equipment of a Corporation, yet here was a case where dividends were paid before the plant was producing. Blue Sky Laws are deliberately enacted to prevent the deception of the unwary, yet such a procedure was countenanced. The Provincial Government provided another concession in the form of a rebate on coal used for metallurgical purposes of six and a quarter cents a ton. This contribution augmented the Whitney gift collection by a minimum of \$25,000 per annum.<sup>(2)</sup> The municipality of Sydney offered a generous site for the plant, freedom from taxation for 30 years, and a complete change of heart to Mr. Whitney and his Dominion Company.<sup>(3)</sup> The site chosen was valued by the town at \$83,000. This type of inducement was common to the period and still persists as a form of protection even to this day.<sup>(4)</sup> The Scotia Company received a grant of \$50,000 and a grant of free taxes for 20 years in Sydney Mines. Other similar offers determined the location of many large projects in different centres in Canada.

As to the change of heart on the part of the Sydneyites for Mr. Whitney, the original hardness was occasioned by the

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- (2) Donald - op. cit.-p.203  
(3) C. O. Macdonald - op.cit.pps.83-86.  
(4) Monetary Times - Vol.35 - p.842.

abandonment of some collieries located at Sydney shortly after the formation of the Dominion Coal Company. These mines were closed because they were unprofitable. At that time, Sydney, a hamlet of some twenty-five hundred people, saw its sole possession wiped out. Mr. Whitney and his Company were reviled as monopolists and octopi -- a charge that was later hurled at the British Empire Steel Corporation. The announcement of the proposed steel plant for Sydney uncurded the hearts of the Sydneters and the milk of human kindness flowed again to engulf Mr. Whitney in civic honours. Drummond writes of the reception at Sydney:- "The people did him the high honour of conferring the freedom of the City -- a City since -- at that time, a straggling, woe-begone village, upon him".<sup>(5)</sup>

Mr. Whitney was no less eloquent on the future of the project, predicting prosperity in a large measure for Nova Scotia, as the result of the new organization.

"Here in the home of the great basic industry of iron and steel all other industries will surely follow. On yonder land, where construction has already commenced, I know that the raw materials for iron and steel can be assembled more cheaply than at any other tide-water in the world - limestone on our shores - coal for metallurgical purposes, equal to the best in the world, and iron areas on the adjoining coasts of Newfoundland".<sup>(1)</sup>

The return of ship-building was prophesied with the development of the iron and steel industry. The press in Canada

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(5) Drummond - op. cit. 229.

(1) Drummond - p. 222.

and in England acclaimed the enterprise. Prospectuses stressed the "fortunate juxtaposition" of the raw materials, and painted in glowing terms the future profits that would accrue from an investment in the project. The expectation of bounties to the extent of \$8,000,000 was additional bait. Consequently, the sale of the securities was rapid. The General Manager, Mr. Moxham, speaking to the Toronto Board of Trade voiced the opinion that Sydney was to be the steel centre of the world.

"So great is this promise that it has ceased to be local. It has ceased to be sectional. It has become international in its influence. At this moment, Sydney is debated with doubt and misgiving by the large German Syndicates, and in the States the strength of her position is conceded by every expert. Canada alone at this moment does not realize how splendid an opportunity is within her control". (2)

The scheme was now duly launched. The imagination of the investor was aroused by the acclaim of the press. Speculation stalked on the stage -- so splendidly arranged by roseate reports. Eyes were blinded to the fact that of the issue of \$20,000,000 Common stock \$15,000,000 was promotion "water".<sup>(3)</sup> Rumour had it that the Morgan interests in the United States had acquired the steel works at a price of \$50,000,000. The President of the Company hastened to deny the rumour in the Montreal "Star", while<sup>(4)</sup> emphasizing the strength of the position as "unique and impregnable".

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(2) Can. Annual Review - 1901 - p.93  
(3) Report of Royal Comm. N.S. - 1926 - p.53  
(4) Can. Annual Review - 1901 - p.93.

The bond issue of \$8,000,000 was taken at 90. The common stock, which had been put on the market at 15 in 1899, skyrocketed to 79 $\frac{3}{4}$  under the pressure of speculation. The rumours of the United States interests added to the speculation. However, with the slump of 1908, this issue dropped to 8 $\frac{3}{4}$ , a depreciation on the whole issue of over \$11,000,000.<sup>(1)</sup> The preferred issue was syndicated at 85, and on the market soon rose to 104. In 1903, it dropped to 20 and for the next year fluctuated widely around 75.<sup>(2)</sup> The provision that dividends could be issued before they were earned helped the sale of this stock. However, that policy was not the hallmark of conservative financing. Much of this stock was syndicated by the Canadian Banks. Sir Wilfrid Laurier and Sir Chas. Fitzpatrick "were disgusted by bankers' manoeuvres in the organization of the Steel Company".<sup>(3)</sup>

Despite the exaggerations of the prospectuses, the merits of the location were auspicious. The survival of the industry is adequate proof of this fact. The iron ore deposits, as had been pointed out in the section on that reference, were extensive and contained ore of a good quality.<sup>(4)</sup> The coal deposits, while not containing the "finest and cheapest coal" in the world, were situated within a radius of twenty-five miles, in almost limitless abundance. Slack coal was very cheap in the early days of the present steel era in Nova Scotia. The price first was 10 cents a ton and gradually rose to a dollar per ton.<sup>(5)</sup> However, the contract that the Dominion Iron & Steel Company had with the Dominion Coal made fuel available

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- (1) Canadian Annual Review. - 1903.
  - (2) Jeans J. op.cit. p.125.
  - (3) Evidence Royal Comm. N.S. 1925 - Dr. Kendall -p.1410-
  - (4) Raw Materials Sub.section "Iron Ore" this thesis.
  - (5) " " " " "Coal"

(1)  
at \$1.20 per ton. Ore could be landed at about a dollar a ton. The markets that were prospected were the world markets, and the position on tide-water was ideal, both for assembling the raw materials and for the delivery of the finished product. The collective force of these advantages was so great that the English iron masters considered the Nova Scotia steel industry as the "Damoclean sword" that threatened their primary business. Local mathematicians figured that Sydney had an advantage of 11779 miles over Pittsburg and Birmingham, Alabama, in the markets of Europe. Railway carrying costs were a negligible factor in the assembling of the raw materials at Sydney, which gave that site a \$2.00 advantage  
(2)  
over Pittsburg. Consequently the promoters expected to land pig iron in England at \$8.00 per ton against the prevailing English rate of \$14.60; steel ingots could be laid down in England at  
(3)  
\$13.00 against the English price of \$22.90. No wonder the English iron trade was perturbed. But their fears were groundless. The paper costs were a far cry from the stark cost figures on the books of the actual operating plant. Miscalculations became evident as operations began. Skilled labour had to be imported from England and Germany. The Wabana ores proved unsuitable for Bessemer steel -- the principle type used in England. The development of open hearth steel was not as yet on a par with the Bessemer process. The collectivity of small overlooked additional

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- (1) E. Forsey - op.cit. p.9)  
(2) Can. Annual Review - 1901 - p.93.  
(3) Jeans J. - op.cit. p. 123.

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- (1) E. Forsey - op.cit. p.9)  
(2) Can. Annual Review - 1901 - p.93.  
(3) Jeans J. - op.cit. p. 123.

costs advanced the ultimate cost of production. The costs of mining coal over-balanced the advantage of proximity.

However, it must be emphasized that the natural setting for the production of steel under the proper conditions of efficiency still remains. The problem of marketing the products has become complicated. The value of the Wabana deposits has been realized. It is a great asset to the Nova Scotia steel industry -- an important factor in the future growth.

The above cross section of the speculation and enthusiasm is important, because of their influence on the construction programme of the project. The first directorate of the Dominion Iron and Steel Company was made up of men, largely ignorant of the steel industry, but withal important figures in the world of finance and "big business". The roster was as follows:- H. M. Whitney President, Hon. George A. Cox and Elias Rogers, Toronto; Sir Wm. Van Horne and Messrs. James Ross, R. B. Angus and Robert MacKay of Montreal; Messrs. A. F. Dimock and A. H. Paget of New York; Hon. David MacKean and Messrs. W. B. Ross and B. F. Pearson of Halifax; and Mr. J. S. MacLennan. It was an imposing board, but the nearest approach to steel experience was the railroad and coal men on the board. The situation called for a directorate with a specialized knowledge of the steel business, which could have guided expenditures within conservative limits. The first General Manager, A. H. Moxham, was a mine owner in Pennsylvania and was given a salary of \$50,000

a year. It was reported that he had invested a \$1,000,000 in  
(1) the business. The general optimistic outlook, inspired by the prospectuses, seems to have dulled the sense of efficiency, for money was spent with a lavish hand, the more wasteful by lack of true examination and experimentation. Lack of co-operation in the  
(2) official staff added to the difficulty. Costs, the governing factor, for the entry into world markets, played hide and seek. The original plans called for Bessemer production, and considerable money had been spent on equipment when it was discovered that the ores were unsuitable. A great deal of unnecessary expenditure resulted from excessive construction. A rail mill was ordered and later discarded in favour of another mill of greater adaptability. The following excerpt from the Canadian Annual Review of September 1903, states the general conditions:-

"The whole works could be reproduced for two-thirds of what they have cost. There has been a waste of seven or eight million dollars. Experts working under the control of a board, which did not include one member, having a practical acquaintance with the business which he undertook to direct. Many protests reached the ears of the directors, but were disregarded, and now that disaster and disgrace had overtaken one of the most promising concerns ever launched in Canada, one cannot altogether acquit the board of directors of responsibility in the matter. In addition to the failure of the board to control and direct the expert knowledge that was at their disposal, they incidentally failed to ascertain in the earlier stages of their history just what class of steel could be made, which accounts for the change of programme, the abandonment of some mills and the purchase of others".(3)

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- (1) Can. Annual Review - 1901 -p.95.
  - (2) Can. Mining Review - Vol. XX - p.76.
  - (3) Jeans - Canada's Resources - p.125.

This detailed account of the early days of the Dominion Iron and Steel has been given to show the burdens that saddled the industry. In the light of these conditions, it is not at all a matter of surprise that the industry to-day has not enjoyed the prosperity that has come to many of the steel enterprises throughout the world. Then, too, if the above statement be correct, the amount of the bounties paid to the industry went into the sink hole of inefficiency. To make the burden -- it was not really a burden to the financial end of the Company for no dividends were paid on common stock while the Company remained as a separate entity -- worse in respect to the future ability to raise funds by the medium of common stock, the huge promotion issue of \$15,500,000 was outstanding. The very fact that the industry has survived is remarkable.

The physical growth of the project was rapid. By 1900, building operations were in full swing. Four blast furnaces of the latest design were erected, with a combined rated capacity of 1200 tons per day. These were completed and blown in by the end of 1901. Pending the completion of the open hearths, the product was shipped abroad in large quantities, as it carried a bounty. A coke oven plant of 400 Hoffman oven had been completed to supply the metallurgical coke. The open hearths were completed late in December 1901 -- the unit consisting of ten 50 ton furnaces. The product was of a high quality and was adaptable to the usual practice. The export trade was continued for a year in this line --

steel billets. A blooming mill was added to the equipment, as it was decided to make rails. However, the first mill, built in 1902, had to be discarded.<sup>(1)</sup> Plans were made for further processing equipment and for a time, a structural steel mill was projected. Finally it was decided to erect a rail mill, so as to get the protection given of \$7.00 per ton in 1903. A large quantity of billets was shipped to Scotland in these years, as the product of the blast furnaces was larger in volume than<sup>(2)</sup> the steel producing capacity. Meanwhile the original General Manager had been replaced by Graham Fraser, who had been connected with the Nova Scotia Steel Company, and at once a reconstruction campaign was begun. Great inroads were made into inefficiency. The coke and coal washing plants were reorganized and additional<sup>(3)</sup> shipping and loading facilities were enlarged. Machine shop and foundry were also added to the plant.

Changes in the financial control were made in 1901. Whitney sold his interest to James Ross and his syndicate of<sup>(4)</sup> Montreal. Whitney faded from the picture because of "poor health". Ross then assumed the Presidency and several changes were made in the Board. Meanwhile, the coal situation was becoming involved. The cause of the strife and the attendant financial loss between the Dominion Coal and the Dominion Iron and Steel Company arose from the contract that had been made in 1899. It had been signed on June 29, 1899, one week after the incorporation. The contract had

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(1) Commercial and Financial Chronicle - Vol.LXXI - p.1169.  
(2) Monetary Times - Vol. XXXVI - p.734.  
(3) Commercial and Financial Chronicle - Vol.LXXV - p.27.  
(4) E. Forsey op.cit. p.9.

provided for the coal supply of the steel plant at \$1.20 a ton. It also embodied an option for the lease of the properties of the Dominion Coal Company by the Steel Company, expiring January 1, 1903, which provided that the Steel Company pay all fixed charges-- 6% on the common stock and 15¢ a ton on output over 3,500,000 tons. This was a most favourable contract for the Coal Company, as the prevailing prices did not begin to offer such returns. However, in 1902, the Dominion Iron and Steel Company leased these coal properties. The wisdom of this move was represented in 1903 by a floating debt of \$2,500,000 which to a Company in the position of the Dominion Iron and Steel, could not be refunded by the issue of new <sup>(1)</sup> bonds. This floating debt also hindered the Company in raising the necessary money for the erection of additional mills. With the change of control by the Ross syndicate to Mr. J.H. Plummer, former Assistant General Manager of the Canadian Bank of Commerce, the contract was broken. This was in 1903. A new contract was signed that provided for sufficient fuel to supply the needs of the plant at the price of \$1.28 per ton of fresh "run of mine" coal. There was an option embodied in the contract that stipulated that the Coal Company could supply slack after 1907, if not to the <sup>(2)</sup> disadvantage of the Steel Company. In 1906, the demands of the Steel Company necessitated the opening of a new mine to increase the output. The coal from this new seam proved worthless for

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(1) Commercial and Financial Chronicle - Vol.LXXV -p.1402.  
(2) Annual Report 1910 -DISCO.

metallurgical purposes, because of its high sulphur content, which could not be successfully eliminated by washing. The steel plant rejected these shipments and demanded that fresh "run of mine" from the Phalen seam be supplied, as per contract. During the years 1905 and 1906, the Coal Company could not supply the specified "run of mine" and the Steel Company under temporary agreement had to accept deliveries of slack and banked coal. Additional supplies had to be purchased outside at increased figures. For a time consignments were sent marked as "Phalen run of mine" but chemical analysis showed that a high percentage of these consignments was from the new seam. Naturally, the Steel Company protested. The Coal Company retaliated by cessation of all deliveries. Without large supplies of coal, the Steel Company had to discontinue operations until new coal connections could be made. The supplies of coal that were obtained were well above the contract price and the difference was charged to the Coal Company. The increased cost of coal amounted to \$165,000<sup>(3)</sup>. In 1907, the Dominion Iron and Steel Company sued the Coal Company for damages arising from violation of contract. The case went to the Supreme Court of Nova Scotia who upheld the claim of the Steel Company. The Steel Company claimed damages to the extent of \$1,796,640,35 -- \$829,247,64 for extra cost of coal purchased under the special agreement from the Dominion Coal Company; \$356,142,71 for extra cost of coal purchased

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(3) Financial Post - June 25, 1910.

from others; damages due for short deliveries in August, September and October 1906, \$132,252.75, and for cessation of deliveries in November \$479,000<sup>(1)</sup>. However the legal battle was far from over. It proceeded through the various courts to the Privy Council, where the award was upheld and damages to the extent of \$3,550,000 were awarded to the Steel Company. In 1909, the two firms negotiated a new contract, with the price set at \$1.55.<sup>(2)</sup>

During the first ten years of existence, the Dominion Iron & Steel Company had been seriously handicapped with heavy fixed charges. The additional debt that the coal option had made to the existing burden, and the depletion of the reserves to pay the extra price on coal kept the financial position very unfavourable. The years 1902-03-04 all showed deficits averaging \$350,000 yearly. The strike in the steel works in 1904 had resulted from the wage reductions of 1903 and while it was a victory for the Company it cost them a good deal of money owing to the shut down.<sup>(3)</sup> However, the new management was making progress in the right direction. The rail mill was in production in 1905. The Company found that pig iron and billets could only be exported in times of exceptionally high prices.<sup>(4)</sup> Consequently additional processing equipment was planned, as the finished product enjoyed a more staple market. Lack of funds retarded the development to the original plans. The rod mill was commissioned in 1904. The product though very satis-

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- (1) Supplementary Report - DISCO - Oct. 1907.
  - (2) Annual Report DISCO - 1910.
  - (3) About \$500,000 - Monetary Times - Vol. LXXIX - p.502.
  - (4) Canadian Mining Review - Vol. XXIII - p.103.

factory, had to meet the stubborn competition of the product of the United States Steel, which entered the country duty free. Many of the customers of the United States Steel were bound by contract for the six months' period. However, at the expiration of these contracts, the Dominion Iron & Steel Company managed to get the lion's share of the business -- about 85% of the Canadian consumption.<sup>(1)</sup> This product carried a bounty of \$6.00 per ton. The gradual steps towards efficiency helped the Company weather the storms of the depression years, 1907 and 1908. Although most of the Canadian mills had closed down, the Dominion Company maintained full operation<sup>(2)</sup> with a steady volume of production and no reductions in wages. It was during this period that the Dominion Company had re-entered the world market and was shipping rails to India, South Africa and England. The plant was occupied to capacity and the extensions were planned to meet the growing demand. The award of damages was most convenient to the Dominion Iron and Steel Company as it enabled the back dividends on the Preferred stock to be paid and wiped out the floating debt.<sup>(3)</sup> The residue went into the surplus.

Since the partial merger that resulted from the leasing of the coal properties in 1902, the coal problem had been an argument in favour of merger with the Dominion Coal. And it was really the difficulties of the coal problem that forced the Coal and Steel Companies into merger in 1910. From time to time, amalgamation was prescribed as the cure for the difficulties.

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- (1) Commercial and Financial Chronicle - Vol.87 - p.99.
  - (2) Monetary Times - Vol.42 - p.2280.
  - (3) Annual Report Dominion Iron & Steel Company - 1910

The finances of the Coal Company had been in good condition. Dividends on the common stock had averaged around 4% in the years 1902-04 and 1907. However the question was who was to have the upper hand. Dissention had convulsed the ranks of the Coal Company in 1907. The control of the Company by the Ross syndicate (1) irritated the minority faction. Attempt to use the steel proxies held by the Coal Company aroused this outburst. The Ross syndicate attempted to gain control of the Dominion Iron & Steel Company at the meeting in 1907, which "if obtained would have been used to (2) the disadvantage of this Company". Evidently the coal faction wanted to gain control of the Steel Company in order to insure that the claims for damages would not be pressed. However, they were failed by prompt action on the part of the steel directors. The Annual Meeting was postponed until enough proxies were gathered (3) to oust the intruders. Meanwhile, as no definite decision had been handed down in the case of the steel-coal dispute, the Dominion Iron & Steel Company applied to the Government of Nova Scotia for additional charter powers -- power to guarantee the bonds of subsidiaries, which could be controlled through stock holdings. The reason for this move was to enable the Dominion Iron and Steel Company to get control of sufficient coal, should the decision in the case be adverse. Several attempts were made at settlement by the Coal Company in the last days before the decision was handed down. The Steel Company refused. However,

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- (1) Dominion Coal Annual Report - 1906.  
(2) Sup. Report Dominion Iron and Steel Company - Oct. 1907.  
(3) Commercial and Financial Chronicle - Vol.85 p.89.

The Dominion Iron and Steel, was in the chair. Speaking unofficially, in answer to a question on the proposed merger, the President assured the coal shareholders that they would receive justice from the hands of the majority. He hinted that the merger would take the form of a holding Company. While assuring the minority that their status would remain unchanged, he hastened to assure them that "those who formed the pool would probably have steadier dividends than those who stayed out. The latter might get more, or less. Nobody knows. But those who go into the holding Company can only benefit by the holding Company's share of the dividends each Company pays to its shareholders". He emphasized the benefits of the union, but did not hesitate to point out that the new export tax on the ores and the cessation of the bounties would decrease the earnings of the Steel Company. However, the earnings from the new plant were hoped to offset these reductions. In addition, the affairs of the Coal Company were disturbed by the coal strike and the earnings much reduced. Consequently the proposal of the Coal shareholders that the common stock of the Coal Company carry a preference as to dividends over the stock of the Steel Company could not be considered. He also commented on the ramifications of the proposed merger and suggested three sources of earnings:- "Such a combination would be able to make money by mining and selling coal, by mining ore and selling it; or by taking coal and ore and making it iron and steel and then selling the product". The

above pronouncement on the proposed merger is most commendable. It did not attempt to distort the conditions to any degree but tried to present a true picture of conditions.

One week later, a joint statement was issued to the shareholders of the two Companies involved by the joint Board of Directors. It was the official proposal of the union of the two interests. It outlined the arrangement for the exchange of stock in the new holding Company. Common shares of the new Company would be exchanged for the old shares, if so desired. Under the holding Company plan, the constituents would retain their corporate existence so that the bond issues and the preferred stocks would not be disturbed. The proposal was "one share of \$100.00 par value common stock of the Dominion Steel Corporation and \$4.00 in cash for each share of common stock in the Dominion Coal Company or the Dominion Iron and Steel Company". This basis of valuation offered a practical solution to the problem as the minority interest could retain their status, if it cared to do so. The reputation of the Dominion Coal Company was more respected as dividend producer than the Dominion Iron and Steel Company, yet the circular produced figures to show that over a three year period ending 1909, the steel stock earned 7.69% as compared with the coal stock earnings of 4.66%. The \$4.00 cash payment was to be in lieu of dividends for the ensuing year - (a) to enable the Coal Company to focus attention on the coal strike "so that the position of the Company be maintained

at all costs". - (b) to relieve the directors of the Steel Company from paying dividends until plant extensions were completed. To secure funds to defray these cash payments, an issue of \$1,500,000 of 5% five year debentures was proposed. This was the only re-financing that accompanied the merger, no attempts to issue promotion stock being made. The issue of debentures was a type of inflation, however, as under the conditions of strike and construction, no dividends would have been paid on common stock. The idea was to induce the holders of stock to stay with the merger. However, it must be pointed out that the merger of the two Companies brought the promotion stock up to \$28,000,000 -- issued on the formation of each Company.<sup>(1)</sup> The outlay involved in the issue of the debentures approximated \$375,000 in amortisation and in fixed charges a year, so that the common shareholders, and even the preferred shareholders, were being affected to this tune for the five years to come. In connection with the promotion stock, it must be pointed out that the conditions of the past decade had not permitted the large growth of equity behind it. However, the new organization held promise of better days for the future. Other notable features in the arrangement were the provisions for the issue of preferred stocks -- to be exchanged for the outstanding issues in the constituent Companies. In addition, the issuance of further preferred stock to cover capital expenditures was mentioned.

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(1) Royal Comm. - 1925 - p. 53.

On April 12, 1910, the new organization was incorporated under the Companies Act of Nova Scotia as the "Canadian Steel Corporation". However, this title conflicted with the letters patent that had been issued by the Dominion Government to another Company. Consequently the name of the merged interests was changed to the "Dominion Steel Corporation"<sup>(2)</sup>.

The Annual Meeting of the Dominion Iron and Steel Company, was held on June 17th, 1910. The directors took the opportunity of defending themselves against the charges that they had paid too large a price for the 50,000 shares of the Coal Company -- that these shares, purchased at par, could have been obtained at a considerably lower figure. The directors maintained that "the shares were worth all they had cost". Moreover they added that if the shares had been purchased in the open market, the same psychological results would not have been obtained from the shareholders of the Dominion Coal Company in respect to the attitude on the merger. The success of the merger plan was pointed out, as 90% of the Coal stock and 95% of the Steel stock had already been exchanged or agreed to.<sup>(3)</sup> In the light of the above control, the new Corporation represented the entire ownership of both properties outside of the fixed charges. And in this regard, planned to issue the securities for all new undertakings.

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(2) Annual Report Dominion Steel - 1911.

(3) Annual Report Dominion Iron and Steel Company - 1910.

Consequently from this date, all securities were issued by the Dominion Steel Corporation. The advantage of this move was obvious, as the combined properties increased the confidence of the investing public, with the resulting effect of easier flotation of securities at lower rates.

The Consolidated Mortgage Loan - Sterling 5% Bonds - had met a favourable reception in England, where they were floated in 1909 by Speyers. As a result, funds necessary for the expansion of the steel plant were at last available. This expansion was based on the expectation of the usurpation of the market, enjoyed by imports into Canada. The expenditures for improvements included the installation of new coke ovens, two large mixing furnaces, a new power plant, and a new finishing mill. An additional blast furnace, and rod and nail mills were planned. The dominant idea was diversification of production to offset the abolition of the  
(1)  
bounties.

The Dominion Steel Corporation was incorporated with an authorized capital of \$50,000,000, of which \$35,653,300 was issued in 1912. The first issue of new securities by the Steel Corporation was on November 1, 1910, when the issue of \$1,500,000 debentures was launched. The expansion movement did not cease with the main merger, but from time to time small interests were included. The Cumberland Coal and Railway Company was acquired by exercising the

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(1) Report Dominion Iron and Steel Company - 1910.

option that the Dominion Iron and Steel Company had taken at  
the time of the Coal-Steel dispute. <sup>(2)</sup> The property was acquired, after  
some formality, by the Steel Corporation by the exchange of 6000  
shares of Steel for 20,000 shares of the Cumberland Company. In  
addition, the bonds of the Cumberland Company were retired by the  
issuance of 5% bonds <sup>(3)</sup> guaranteed by the Steel Corporation -- a  
reduction of 1%. The railway system that was controlled by the  
Coal Company was incorporated under the Railway Act, as the Sydney  
and Louisburg Railway, to insure the separate accounting of costs  
of the system, so that it might not be operated at a loss. Another  
small enterprise was added to the central group in 1911, when the  
Sydney Lumber Company was acquired for 2500 shares of common stock.  
This addition made available large timber limits in New Brunswick,  
with saw and finishing mills, thus insuring a supply of wood for  
all purposes, from pit props to nail kegs. Transportation services  
were added with the inclusion of the Black Diamond Lines, with the  
subsequent change of name to the Dominion Shipping Company,  
providing facilities for the transportation of ore, coal and  
<sup>(4)</sup> finished products.

Failure to obtain the expected assistance from the  
Government in the form of increased protection on primary products,  
enlarged the scope of the additions. A new blast furnace had  
been added in 1909 and another was finished late in 1912 to maintain

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(2) Can. Mining Journal - Vol. 31 - p. 218.  
(3) Annual Report Dominion Steel - 1911.  
(4) Annual Report 1912.

the primary output. Two large open hearth mixers were added to obtain the best results from the ores. A third Bessemer converter was added to increase the output in this type of specified steel. A new cold rolling mill and repairs to the old cold rolling mill to adapt it to a bar mill diversified this type of output. The two new furnaces were started in 1911 and 1912 respectively. The installation of the new merchant mill made available all the necessary stock for the production of the finished forms. From these forms, bolts, nuts, wire and wire nails were made.<sup>(1)</sup> This additional output was very profitable to the Company. A large demand was especially found for the small hardware produced, which in turn kept many of the crude form mills busy in supplying the demand. The organization was forced to the peak of efficiency to cope with the added competition. Yet the outlook was bright. Government rail orders provided profitable operation of the mills. The product was of a high standard and was readily accepted. The attitude of the officials was one of optimism. In 1912, the President, J.H. Plummer, on being questioned by the Monetary Times as to the effect of the proposed establishment of the United States Steel Corporation plant at Objibway, Ontario, was emphatic: "There is room for all of us in Canada. The Dominion Steel Corporation is not afraid of the United States Steel Trust or anybody else".

O tempora! O mores!

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(1) Monetary Times - Vol. 47 p.742; Vol. 49 p.406.

The early months of 1914 were featured by a great decline in production and the declaration of War in August almost caused an immediate collapse. The reaction was only temporary, however, as the need of war supplies, especially steel for munitions, put the plants into operation. The Dominion Iron and Steel benefited greatly. Owing to the entire output of the English and Continental mills being devoted to the production of steel for munitions, the export market for billets, wire rods, nails and wire was greatly increased. Considerable quantities of rails were shipped abroad. During the year the production of pig iron decreased in Nova Scotia almost 50%. As a result, only one of the blast furnaces was active throughout the entire year. Three others operated 241, 225 and 128 days respectively. The year 1915 was marked by a steady renewal of activity, almost entirely due to the demand for munitions. In addition, there was a steady demand for billets and wire, in the export market, which was supplied almost totally by the Nova Scotia industry. The output of pig iron in Nova Scotia was increased by 193,223 tons, an increase of 85% over 1914. This activity was not shared by the other iron producing Province -- Ontario -- where a decline of 11% was registered. The cause of this spread can be attributed to the pioneering work of the Nova Scotia industry in the production of shell steel, and also in the increased demand for finished products. Moreover the location

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(1) Production of Iron and Steel in Canada - 1914.

(1)  
was especially favourable, since the railway haul was eliminated. The increased demand, however, did not yield capacity operation of the Nova Scotia furnaces. Of the seven registered furnaces in the industry, three operated at capacity throughout the year, one was idle, and the remaining three were in blast for 348, 179 and 36 days respectively. The export trade of the Dominion Iron and Steel made up a large part of their business, with large quantities of billets, wire products and rods shipped to France and England. The export figures of wire and wire nails, produced in Canada, show an increase of \$3,000,000 over 1914. It is this increase that affected the increased sales of the Dominion Iron and Steel Company, who undoubtedly handled the majority of this export trade. (2)  
The up-trend was continued in 1916. Pig iron production in Nova Scotia reflected an increase of 49,780 tons, or 11%. Ontario held the record with an increase of 41.7% over the previous year. This increase can be credited to the extensive manufacture of munitions in the Province of Ontario. As a result of the increased production, the furnaces of Nova Scotia operated steadily -- four furnaces operated continuously and only one was idle. The export of wire products, billets and nails amounted to \$8,597,320 for 1916, which represented a tonnage increase of (3)  
50,000 tons. Pig iron production in Nova Scotia during 1917 showed a small increase of 2000 tons. The highest production of pig iron for the War period was recorded in this year. However,

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(1) Production of Iron and Steel in Canada - 1914.  
(2) " " " " " " " - 1915.  
(3) " " " " " " " - 1916.

the production never exceeded the 1913 figure of 428,632 tons (gross). The export market weakened in 1917, with a falling off in the demand for wire products. The Nova Scotia industry continued to export considerable quantities of billets and nails to England and France. (4) The final year of the War -- 1918 -- saw a decrease of 50,000 tons in the pig iron production of Nova Scotia. There was a similar reduction in the demand from the export market and the demand for wire and nails was reduced considerably.

The War period had given a large amount of business to the Iron and Steel industry of Nova Scotia. The average production of 1914-15-16-17-18 was approximately 400,000 tons of pig iron, an increase of 50,000 tons per annum over the preceding 5 years. The additional equipment that the Dominion Iron and Steel Company had installed in 1911 and 1912 enabled the Company to show handsome profits, from the War period. The diversification of output coincided with the needs of the Overseas market, where a large output of profitable production was placed. Another factor that contributed to the large earnings of the Nova Scotia steel industry during the years 1917 and 1918 was the ownership of their own sources of raw materials. When the United States entered the War in 1917, control of the sources of raw materials for the steel industry was placed in the hands of the War Industries Board, who fixed the prices of these raw materials. The base price for coke

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(4) Production of Iron and Steel in Canada - 1915.

was fixed at \$6.00 per net ton, and iron ore was quoted at  
\$5.05 per ton at lower Lake Ports. The Dominion Steel Corporation,  
controlling its own coal supply, was able to supply coal to its  
steel works at \$1.55 per ton, as under the contract of 1909.  
However the Nova Scotia Steel and Coal charged its steel works  
the current prices -- \$5.97 in 1918, \$6.36 in 1919, and \$5.77  
in 1920. In addition, the ownership of the Wabana ore deposits  
enabled the ore to be supplied at cost.

From 1914-18, few physical changes or repairs were  
effected, as the interruption of production was not advisable.  
In connection with the war supply, the Dominion Iron and Steel  
confined its operations to the production of shell blanks.  
However, the Corporation was instrumental in pioneering the  
production of toluol -- from which T.N.T. was made -- by the  
enlargement of the by-product recovery plant of the coke ovens.  
The British War Office had wired the Shell Committee of Canada to  
investigate the possibilities of the production of toluol from  
waste coke oven gases, at the outset of the War. The Cape Breton  
coals were found to contain rich hydro-carbons necessary for  
the recovery of toluol. Consequently, it was desirable that a  
recovery plant be installed. After considerable investigation  
and experimentation, the necessary apparatus was devised, and  
on February 11, 1915, the Dominion Steel Corporation undertook

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(1) Production of Iron and Steel in Canada - 1917 - p.5  
(2) Select Comm. House of Commons 1921 - p.135.  
(3) " " " " " " - p.246.

the delivery of toluol to British specification by June 25, 1915. The construction work was finished well in advance of the contract, and on May 15, 1915, the first car of toluol was shipped. The production of toluol was increased to meet the demand at a later date, and was continued until November 1918, at which time its output was 708,743 imperial gallons. The equipment was later devised to produce a motor fuel -- benzol -- from the oils recovered in the coking process.

The earnings of the Dominion Steel Corporation throughout the War were very satisfactory. The large demand for steel at increased prices, and a similar demand for coal, enabled the Corporation to earn the following:-

| <u>DOMINION STEEL CORPORATION</u> |       | <u>NET EARNINGS</u> |
|-----------------------------------|-------|---------------------|
| 1914                              | ..... | \$3,571,058         |
| 1915                              |       | 7,004,316           |
| 1916                              |       | 12,967,874          |
| 1917                              |       | 11,030,112          |
| 1918                              |       | 8,768,654           |

(2)

The dividend record on the common stock shows that no dividends were paid from 1914 to 1916, with \$320,977 paid in 1917 and \$1,444, 396 in 1918. As no great improvements, additions or repairs had been effected during the War period, the period closed with the plant in need of a large expenditure for that purpose.

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(1) Munitions Supply of Canada - D. Carnagie - p.74.
(2) Annual Report - Dominion Steel - 1920.

HISTORY OF THE TARIFF AND BOUNTIES

PART 2

1897-1930.

The depression of the early nineties germinated the seeds of political discontent that led to the overthrow of the Conservative party -- adherents of the National policy and the bounty legislation. Since the introduction of the National policy in 1879, the tariff on iron and steel had mounted higher and higher, either directly or through the application of bounties. Despite these measures, the industry had not grown to large and self-sufficient dimensions. As a result, agitation had grown stronger and stronger for the lowering of the tariff and the abolition of the bounties. The Liberal party, under the leadership of Sir Wilfrid Laurier, seized the opportunity and were swept into power. The revision of the tariff was one of the first problems that the new administration had to encounter, and it was a difficult task trying to placate all interests. In order to facilitate the revision, a commission composed of the Minister of Finance, Mr. Fielding; the Minister of Trade and Commerce, Sir Richard Cartwright; and Minister of Customs, Mr. Paterson, held public sittings in the larger centres and interviewed the manufacturers and importers

on the proposed revision. The result of these sittings is described by Porrit:-

"And the petitioner or witnesses were either manufacturers or importers. They were mostly manufacturers; and they succeeded in convincing the newly-elected Liberal Government that any disturbing changes in schedules and any abandonment of the bounties, which the Conservatives had established in 1883 - any such changes as had been so uncompromisingly threatened at the Liberal Convention of 1893 - were inexpedient, unwise, and impolitic, and would dislocate Canadian industries, and be hazardous to the capital embarked in them. It was at this juncture that the coal and iron interests of Nova Scotia obtained the sympathetic ear of the Government" (1)

However, even in the arrangement of the iron and steel schedules, much trouble was encountered within the iron and steel industry, between the processors of the different stages of the finished product. That has always been a difficult task -- to allocate to each product the right amount of protection. Then, too, the agricultural factions expected drastic reductions on iron and steel products, despite the fact that they were not represented at the sittings. The obvious result was a compromise. That method offered the safest exit. In the iron and steel schedules, a general reduction followed, but the bounties were retained and expanded. A feature of the Tariff of 1897 was the introduction

(1) pages 381-382.

of the preferential tariffs. Schedule D of the Customs Tariffs Act provided for reduced rates on certain goods, to any country whose tariff was reciprocal to Canada. Under these provisions, between the dates April 23, 1897, and June 30, 1898, one-eighth of the general tariff under Schedule A was remitted, and from July 1, 1898, one quarter of the duty remitted.⁽²⁾

A general reduction of about 10% was effected, though in specific cases there were much larger reductions. It is of interest to note that many of the rates set on these items were retained as the general tariff rate until the revision of 1930.

The primary products were all subjected to healthy reductions, but the continuation of the bounties almost totally offset the effects of these reductions to the consumers. Primary iron -- pig, kentledge and scrap -- was reduced from \$4.00 to \$2.50 per ton, which rate has prevailed as the general tariff to the present day on pig iron and kentledge. Iron and steel ingots, blooms, billets, slabs, cogged ingots, puddled bars, n.o.p. were taxed at \$2.00 per ton -- a reduction of \$3.00. Scrap iron and steel was lowered from \$3.00 to \$1.50 per ton. Steel fish and tie plate were admitted at \$7.00 instead of the previous rate of \$10.00 per ton; plates, bars, angles and bands of steel were reduced from \$10.00 to \$8.00; a weight allowance of an additional ten pounds to forty-five pounds per lineal yard, dutiable at 30%,

(2) 60-61 Vic. 1897 C.16)

acted as a reduction of duty on iron and steel bars and rails; steel forgings fell from a minimum \$15.00 per ton on a 35% rate to a minimum \$10.00 with a 30% rate; and hardware, e.g., nuts, bolts and rivets were reduced from 1¢ to $\frac{3}{4}$ ¢ per lb. As a gesture to the iron industry of Ontario, which was just getting established, the duties on bituminous coal were reduced:- From a general rate of 60¢ per ton to 20% not exceeding 13¢ on slack and 53¢ on "run of mine". The free list was large and varied. Rails over 45 lbs. for railways, excluding tramways and electric, were admitted free. Iron and steel forms, not manufactured in Canada, and designed for specific purposes were also in the same category. Wire rods were kept on the free list. The agricultural interests received tax-free barbed wire and galvanized fencing.

The above chronicle shows a general reduction on the primary materials that formed ingredients for future processing, giving to secondary producers low taxed raw materials. The reduction varied from 35% to 75% on these items, and on the secondary products from 12% to 20% of the former items. Thus the reductions on the secondary products pleased the consumers, the reductions on the primary products satisfied the manufacturers, and the bounty concessions to the primary producers placated them. The farmers were contented with the general reduction. Labour alone remained to be given some concessions to complete the picture of national contentment. This was done by the exclusion of prison-made goods,

(1)
with a number of provisions to insure that this would be enforced.

The administering of the "soothing syrup" to the primary producers involved the juggling of the bounties on the production of iron and steel. Deprived of a certain portion of their tariff protection, the producers were aided temporarily by the extension of the bounties, while making the adjustments necessary to carry on after their expiration. Although the Liberals had declared in their election campaign that they favoured the abolition of the bounty system, when the time came for the decision it was found that to placate everyone the retention of the bounties must be included in the tariff revision plans. A potent factor in the retention of the bounties was the plans of the steel industry in Nova Scotia, which as Porrit has indicated seemed to influence its extension. Moreover the extension of the bounties to apply on pig iron produced from imported ores almost coincides with the acquisition of the Wabana deposits of Newfoundland by the Nova Scotia Steel Company. The "writing on the wall" of the Whitney interests is also visible. Since Mr. Fielding was Premier of Nova Scotia, he must have heard of the proposal before the Federal Revision. This (the bounty extension) was a distinct contribution to Nova Scotia, as that province produced in 1895, 35,192 tons of pig iron, out of the total 42,454 tons. No doubt, it was in part a compensation for the duty reduction on bituminous coal. It must not, however, be imagined that the extension of the bounties

(1) Debates - 1897 - pp. 3661.

was the most potent factor in the flotation of the Dominion Iron and Steel Company. As has been pointed out elsewhere, the project was primarily a financial promotion with the development of a local market for coal, secondary, and as such the extension of the bounties was not the deciding factor. In the light of the facts, the scheme would have materialized without them. However, they were a distinct help in the floating of the securities.

Under 60-61 Vic. (1897) C. 6 and 11, the previous Bounty Act of 1894 was implemented by additional concessions, and the rates increased. Pig iron, produced from foreign ore, received a bounty of \$2.00 per ton, and pig, produced from domestic ore, received \$3.00 -- an increase of \$1.00 per ton. The list was increased to include steel ingots, which together with puggled bars and steel billets carried a bounty of \$3.00, which, in the cases of the two last, represented an increase of \$1.00. In the case of these semi-manufactured products, it was required that 50% of the pig iron used in their production be produced in Canada. The Act stated that these bounties were extended for a period of five years, expiring on April 23, 1902.

The extension of the bounties to include foreign ores, gave rise to a great deal of discussion. All sorts of arguments were advanced pro and contra. In defense, it was urged that the development of the Newfoundland ore deposits would create amiable

relations with the sister Dominion and might culminate in a
(1) union. To the charges that these bounties would injure the
native ore industry, it was replied that rather it would stimulate
the demand for native ores as a quantity of imported ore would be
needed, in any case, for a mixer. At any rate, as has been pointed
out in the section on the ores of Nova Scotia, it was not the
bounties, but their own inherent disadvantages that had relegated
the Nova Scotian ores out of production.

Another point that aroused considerable discussion,
was whether the bounties would apply on exports of the Canadian
furnaces. The original Bill provided for the imposition of an
export duty by the Governor General, equal to the amount of the
(2) bounty. Without such conditions, it was feared by the Finance
Minister that the trade relations with other countries would be
(3) jeopardized, if the export trade were thus subsidized. Finally
interests opposing the export duty argued that these were bounties
for the development of the industry and that development could
only be achieved by large production, which would reduce unit
costs. If direct encouragement was extended only to the production
of the domestic market, this could not be obtained, as in the
restricted market competition would be keener and prices would be
lower, so that normal development would be retarded. Moreover, it
was asserted, that this was specifically a bounty on production,

(1) Debates 1899 p. 7641)
(2) " 1897 pp. 1129-30.
(3) " 1896 p. 5196.

(4)

not on exportation or consumption. The latter persuasion prevailed⁽⁵⁾

and the Act was adjusted to include bounties on all production.

With regard to the exportation, it will be noted from the export figures, that the value of pig iron exported under the bounty system rose from \$55,448 in 1896 to \$593,739 in 1902 and \$778,619 in 1903, but later dropped as low as \$7,429 in 1906. For the years 1896-1910, the annual value of the export of pig iron was \$172,982. The high quantities of pig iron exported in 1901 and 1902 came largely from the Sydney works, as the further processes were still unfinished. In fact, the majority of the pig iron exported undoubtedly originated in Sydney, owing to the location. In that case the Newfoundland ores received the benefit, although the British importers, the destination of the majority of the imported iron, were able to procure cheaper iron at the expense of the people⁽⁶⁾ of Canada.

The Bounty Act of 1897 had scarcely been placed on the files, when the interests connected with the various steel projects of Canada applied for a further extension. The Nova Scotia interests included both the Dominion Iron and Steel and Scotia Companies. Both ~~xxx~~ these Companies were contemplating inaugurations and extensions. The Whitney syndicate had approached the Government and asked for an extension of the bounties for an extra period. Although the Company had been launched before the

(4) Debates - 1897 pps. 5189-91.

(5) Chapter 6 of the Act.

(6) Production of Iron and Steel in Canada - p.12 Table on Exports of Canadian Pig Iron.

application was made and promoted with the knowledge that the⁽¹⁾ bounties would end in 1902, additional bounties were most welcome. The shifting of the locale of the Nova Scotia Steel to Sydney Mines furnished the basis of another plea for bounties. Although the Company asserted that they would not build without extension⁽²⁾ of the bounties, this is hardly credible as they owned part of the Wabana mines and the site proposed was to their advantage. In addition, the new locale was the scene of the coal operations. However, the Government yielded to the requests of the Steel interests. Perhaps the Minister had a rather warm spot in his heart for the Sydney venture, and being a Nova Scotian was thoroughly in favour of the project. As a result of these requests⁽³⁾ for extension, the Bounty Act was amended in 1899 and the new clause decreed that the bounties be continued from 1902 to 1907 on a decreasing scale. From April 23, 1902, to June 30, 1903, the bounty would be 90% of the previous rate; 1904, reduction to 75%; 1905, 55%; 1906, 35%; 1907, 25%. The bounty programme was now extended for eight years and enabled the Dominion Iron and Steel Company to take advantage of a goodly portion of that time after construction of the plant had been completed. The old cry of "shipbuilding" was linked with the Dominion Iron and Steel Company⁽⁴⁾ at the time of this extension. In this connection, it was suggested that the latter would be in a better position to undertake shipbuilding with aid of the bounties, as cheap iron would be available.

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- (1) Canada's Resources - Jeans - p.53.
 - (2) Iron Age. Vol.LXI - p.4.
 - (3) Chapter 8-62-63 Vic. 1899.
 - (4) Debates 1899 p.4974.

It was hoped that the sliding scale would enable the industries to adjust themselves to the gradual reduction and that the extraction of the protection to the primary industry would be painless. In the latter case, even the protests of Mr. Whitney (1) to the contrary were ignored.

The question of bounties at last seemed to be settled. However, the ebullient prospectuses of the Dominion Iron and Steel Company (viz. History) disturbed the feelings of the opposition. Previously, the spirit of the times had lulled them into complacency, but the brilliant future depicted by the circulars, jarred them to attention. Discussion on the bounties was ever recurring. It was feared that the drain on the Treasury would be excessive. When the prospectuses announced that the bounties would net the Dominion Iron and Steel Company \$8,095,000 between 1902 and 1907, the cost of them was impressed rather firmly on the House. The Canadian Annual Review of 1901 devotes is some space to the discussion that/pertinent to this topic. It summarizes the speech of Mr. Aulay Morrison, which is adduced:-

"It might (the cost of the bounties) be very much more, he asserted, while other firms promised large production on the same lines. He feared that the demands on the Government would therefore be very large, and in view of the fact that the Cape Breton Company had a capital of \$28,000,000 and the support of great financial magnates, it could hardly be contended that the bounty was essential to success. He would like to know if it were not possible

(1) Debates 1899 - p. 4971-73.

without invading vested rights, to in some way limit the application of the principle and the growth of still greater vested rights in this connection. These were hardly struggling industries and the objects of the Statutes of 1896, 1897 and 1898 were, therefore, being practically, if not technically, infringed.

The Minister of Finance declined to give a definite answer that might tie the hands of the Government. He pointed out that by the terms of the Act these bounties would be gradually reduced so as to cease to exist in five years from the present time".

(1)

By 1903, tariff and bounty matters again ushered into the limelight. The old cry of discrimination within the industry, which even re-echoed in the adjustment of 1930, was voiced. The Dominion Iron and Steel Company claimed that the Nova Scotia Steel Company was adequately protected, while their finished products were neglected. (2) Moreover, the Dominion Iron and Steel Company (3) argued that they had not yet gained a footing. Yet the bounties were on the decrease. A cry for assistance on many manufactured forms was registered. Rails and structural steel, especially the heavier forms, while being manufactured or were proposed to be manufactured in Canada were on the free list. The Dominion Iron and Steel Company were looking for a bounty on wire rods as they were ready to produce this product. Attempts were made by the Canadian Manufacturers Association to have the tariff barrier raised to the level of the United States tariff. The Opposition also favoured increased protection for the iron and steel industry,

(1) Can. Annual Review - 1901 - p. 91.
(2) Debates - 1903 - p.4291.
(3) Ibid. p.7977.

(1)
especially in the finishing branches. The Liberals however demurred. "Tariff tinkering", especially with the iron and steel schedules, was a delicate matter. Equilibrium was easily destroyed and was very difficult to regain. Once again, the obvious medium arose. The Bounty system provided an escape from a difficult revision. It was amended, extended and enlarged.

A different system of reductions was introduced to expire in 1907. The same rate of bounty as in force in 1903 was given in 1904. The enlargement of the scope of the bounties included several finished products; rolled round wire rods (produced by the Dominion Iron and Steel Company) were assigned a bounty of \$6.00 per ton; and a \$3.00 bounty was extended to structural materials, rolled shapes, and plates. These bounties extended only on sales to Canadian consumers. (2) At the same time, a duty of \$7.00 per ton was put on steel rails, which was put in force by Order-in-Council, August 27, 1904. (3) The Dominion Iron and Steel Company, alone of the Nova Scotia projects benefited by the duty on rails. It was applied just as soon as the Governor General in Council decided that "steel rails of the best quality, suitable for use on Canadian railways, are being manufactured in Canada, from steel manufactured in Canada, in sufficient quantity to meet the ordinary requirements of the market" (4) Previously, in 1900, the subsidies bill for railroads was amended to include the

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- (1) Debates - 1903 - p.3864.
(2) 3 Ed.VII - 1903 - c. 68.
(3) 3 Ed. VII -c. 15.
(4) Excerpt from 3 Ed. VII c.15.

following:-

"that the Company shall lay its road with new steel rails made in Canada, if the same are procurable in Canada upon terms as favourable as other rails can be obtained. This is a condition of granting a railroad subsidy."

(1)

which enabled the Nova Scotia Company to reap a certain share of the rail business. A maximum and minimum tariff was also proposed.

The year 1906 saw the general revision of the Tariff that the Liberals had avoided since 1897. The conflict between the primary and secondary producers of iron and steel waxed so warm that no alternative than the revision was offered. In addition, the bounty system was so obvious that it left the Government open to much criticism. Consequently, a more indirect method was to be preferred. So came the readjustment. The revision occupied some time. A Tariff Commission, composed of Messrs. Fielding, Paterson and Brodeur, investigated conditions and held sixty-seven public sessions in all parts of Canada. The farmers, who had neglected to appear at the former tariff enquiry, were well represented at the hearings and made strong representations of the costs of the bounties to them. Concerning the steel Companies of Nova Scotia, Porrit remarks:-

(1) Porrit - Sixty Years of Protection in Canada - pps.398-9.
(2) " " " " " " " " p. 431

"The poor mouth was seldom pulled at the sessions of the Commission. It was impossible for men interested in iron and steel undertakings, like that of the Dominion Company, which is capitalized at \$35,000,000; or that of the Nova Scotia Company capitalized at nearly \$10,000,000 - it was impossible for managing directors or tariff buttressed and bounty fed concerns like these to appear before the Commission and file the infant industry plea".

(3)

The Tariff Commission devoted a large amount of time to the revision of the iron and steel schedules. The wording of many items was changed to simplify application. In this regard, units of $2\frac{1}{2}\%$ were adopted.

The Tariff as introduced in 1906 by Mr. Fielding, featured many small changes. Agricultural implements were subjected to a reduction of duties, averaging $2\frac{1}{2}\%$. The bounties were abolished on some items, but in the main were retained. A new "intermediate" tariff was incorporated into the schedules, which aimed at **reciprocal** agreements. The British preference took the form of general specified rates, displacing the percentage reductions. In the most part, the changes concerned either the intermediate or preferential rates. (See table on changes). Lists of specified products were drawn up, upon which a drawback was granted. The chief item on this list of drawbacks was bituminous coal, which under 6-7 Ed. VII c.11 allowed a rebate of 99% of the duty on coal used for smelting purposes.

Once more, discussion centred around the bounties. The Dominion Iron and Steel Company advanced the plea that they had not

developed as rapidly as had been expected and the expiration of the bounties would find them in a precarious position, and added "that the Government had not been called upon to pay as much as had been expected at the outset"⁽¹⁾. Finally after a great deal of discussion on the merits of extending bounties on the products of foreign ores, the bounties were extended, but with certain qualifications. Despite the opposition of the Dominion Grange and the Conservative party, the Bounty legislation was enacted.^x However the old idea formerly introduced by Mr. Fielding concerning the export tax on bountied products prevailed. Fear of counter-vailing duties on all the ~~schedule~~ and the possibility of tariff wars led to this adjustment. The 1907 Customs Act Amendment provided that bounties be paid on pig iron, bars and steel, only when manufactured for consumption in Canada. Furthermore it was provided that the crude forms would bear no bounty when exported, even if semi-manufactured. The time limit was extended until 1910 in the case of previous items, and the addition to the bounty list was made of products of the electric process, with the expiration date of 1912. The sliding scale was retarded by the then current rate, being retained for another year. The bounties structural sections, angles and plates were abolished in favour of customs duties, substituting a \$7.00 rate

(1) Donald - p. 148.

x "It is rather a coincidence that the chief beneficiary of this bounty system is located in the Province of which Mr. Fielding is political leader". Porrit - 60 years - p.454.

in place of a bounty of \$3.00 plus 10%. Wire rods were unchanged, enjoying a bounty of \$6.00, with no duty.

The tariff proved rather a disappointment to the manufacturers, who had hoped for much higher protection, based on the Dingley Tariff of the United States. However the opposition of the farmers prevented such a move. In addition, the introduction of the intermediate tariff was, at first, a matter of grave concern to the iron and steel interests, as it was feared that it might perhaps be extended to the United States and to
(1)
Germany.

However, nothing of the kind was done. The following tariff changes may be noted. Pig iron was unchanged in the general rate, but the preferential and intermediate tariff was fixed at \$1.50 and \$2.25 respectively. Ingots of iron and steel were increased, in the general from \$2.00 to \$2.50, with the other rates at \$1.50 and \$2.50. In certain instances, specific duties were substituted for ad valorem rates. On the whole, the extension of the bounties prevented large increases (viz. chronological table).

The death knell of the bounties was sounded, despite the attempts of the manufacturers to cut the rope. The bounties on wire rods were also stopped in 1911, although the Dominion Iron and Steel Company had petitioned for the extension of these for another year. The actions of the Dominion Iron and Steel Company

(1) Porrit - p.432.

in respect to the export of rails during this period, hardened the hearts of many and aroused considerable resentment, especially on the part of the railroads. The low demand years of 1908-09 forced the Dominion Iron and Steel Company to look around for export business. Previously large shipments of pig iron and billets had been made. That was before construction of the processing mills was completed and before bounties were confined to domestic consumption. In 1908, the situation was changed. In the first place, the rail mills were installed and in the second place, no bounty was applicable to the export of the crude forms. Rails were the logical product for export. And this business netted large orders.^x The prices quoted were very low, necessarily so, to obtain the business. Naturally the railroads accused the Company of dumping to maintain the price at home. They advocated the abolition of the bounty system, on the grounds that if the Dominion Iron and Steel Company could survive in the world markets, they could do so equally well in the domestic trade.⁽¹⁾ Others commended the ability of the Company to embark on this type of business. The Company defended the move on the grounds of keeping the labour force at work -- a rather surprising assertion for the Dominion Iron and Steel Company, whose attitude toward labour was not at all altruistic. Moreover the officials of the Company were rather outspoken in their replies to the railroads, etc.

x 7s. less than the tender of an English firm, delivered in Africa, duty paid.

(1) Iron Age. Vol. LXXXI - p.1456.

The President is reported to have remarked that "prices abroad show a profit quite apart from the bounties.⁽¹⁾" The General Manager also declared that "orders for rails are coming from all over the world. The plant is in a position to furnish steel to the world's markets at \$6.00 a ton less than Pittsburg". The above statements do not imply a great deal of dependance on the bounties. However in the proposals for the merger of the Coal and Steel Companies into the Dominion Steel Corporation, it was pointed out that the bounties would be a distinct loss, that would be offset by the advantages of the merger. The notorious over-capitalization of the Dominion Iron & Steel Company, rather helped the Company in their fight for the bounties, as they offered the dividend record as the criterion of whether the bounties were justified or not. However, the bold statements of the officials in the years 1908-1909 rather indicate that the bounties were unnecessary.

The effects of the Bounty Statutes under the Liberal regime are rather difficult to analyze. Undoubtedly the industry made great forward strides. In fact, the three primary producers now in operation (Dominion Iron and Steel, Algoma, and Steel of Canada) were organized during this period. But to attribute to the bounties, the sole credit for this progress is an error. This is especially true in the case of the Nova Scotia. The history of the growth and development of both the Scotia and Dominion Companies

(1) Montreal Witness Dec. 14, 1908.

indicates, especially in the case of the former, that the fundamental conditions, inherent in the location, was the deciding feature. The Dominion Iron and Steel Company was evolved as a promotion scheme. The very size of the enterprise indicates that point. The fundamental conditions, e.g., location, cheap ore and coal, etc., made very fine reading in prospectuses and that was the means used to distribute the securities. Bounties or no bounties, these conditions still held. The bounties were an added source of revenue and provided an incentive for the investment of capital by timid shareholders. They had the effect of suggesting that the Government was interested - a fine bait for foreign shareholders. It is the writer's opinion that the bounties did more real harm to the future of the industry than any benefit that was derived from the \$8,000,000 received from that source. The assurance of this definite amount was a stumbling-block to efficiency. The bounties, since they were directly linked with output, tended to make the scheme too grandiose, too extensive for the original move. After all, a slow steady growth that expands in tune with the demand, economically available, would have been more auspicious. The latter method would have been more conducive to efficiency, as successive steps would be plotted upon direct experience. Too often do large scale schemes, planned on paper, prove inefficient. The net result is that the shareholders are dissatisfied and the industry receives the proverbial "black eye" that is a serious

handicap to the credit of the future. After all, credit is the life blood of the industry and inability to float securities at or around par is a serious handicap to the future of any industry. The loss of reputation affects not only the particular enterprise but the industry as a whole. In the light of these considerations, the bounties had an influence that proved a barrier to efficiency. And that early inefficiency was a millstone around the neck of the industry. Huge capital expenditures that bore staggering fixed charges handicapped the industry. Earnings applicable to improvements were reduced and as a result the cost of production did not descend in harmony with the world industry. The early markets, which the industry might have permanently captured, were lost. Yet these permanent export markets are decreed by the economic setting of the Nova Scotia industry. To build large capacity equipment on the hope of protection from Governments is absurd. Herein are the seeds of the present complications. These generalizations concern the Dominion Iron and Steel Company to a great extent. In the case of the Scotia Company, it is difficult to discern the effects of the bounty system, as in 1901 the Scotia Company was reorganized to include the coal properties of the General Mining Association. Then, too, no great divergence from the original policy occurred. The programme of gradual expansion was continued. For some time, an enlargement had been planned, even when the bounties were to expire

in 1902. However, when the Whitney interests besieged the Government for an extension, it was good business to ally themselves to the move. Then again, the productive capacity of the Nova Scotia plant was small, consisting of one furnace, so that the bounty payments did not offer a distinctive advantage. It is quite likely that the Scotia Company would have gone ahead with their plans without the bounties. However it may be added that these bounties were very welcome to the enlarged Scotia Company, but as in the case of the Dominion Iron and Steel, the bounties were not a "sine qua non". Moreover Scotia had acquired Wabana before the bounty was extended to foreign ores.

The relative competitive positions of the two Nova Scotia industries may be gathered from the effects of the drawback of 99% extended in 1906 on iron and steel used in the manufacture of agricultural machinery. A comparative statement of the tonnage sales to agricultural manufacturers is adduced:-

<u>YEAR</u>	<u>SCOTIA</u>	<u>DISCO.</u>	
1903	5713	2250	
1904	3510	3373	
1905	5106	3313	Gross Tons
1906	4651	2732	
1907	4652	69	
1908	2132	27	
1909	4134	976	
1910	5821	582	
1911	3841	137	

The production of the Scotia Company was on the average consistent, while the production of the Dominion Iron and Steel

dropped sharply off. This demonstrates that (a) that the Scotia Company had a market that was constant and (b) that evidently they were able to meet the price that was available to these fabricators under the drawback.⁽¹⁾

With the cessation of the bounties in 1910, the tariff on iron and steel was not altered. It was considered that the industry was "on its feet", and that the purpose of the bounty legislation had been fulfilled. The attempts at Reciprocity in 1911 also had the effect of stifling further claims for bounties. However, the reciprocity arrangements brought about the fall of the Liberal party. These arrangements were at first enthusiastically hailed, but the subsequent agitation, especially by industrial interests, turned public opinion in the other direction. The iron and steel interests were alarmed by the inclusion of wire rods in the reciprocal list. These had carried a bounty of \$6.00 a ton since 1904 but the attempt to have these bounties extended, failed. In addition, these were on the free list, and it was feared that, if the reciprocity proposals were carried out, all hope for protection in these items would disappear for the time. The consequent fall of the Liberals relieved the iron and steel interests on this score.

The Conservatives came into power quite content to leave the iron and steel industry, which had been the "fair-haired infant"

(1) Advisory Board Tariff and Taxation - January Hearing - Iron and Steel - 1929 - p.12.

of the Liberals, shift for itself. This was a disappointment to the primary producers, who had hoped for increased protection, from the original protectionist party. The Conservatives refused to "tinker" with the tariff and consequently ignored the memorial presented by the iron and steel interests of the country, late in 1911. This memorial urged increased duties as a compensation to the abolition of bounties on primary products. All the stock arguments were advanced - disproportionate protection to the primary industries, dumping by United States producers, protection to labour etc. In addition a temporary bounty on pig iron was advocated, pending a general revision. These suggestions were not considered at the time. However, the depression in the industry in the United States played havoc with the producers of wire rods, who had to contend with a great deal of competition at reduced rates, and whose product was on the free list. The Dominion Iron and Steel Company was particularly affected, as they had a fine mill that represented an investment of \$1,000,000, and capable of producing a large percentage of the demand. The other plant was operated by the Steel Company of Canada and its capacity could easily provide for the rest of the demand. Finally the gravity of the situation influenced the Government to legislate on this item, in 1914, despite the complaints of the small nail producers, who saw the prices of their raw material threatened. The partial revision of the tariff of 1914 raised the rates on the following items:- the intermediate tariff on pig iron was increased 25¢ to \$2.50; wire rods were removed from the free list and were listed at \$2.25 under the

British preferential and \$3.50 under the intermediate and general tariffs; rolled iron and steel angles, beams, etc, weighing over 35 lbs., per lineal yard, were removed from the free list and included in the item on similar lighter products, the duty being:-

(British) \$4.25 (Intermediate) \$6.00 (General) \$7.00

These adjustments placated the primary interests for a time and the outbreak of the World War prevented the general revision. Moreover the demand for munitions and other steel products, taxed the capacity of the plants and banished tariff matters. The substantial profits that accrued to the industry during this period left no argument for increased protection.

Consequently no legislation was enacted that affected the iron and steel interests. The Customs Tariff War Revenue Act of 1915 imposed additional super duties upon the existing tariff, but these were revenue duties and were balanced by the increased internal taxation.

The history of the tariff in the post war period is chiefly a resume of the attempts to have the tariff revised and finally of the

From "Production of Iron and Steel in Canada" - 1918 - p.16.

"No bounty is offered by the Dominion Government, but because of the restriction on exports from the United States, and the war necessity of an increased supply of pig iron, the War Trade Board was authorized by the Government under authority of Order-in-Council P.C. 1187 - approved May 18, 1918 - "To enter into communication with responsible parties for the rehabilitation of dormant blast furnaces and the construction of new undertakings in Canada on the basis of the Government guarantee for the purchase of their product for a series of years and at such reasonable prices as may be agreed upon and that a report thereon be made to the Government with the least possible delay".

culmination of these efforts in the appointment of the Advisory Board on Tariff and Taxation in 1926. However, the general revision did not become law until Sept. 1930. The intervening four years were occupied in the revision, which was most exhaustive. To handle the problem of the iron and steel industry, the Board held a series of special sittings at Ottawa and a most detailed examination of the industry in all its phases ensued. This close examination was precipitated by the bankruptcy of the Dominion Iron and Steel Company. Experts were employed by the Board in the various capacities of explaining and investigating the claims advanced by the iron and steel interests. The sittings were public and a record of the proceedings was published verbatim, with the exception of confidential data. These records together with the elaborate briefs furnished the Board by the interested parties furnish a great deal of information on the subject.

Directly on the cessation of the War, application was made to the Government for a revision of the tariff. The increase in the general level of prices had lessened the protection on articles carrying a specific duty - which are predominant in the primary products - pig iron, blooms, billet slabs and ingots - on the iron and steel tariff section, and the manufacturers of these products were anxious to have this condition remedied. However, these appeals fell on deaf ears. Several reasons were advanced for this attitude. Prior to the War, the Minister of Finance, Sir Thos. White, had declared himself against high duties on primary iron and

steel products, which formed the raw material for the secondary (1) processors. Again in 1919, the Minister was adamant on this stand. To the demand for a general revision of the schedules, Sir Thomas White declared that conditions were too unstable for such a move -- the markets of the world were disorganized by the War, the currencies of the nations were upset and prices were in the same condition. Nevertheless he declared that a general revision was a necessity and (2) that had the War not intervened, one would have been made in 1916. As a consequence only two items in the iron schedule were affected in 1919. The duty on rolled iron hoop was raised $7\frac{1}{2}\%$ from -- Free: $5\%:5\%$: to $7\frac{1}{2}\%:12\frac{1}{2}\%:12\frac{1}{2}\%$: and this same item was subdivided into an "A" section, allowing the free entry of such products (also rolled iron or steel sheet) for manufacture in their own factories -- a new item. The agricultural communities were placated by reductions in freight rates on the various products. In addition, the majority of the Special War Revenue Duties were removed. Any reductions did not affect the general level of tariff to any extent. Public opinion would not countenance any readjustment of the iron and steel schedules, as this industry had prospered most substantially during the War, paying large dividends despite greatly increased costs.

(1) Debates - 1914 - Budget Speech - Sir. Thos. White, Minister of Finance.

"My own view is that bounties are justifiable to call into being new industries, where capital is always timid as to experimental ventures, requiring special inducement to enter upon their development, but after such enterprises are called into being and firmly established, it is difficult to justify further aid of a direct character".

(2) Debates - 1919 - p.2252

During this period 1918-1921, however, the steel industry of Nova Scotia was the recipient of a direct subsidy in connection with the shipbuilding revival. By an Order in Council, dated April 2, 1918, a contract of 250,000 tons of plate for shipbuilding was given by the Government to the Dominion Iron and Steel Company, who had agreed to erect a mill to produce this product, which was not produced in Canada and which was necessary in the all Canadian renaissance of shipbuilding. The necessary machinery for this plate mill was admitted duty free (an exemption of three quarters of a million dollars). Hon. C. C. Ballantyne, Minister of Marine, disclosed the details of this contract in the House on April 4, 1918. The contract stipulated that the Government would take a minimum tonnage of 50,000 tons per annum for five years. The price was to be fixed by the relative price of steel ingots -- to be adjusted to this base every six months -- and the base ratio was fixed at \$4.15 per hundred lbs. for plate and \$22.50 per ton for ingots. The Government incurred no cost in the erection of the mill. Provision was made for supervision by Government accountants to insure that the price of ingots charged was the true price. In addition the base ratio was the maximum that could be charged.⁽¹⁾ It is to be remarked that this contract was signed during the War, when plates were not available at any price (of 80,000 tons ordered in the U.S.A. in 1918 only 6000 tons were delivered)⁽²⁾ At the time, the Minister of Marine congratulated the people of Canada on the contract and especially on obtaining such a fine mill for Canada.

(1) Debates - 1918 - p.347.

(2) " - 1920 - p.624.

It was asserted that the shipbuilding industry's future was assured. However, with the termination of the War, the Government found themselves in a sorry predicament. The price of plates rapidly declined and the contract with the Dominion Steel did not appear so advantageous. It was rumoured that the Government would repudiate the contract. Construction work on the mill was halted. Rumours of damages flew thick. However negotiations began and the result was a reduced rate -- \$3.65 per hundred lbs. as stipulated by the Order in Council of July 26, 1919. At the same time, similar plate could be obtained in the United States at \$2.75⁽³⁾. However the Government did not want to blight the hopes of the shipbuilding enthusiasts and the Dominion Steel Company, so the ill-fated contract was upheld. The fate of the shipbuilding industry need not be recounted. So when the mill went into production in 1920, the Government was obligated to take 250,000 of plate at a price that was ridiculously high. In addition, there was no market for this plate and the original demand -- the construction of the Mercantile Marine -- had been satiated by imported plate. The obvious move was to break the contract. Again the rumours began to fly thick and fast. Damages would be claimed for \$15,000,000 or \$18,000,000 it was asserted in the House. Finally, the claim was settled for \$4,500,000⁽⁴⁾. The settlement was made out of Court by the Government, who agreed on the figure - \$4,600,000. The Conservatives paid \$3,500,000 in 1921, but the Liberals, who were in power the next

(3) Debates - 1919 -p.2252.

(4) Debates - 1922 -p.2170.

year, closed the claim with the payment of \$1,500,000. As a result, the Dominion Steel (at the time the British Empire Steel) received this sum, which covered the cost of the mill and at the same time retained possession of the mill. This was a direct payment of subsidy. In addition, the spread between the contract price and the United States price was absorbed by the Government on about 50,000 tons. The protective policy that was adopted in this instance was defended by the Government at the time of its inception as the basis of the shipbuilding renaissance, started by the Imperial Munitions Board. Later at the repudiation of the contract, the excuse was that the contract had been made in time of war. However, it must be remarked that had the mill been stopped by the cancellation of the contract, the direct saving would have been great. Perhaps a bounty on plates could have been used to the advantage of the Government. The loss to Canada on this project could have been avoided. However, political circumstances and the complications that would have arisen in the Maritimes dictated this abortive instance of protection.

During these years, nothing had been done in the direction of revision. The old question of the effects of the bounty system were continually turning up. Mr. Fielding, in 1920, in pointing to his old love -- the iron and steel industry -- reiterated his attitude that the Treasury did not lose a cent on this system on account of the duties paid at the ports, where the iron and steel producers were located. He pointed to the fact that during the years 1916-1917-1918

the iron and steel industry paid taxes, war and customs duties, aggregating \$7,793,000 -- almost 50% of the bounties disbursed by the Government. However, despite these assertions, there was no enthusiasm shown for a resumption of the bounty policy. The trend was to freer trade. With the advent of the Liberals to power, hope of a revision was renewed, but still the issue hung fire. The formation of the British Empire Steel had convinced the people that Nova Scotia did not need protection. Indeed that was one of the arguments advanced in the formation of the merger by the promoters. "During the past year, the Dominion Government lent valuable assistance to the steel industry. We cannot, however, look for aid in this direction in the future, and we must now prepare to depend entirely upon our own resources and stand on equal terms with the steel producers of the world"⁽¹⁾. This tune was soon changed and the British Empire Steel Corporation was again a suppliant for increased tariffs.

Legislation on the iron and steel tariff during 1923 and 1924 can generally be termed tinkering. A few special items were adjusted, the free list was expanded with regard to a few raw materials for further processing, and some drawbacks were added to the list. The drawback on rolled iron, steel and pig iron, entering into the manufacture of agricultural implements and other specified processing, was cancelled and these items put on the free list. The British

(1) Presidential Address - Annual Report of Dominion Steel Corp'n, June 18, 1920.

preferential tariff was reduced $2\frac{1}{2}\%$ on rolled or cast bars of iron or steel valued at more than $3\frac{1}{4}\%$ per lb. Raw materials for the manufacture of cold rolled steel were placed on the free list in 1923. Special tempered and hardened steel for saws, cut to shape, was taken from the free list and taxed $7\frac{1}{2}\%$: $12\frac{1}{2}\%$: $12\frac{1}{2}\%$. There was no increase in the primary product duty. The important tariff change came in the coal item - a change in favour of the Corporation "that was to depend upon their own resources - the British Empire Steel" although they did not think so. The duty of 1906 -- 14¢ on slack and 53¢ on "run of mine" was changed to a general rate of 50¢ on all soft coals. Anthracite was free.

Meanwhile the agitation for a revision was gaining ground, but the chief discussion concerned the coal industry of Nova Scotia, which was torn by labour strife. However, the odd reference to the steel industry was introduced, pro and con, in passing. The agitation for Maritime Rights was soon in full cry and naturally the steel industry permeated the discussion. Attention was concentrated on the freight rates. The ills of the steel industry were severe. On this account, Premier Armstrong of Nova Scotia headed a deputation to Ottawa, late in 1924. The memorial in general presented embodied the claims later advanced before the Tariff Board and to the Commission on Maritime Claims. A revision of the customs tariff upon iron and steel and their products was requested, in which consideration would be given "to the difficulties now

hampering the steel works of Nova Scotia". Application was made for higher rates of duty than then provided on rolled sections and steel plates that "are now admitted to Canada under the lower scale of duty". Protection was demanded against importation of iron and steel from countries with depreciated currencies. A protest was lodged against the numerous exemption clauses in the iron and steel tariff. It was also pointed out that the "ad valorem effect of the specific duties has been lowered by the increased selling prices of these goods"⁽¹⁾ and a readjustment in this regard was requested. The maritime members rallied to the cause. Opposition was also strong. The Nova Scotia steel industry was painted as "a source of taxation and expense to the rest of Canada". It was pointed out that the British Empire Steel and its predecessors had received bounties to the extent of \$8,115,399,75, plus \$4,500,000 damages on the plate mill, plus a remission of duties on machinery, etc,⁽²⁾ totalling \$13,276,672. The labour representatives assailed the steel industry for the failure to adopt the eight-hour day. Undoubtedly the industry was in a bad situation; it was tottering on the verge of collapse. Costs of production were very high. It was asserted in the House that two ship loads of Belgian rods were landed in Nova Scotia at \$9.00 a ton less than the cost of producing them on the spot. The financial structure of the Corporation -- The British Empire Steel Corporation -- was assailed and blamed for

(1) Debates - 1925- p.1835.

(2) " - 1925- p.107

these high costs. The record of furnace operation furnishes proof that the Corporation could not operate. The report of the Nova Scotia Royal Commission on the coal industry produced fodder for further debate in the House. This Report recommended that the books of the two Companies -- coal and steel -- be kept separate. The capitalization of the British Empire Steel Corporation was analyzed and it was found that the promotion stock, issued at various times in the history of the Corporation, aggregated \$54,000,000. The whole question was becoming more and more involved. The introduction of the Maritime Claims intensified the situation. The result of this agitation was two-fold -- the establishment of the Tariff Advisory Board to revise the tariff and the appointment of the Royal Commission to investigate the Maritime Claims, both appointed in 1926, on the 7th of April. Both these Boards were to influence the changes in tariff and general protection; also the latter freight rates. The Duncan Commission's Report was especially advantageous to the Nova Scotia steel industry, as many of the recommendations had a direct bearing on the topic. Before these two bodies were appointed, the Budget was returned. In it, no relief for the iron and steel industry was specified. Consequently the steel interests were greatly perturbed. The "British Empire Steel Corporation Bulletin" of April 4, 1926, commented on the four serious disappointments in the Budget: failure to adjust specific duties on the basic forms of iron and

steel, so as to bring their ad valorem effect up to the general level of duties on other materials: failure to adjust the duty on coal that had been lowered in 1925 ("Run of Mine" was lowered 3¢ per ton, but slack was advanced from 14¢ to the new general rate - 50¢): failure to remedy the situation precipitated by the depreciated currencies on the Continent: failure to abolish "the pernicious policy of encouraging the importation of finished goods by lowering the duties"⁽¹⁾. The debate on the Budget featured the iron and steel tariff revision. The tariff was described as "the most irrational and confusedly mixed mass of out-of-date schedules imaginable"⁽²⁾. The Liberals favoured freer trade, the conservatives made a strong plea for protection, and the leader of the party, Mr. Meighen, advocated "a tariff comparable to the tariff of the competitor to the South"⁽³⁾. The conditions in the iron and steel industry were cited in support of this policy. It was asserted that the growth of the industry there was steady and that the prosperity was unprecedented in the U.S.A. In Canada, the reverse was true, especially in the Nova Scotia industry. The Liberals remarked that the Steel Company of Canada, located at Hamilton, was in fine shape and was producing fair dividends. (The common stock reached par for the first time in 1926). However the announcement by the British Empire Steel Corporation that there would be no interest paid on these bonds of the Dominion Iron and Steel in 1926 (Annual Report 1926) concentrated attention on that

(1) Debates - 1926 - p.3060.
(2) " " p.3424.
(3) " " p.2618

unit. The Coverdale Report to the British Empire Steel Corporation apparently advised the procedure. The Maritime members introduced a relief bill into the House for the Nova Scotia industry and a warm debate ensued on the Dominion Iron and Steel⁽¹⁾. The pertinent question was what was wrong with the industry. The familiar arguments were adduced, only to be assailed by the House in general. On the question of depreciated currencies, it was asserted that this point was much over-emphasised. The total importation of iron and steel was around \$171,000,000 of which \$151,000,000 was from the United States, \$17,000,000 from Great Britain and the remaining \$3,000,000 from countries "with depreciated currencies". Mr. Robb, Minister of Finance, remarked - "Much has been said about the effects of depreciated currencies, but the sworn statements of the Customs Officials do not go to show that there have been such great importations from depreciated countries"⁽²⁾. The argument that compared labour costs with continental nations and claimed that a great disadvantage was inherent, was attacked by Mr. Woodsworth, the labour interests watch-dog. He asserted that the eight hour day had been in force in Belgium since June 1921. He quoted from a publication of the International Labour Office of the League of Nations, dated May 31, 1926, a protest lodged by the employers of Belgium on the eight hour day, declaring their disability to compete under these conditions⁽³⁾. The discussion then turned to the failure of the

(1) Debates - 1926 - pps. 4433-4467.
(2) " " p. 4444
(3) " " p. 445

Corporation to produce the Coverdale Report. (Made by special investigators on behalf of the Company) for examination by the Government. It was revealed that this was offered to the Prime Minister and the Finance Minister only. It is probably this point that led to the defeat of the resolution. The Minister of Finance disclosed the correspondence between the Ministry and the President of the British Empire Steel Corporation, Mr. Wolvin. In it, the President requested aid from the Government in the following manner:- A bonus on coal used in the production of steel, with suggested maximum limits of annual payment; a change in duties from specific to ad valorem; an advance of the money held by the Government, pending the settlement of the reparations⁽¹⁾ claims of the Corporation for War damages. Despite the pleading of Nova Scotia members, who feared that the industry would cease operations, and who pointed to the connection of it with the conditions of the Province. In event of the former, dire consequences were predicted for Nova Scotia. The failure to produce the Coverdale Report evidently overbalanced these considerations.

The failure of the Dominion Iron and Steel Company was attributed by some to two causes -- (a) transportation -- (b)⁽²⁾ tariff. By others, to inefficiency. However, the Duncan Commission and the Tariff Board were left to investigate these

(1) Debates - 1926 - pps. 4446-48.
(2) " " p. 4450

causes and devise measures to rectify them. The general opinion was "that there should be no protection, until an investigation of the financial affairs of the Corporation is made. This industry must be thoroughly reorganized and the interests of the workers be safeguarded in every respect."

Thus the industry of Nova Scotia for the time was left to shift for itself. The Dominion Iron and Steel passed into the hands of the Receiver and operations were continued under this control. Meanwhile the Report of the Royal Commission on Maritime claims, under the chairmanship of Sir Andrew Rae Duncan, had been submitted to the Government following an investigation⁽¹⁾ of these claims. The Terms of Reference included two conditions that were harassing the steel industry -- freight rates and transportation and the trade policy. In respect to the freight rate question, the Report traced the history of the Intercolonial Railway and reviewed the conditions that led to its construction. It was pointed out that conditions other than economic had led to its construction and the selection of the route. Prior to 1912, the rates on this railway had been governed by the requirements of the traffic and not by the costs of operation. However after 1912 the freight rates were increased by changes in the rate structure. "The lower level of rates that prevailed on the Intercolonial Railway system, prior to 1912, is, in our view, rightly to be interpreted as the fulfilment by successive

(1) Sept. 23, 1926.

governments of the policy and pledges that surrounded the railway from its inception, whatever impressions may have been created by the form of its administration". (P.21) It was shown that the increase in rates over the 1912 base, in comparison with the rest of Canada, was greater by 37%. The rates on the Maritime division suffered a cumulative increase of 92%, while the cumulative increase of rates in the rest of Canada was 55%. To this spread of rates the commission attributes this responsibility "in a very considerable measure, for depressing in the Maritimes to-day business and enterprise which had originated and developed before 1912, on the basis and faith of the rate structure as it then stood"(P.21). And also that it placed a burden on the Maritimes which it was never intended they should bear. The situation, flavoured by national, imperial and strategic conditions, led to the recommendation "that an immediate reduction of 20% (so that 192 - the index - will become 155 approximately) be made on all rates charged on traffic that both originates and terminates at stations in the Atlantic Division, and that the same reduction be applied to the Atlantic Division proportion of the through rates on all traffic which originates at stations in the Atlantic Division (excluding import traffic by sea) and is destined to points outside the Atlantic Division".⁽¹⁾

Under the sub-heading "steel and coal", the trade policy of the country in relation to these industries was investigated to

(1) Commission on Maritime Claims-Report. p.22.

the extent of hearing evidence on behalf of the steel industry. It was considered that the recommendations for lower freight rates covered the most of the difficulty in connection with the transportation aspect. The national importance of the steel industry to Canada was stressed by representatives to the Duncan Commission and it was pointed out that "it would be unfortunate for Canada if this original purpose (development of the primary industry) were thwarted, except as regards Nova Scotia, steel manufacture⁽¹⁾ on a basis of national security does not exist".

The matter of the revision of the tariff and the readjustment of the duties on the primary forms was referred to the Tariff Board. However, the Report of the Commission on Maritime Claims emphasized the significance of the industry to Nova Scotia and the need "for prompt action". The Report also recommended a bounty on coal used in the making of steel. It was pointed out that the drawback of 99% of the duty on coal used for metallurgical purposes was equivalent to a bounty. It adds "While there are, no doubt, other angles from which this concession can be regarded, it does in operation have the same effect of a bonus and it is difficult to see how this bonus can be denied to native coal"⁽²⁾ The bonus recommended was to be calculated on the basis of the present draw-back for every ton of coal used in such manufacture.

The steel industry of Nova Scotia emerged from the investigation with two scalps in its belt -- recommendations for

(1) Commission on Maritime Claims-Report. p.37.
(2) " " " " " p.38.

reduced freight rates and for a bounty on coal used in steel production. However, "the prompt action" emphasized by the Commission was not forthcoming, nor were these recommendations to be accepted in toto. Meanwhile the Advisory Board on Tariff and Taxation was getting ready to go into action. Action that was to be prolonged until 1929. The agitation for the adoption of the recommendations of the Duncan Commission on Maritime Claims was intense. Nova Scotia members of Parliament urged action. The workers of the Dominion Steel were also of the same mind as the following telegram to the member from their constituency indicated:-

"Elected representatives of the three thousand steel workers in conference this date urge that immediate action be taken by your Government to adopt recommendations of Duncan Commission".

(3)

Yet the Government did not show any great desire to implement the recommendations, especially those that concerned the steel industry. The litigation connected with the British Empire Steel Corporation left the outcome in doubt and retarded any definite moves. On March 18, 1927, the Prime Minister, Mr. Mackenzie King, remarked in the course of a speech in the House:-

"Owing to existing uncertainty of conditions surrounding the iron and steel industry in the Maritimes, the government does not feel in a position to make at present any pronouncement with respect to the Commission's recommendation of a renewal of the system of granting bounties with respect to steel, when Canadian coal is used in its manufacture".

The requests for the immediate revision of the iron and steel schedules were greeted with the answer that the Tariff Commission were in session. Reasons advanced for the delay were twofold. In the first place, the financial difficulties of the British Empire Steel Corporation and the receivership of the Dominion Iron and Steel prevented any definite investigation of the industry and also prevented the concerned parties from organizing their cases. Secondly, the applications of the primary producers had aroused the secondary manufacturers of iron and steel products, and as a consequence a large number had applied to the Tariff Board for a hearing. Naturally, the time involved in this work was prolonging the hearings. However, the Maritimes Freight Rates Act was passed on April 14, 1927.⁽¹⁾ While this act did not implement in full the recommendation of the Maritime Claims Commission on the freight question, nevertheless it satisfied the steel interests. The Act provided an immediate reduction of freight rates of 20% on the following "preferred" movements;- (a) local all-rail traffic, (b) westbound all-rail traffic; (c) traffic outward - export traffic rail and sea. The Eastern Division on which these rates were to apply extended to Diamond Junction and Levis. The Act failed to include reductions on through/^{freight}traffic to the United States, and in-bound traffic. The Act helped to remove one of the effective barriers of the Nova Scotia steel industry to the hinterland -- the markets of Quebec and Ontario. As the Commission

(1) 17 George V - 1927 - c.44.

pointed out, this concession was one that the history of Confederation and the history of the railroad demanded. It was not based on economic premises. The first of the Nova Scotian steel industry's claims had been fulfilled.

Between the passage of the Freight Act and the introduction of the Budget in May 1930, no tariff or other changes were made. The period was featured by several outbursts on the part of the Nova Scotian members in Parliament. The investigations of the Tariff Board and the presentations of elaborate briefs by the iron and steel interests offered the interesting side-lights. The Liberals were becoming decidedly alarming to the manufacturing interests, as they continued to lower tariff on other products in their aim to reduce the costs to the consumer. This was done largely by the British preferential tariff. The Conservatives were not too prone to commit themselves, especially on the proposed bounty to the Maritime steel industry. The organs of the iron and steel industry particularly "Iron and Steel of Canada" had been continually thundering for increased protection. They deplored the "conflict of economics and nationalism" in our steel industry. The issue of July 1921, of Iron and Steel, carried one of these editorials, concluding on this note - "The considerations of national defense and self-sufficiency should precede and modify all government action bearing upon the status of the iron and steel trades in Canada".

The brief presented to the Tariff Board by the Receiver of the Dominion Iron and Steel was an elaboration of the original

arguments that had been presented to the Duncan Commission and to the Government.

These arguments were accompanied by pertinent figures to help the case. Nor was any opposition lacking. The primary producers -- Dominion Iron and Steel Company and Algoma (the Steel Company of Canada did not appear before the Board to argue for primary duties) had to contend with the secondary processors, who naturally objected to any proposed increases in their raw materials. In addition, the attorneys for the Canadian Council of Agriculture and the Consumers' League of Canada guarded the interests of their clients and protested vigorously to proposed advances. The recommendation of the Duncan Commission for immediate action was attacked by the opponents who maintained that the recommendation was ultra vires.⁽¹⁾ The brief stressed the importance to the nation and to Nova Scotia, because "it provides advantageous employment to a large population and because it is essential from the standpoint of national independence and security". The agricultural representative declared that the same held true for his occupation. The steel plants alone employed 2100 men drawing wages of \$2,500,000 to produce the necessary coal, in addition to their own operating force of 3500 steel workers drawing wages and salaries of \$4,700,000. It was emphasized that one sixth of the population of Nova Scotia depended on the Nova Scotia Steel and coal industry.⁽²⁾ However, the discussion of this point pointed out that only 5600 men were directly connected with the steel industry. The brief presented a chart that showed 78.21% of the operating expenditures in the production of iron and

(1) Report of Reference 2-Nov.29-30-D 123-26.

(2) Reference Nov.28-30-1928 - Iron & Steel pps.127-128.

steel by the Company who spent in Canada; that 90.30% was spent in Canada and Newfoundland. The advantages of the location were reiterated "This fortunate juxtaposition of iron, coal, dolomite and limestone, united with water transportation is a national asset which enables Canada to be independent of foreign countries, in respect of the vital matter of iron and steel.⁽³⁾ At this point, the Chairman pointed out that these phrases were strongly reminiscent of the prospectuses of the Dominion Iron and Steel Company in 1900.⁽⁴⁾ After a general preamble mixed metaphor, the brief veered into the centre of the discussion. The efficiency of the plant was declared to be of a high order and it was stated that it had reached the point "where the interest on money would be greater than any saving that could be made in operations"⁽⁵⁾. Four years previous to this date the General Manager testified before the Royal Commission on the Nova Scotia industry that it would take \$14,000,000 or \$15,000,000 to make it "equal to any"⁽⁶⁾. Yet during this period the Company had gone into the hands of the Receiver. It is rather doubtful that the Receiver, although acknowledged as most efficient could achieve such results. On examination the General Manager attributed the failure to prosper to low capacity operation. "We can produce as much tonnage in Canada and we could produce as cheaply, at the same cost, as they do in the United States if we had the tonnage"⁽⁷⁾. The remainder of the brief was devoted to a consideration of the existing tariff and the recommendations for its

(3) Reference Nov. 28-30-1928 - Iron & Steel - p.130
(4) Ibid. p. 131.
(5) Ibid. p.132
(6) Evidence - 1925 - p.3029.
(7) Reference - Nov. Iron & Steel p.135.

revision. The request for readjustment was based on two main premises -- (a) a tariff could not be fair that discriminated against the products of one established industry in favour of the products of other protected industries: (b) it has been against public policy to maintain an arrangement of duties which discouraged the extension of industry which would otherwise be logical and easily accomplished. The history of the tariff was adduced to maintain these contentions. The introduction of long lists of drawbacks and the failure of revision since 1907 were noted. The ad valorem effect on specific duties owing to the rise in prices was demonstrated as follows:-

	<u>1908</u>	<u>1915</u>	<u>1927</u>	
Steel billets, 60 lbs. and over	9.5%	12.6%	7.4%	(1)

The results of price changes on secondary products were compared with these figures and the lower protection afforded to the primary industry in proportion was shown. ⁽²⁾ It was pointed out that the raw materials of the secondary processors were in the large the finished products of the primary producers, and that to insure capacity production, a portion of these primary forms had to be sold. In the further processes of the primary industry, figures were produced to show protection on conversion costs. Working down from the \$7.00 duty on rails, the brief suggested duties based on the conversion costs on the primary products. The competition from Belgium and Germany, which countries had revived and re-equipped their industries and in addition an International Steel Cartel, was the main source of trouble. It was pointed out that the costs of water

(1) Brief of Dom. Iron & Steel - sec. 17.

(2) Ibid - Nov.28-1929 - Reference 2 - Iron & Steel - p.138

carriage were about the same - Sydney to Montreal, total charge⁽³⁾ \$2.75, - Antwerp to Montreal \$2.92 per ton of pig, billets and rods. The lower wage scales in continental countries were also produced as an argument for protection. The figure quoted for Sydney was 59.8 cents per hour as compared with 19.9 cents for Belgium. This seems obviously disproportionate. The average wage in Sydney in April 1929 was about 42 cents an hour. An official of the Company on being confronted with this fact said that "this (59.8¢)⁽⁴⁾ was what the lawyers used as a comparable basis. In the light of the conglomeration of the above facts, increased protection was asked.

The Tariff Board concluded their public meeting with the producers in January 1929. The briefs of the two primary Companies, - the brief of the Algoma Steel Corporation was prepared by Dr. B. K. Sandwell, - offered some very complicated data and some time was necessary for a consideration of these and the objections raised by the secondary producers. In addition, blank copies were passed to all manufacturers for suggestions on the revision of the word-structure of the tariff schedule. Considerable changes in this regard were⁽⁵⁾ effected in the tariff introduced by the Liberals on May 30, 1930.

The general revision had at last been completed. The amendments in the wording, structure and rates of the schedule that ranked first in length, intricacy and importance had been finished. The Budget Speech pertinent to the revision pointed out the method in which the schedule had been drawn up -- the necessity of maintaining an efficient and self-reliant iron and steel industry, supplying

(3) Brief of Dominion Iron and Steel Company - sec.32.

(4) Minutes General Works Comm. Meeting - April 10, 1929, Dominion Iron & Steel Co.

(5) Budget Speech).

consumer demand at reasonable prices, and in the second place "the national desire to facilitate trade in iron and steel products, with those countries who facilitate export trade from Canada." ⁽¹⁾ Particular attention was directed to the primary products in the above direction and especially with the use of the British preference to induce the products of Great Britain of a specialized nature. The increases in the primary forms were made with a view to the incidence of the changes. It was declared that this would be absorbed before the ultimate consumer was reached.

Another triumph was recorded for the Nova Scotia industry when it was announced that the long awaited bonus on coal consumed in the production of steel -- the recommendation of the Commission on Maritime Claims would be put into effect.

The primary item - pig iron - was unchanged, thus retaining free raw materials for the secondary producers. Ingots of iron or steel, n.o.p., were increased in duty in the intermediate and general rates, the preferential tariff being unchanged : to \$1.50: \$2.50: \$3.00: from \$1.50: \$2.25: \$2.50. A new item 377a included blooms, billets and slabs, and cogged ingots, n.o.p., and sheet bars, carrying a duty of \$2.50: \$4.00: \$4.50: instead of the general item of \$1.50: \$2.25: \$2.50. Hot rolled bar and rod iron and steel enjoyed an increase from \$4.25: \$6.00: \$7.00 to \$4.25: \$7.00: \$7.00. The general rate on 379d was raised \$1.50 and the intermediate rate \$1.00. Under this same heading came several sub-items for further

(1) Mr. Dunning - Budget Speech - 1930.

processing - bars and rods, including ingots less than 60 lbs. per yard. On two of the sub-items the general and intermediate tariff was unchanged but the preferential rate was put on the free list - a reduction of \$2.25 and \$2.00 respectively. The general and intermediate tariff on plate steel were increased, but the preferential rate was unchanged - from \$2.00: \$2.75: \$3.00: to \$2.00: \$4.00: \$6.00. It is evident that there were few drastic changes. The British preferential was left stationary to a great extent and the increases affected the intermediate and general rates. Even the intermediate rates were not raised as high as the manufacturers and producers had wished. The granting of the bounty on steel helped to alleviate this disappointment to the Nova Scotia interests. The Algoma Steel interest were benefited by increased protection on alloys steels. The equilibrium was maintained by allowing the entry at reduced rates of many raw materials for the processing industries.

The revised tariff was not acclaimed with enthusiasm. It was too mild for many protectionists who had expected great things after the prolonged sitting of the Tariff Commission. The discussion that accompanied the passage of the Bounty Bill through the House was not an hostile one. Rather opposition concerned the manner in which the bounty would be applied. Many wanted the bounties to be qualified by provisions that these would be passed on to the workers. However, several amendments in this direction were defeated. Finally the bill passed the House as originally planned. The Conservatives, accused the Liberals of withholding the bounty as an election move.

Almost all the hoped-for legislation was completed and the Nova Scotia industry was well ahead of the 1926 position with

regard to protection. However, conditions in the industry were showing the effects of the "depression" which has persistently continued.

The Dominion Elections were held in the summer of 1930. The people perturbed by unemployment and the prolonged slump voted the Conservatives into power. Consequently the iron and steel industry was the recipient of promises and it was out to have them fulfilled. The partial revision of the tariff in the iron and steel schedules was announced September 16, 1930. Only seven items were affected, largely by the raising of the intermediate rate to protect against the continental competition. Iron and steel plate, hot or cold rolled was raised over 100% on the British preference -- from the May rate of \$2.00: \$4.00: \$6.00 to \$4.25: \$6.00: \$7.00. The other six items were raised in the intermediate tariff from 10% to 50%. Ingots, bars, rods, etc., all were jumped fifty cents in their various items.

The dumping duty introduced in 1904, was raised from 15 to 50% ad valorem - of the difference in price between the exporter price in Canada and the Canadian production - and was subject to closer regulations, a very desirable move as far as the iron and steel interests were concerned. A general revision of the tariff was promised by Mr. Bennett for 1931. However nothing in this direction has been done beyond the preliminary stage. General conditions have been too grave to permit any time to be devoted to

the tariff. In addition, additional duties are not desirable at a period like the present. The Imperial Economic Conference may revive tariff action.

The Nova Scotia industry has emerged from the fray battered and lame, yet the elixir of protection should enable it to gain a competitive status. The reorganization of its finances enables a fresh start to be made free from many heavy financial burdens. In addition, the bounties should enable the industry to attract capital, once its ability to produce earnings is proven. However this is hardly the time to expect earnings in the steel industry but the general revival of business will demonstrate its future. The markets of the world must be its ultimate goal, yet the reduced freight rates should enable it to command a considerable domestic market. Canada has been generous with the Nova Scotia steel industry -- the future will tell the tale. Undoubtedly, a tariff is needed to maintain it through the days of reorganization and depression.

The future of the tariff and the iron and steel industry is difficult to forecast. The industry is evidently indissolubly espoused to protection. The problem arises in planning the type of protection to be employed. The return of the bounty system is noteworthy. Yet it is doubtful if it is here to stay. The system as in force to-day applies directly to one Company. It was introduced as a relief measure. It will be repealed when relief is no longer

necessary. Consequently, the fortunes of the Nova Scotia steel industry are a matter of direct concern to the people of Canada.

The waste that has resulted in the Nova Scotia steel industry during the past thirty years has absorbed a large portion of the tariff protection extended at the expense of the people of Canada. The remedy is obvious. Tariff legislation in the future will have to be based on the knowledge that there is no waste in a protected industry. Efficiency will have to be guaranteed. Precautions will have to be enforced to insure the requisite standards. The economics of the steel industry will have to be borne in mind. The prosperous years have to take care of the unfavourable years. The steel men realize this fact. Let the legislators become aware of it. The country cannot afford to protect an industry that can only survive on prosperity.

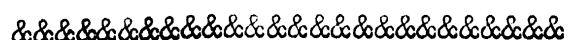
A word may be said in passing on the relation of the Imperial Economic Conference to the future of the steel industry of Nova Scotia. Canada can absorb a large volume of iron and steel products from Great Britain that are at present imported from the United States. England by granting a preference to Canadian steel can open her markets to the steel industry of Nova Scotia. It has been the custom for the English iron trade to import from Belgium and Germany large quantities of semi-finished steel. At the inception of the Dominion Iron and Steel in 1899, the prospects of the English markets were emphasized. The same natural conditions are present. The costs of production are high, because of lack of volume of output. Here is an outlet. Under a preference, the

Nova Scotia industry should be able to enter the English market. If not there is something radically wrong.

To blame the tariff for the stagnation that characterized the steel industry in Nova Scotia during the post-war years is absurd. A conglomeration of causes was responsible. In the first place, there were the causes inherent in the industry. These were chiefly artificial, the results of past errors.

The general condition of the world markets prevented an export outlet to any great extent. The re-entry of Belgium and Germany into the steel trade, equipped with the latest in productive machinery and financed by eager capital, made further difficulties. Even the conditions of the money markets and the shipping problem added to the unnatural conditions. The reparations and war debts exerted their influence.

The painful re-adjustment that the world is experiencing in the present period will tend to eliminate many of these irregularities. In another new era can the Nova Scotia industry find the keys to prosperity which have eluded all efforts in the past. The first requirement is that the industry should begin to depend essentially on itself, on the natural advantages that are provided, on the brains and efficiency of its management and labour. The financial reorganization permits -- the favours of the people of Canada allow!



The Post War Period.

CHAPTER 2.

The history of the post war period largely concerns the financial manoeuvres that culminated in the merger of the two Nova Scotia steel industries and the Halifax Shipyards into the British Empire Steel Corporation, the financial failure of the merger, and the consequent re-organization. Outside of the financial aspect, there remains little of note. Expansion has been confined to the promotion stock. The abortive plate mill project, sponsored by the Federal Government, represents the only extensive new construction. In the physical aspect, the history is confined to the gradual improvement of the equipment that had grown obsolete and the introduction of new devices of a minor nature to reduce the costs of production.

The background of this period must also be considered. It is briefly the reaction from the world war. The conditions as they affected world trade must be pitted against the conditions inherent in the steel industry of Nova Scotia. The prevalence of

inflation in the early years of the post war period, the depression of 1921, and the consequent readjustment-all provide the background. The return to prosperity and the failure of the Nova Scotia industry to share in that prosperity must be considered. The labour troubles, both in the coal and steel industries, complicate the problem of analysis. The later developments, include the political aspects in connection with Maritime Rights and the subsequent legislation, the receivership of the Dominion Iron and Steel Company, and the reorganization of the industry in the Dominion Steel and Coal Corporation. Despite all these changes, the natural conditions that surround the Nova Scotia industry have not changed, nor has the economic setting been improved. It must be remembered that the success of the industry during the War period was achieved under abnormal conditions, yet it was largely dependent on the export trade. The re-adjustment of Europe has rendered that outlet difficult. Yet the future of the Nova Scotia is bound up in that market. The economic setting demands it. That is the problem.

During the development of the Nova Scotia steel industry, in the early years of the present century, the question of merging the two steel companies - The Dominion Iron and Steel and the Nova Scotia Steel

and Coal - had been mooted. The community of interest in the Wabana ore deposits, the contiguity of the coal areas, and the savings that would accrue from the single administration of the horizontal integration had naturally suggested such a procedure. Two factors prevented its accomplishment - the individuality of the Nova Scotia Steel and the relative financial organization of the two companies. The Nova Scotia Steel had been developed in a conservative manner from a very humble origin. No wild-cat financing had accompanied its evolution. The Dominion Iron and Steel had been evolved, from a promoter's brain in true "Wallingford" manner. Consequently, a merger could not be arranged because of the difficulties of allotting true value to each party. However, these conditions did not prevent rumors from circulating. Following the stock market slump of March 15, 1903, it was rumored that a merger would be effected. This was officially denied by the Scotia Company on July 18, 1903. (i)

The next movement for a merger came in the battle for control of the Nova Scotia Steel. This followed the declaration of the stock dividend in 1909. The market tendencies of the Scotia stock indicated that some outside influence was at work. It was rumoured that a

(1) Canadian Annual Review (July 18) - 1903 - p.516.

syndicate, headed by Mr.R.Forget, actually had gained control of the company by purchasing securities in the open market. Quick action on the part of the board of directors foiled the move. The outcome was that the president of Scotia, Mr.Harris, took over the shares of the intruders, and the status of the company was unchanged.(ii) It was rumored that the syndicate had attempted to gain control of the Scotia as the first step in a large merger plan. The Monetary Times predicted that a merger would be forced upon the Nova Scotia steel industry by the conditions of the industry and the necessity of strength to combat competition. (iii)

Early in 1918, a merger between the two steel companies was the subject of discussion. Evidently the change of control of the Scotia Company gave rise to these rumors. The Monetary Times featured this news, and ran the comparative statements of the two companies. It commented favorably on the proposal. The officials of the two companies were non-committal. The rumor stated that an American banking firm which had floated the issue of the securities for the Nova Scotia company in 1917 was .

(ii) Monetary Times - vol. 45 -p.2514.

(iii) Ibid. - p.911.

ready to finance the merger. Public opinion did not favour the idea of losing control of the Nova Scotia industry to an American syndicate. The Monetary Times favored a voting trust, with the control vested in Canada. (i) Possibly because of the war situation and the steel shortage in the United States, the American interests were active. The subsequent action of the War Trade Board in taking over control of production in September 3, 1918, prevented any further action.

The actuating force of the British Empire Steel Corporation was to come from another direction. It found its seeds in the action of the Imperial Munitions Board with respect to the ship-building industry. The shortage of suitable ocean tonnage had caused that body to rejuvenate the ship-building industry in Canada. At the conclusion of their program, the Dominion Government acting through the Department of Marine and Fisheries resolved to carry on the industry. This was in January 1918. In accordance with the plan, an investigation of the ship-building plants was undertaken. It was in this connection that Mr. R.M. Wolvin, President of the Montreal Transportation Company, was sent by the Minister of Marine to investigate the situation in Halifax. Previous to the explosion of 1917, the ship-

(i) Monetary Times - V.60-Feb.22, 1918.

the Montreal Transportation Company, which was controlled by them, \$250,000; and "associates and friends," \$3,000,000.

(2)

In the meanwhile, the Minister of Marine had negotiated a contract for the erection of a plate mill with the Dominion Iron and Steel Company. (3) The new mill would be the only source of raw material available in Canada. Mr. Wolvin, looking to the future of shipbuilding, saw the advantage of controlling the supply. A merger at once suggested itself. The scheme offered plenty of room for flights of the imagination. It provided for control of the raw materials - coal and ore, the control of the steel production, the construction of ships, in addition to offering the transportation of the coal, ore, and finished products. The embryo of the coal - steel shipbuilding merger was formed. In June 1919, Mr. Wolvin met the president of the Dominion Steel Corporation, Mark Workman, in England and the outcome of the conferences was a personal investigation of the coal and steel properties. As a

(2) Evidence before N.S. Royal Comm.-1925 pages 2054-56.

(3) Debates - 1918 - p.347.

transportation expert, Mr. Wolvin detected the need for enlarged facilities in this direction and saw his ability to provide them through the Halifax Shipyards. (4)

He began acquiring shares of the Dominion Steel Corporation in the open market. In November 1919, the first rumor of the new merger was accentuated by the sale of 50,000 shares of the Dominion Steel to Col. Morden. This gentleman had acquired a reputation as a promoter, as a result of his flotation of the Canada Steamship Lines in 1912. - with \$12,000,000 "watered stock." (5) Evidently the English syndicate, headed by Col. Morden, and Mr. Wolvin had a friendly agreement, for Mr. Wolvin joined the Board of the Dominion Steel, and was soon after elected president. Mr. J. W. Norcross joined the Board at the general meeting in 1920. Once they were in control, the syndicate and Mr. Wolvin decided to act with celerity. (6)

The opening gun in the merger proceedings was the incorporation of the "British Empire Steel Corporation". Letters patent authorizing a capital of \$100,000 were obtained from the Federal Government on March 15, 1920. On May 18, the corporation applied to the Dominion Government

(4) Forsey E. - Econ. and Social Aspects of N.S. Coal Ind. - p. 34

(5) Debates - p. 2252 - 1919.

(6) Annual Report - Dom. Steel - 1920.

for supplementary letters, increasing the authorized capital to \$500,000,000. (i) The attention of the House of Commons was called to the proceedings and the ensuing debate revealed the personal history of the promoters. It was decided that an investigation of the enterprise would have to precede the granting of the increased capitalization.(2) However, there were other means of obtaining a charter. The Dominion Coal and the Dominion Iron and Steel had been incorporated in the Province of Nova Scotia, and at various times in their history, had their corporate powers enlarged to include special provisions. (3) To the Province of Nova Scotia, the promoters turned for a charter. Despite some opposition, this was readily granted and the charter was passed by the Legislature on May 22. The cheque that had been sent to Ottawa for the incorporation fees was returned. Incidentally the costs at Ottawa would have been \$100,000. Previously attempts ~~that~~ had been made by the promoters to have this reduced to \$50,000.

Armed with the charter, the promoters moved to the next stage of the process - the annual meeting of the Dominion Steel Corporation. Meanwhile the proposed scheme had been formulated. It was a very elaborate plan that included a host of companies, reaching as far west as Ontario. Several ship-building schemes were included, a steamship company,

(i) Evidence - Royal Comm. - N.S.-1925 - p.4346.

(2) Debates-1920 -pps.1946-67.

(3) Viz.-p. of this thesis.

and the two Nova Scotia steel companies. The list proposed was as follows :-

Dominion Steel Corporation.
Nova Scotia Steel and Coal Company.
Canada Steamship Lines.
Collingwood Shipbuilding Company.
Halifax Shipyards.
Davie Shipbuilding and Repairing Company.
Maritime Mail Company.
Century Coal Company. (4)

However, dissension arose among the directors of the Dominion Steel as a result of the failure of the constituents to produce information concerning their operation, after the Board had passed the merger in principle. On May 26th, the Board took action and suspended the acceptance of the merger. The annual meeting was set for June 15. The failure of the arrival of the necessary information caused an adjournment until June 18.

The dissenting directors applied to the Courts to have the meeting postponed by an injunction. This was refused. (i) The annual meeting was held June 18, 1920 and the new interests were officially vested with control. The first move was to install the London Advisory Committee. This was to handle the export business of the Company, and through their connections to provide "a large potential customer of your Company's ore, and as events progress, a purchaser of considerable quantity of pig iron and billets, which will become available from the new furnaces that the future will undoubtedly see built at Sydney."

(4) Circular-issued by Board of Directors of Dom.Steel.

(i) Annual Report - 1920 - Disco.

In the discussion, that followed the President's address, the dissenting directors aired their grievances. Mr. Plummer outlined the reasons for attempting to prevent the meeting. Mr. MacMaster emphasized his position as a trustee for the shareholders, declaring that " no business man would go into partnership without at least knowing what the other partners would put in." Mr. Wood criticized the balance sheets issued as of the proposed Companies-wherein the surplus was obtained by writing up the value of the mineral deposits, and the assets appeared to be derived entirely from the similar items of the Dominion and Nova Scotia Companies alone. He also criticized the proposed distribution of shares, stating that this was away out of proportion. (2) While these remarks did not hurt the status of the promoters, who had full control, nevertheless they were a signal that a drastic reduction of the plan must be effected. The result was that only three companies were included - the Dominion Steel, the Nova Scotia Steel and Coal, and the Halifax Shipyards. (3)

Aside from the financial negotiations, there were definite arguments in favour of the merger. The operations of the mining properties were a definite argument in favour of the merger. The contiguity of the ore deposits had

(2) Annual Report - Disco -1920 - Mr. Wood.

(3) Viz. - Forsey - opp.cit.-p.38.

necessitated that the Scotia company run a shaft through the deposits of the Dominion Company. This shaft was to become the property of the Dominion Company on the completion of a return shaft that the Scotia company completed in 1919. Here was one instance of duplication, that had happened in the ore deposits, and there was the likelihood of similar occurrences. The situation in the coal areas was more acute and at times threatened to end in legal warfare. The trouble dated back to 1913, when the Sydney Main seam terminated at the verge of the Dominion properties. The areas adjoining had to be leased on a royalty basis. By 1918, the trouble was again renewed and legal proceedings were threatened. "Existing property conditions were responsible for great inefficiency in the working of the Scotia holdings and " were partly responsible for that costly blunder of the Jubilee Bankhead and seemed likely to mean untold future expenses for both companies in rock driftings, new railways, shipping piers and colliery towns." (i) Some of this trouble could have been avoided by the exchange of leases as was afterwards effected. (2)

Scotia evidently did not entertain any plans for a merger in 1918. Construction work on a new blast furnace was started at Sydney Mines and the steel plant was subjected to a general overhauling and remodelling. The plants at Trenton were also put in shape. (3)

In 1919, the Scotia company acquired extensive timber holdings in the counties of Pictou and Colchester. The wood was for freight-car sidings, as made by the Eastern Car. In the same year, the Scotia company acquired the near by Acadia Mines at Stellarton. Control was purchased from the Belgian syndicate, which (6) had re-organized the business in 1910. The advantages to the Scotia Company from this purchase were twofold - fuel for the Trenton plant was available at a short distance, and the power plant of the Allen Shaft was of a large enough capacity to enable the power to be utilized in the steel plant at Trenton.

The entry of Scotia into the merger is covered with dark proceedings. From the above, it is evident that the Scotia Company had no intention of selling out. The financial position was sound. The following quotation reviews the financial situation -

" From 1884 until Dec.31,1920, a period of 36 years, the Scotia's Company's earnings were \$33,307,329.96, and in only one year was a loss shown - 1897, a trifling figure, being less than \$5,000. The total dividends paid during the Company's operation were \$7,452,758.82 - the balance of the earnings were put back into the property." (4)

The suggestion that the merger was forced on the Scotia Company by the competitive conditions in Nova

Scotia was emphatically denied by Col. Cantlie in a scathing letter to a Halifax paper -

" The Dominion Steel were in business twenty years before the merger and were active competitors during the latter half of that period. They were never able to put The Scotia people out of business and never could have done so. Scotia made better steel both at New Glasgow and Sydney Mines than the Dominion Sydney plant ever did or could make, as was amply demonstrated during the War; and with larger and more modern open hearth furnaces and a lower overhead burden, made it not only better but cheaper." (5)

The actual amalgamation of the Scotia with the Dominion Company evidently was planned in a different manner than was finally adopted. The original plans evidently called for the control of Scotia without any actual merger - after the former grandiose proposal was dropped. Mr. Wolvin had planned to obtain control of "the nuisance, without merging with it, " by purchasing all the shares possible in the open market. However, these plans went astray, and the London syndicate advised merger. Consequently Scotia was included, when acceptance of the Halifax Shipyards, as a third member of the project, was signified. (i) The change of attitude on the part of the Scotia directorate is unexplainable. Of this Col. Cantlie writes -

(i) Evidence - Royal Comm. 2055-73 - ex Forsey E.-pps.38-39.

" Scotia was betrayed and surrendered from the inside by a few men who thought it to their interest to bring the merger about, and (2) who received positions and directorships, and possibly other rewards." The subsequent terms extended to the holders of Scotia common, where the Dominion Steel shares were granted \$5. extra valuation per share, seem to affirm the above statement. In the light of Scotia's financial condition, even including a reduction for the Jubilee Bankhead, a more generous attitude was to be expected.

An interesting sidelight, in connection with the acquisition of the 50,000 shares of the Dominion Steel Corporation, and the formulation of the British Empire Steel Corporation, is furnished by a press dispatch to the Montreal "Gazette" on December 10, 1919. In this dispatch, Col. Morden is reported to have stated that "British engineers had reported in favour of scrapping nearly all the company's Disco plant, as it was very out-of date." Perhaps this was an innocent statement. However, the condition of the Sydney plant was not as bad as painted by the British engineers. A new set of the latest type coke ovens had just been installed and a general program of repairs was under way. The only weak spot that needed attention was the open hearth plant. The idea of the dispatch was either to let the people of Canada know that the new interests were going to spend some money, or it was

to depress the price of the stock. It was a promotion measure at any rate. (3)

All the difficulties were now surmounted and the actual merger became a reality. A circular to the stockholders stated that the original scheme was abandoned because the directors considered it inadvisable to have that agreement carried into effect. The proposed stock issue out of the authorized capital of \$500,000,000, was -

7½% cumulative preference shares Series "B"	\$19,950,000
7½% " 2nd " "	57,350,000
Common shares	24,450,000
Total	\$ 101,750,000

No Series "A" preferred (8%) was issued at the time.

A feature of the capitalization was the exchange of common shares for 7½% second preference (cumulative) on the following basis.-

- (a) One share of Dominion Steel Common to be exchanged for \$95. of 7½% cumulative 2nd preference, and \$40. of common.
- (b) One share of Nova Scotia Steel common (\$100.) to be exchanged for \$90. of second preference, and \$40. of common.
- (c) One share of Halifax Shipyards common to be exchanged for \$60. of second preference and \$25. of common.

The 7½% Series "B" preference shares were offered share for share for -

Dominion Steel Corporation	- 6½% preference
Dominion Iron and Steel Co.	- 7½% "
Dominion Coal Company	- 7½% "
Eastern Car Company	- 6½% "
Halifax Shipyards	- 7½% "

and 1½ shares of 7½% Series "B" was offered in exchange for each share of Nova Scotia Steel & Coal Company 8% cumulative first preference stock.

The above mass of figures added another flagrant example of stock "watering to Canadian finance. The above transactions augmented the promotion stock, floated at the organization of the Dominion Coal Company (\$12,500,000), the Dominion Iron and Steel (\$15,500,000), the Nova Scotia Steel and Coal (\$2,000,000), and the Halifax Shipyards (\$5,000,000) by \$19,000,000 bringing the total figure of promotion stock to \$54,000,000. (i) A large proportion of the watered

common found its way at the time into second cumulative preference division, ~~which~~ was a very flagrant feature of the financing. However, no harm accrued from this move, as no dividends were ever paid on the second preference stock.

(2) The enlargement of the property account by the revaluation of the assets was an old device in corporation finance to promote the sale of stock. However, it is an obvious way of watering stock, because equity can only be placed behind the stock by "ploughing in surplus earnings, which in this case could hardly happen on account of the heavy second preference issue. It must be noted in passing that these properties were valued at a time when the general level of prices was far above normal. The capitalization has been called top-heavy. Indeed it rather resembles the capitalization of a railroad company with its tremendous load of fixed or semi-fixed charges. The receipts

(i) Report of the Royal Comm.-H.S.-1925 -p.53.
(2) Ibid - p.54.

of \$75,000,000 from the sale of (i) the securities is a matter of grave concern. That is a lot of money to have been wasted on a scheme financed in so disgraceful a manner. The opinion of the financial markets is best expressed in the record of the security prices.

Bescp Stock Issues.

Type	'21	'22	'23	'24	'25	'26	'27
Series "B"	62 $\frac{1}{2}$	77 $\frac{1}{2}$	73	57 $\frac{3}{4}$	36	30	35 $\frac{1}{2}$
2nd Prfd.	35	39	26 $\frac{3}{4}$	17	14 $\frac{1}{2}$	15	6 $\frac{1}{2}$
Common	12 $\frac{1}{4}$	15	10	6	4 $\frac{1}{2}$	3	2 $\frac{1}{2}$

(Financial Post Annual)

In regard to the \$19,000,000 promotion stock, the Corporation even advanced the argument that this was more than covered by the consolidated surplus of \$21,784,870. However, through failure to maintain the properties during the War, a great deal of this amount was applicable to the re-habilitation of the mines and plant. Therefore this fund was really a reserve for obsolescence, while it was classified as a surplus. Next it was suggested as (2) a basis of the \$19,000,000 promotion stock and at the same time was still included in the surplus account! Yet at the annual meeting of the British Empire Steel Corporation on June 30, 1926, the President, Mr. Wolvin is reported to have stated the following - "With respect to a remark about

(i) Report of Royal Comm. -p.53.
 (2) Forsey E.-opp.cit.-40 -41.

"frenzied finance", he said that there was nothing of that sort in connection with the Corporation, there had been no issue of promotion stock, and no new financing(3) which could be so characterized." And in the same report, the hope of Government assistance was uttered !

The other feature in the organization of the British Empire Steel Corporation was the London Advisory Committee, which had been appointed in 1920. A London Office was established to facilitate the sale of the company's products in the export market. The first Director of the Office was Sir Newton Moore, at the time a salaried official of Besco, and the present head of the Dominion Steel and Coal Corporation. Despite the official title and connection, the Office was little more than a commission (4) agency, of which the parent company had only a half interest.

The merger went into effect on April 16, 1921, when the stocks of the constituent companies were acquired. (i) There was no general change in the organization of the various constituents. The British Empire Steel Corporation superseded the Dominion Steel Corporation, which had controlled the organization, production and financing of the Dominion Iron and Steel and the Dominion Coal companies since the original merger of 1910. (2) These arrangements had provided for the payment of interest on bonds and div-

(3) Annual Report - Besco - 1925 -p.13.

(4) Evidence -R.C. -N.S. -1925 - p.2078 -79.

(i) Annual Report - Besco - 1921.

(2) Annual Report - Dom.Steel -1910.

idends on the preferred stocks of both the constituent companies, together with provision for sinking funds and reserves by the Dominion Steel Corporation. The two constituents were treated as departments of the holding company. These arrangements were enlarged under the British Empire Steel Corporation to include the other two constituents - the Halifax Shipyards and the Nova Scotia Steel and Coal Co. on the same basis. (3) Consequently it is difficult to determine the exact earnings of the steel division - which constituted the entire steel industry of Nova Scotia, as the corporation reports include the combined earnings of the entire organization.

One point in connection with the merger was the abandonment of the blast furnaces and open hearth plant of Sydney Mines. Since the merger, it has never been in operation. This seems rather strange in the light of the expenditures that had been made on improvements and enlargements just prior to the merger. A new blast furnace had been built (without stoves) and the steel plant had been overhauled. (4) In 1926, the officials stated that business could not be carried on there without "heavy expenditures on plant and new coke ovens." (5) This statement does

(3) Report of Royal Comm.-1926 -N.S.-p.55.

(4) Annual Report - Scotia - 1920.

(5) Annual Report - Scotia - 1925.

not seem to agree with the letter quoted on page concerning the efficiency of the Sydney Mines plant, which termed the equipment "larger and more modern." (6) Why this plant was allowed to fall into ruin, only the officials know!

The first annual report of the British Empire Steel Corporation disclosed that \$88,633,920 had been issued in capital stock of various types out of the authorized capital of \$500,000,000. The outstanding preference stocks of the component companies aggregated \$12,944,700. The total capital stock outstanding amounted to \$91,116,395.(i) The total bond issue outstanding on December 31,1921 was \$31,167,899.98.

The first year of operation was very unfavourable for the steel industry under the new control. The depression of that year militated against any activity in the steel trade. As a consequence, the blast furnace operations were curtailed with resulting decrease in pig iron production. (From 296,896 in 1920 to 151,343 tons in 1921) Activity in the mills was very low. The plants of the Scotia Company at New Glasgow were idle a large part of the time. The iron ore situation was the brightest of the lot. The general reduction of ocean rates enabled the marketing of the ore in Europe and Great Britain. There were no changes

(6) Letter to Halifax Evening Mail - March 16,1925
(i) Annual Report - Besco - 1921.

effected in the equipment of the steel plant. The new battery of coke ovens was completed. The plate mill, which had been built to fulfill the contract made with the Dominion Government, was idle with no prospect of business. However, the payment of the damage claim of \$4,000,000 by the Government was ample to cover the loss. (2)

The following year did not show much improvement. The blast furnace activity was 17 $\frac{1}{3}$ of capacity and the output of pig iron (3) was the lowest in the history of the Dominion Iron and Steel Company - 120,769 tons of pig iron. The operation of the steel plant at Sydney was intermittent. Production at the steel mills of New Glasgow was at a minimum. There was very little demand for the various steel products of the corporation: processed steel, railway steel, railway cars and steel ships. The coal strike closed the steel plant and all operations were discontinued during August and September. This was done partially because of lack of fuel and also because there was nothing to keep the plant occupied. (4) The export trade in iron ore was most encouraging. Out of a total production of 1,123,327 tons of ore mined at Wabnam 811,845 tons were shipped to Great Britain and Europe, the largest importer of ore being Germany. (5)

(2) Ibid. 1922-for details see this thesis-Tariff Chapt.

(3) See chart of pig iron production in Nova Scotia.

(4) Annual report - Besco - 1922.

(5) Mineral Production in Canada @ Ottawa - 1929-p.130.

In December 1922, an issue of \$4,645,000 5% Consolidated (i) Mortgage Bonds was floated. These bonds were issued by the Dominion Iron and Steel Company and were guaranteed by the Dominion Steel Corporation. This issue of bonds had been authorized in 1909, but only a portion of the issue was floated. The balance was retained in the treasury of the company and was used as a basis of bank loans from time to time. (2) Thus, these bonds were available at the time, and provided the means of raising extra capital without interfering with the capital structure of the holding company. The largest proportion of the proceeds of this loan went to the Dominion Coal Company. The new corporation was having a difficult time in paying the interest on its bonds and first preference stock of holding and constituent companies out of earnings. No dividends were being paid on the second preference and common issues. The fixed charges on bonds outstanding exceeded the net earnings in 1922. The dividend on the preferred stocks - \$1,024, 197 - was paid out of the surplus, which had been largely furnished by the damages paid by the Government on the plate mill. (3)

The following year witnessed a revival in the steel trade, which was reflected in the increased operation of the steel industry. Despite the industrial troubles

(i) Annual Report - 1922 - p.17
(2) Annual Report - Disco -1910.
(3) Profit & Loss Statement - Besco -1922.

that characterized the operations (4) of the Sydney plant during part of February and all of July, blast furnace operation was about 47 $\frac{1}{2}$ % of capacity. Pig iron production rose to 277,654 tons. Steel ingots and direct castings were also in demand and the production was 297,842 tons. The processing department were active, as they utilized almost all the ingot output. The wire and nail output increased considerably. In this connection, it may be noted that the small export trade of the Nova Scotia Steel industry was confined to these products. The revival of the transportation business led to the placing of orders for rails and railway equipment, which augmented the demand for primary steel products. (5)

The main financial feature of 1923 was the reduction of the authorized capital of the British Empire Steel Corporation from \$500,000,000 to \$250,000,000. This was done by cancelling that amount of securities held in the treasury:- \$115,000,000 of preference shares of different types and \$135,000,000 of common stock. (6) Several reasons were advanced for this reduction of the capitalization. It was stated that the corporation had originally planned to include a much larger group and that the capital structure had been designed for that purpose. The subsequent course of events had not permitted the original plans to be fulfilled and as a result of the smaller group, the authorized capital was

(4) For details -viz.-Chapter on Labour in the Industry.

(5) Annual Report - Besco -1922.

(6) Report of Sepcial Annual Meeting -April 9,1923.

greatly in excess of any possible need. In conformity with the reduced needs of the existing organization, the capital was reduced to one half of its former authorized amount. The authorized capital of \$250,000,000 was constituted as follows:-

	8% Cumulative First Preference "A"	\$60,000,000
	7% " Second "	75,000,000
(i)	Common	75,000,000
	7% Cumulative First Preference "B"	<u>40,000,000</u>
	Total	\$ 250,000,000

Some protest was raised at the policy of leaving the Series "A" 8% preference stock on the books. It was urged that the existence of this stock was damaging the credit of the corporation. To this protest, the President, Mr. Wolvin replied ".... we have had no difficulty in disposing of securities and the credit of the Company is good - any impression to the contrary is incorrect." (2)

Another argument advanced for the reduction of the capital stock was that a better impression would be made on the workers.

" If you give us a capital of not more than two hundred millions of dollars, we are going to satisfy labour to a very great extent. Labour has been studying this over-capitalized business for years. They do not understand that the capital is not in use, and any little difficulty that crops up is liable to be taken hold of. I say that we should cut this capital down ... and I think that we could stand well in the sight of the labouring man and he would be where we would like to have him." (3)

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- (i) Annual Report - Besco - 1922-p.13.
(2) Ibid.-
(3) Ibid.- Mr. McGaffigan.

The activity of 1923 did not persist, and the operations of 1924 were on a greatly reduced scale. In addition to the slackening in the demand, increased competition from the European producers was proving very troublesome. Blast furnaces operation was 26 $\frac{1}{2}$ of capacity with a production of 177,078 tons of pig iron. Steel production dropped to 185,420 tons. The plants produced 74,327 tons of rails and 68,454 tons of other products. The Eastern Car works built 1,576 cars. The Halifax Shipyards confined its operations to repairs. The tonnage seems to indicate that a fair business was done. However, prevailing prices were low and the margin of profit was small. (4)

On September 19, 1924, the relation of the constituents with the holding company were officially altered by the rescinding of the Resolution passed on December 12, 1912, which had empowered the Dominion Steel Corporation to handle all operation for the constituent companies. The same policy was continued under the control of the British Empire Steel Corporation until it was repealed. Subsequent to the above date, the Dominion Iron and Steel and the Dominion Coal Company have maintained a separate account of their operations. This change was brought about by the installation of a new management in both the steel and coal units.

This new management started a general housecleaning. Mr.H.J. Kelley was brought from the Bethlehem Steel Corporation and placed in charge of the steel operation. The efficiency of the plant had fallen to a very low order. There were very many loose ends that needed attention. A large number of officials were on the pay-roll and performed no other function than ornamenting the plant. Mr. Kelley, at a single stroke eliminated 500 of these "dead-heads" (1) and turned his attention to the productive end of the steel organization, where serious losses had been sustained by large percentages of defective goods. The final results was that production was speeded up, waste almost totally eliminated, and large savings effected. The monthly payroll was decreased by \$86,000.(2) No attempts were made to decrease the wage scale. Industrial relations in the steel plants were made more congenial by the development of the Employees' Representation Plan. (3) A Bureau of Industrial Relations was established, which at one devoted its attention to safety measures with renewed vigour, with an encouraging reduction in the number of accidents. The original safety work was inaugurated in 1915. (5) The Royal Commission of 1925 makes little

(1) Evidence - Royal Comm.N.S. 1925 -p.3328.

(2) Ibid. -p.3091.

(3) Ibid. -p.3065-3075,3098.

(4)Report of Royal Comm - N.S.-p.55.

(5) Social Service Council of Canada - "A Survey of the Steel Industry" p.22.

comment on the management of the Corporation prior to these changes.

" Evidence has been produced which showed that the operators have recently undertaken a close examination of the administration and office organization of the various constituent companies as well as of the Corporation. As a result of the cutting down of staff and the reduction of salaries, a saving has been effected which will show a reduction of approximately \$800,000 for 1925 as compared with the 1923 period." (4)

The inefficiency that rotted the core of the corporation was an expensive process for the people of Canada and the unfortunate shareholders. No wonder that companies were unable to compete, no wonder that the world market cannot be exploited ! Once again, inefficiency had taken its toll to be reflected in the near future by the insolvency of the Dominion Iron and Steel Company. The properties of the steel unit had not been maintained to a point of the highest efficiency,"nor does there appear to have been any consistent policy of depreciation or depletion of properties on the whole."

(1) Consequently, there were no funds available for the remodelling of the plant. The financial fortunes of the British Empire Steel prevented the flotation of additional securities for this purpose. Earnings in

1924 were insufficient to pay the fixed charges. The deficit - \$1,326,588.71 was paid by drawing on the Consolidated Surplus that had been accumulated up to the time of the merger. (2) The sources of the deficit were largely in the coal division, where output had declined appreciably. The condition was heightened by labour troubles that were brewing.

The year 1925 was no brighter for the British Empire Steel Corporation - it was much darker. The chief source of trouble were the labour disputes in the coal properties, which led to the appointment of the Royal Commission in 1925. The effect of the strike on the steel unit was mainly felt in June and July, when the two furnaces in blast had to be banked for lack of fuel. The blast furnace plant despite the shut-down operated 33% of capacity to produce 201,795 tons of pig iron, a 10% increase over 1924. Other production was 251,669 tons of steel ingots, 73,912 tons of rails and 114,027 tons of other products. The car works at Trenton produced 180 cars. The steel industry had fallen upon evil days. The annual report of the British Empire Steel goes into the causes of decadence in the steel industry in detail with the main emphasis on tariff conditions. (4) The total deficit for the year 1925 for the British Empire Steel Corporation was \$4,411,430.28.

(2) Annual Report - Besco -1924.

(3) For details - see Forsey E.- "Econ.& Soc.Aspects of NS.Coal

(4) Annual Report - 1925-Besco.

The chief feature of the Annual Meeting, held June 30, 1926, was the announcement that the interest on the first Mortgage bonds of the Dominion Iron and Steel, due July 1st and the interest on the Consolidated Mortgage bonds, due September 1st, could not be met. A general re-organization of the entire corporation was planned. This procedure was evidently based on the Coverdale Report - a private investigation made for the information of the directors. It analyzed each constituent company in detail and made certain recommendations. Despite the demands of the House of Commons and some of the shareholders to produce this Report, it was never made public.

The Dominion Iron and Steel Company was forced into liquidation by its inability to pay the fixed charges that had pyramided to a staggering total. Ever since its inception, these charges had handicapped the company. The total bonded debt outstanding on December 31st, 1925 was \$16,843,253.34. (1) The effect of these heavy charges was the inability to apply any considerable sums to the writing off of old equipment and to the installation of more modern productive apparatus. This fact was reflected in the efficiency of the plant, which could not withstand the

(5) For parliamentary discussion - Debates -1926-4433 - 67., also Annual Report - Besco-1925. (Annual Meeting)

(1) Annual Report - Besco - 1925.

added competition to which the industry had been exposed in the post-war period. In addition to this handicap, there was evidence of poor management in the years prior to 1924.(2) The condition of the equipment at that time may be inferred from the statement of the General Manager in 1925 that " it would take \$14,000,000 or \$15,000,000 to make it equal to any." (3) While the Corporation blamed the lowness of the tariff for its difficulties, it is evident that other factors exerted a very considerable influence. In addition to the immediate difficulties, the future under the heavy bond issue held very little promise. An issue of \$5,159,000 5% First Mortgage Bonds was falling due in 1929 and there was little hope that this could be renewed at the same terms on the basis of the plant, as it was then equipped. Finally, the earnings from operations "were practically nil." The payment of the bond interest and the allowance of a respectable sum for depreciation would require earnings of about two millions a year. Dividends had been paid on the preferred stock of the Dominion Iron and Steel (included that portion exchanged for B.E.S.Corp.Series "B") up till 1924; but these payments came largely out of the surpluses of the

(2) Report of Royal Comm.-N.S.-p.55.

(3) Evidence - Royal Comm. - p.3092.

previous years(before the merger.) The company had been dependent on the banks for its working capital. At this stage, these bank loans totalled over \$3,000,000 and no further aid in this direction was forthcoming. (4)

Applications for aid to the Government fell on deaf ears. Accordingly on July 2,1926, the National Trust Company, Trustee for the bond-holders, was appointed Receiver. (5)

The Nova Scotia Steel and Coal - the other steel producer in the Nova Scotia industry- had ceased to exist as a primary producer. It seems that any business that it had held as a primary producer had been usurped by the Dominion Iron and Steel - and then lost! The export trade in iron ore had certainly been taken over. It is to be remembered that the Nova Scotia Steel had first developed that business. Yet, despite the large shipments of ore to the export markets in the post war years (1) the directors of the Nova Scotia Company reported in 1926 that " production has been restricted to some extent by the necessity of selling stocks of ore mined and stocked prior to the socalled merger. " (2) Consequently, the production had been taken over by the Dominion Company, in an effort to make a credible showing! The Sydney Mines plant had been abandoned and the operations of the steel mills at New

(4) Annual Report-Besco - 1925 p.10.

(5) Report - Ad.Board Tariff-Taxation p.123.

Receiver appointed by Supreme Court of N.S.

(1) See Table in Appendix.

(2) Proceedings of Meeting of N.S.Steel - July 9, 1926.

Glasgow reduced to a minimum. Only the forge and car works were kept in operation. The Dominion Iron and Steel did not possess this type of equipment. The coal properties were operated in part. Thus, it is evident that the Dominion Iron and Steel has operated at the expense of the Scotia Steel. The equipment which had been out of use for some years was largely reduced to "scrap," Despite this waste, any benefits that had accrued to the Dominion Iron and Steel Company had not enabled it to maintain its solvency. A terrific price had been paid for the attempt!

The Receiver took full control of the operation of the Dominion Iron and Steel. The management and sales policy was under its sole direction. Contrary to the prevailing belief at the time of the failure, operations were continued. A herculean task confronted the Receiver, but it was attacked with a will. Under the new regime, the Company which had been operating at a loss of from \$500,000 to \$1,750,000 annually, showed in its first year an increase of sales over production costs of \$1,600,000. (3) The revival of the demand for steel was a factor in this improvement, but by no means a dominating factor. Blast furnace operation was maintained at approximately 30% of capacity, producing 250,238 tons of pig iron. The ingot production remained at 250,000 tons. The

(3) Survey of Steel Industry in Canada - Social Service Council - p.20.

large increase came in the finishing departments where the aggressive sales policy, unhampered by the necessity of paying any fixed charges, disposed of a large volume of business. The balance sheet does not disclose any large capital expenditures, yet it is evident that the efficiency of the plant had increased to enable the above results to be shown in the first few months of operation.

Meanwhile a battle was raging between the various interests of bondholders and other claimants. The Receiver had been appointed to guard the interests of the holders of the First Mortgage Bonds of the Dominion Iron and Steel Company. The remaining portion of the funded debt was represented by the Consolidated Mortgage Bonds - Sterling Series \$7,035,253.34; Currency Series \$4,639,000; total amount outstanding - \$16,833,253.34. (1) These bonds had been guaranteed as to principal and interest by the Dominion Steel Corporation, control of which was vested in the British Empire Steel Corporation. On the default of the interest on these bonds on September 1st, 1926, a Committee, acting for the holders of the Currency Series of these bonds demanded payment of both principal and interest. Application was made to the Courts for the dissolution of the Dominion Steel Corporation. (2) The application was granted by the Supreme Court of Nova Scotia on August 12, 1927. (3)

(1) Annual Report - Besco -1927.

(2) From "Plan of Reorganization" - April 14, 1930.

(3) Iron and Steel of Canada - Sept. 1927. -p.269.

Another suit was instituted by the Dominion Steel Corporation to determine the priority of the various liens, held by the banks and the bondholders. The Supreme Court of Nova Scotia, Mr. Justice Mellish presiding, decided that the banks had the prior lien. (4) This upset the plans of the National Trust Company, the Trustee, who filed application for an appeal. This was not pressed. (5)

On the same day that the dissolution order was handed down by the Supreme Court of Nova Scotia, August 12, 1927, the shareholders failed to ratify the reorganization scheme proposed by the Directors. (6) This scheme proposed that the constituents of the Corporation should be operated as separate entities.

The judgment of the Supreme Court in the Dominion Steel Corporation dissolution suit was appealed. While the appeal was pending, negotiations were opened with Messrs. Holt, Gundy & Company concerning the financing of the Corporation. These negotiations concerned the possible action that would follow if the appeal was dismissed. The outcome was that over ninety per cent of the Currency issue of Consolidated Mortgage Bonds outstanding was acquired by Messrs. Holt, Gundy & Company. This action checkmated the dissolution decision and the matter was dropped. (1)

(4) Annual Report - Besco - 1927-p.13

(5) Ibid.

(6) Iron and Steel of Canada - p.269.

(1) Annual Report - Besco - 1927 - p.10.

In exchange for this action it was agreed that the right to vote the common shares of the Dominion Steel Corporation, which had been vested in the British Empire Steel Corporation, should be entrusted to a committee of five, composed as follows: the President of the Corporation, one member nominated by the directors of the corporation, and the remaining three chosen by Messrs. Holt, Gundy & Company.(2) The final arrangements were completed on February 2, 1928. On that date the presidency was vacated by Mr.R.M.Wolvin. He was replaced by Mr.C.B.McNaught; at the same time Sir Herbert Holt and Messrs. Gundy, Duggan, Wilder, McNaught and Montgomery joined the Board of Directors. The stage was cleared for a re-organization. At a later date, the Currency Series of bonds was deposited as collateral for a bank loan. With the proceeds of this loan, a settlement was effected with the holders of the Currency Series of these bonds. (3)

The Dominion Iron and Steel under the Receiver and Manager was meanwhile making a creditable showing. No action had been taken by the Government on the tariff question beyond the appointment of the Board. However, the Maritime Freight Rates Act, passed April 14, 1927, was a distinct help in marketing the products of the steel plant. (4) The trade revival was still on the uptrend and

(2) Ibid.

(3) "Plan of Reorganization" - p.2.

(4) 17 Geo.V (1927) c.44.

this was reflected in the increased business of the steel operations. Considerable sums were expended in improving the efficiency of the plant "a few thousand dollars above that figure - \$1,300,000." (5) The electrification of the shipping piers enabled large savings to be made annually - enough to virtually pay for the installation within the year. (6)

Furnace operation was about the same as in 1926 - about 30% of capacity. The production of pig iron was fractionally lower. Steel ingot production showed an increase of 20% to 297,637 tons - the highest since 1923. The tonnage of rails sold reflected the increased activity of the railways - 126,046 tons, an increase of 50% over the preceding year. The other products totalled 108,020 tons. (1)

The export sale of ore for 1927 was the highest in the history of the deposits, aggregating 946,569 tons. The major portion of this was sold to German steel operators and several small lots were sold in the United States. The production of the Nova Scotia Steel plants at New Glasgow was 33,472 tons of finished steel; the Eastern Car Company produced 520 cars. The Halifax Shipyards had never built another ship since the completion of the Government contract in 1921. Oper-

(5) Record of Public Sitting - Advisory Board Tariff.
Iron and Steel Reference - Nov.27-29 - p.133.

(6) Iron and Steel of Canada - Sept.1927 -p.284.

(1) Compiled from the Annual Report, and from the Dept.
of Mines Returns.

ations were confined to repair work. Consequently, there was no outlet for ship plate in this quarter. (2)
The earnings of the Dominion Iron and Steel Company, under the Receiver, for 1927, were \$1,688,075.35. (3)

The next year - 1928 - also continued to provide a large volume of business in the steel industry. For the first time since 1918, the production of pig iron in Canada exceeded one million tons. The Nova Scotia production reflected the general increase in the demand, but did not increase proportionately with that of Ontario. During 1928, the blast furnaces were overhauled and only four were put in condition to produce. However, these four furnaces were capable of producing as great a tonnage as the original six. The furnaces operated at about 60% capacity and produced 302,756 tons of pig iron. The open-hearths produced a hundred thousand tons more than the preceding year - 391,688 tons of ingots, about 95% of capacity. (4)
The finishing mills which absorbed the greatest percentage of the primary product were operated largely on double shift. This high capacity production and the prevailing high prices enabled the Dominion Iron and Steel to return \$1,794,478.08 gross profit on operations. (5)

(2) Annual Report - Besco @ 1927.

(3) "Plan of Re-Organization." - 1930 - Recap. of Earnings. p.11

(4) Production of Iron and Steel in Canada-1929-Ottawa-p.86

(5) Recap. of Earnings - Dom.I.& S. - 1930.

The activity of 1929 in all spheres of economic activity is well known to all. The steel industry was no exception. New records in domestic production were set up. The production of pig iron was the greatest in the history of the industry in Canada, exceeding even the production during the War Years. (1) The production in the Nova Scotia industry did not register any large increase over the preceding year. The record of 428,000 tons made in 1913 was not even approached by the 1929 mark of 310,801 tons. Ontario furnaces had registered the greatest increases. Nova Scotia had fallen behind. The ingot production, however, was very encouraging. The rated capacity of the equipment - 400,000 tons, was exceeded. The output was 407,962 tons - 101.8% of capacity. The output in the finished product departments was maintained at a high peak. The earnings for 1929 under the Receiver were \$2,328,000.33 - an increase of more than a half a million dollars over the preceding year. (2)

The issue of First Mortgage Bonds - \$5,000,000 - which fell due on July 1st, 1929, was retired by the Receiver. Funds for this purpose were acquired by withholding the payment of interest on the Consolidated Mortgage Bonds of the Dominion Iron and Steel Company, by the

(1) Production of Pig Iron in Canada -see Table.

(2) "A Survey of the Steel Industry" - Social Service Council - p.20.

repayment of a loan made to the Dominion Coal Company in 1922 from the proceeds of the sale of the Currency Series of Consolidated Mortgage Bonds in that year, by the application of the reparations award for war losses, paid that year and by the use of certain current assets. (3) The amount received on the reparations account was \$472,097.82.

A review of the activities of the Receiver during the years 1927-28-29 discloses that the average earnings were \$1,959,183.58. (4) During the period, the cost of properties was increased by roughly a million dollars, and the depreciation reserves by approximately a million and a half. In all, a total of \$2,250,000 had been issued as a source of working capital and for necessary maintenance charges. The whole issue of the First Mortgage Bonds had been retired. The surplus of two million dollars that had been set up during the tenure of the receiver was largely due as interest on the consolidated bonds of the company, as none had been paid over this period. (5)

The efficiency of the operations of the Dominion Iron and Steel was achieved by careful supervision on the existing equipment rather than by the addition of any new units. Examination of the balance sheets fails to disclose any large disbursements that might be traced to

(4) Ibid. - p.10.

(5) From a comparison of the Balance Sheets of 1927-29.

additional properties. The results are commendable, yet it is rather to be doubted that the equipment, which in 1925 would have taken "\$15,000,000 to make it equal to any." (1) could have been brought up to this point without the expenditure of any large sums. However, it seems to be the intention of the operators to bring the plant up to this peak as conditions allow. Such intention was voiced before the tariff board. No other comment is necessary on this score other than to reiterate the virtue of such intentions as paving blocks on a certain well travelled highway. The point is that these intentions must be verified if the industry expects to compete - or - to justify assistance!

The officials of the Dominion Iron and Steel Company in replying to the charges of Mr. Ross H. McMaster, President of the Steel Company of Canada, who according to newspaper reports, made serious statements charging lack of efficiency and modern methods in operations at Sydney (2) stated that Mr. McMaster was "misinformed." To back up this contention, the official cited the repeat orders on 127 lbs. rails produced for the New York Central

(1) Royal Commission - N.S. - Evidence -1925 -p.3092.

(2) Report of Public Session - Advisory Board Tariff - Iron and Steel - Reference 2 - Nov.27-29,1928 - p.5.

Railway."For a considerable period of time 99.7 per cent of all rails rolled at the Sydney plant have met the specification of the buyers. We believe this is a record unexcelled by any rail mill in America." (3)

The General Manager, Mr.H.J.Kelley, appeared before the Tariff Board and testified that production was carried on " at a fair cost and in an efficient manner." He said that " he found a very good property existing when he took charge." He claimed that the plant at Sydney "could compare with others in efficiency." On the question of cost of production, Mr.Kelley emphasised volume - " We can produce as much ~~tonnage~~ in Canada and we could produce as cheaply, at the same cost as they do in the United States, if we had the tonnage." (4)

Another witness was produced to vouch for the efficiency of the Sydney unit. He declared that he had inspected the equipment and was "agreably surprised." " It has reached a point, in my opinion where the interest on money is greater than the saving that could be made in operations." (1) He commented on the management which he declared was A-1 at Lloyds and concluded his testimony with:- " I can say that the Dominion plant at Sydney is worth every support that can legitimately ^{be} given it by the Board and the Parliament of Canada."

(3) Ibid. - p.5.

(4) Ibid. - p.133-35.

(1) Report of Public Session on Iron and Steel
Reference Advisory Board of Tariff - Nov.Session
pps.132-133.

Undoubtedly the efficiency of the plant had vastly improved in the past few years, but as has been pointed out before, this was largely effected by the most careful and economical management. The only large scale renovations that had been made were the re-building of a blast furnace and the construction of a new power house. (2) The above testimony does not emphasise the condition of the "open-hearth" units, which were the main objects of criticism. Undoubtedly the mill equipment was very efficient. Records for production had been repeatedly broken on these units. However, it must be remembered that the testimony had been given in the hope of obtaining additional protection. Under these circumstances, it could hardly be expected that admissions of inefficiency would be forthcoming. The plea advanced was that capacity could not be obtained under the existing tariff. (3) Only one remedy for the situation is obvious. The cheapest produced article will sell in the largest quantity. The location of Nova Scotia precludes any large market in the hinterland of Ontario as that section of the country is well provided for not only by the Canadian plants, but also by the American steel industry, which is largely concentrated in that radius. Emphasis must be placed, therefore, on the cost of production to the Nova Scotia industry, for

(2) Iron and Steel of Canada - from a survey of 1918-30.
(3) Nov.Session - Ad.Board T.& T. - p.135.

on this basis, and this basis alone, can it hope to survive. The granting of the bounty on coal used in the production of steel undoubtedly helped in that direction. The results are not evident because the market has been paralyzed by the present depression.

Production of iron and steel in Nova Scotia declined sharply in 1930. Pig iron output fell off from 310,801 tons in 1929 to 212,906 tons in 1930. Two furnaces operated five months of the year and only one was in operation for the remaining seven months. Ingots production fell off to 296,522 tons. This figure represented about 75% of capacity. The excess ingot production over pig iron is explained by the practice of mixing scrap steel with pig iron in the open hearth charge. A certain small percentage of the pig iron is sold as foundry pig iron. The down trend of production continued into 1931 when the lowest production of pig iron during the present century was recorded in Nova Scotia. Furnace activity was recorded for only eight months of the year, when one furnace was in blast. This furnace was banked during the last four months of 1931. The production of pig iron was 102,393 tons. Steel ingot production fell to 171,551 tons, representing about 40% of capacity. The result of these declines was reflected in the balance sheets, and also in the serious unemployment conditions that have surrounded the industry during the past two years. (1) The finishing

(1) The figures are compiled from information provided by the Metallurgical Branch of the Bureau of Statistics.

mills have been largely idle, and the railroad situation did not enable the demand for railroad steel to become active.

One more phase of the Nova Scotia Steel remains to be analyzed: the re-organization of the British Empire Steel Corporation. The unfortunate history of that corporation was a terrible blow to the Nova Scotia steel industry. This is obvious in the fact that there has been no growth in the industry since 1913. The production of that year has never been exceeded. The effect of the War Years was wasted in the "frenzied finance" of the British Empire Steel Corporation. The inefficiency that crept into the steel organization in the early years of the Besco regime added to the troubles, till finally the Dominion Iron and Steel, caught fast in the mire of heavy fixed charges etc. sank beneath the waves of financial insolvency, despite the efforts of a new management.

The entry of the Holt, Gundy and Company interests into the British Empire Steel Corporation in 1928 and change of control ^{the} in/corporation started many rumors. The "Financial Times" of London, announced that plans were under way for the formation of an international organization. - " A possibility exists that Mr. Wood and Mr. Robert Fleming of London may negotiate for the alliance of the British Empire Steel and the Algoma Steel Corporation. In this event the Canadian power

holdings of Insulls of Chicago may be included on account of the close connection with the Algoma concern." (1) The article traced the financial connections of the various parties concerned. E.R. Wood was identified with the Preferred Shareholders' Committee of the British Empire Steel, was vice-president of the National Trust Co., trustee and receiver of the Dominion Iron and Steel. He was also president of the Dominion Securities Corporation Limited. It was pointed out that "Messrs. Speyer of London" were connected with the Dominion Steel Corporation, as they issued the securities floated in 1912. Messrs. Speyer stipulated at that time "that no bonds be issued without their consent." The trustee, the National Trust Co. issued the later securities, in connection with Speyers. The connections of Sir Herbert Holt in the world of finance were well known. The ultimate connection of the whole tangle was with Dillon, Read & Co. of New York. (2) The rumor of the international organization was very logical, but the subsequent reorganization of the British Empire Steel did not bring to light any of these tendencies. However, there is ample time yet to complete such a scheme.

(1) Financial Times (London) Feb. 3, 1929.

(2) Walton Newbold - "The struggle for Steel."

The "unscrambling" of the Besco unit was a very intricate undertaking. The ultimate dissolution had been forestalled by the entrance of Holt, Gundy & Co., but the arrangements were only of a temporary nature. In addition, the holders of the Sterling Series of the Consolidated Mortgage Bond issue had to be reimbursed in some manner. The bondholders had to be satisfied before the receivership of the Dominion Iron and Steel Company could be lifted. The negotiations that formed the background of the reorganization occupied two years. The outcome of these arrangements was the incorporation of the Dominion Coal and Steel Corporation. This Corporation was incorporated under the Companies Act of the Province of Nova Scotia by a special statute (1) in 1928, with an authorized share capital of one million preference class A shares of \$40. par value, and one million common class B shares of \$25. par value - a total authorized capital of \$65,000,000. An issue of \$25,000,000 first mortgage 6½ debenture stock was also authorized. The new corporation was incorporated to purchase the assets of the British Empire Steel Corporation and the Dominion Iron and Steel Company. (2)

Negotiations with the bondholders resulted in the agreement that the 6½ first mortgage sinking fund bonds of the Dominion Steel and Coal Corporation expiring September

(1) Acts of Nova Scotia - Chap. 141.

(2) "Plan of Reorganization"

1, 1939 would be accepted par for par in exchange for the outstanding bonds of the Dominion Iron and Steel Corporation. A cash consideration of \$105. for each thousand dollars of outstanding bonds was offered as a remuneration for the defaulted interest during the years, since September 1st, 1926. The cash payment was to be provided by the issue of sufficient similar bonds. The arrangement involved the exchange of \$11,417,550.40 in bonds and the issuance of \$2,082,446 of bonds to provide the funds for the cash payment. After these arrangements were completed, there still remained about \$11,000,000 in bonds available for future issue for financing additions and extensions. The acceptance of these arrangements was a signal for the dismissal of the receiver and the Dominion Iron and Steel Company passed into the hands of the new corporation and lost its corporate identity.

The reduction of the capitalization involved the exchange of securities; the issues of the British Empire Steel, the Dominion Steel and the Dominion Iron and Steel that eliminated the two previous holding companies - the British Empire Steel and the Dominion Steel Corporation. The assets of these companies were purchased by the new corporation. In this transfer of ownership, the Dominion

Coal Company and the Nova Scotia Steel and Coal was involved. The entire common stock of these two companies was held by the two holding companies. The relations of these companies - Scotia and the Dominion Coal - were unaltered. The outstanding issues of bonds and preferred stocks were not affected by the formation of the new company. The Dominion Steel and Coal Corporation is therefore an operating company and a holding company.

The exchange of securities was made on the following basis:

(1) British Empire Steel -

$3\frac{1}{4}$ Common class B. shares for each share of 1st Pref. Stock
1. " " " "share for every 2 shares of 2nd " "
1 " " " " " " 5 " of Common Stock.

Dominion Steel Corporation.

4 Common class B shares for every share of Preference Stock.

Dominion Iron and Steel Corporation.

3 Common class B. shares for each share of Preferred Stock.

The par value of Common class B stock was twenty-five dollars.

The above exchange involved the issue of 841,756 shares of

Class B stock --553,447 for various types of Besco stock;

188,220 for Dominion Steel preference stock and 100,089 for

the Disco issue. The par value of the common stock issued

in exchange was \$21,043,900. The same volume had been re-

(1) Plan of Reorganization - April 14, 1930 - issued to shareholders.

presented on the books of the British Empire Steel Corporation at approximately \$80,000,000.

It is evident that this reorganization was a serious attempt to put the corporation on a sound basis. The \$54,000,000 of (2) "watered stock" that had accumulated at various times in the histories of the various constituents was effectively squeezed out of the Dominion Steel and Coal. The holding in the Nova Scotia Steel and the Dominion Coal with a total nominal par value of \$50,000,000 was placed on the books at the figure of \$5,000,000. This figure was adequate. The common stock of the Dominion Coal Company was largely promotion stock - \$12,500,000 out of a total \$15,000,000. The earning power of the Nova Scotia Steel had declined severely following the abandonment of the primary plant at Sydney Mines. The coal properties of the same company were in a very poor state of repair and some of these mines had been abandoned. The total earnings, applicable to (1) dividends, during 1927-28-29 on the average, were \$1,385.60 and the arrears on the preferred stock on April 14, 1930 were \$125,000. The value of the common stock is obvious. The value of the plants and properties of the Dominion Steel and Coal as given in the balance sheet is approximately \$33,000,000. This

(2) Report of Royal Comm. - N.S. - 1926 - p.53.

(1) Plan of Reorganization - Prospectus.

figure is also an adjusted one, and is much more accurate than the huge figures carried by the British Empire Steel Corporation.

The readjustment of the organization as represented by the Dominion Steel and Coal has been a drastic but most necessary step in restoring the confidence of the financial world in the Nova Scotia undertaking. It was the only way to show the people of Canada that the industry had reformed. The action of the Dominion Government, in granting a bounty on domestic coal used in the production of steel, shortly after the reorganization arrangements had been completed showed that the attitude had been changed. The same Government had denied assistance in any shape or form to the industry, in 1926. (1) At that time, the attitude of the Government was that no assistance would be given until a thorough reorganization had taken place. That has been done and the Dominion Steel and Coal is once more on a firm financial basis. Every decade of the twentieth century had brought new changes in the steel and coal organization of Nova Scotia. The merger in 1910 was consummated without any "frenzied financing", which had featured the organization of the Dominion Iron and Steel at the beginning of the century, the end of that decade (1920) the twentieth anniversary of the organization found the

(1) Debates - 1926 - 4433 -67.

The natural resources are still available. There is plenty of ore - for use or for sale. It is only of recent years that the export business has amounted to any volume. The future in this type of production is very bright in the light of the lower yields of the Lake Superior deposits. The cost of coal is a problem too. There is little likelihood of drastic reductions - the coal industry is in the second generation. The problem is the prevention of increases in costs. However, the new organization has the foundation of a well balanced capital structure, the fixed charges have been partially reduced. Under these conditions, the future appears brighter than the past; in other words, there is a possibility of success under conservative guidance, with the flag "efficiency" nailed to the mast !

(2) See Chapter on "Raw Materials"- iron ores - of this thesis.

organization undergoing considerable irrigation in the organization of Besco. The reorganization of 1930 was favoured in the first place by the law of averages and was featured by the necessity of eliminating the undesirable features that had crept into the organization. Public opinion demanded it. Popular opinion prevailed.

And so, the jeremiad is at its end. The history of the industry has been a sad and disgraceful one. Financially, it is still a dwarf - not an infant. No definite progress has been made, despite the bounties and protection that had been showered upon it. The waste that has accrued has a far reaching effect. The stock of the Dominion Steel and the British Empire Steel was widely distributed in Europe and in England. (3) The popularity of steel stock in those regions after the Besco fiasco must be immense ! Not only will the Nova Scotia industry suffer, but the whole of Canada ! A financial reputation once lost is very hard to regain. An adequate price has to be paid to remunerate the investors to risk their commitments. This affects the cost of production, which must be kept as low as possible if the industry is to survive.

The Dominion Coal and Steel Corporation has a big problem to solve. The future lies hidden in its solution. At the present time, the steel industry of Nova Scotia is in the doldrums. So is the industry the world over. (1)

(3) Annual Report - 1925.

(1) The U.S. steel industry is operating during 1932 - 20% of capacity.

CHAPTER 3.

Industrial Relations in the N.S. Steel Industry.

Labour's place in the history of the iron and steel industry of Nova Scotia is worthy of special attention. A study of the history reveals the evolution of the highly skilled worker from the original sources, the farm and the sea. The growth of this body of skilled tradesmen has eliminated one of the most potent barriers to success that harassed the early days of the industry. The history of labour in the industry falls roughly into two divisions - before and after the inception of the Dominion Iron and Steel Company. The reason for this division are mainly the advent of the large scale producer, employing a large number of men. The early history must necessarily consist of a rough sketch, because accurate data on this period are unavailable. The other period from 1900 to the present day mainly concerns the abortive attempts to organize the iron and steel workers; the 1904 strike and the calling out of the militia; the battle for the eight hour day after the war; another attempt to establish a union in 1923 and the strikes of the same year; the installation of Employees' Representation Plan, and the final change in the hours in the industry on January 1st, 1931. The vicissitudes of the iron and steel industry during the past few years are not inherent in the Nova Scotia industry alone, but are common

to the industry as a whole. Under these conditions, it is difficult to draw any definite conclusion on the advantage of the eight hour day to the Nova Scotia workers.

Prior to the middle of the nineteenth century, the iron industry in Nova Scotia had been sadly handicapped by the lack of skilled labour. In two definite instances, the failure can almost be directly traced to this cause.

(The Moose River project and the Pictou undertaking.)

The lack of skill was difficult to remedy. The only alternative was to import the skilled labour. Even this led to complications. (1) After the middle of the century, the growth of the country provided the odd skilled tradesman from among the immigrants. However, the ratio of unskilled to skilled in the operation of a furnace was large so that the lack of skilled artisans was not so serious. The skilled workers were usually paid on a production basis. Hours of labour in the Acadia Works at Londonderry averaged about 10 to 12 per day. The furnaces were worked on two shifts to provide for the continuous operation. (2) Ordinary labourers received from \$1. to \$1.30 per day. The men employed in connection with the furnace were paid by the ton of pig iron produced; the keeper getting \$0.25 per ton and the others, \$0.20 per ton.

(1) Gesner - p.254; Can. Engineer - V.ii p.104.

(2) C.O. MacDonald - Coal and Iron Industry - P.243 -45.

This, allowing the furnace to produce seven and a third tons of pig iron per day would be about \$1.83 for the keeper and \$1.47 for others under him. (1) These wages were paid in the period between 1870-75. By 1888, wages had risen considerably in these works. Keepers were paid \$2.30 per day of twelve hours. Others in connection with the furnaces received wages ranging from \$1.16 to \$1.80 per day. In the mills, the wages for a ten hour day were as follows - moulders, \$2.10, \$1.70, \$1.50; puddlers were paid on piece work - \$2.20 per ton and earned \$2.50 to \$2.75 on the average; helpers averaged about \$1.35 per day; locomotive engineers employed by the Iron Works received \$60. per month. (2) The total force around the Londonderry plant was small in comparison to present day requirement in a modern steel plant - about 150 men and boys. (3)

The steel works of the Nova Scotia Steel Company employed about 200 men in 1888. The hours of labour varied with the shift. The day shift was ten hours and the night shift twelve hours. The shifts were worked alternately every week - one week day shift, one week night shift and the same wages were paid for both shifts. No labour troubles or strikes were reported. The steel company had

(1) Jeans J. "Canada's Resources & Possibilities" p.221-
(2) C.Ochiltree MacDonald -p.243-46. Complete lists give
(3) Canadian Mining Manual -1897.

"objections" to employing Union men. Rollers earned an average of \$5. per day on a tonnage basis; heaters received two dollars a day; machinists from \$1.50 to \$2.00; melters averaged about \$3.25.

The social conditions prevailing in New Glasgow were fair. A number of the men owned their own houses and a few held stock in the company. House rent was about \$4.00 monthly for a four roomed tenement. Board averaged from \$3. to \$3.25 per week. There was no organization connected with the works, no society funds, but in case of sickness or accident, relief was provided by a subscription raised in the plant. The habits of the men are described as " not very generally sober. " (4) The average wage of the worker in New Glasgow increased from \$1.30 in 1884 to \$1.35 in 1888. The total labour force of the Nova Scotia Steel Company, in 1895, when the New Glasgow Coal, Iron and Railway Company was included in the organization, numbered 400 men. (1) In 1908, the New Glasgow works employed about 800 men. (2)

The history of the industrial relations of the steel industry in Nova Scotia prior to 1900 is unsullied by industrial disputes. The principal reason for this

(4) C.O. MacDonald - p.251-53.
(1) C.O. MacDonald - p.254.
(2) Ibid. "

condition was that the skilled tradesmen were paid on a contract rate - many were imported from the United Kingdom. As for the unskilled labour, this was available in plenty. In addition the comparatively small numbers employed in the steel industry did not permit of a labour organization, which could wield any power.

The advent of the Dominion Iron and Steel Company rather altered the picture in many respects. The huge plant that was erected in Sydney was capable of employing 4000 men, when working (3) to capacity. Moreover the financing that had ushered the company into existence had an indirect effect on the labour situation, in so far as wages in relation to costs were concerned. The Nova Scotia Steel Company, on the other hand, was surprisingly free from industrial troubles during its existence. (Debates -1930-2496.)

The large demand of the Dominion Iron and Steel for skilled labour was partially filled by workers who voluntarily migrated there from other sections of Canada and from the United States. The company undertook to supply a considerable portion of the force. - " The skilled labour of the Dom. Iron and Steel was largely obtained from Germany and they

(3) C.O.Macdonald - p.93.

were i n this respect, independent of the United States and its labour conditions." (4) This condition was undoubtedly realized by the Company in the lower wages that the immigrant labour would accept. (See - Jeans J. p.170.)

By 1902, the iron and steel workers had organized in a union that was affiliated with the Provincial Workmen's Association. The P.W.A. was an organization that confined its activities to the province and it was at first mainly concerned with the affairs of the coal miners. The P.W.A. dated back to 1879 when it was organized by the coal miners at Springhill, N.S. It was the first Canadian craft union and the first Miners' Union in America. (5)

An iron and steel workers lodge had been included in the organization around the year 1890, but the enrollment was small. The P.W.A. had met with a fair measure of success - won recognition from the coal organization with the adoption of the "Check off" system, had raised the level of wages and had effected general improvement in the mines and mining communities. (1)

The affiliation of the iron and steel workers union in 1902, with the P.W.A. was not recognized by the Company.(2) In accordance with its usual conservative policy, very little was done in this direction for the while by the P.W.A.

(4) Can. Annual Review - 1901 - p.96.

(5) Report on Labour Organization - Canada -1914-p.97.

(1) Forsey E.- p.18.

(2) Lab. Gazette - Nov.1902.

However, the steel workers' union was soon to bare its fangs. The trouble arose out of a reduction in wages. Late in 1903, the depression forced the company to seize on the easiest way to reduce costs - by lowering wages. The accumulation of the organization costs, heavy fixed charges, and the general state of the steel trade made the reduction almost imperative. Accordingly, on November 17, 1903, the following notice was posted:

" Beginning Dec.1, 1903, all wages and salaries will be reduced from 10% to 33%. Common labourers will be paid \$1.25 per diem. (Former wage - \$1.40) " (3)

Naturally the union protested against the proposed reductions. But in vain. The cut went into effect as per schedule. It was a bad time to threaten the company with a strike as the trade conditions were so unfavourable. The union decided to bide its time. The time came in April, 1904. (Labour Gazette - P.956, Vol. IV) The representatives of the men approached the officials and demanded a return to the former wage scale. The company turned a deaf ear to the proposal. The union threatened a strike, but even then the official hearing did not improve. Negotiations dragged out for two months. Finally the union called a strike for June 1, 1904. A special meeting of the Board of Directors

of the company was held in Montreal on the eve of June 1. The official attitude was unchanged, but the company offered to arbitrate on some specific references. This offer was refused by the union and the strike was on. On June 1, 1500 men walked out. This was almost 100% of the men employed at the time, as the plant was working only a small percentage of the capacity. On June 2, the plant had to be closed down as only 30 men remained at work. The company had no other alternative. The sudden walkout had endangered the blast furnaces, which could have been badly damaged by fusing, if they had not been promptly banked.(4)

The Town Council of Sydney were greatly alarmed by the closing of the steel plant, as it represented the pulse of the city. A petition was wired to the Minister of Labour (who was also Postmaster General - the Department of Labour did not obtain a separate identity until 1909.) urging that steps be immediately taken to settle the dispute. Within the first week of the strike, the Minister had communicated with the company and with the union. Both parties refused to alter their original attitude. The company replied that they were willing to arbitrate on certain references. The union would not agree to this

proposal and held that "it would settle it in its own way." (1) The communications between the two disputants and the Minister of Labour reveal that there was no intention of either party weakening. The company maintained that the plant was closed down, not because of the strike but primarily because of business conditions. The month of June passed quietly. There were no outbursts of violence. The strike was a purely local affair. The P.W.A. did not believe in "sympathy strikes." Many of the miners resented this attitude and "felt that it was an absurdity that they, members of the same union should go on working during the steel strike." (2) The turn of events in July shattered all hopes for a peaceful settlement.

The company decided to re-open the plant on the first of July. There were plenty of men idle in Sydney, who were only too willing to return to work. Evidently the trade situation had improved for the company. The strikers, aware of the reopening of the plant, warned the company that there would be trouble. The plant opened, manned by "scab labour". The plant was under the protection of the local constabulary and the company's police. This protection proved "inadequate". The plant was threatened. Picketing on the part of the strikers was drastic. To alleviate the duties of the local

(1) Labour Gazette - July 1904. Correspondence between the different is given.

(2) Forsey E. - p.19.

guardians of law and order, the militia was called out by a local magistrate. The first contingent was the local force, which was later reinforced by a detachment of 200 regulars from Quebec. The presence of the militia did not daunt the spirits of the strikers at first, but it soon became evident that the situation was hopeless. The correspondence between Ottawa and the disputants reveals the attempts of the Minister to bring about a settlement. Finally, the union which had previously refused to arbitrate with the company's representatives, requested that the Deputy Minister of Labour - Mr. W. L. Mackenzie King - be sent to Sydney to settle the dispute. A previous request for a Royal Commission to investigate the industry was refused by the Minister of Labour as "unprecedented." (1) The Deputy Minister arrived in Sydney on July 17th. The strike was terminated five days later. The quick action on the part of the Deputy Minister restored peace. The negotiations between the company and the men resulted in a decisive victory for the company. The union was permanently displaced. The strike was terminated under the Conciliation Act of 1900. No increase in wages was granted. The company agreed to reinstate the

(1) Labour Gazette - 1904 - August pps. 164-168.

striking employees, providing their positions had not been filled during the strike and provided that the company was satisfied with their work. In addition, the company refused to interview committees of men other than their own employees in the future. The company had emerged victorious on all counts. The men suffered a sweeping defeat. The power of the union was severely affected and the provisions for the reemployment of the strikers did not at all favour the latter. Labour in the steel industry, at least in that section of the steel industry, was effectively silenced. (2)

The years following were free from further dispute. The activity of the company during the lean years of 1907-08 kept the plant open and the labour force in Sydney was employed at the usual wages when most of the steel plants in Canada were closed down. (4) The plant in 1909 employed a normal number - 4,000 men. This figure forms a basis for the future comparison - the effect of the labour saving devices introduced. The wages at this time averaged about \$2.00 per day, ranging from 14 cents an hour for the unskilled to \$5.50 to \$6.00 a day for skilled services. (3)

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- (2) Labour Gazette - 1904 - August - pps. 164-168.
Can. Annual Review - 1904 - p.600 et seq.
See also - Lab. Gaz. - Vols. iv.-pps.710,809 -v.-189.
Monetary Times - V.79-p.502 - Cost of strike to comp.
\$500,000 Commer. & Fin. Chronicle -v.78 -p.2337.
(3) C.O. Macdonald - p.93.
(4) See - "History" in this thesis.

disturbances. Nothing of singular importance happened between 1917 - 1920 in the labour situation. The union was successful in sowing the seeds that resulted in the subsequent strikes, but there were no quarrels between the company and the men. The repeated demands of the union for the "check-off", the eight hour day and increased wages were simply ignored by the officials.

In 1920, another small organization in connection with the steel industry was involved in a dispute. The railway men connected with the plant demanded the same general provisions that had accrued to the employees of the various railroads in Canada (as a result of MacAdoo Award.) Employees of the Sydney and Louisburg Railway, a subsidiary of the Dominion Steel Corporation, had received the increased wages as the road was included under the Railway Act. (3) Consequently the railway operators of the plant felt that they were being badly treated. The company refused to accede to the demands maintaining that the disputants were steel workers primarily and that because of their special qualifications, there was no reason to consider themselves other than steel workers. The custom of the United

(3) Iron and Steel of Canada - Dec. 1920 - p.323.

States Steel Corporation of dealing with all employees as steel workers was cited as precedent. (1)

The refusal of the company was a signal for a strike of the railway operators - 130 in number. The strike was commenced on November 22, 1920. The effect of the discontinuation of transportation service within the plant was the immediate cessation of operations. The plant was closed for several days. The strikers were replaced in a few days by new employees. The strike officially continued for over a year, but it actually terminated as far as the company was concerned on the resumption of transportation service. (2)

The Amalgamated Association of Iron, Steel and Tin Workers of America was active in the industrial affairs of the Nova Scotia Steel and Coal Company in 1920. The steel workers and electricians of the Sydney Mines steel plant demanded an increase in wages through the union. Application was made under the Industrial Disputes Investigation Act for a board of arbitration by the union. This request was denied because the scope of the Act did not include steel workers. Finally a commission was appointed by the Provincial Government to investigate the situation.

(1) Iron and Steel of Canada - Dec. 1920 - p.322 p.323.
(2) Labour Gazette - p.41,191, vol. 21.

The union demanded an increase in wages and shorter working hours. Evidence was produced by the workers, showing that the scale of wages in force at the Sydney Mines plant was considerably lower than at the plant of the Dominion Iron and Steel at Sydney. The officials of the Scotia company declared that relation between the men and the company had always been amiable. It was contended that the plant had been kept in operation at times, when business conditions decreed a shut-down, in order to provide work for the men. On the question of shorter hours, the official stand was that such a change was incompatible with the financial conditions. The commission finally recommended a slight increase in wages - labourers, four cents an hour; machinists, six cents an hour; and rollers a minimum daily wage of \$3.60 plus an increase of four cents per ton on production. A recommendation was made in reference to the hours of labour, suggesting that steps be taken to remedy the situation as soon as conditions would permit. (3) This partial victory for the union undoubtedly had some effect on the subsequent proceedings in the district.

(3) Lab. Gaz.-vol.20 - p.831 -32.

The condition of the steel industry in 1920 and 1921 led to general reductions that were effected in Nova Scotia. The average daily wage for 1920 was \$5.20. This had declined to \$3.58 (1) in 1922. The pressure of hard times generated a great deal of industrial unrest in the industry. Employment was spasmodic. (2) Wages were substantially reduced. The anticipated prosperity had not been realized. Predictions and promises of better pay and shorter hours, which had been "profusely made" in the immediate post war year, had not been fulfilled. To these general conditions, which were common to all industry, the unsuccessful attempts of the Steel Workers' Union to gain recognition were added. The advantage of collective bargaining for increased pay and shorter hours was realized by the steel workers of Sydney. The fact that the company refused to recognize the union added to the general unrest. Despite the fact that only a small proportion of the workers were enrolled in the union, the psychological effect of the company's attitude embraced the majority of the workers. The general effect was heightened by the campaigns of the agitators attempting to augment the ranks of the union. (3) Charges of discrimination against union men were hurled at the steel company. There was a widespread belief that the company employed a system of espionage to cover the activities of employees who were

promoting the interests of the union. (4)

The Report of the Royal Commission that was appointed subsequent to the conclusion of the July-August strike (5) to inquire into " The Industrial Unrest among the Steel Workers in Sydney N.S. " summarized the fundamental causes of the unrest. -

- (1) The rate of wages.
- (2) Refusal by the Company to recognize the Union.
- (3) Denial of collective bargaining.
- (4) Belief that there was discrimination against members of the Union.
- (5) The absence of any recognized organized means through which the representatives of the men could confer with representatives of the management.
- (6) The long hours of labour.
- (7) Irregular employment and fear of unemployment.
- (8) The high cost of living.
- (9) Agitation stirring up hostile class feeling by speakers and writers who denounced those in positions of authority, including the judiciary; called capitalists and employers by such names as " slave drivers," "labour exploiters", "common enemy" etc. and urged workmen to seek redress from their grievances by hostile and violent action. (6)

Another cause of unrest that the Report did not enumerate was the capitalization of the British Empire Steel Corporation. The general halo of optimism that surrounded the merger and the promises of large returns to the shareholders were not lost on the workers. The promotion "ballyhoo" was a two edged sword ! The officials of the corporation realized that the huge capitalization was a source of discontent to the workers, and a reduction of \$250,000,000 was effected in 1923. (1)

The history of the early years of the corporation (1921-24) disclosed that a large measure of inefficiency prevailed in the steel plant. The cost of this waste had to be shared by the workers and probably accounted for a considerable portion of the wage reduction. (2) The combination of inefficient management, absentee landlordism and inadequate markets on the one hand and weak and unscrupulous labour leadership, strikes, and sabotage had threatened the industry with extinction.

The first of the two strikes that occurred in 1923 was declared on February 13. The strike continued for four days. The immediate cause of the strike was the discharge of an employee in the nail mill. A dispute had arisen between the employee and his foreman early in the day. He had refused to obey "the reasonable orders" of his superintendent and had stopped his machine. He had circulated through the mill advising the other men to quit work. The scene of the dispute was the stage of the drama that culminated in the strike. The General Superintendent had arrived to investigate the trouble. The president of one of the local lodges of the Steel Workers' Union had also come to the place of the dispute to see what the trouble was. A verbal clash ensued between the General Superintendent and the president of the Union, when the latter offered to investigate the cause of the discord. The Union had acted in a similar capacity previously.

The Union leader claimed that he had been insulted, as had many ~~another~~ union official at previous dates. The workman involved was nursing a personal grievance at the time because he had not received a promotion. (3)

The strike was called not over a question of wages or hours of work in the plant, but because there had not been an investigation. "Evidently many of the men did not know what the strike was about, or what they wanted to accomplish except to show the company that they had the power to stop work." At a meeting of the Union Lodge on the evening of the first day of the strike, a resolution of approval was passed. The strike was called for a one hundred per cent walkout, making no provision for the retention of maintenance men. It was arranged that pickets should cover all the entrances to the plant. In the course of this picketing, drastic measures were used by the strikers. Men willing to work in the coke oven department were prevented from so doing. The homes of many of the important officials, whose presence was required at the plant to protect and preserve the blast furnaces and coke ovens, were picketed by the men. These officials were prevented from going to work. Locomotive engines were raided and left to freeze. (1)

It was the drastic picketing that prevented the operation of the plant. On the day after the walkout over one

thousand men reported for work on the day shift and five hundred on the night shift. It is evident that the Union had not convinced the majority of the workmen of the righteousness of the position. (2) The executive of the Union were unable to cope with the situation that had arisen. The riots of the strikers were beyond control of the local police force. In consequence, a mediator was sought to end the strike, which was called off on February 17th. The Company agreed to investigate fully the circumstances surrounding the discharge of the nail mill employee. The subsequent investigation confirmed the original discharge. (3)

The cessation of the February strike was only a temporary measure. Immediately after the strike, it was common rumor among the men that another strike would take place. The discontent that pervaded the workers became "much more manifest." A committee of men who were members of the Union approached the officials for an increase in wages and the granting of the "Check-Off". The reply to these demands was in the form of a statement issued by the President, Mr. Wolvin. This was on March 14. In brief it set forth the official attitude toward the Union.

(2) Maritime Labour Herald - Feb. 24, 1923 - The general account is taken from the Report of the Commission that investigated the situation, - p.13.

(3) Ibid. p.12.

- " (a) The policy of the Company is to maintain an open shop.
(b) The check-off will not be accepted by the company.
(c) Prices or products do not cover the cost of operation at the present time. Consideration will be given to an increase in wages after orders that are profitable are secured. " (4)

The Steel Workers' Union retaliated with a letter to the General Superintendent demanding (a) a thirty per cent increase in wages, retroactive to the first of March, 1923; (b) recognition of the Union with the provisions for the check-off of the union dues and the meeting with committees of men to adjust difficulties; (c) an eight hour day. (1) On March 27, 1923, the announcement of a ten percent increase in wages was made. In connection with this announcement the Superintendent sent a letter to the president of the Union at his place of employment in the plant. This was returned with the advice that "any communications that you wish to submit to the employees should be addressed to the Secretary of the Union." (2) On June 1, 1923, the executive of the Steel Workers' Union met the management and demanded a wage increase of twenty per cent and the granting of the check-off. Threats of a strike were uttered and it was disclosed that in event of a strike the full backing of the miners had been promised. The officials were informed that a recent vote of the Union membership was

(4) Maritime Labour Herald -Feb.24,1923. - The general account is taken from the Report of the Commission that investigated the situation - p.12.
(1) Report of Royal Comm. - 1924, p.12.
(2) Ibid.-

unanimous for a strike. On June 13, the committee re-appeared before the management and met the Vice-President. The previous demands were reiterated. The greatest emphasis was laid on obtaining the check-off. The committee intimated that if the check-off were granted "the other demands would not be pressed." (3) The Vice-President offered to refer the demands of the men to the Board of Directors of the Company. The Board met in Montreal on June 21. The Board refused to accede to the wishes of the men, the applications being denied in its entirety. The decision of the Board was communicated to the President of the Union on June 27. A general strike was declared by the Union that went into effect "between three and four o'clock in the morning" of the following day - June 28th. The strike was authorized by a vote of the the members of the Union whose number was not more than one fifth of the average number of men employed in the plant in June. (4) On the declaration of the strike, no provision was made for leaving maintenance men on the job to care for the furnaces. This was a direct violation of

(3) Report of Royal Commission - 1924 - p.12.

(4) Ibid. p.13.

laws of the Amalgamated Association of Iron, Steel and Tin Workers of America, which provided that " the company should be given notice and warned that the men would work only long enough, after notice, to empty the open hearth and other places of steel in process and to leave the plant in good shape and undamaged so that the work could be resumed." (1)

The early days of the strike were featured by numerous riots of a serious nature. Gangs of strikers, masked and armed with bludgeons, raided the plant and dragged maintenance men from their posts. The riots that took place on the first night of the strike centred around the gates of the plant. The crowd attempted to storm the gates of the plant under a barrage of stones. The local police rallied to stem the tide of the advance. The Deputy-Chief was uncereemoniously kicked in the face when he had fallen before the approaching mob. A Magistrate attempted to read the Riot Act. A stone hurled from the crowd terminated the reading and knocked the reader temporarily into oblivion. The riots were continued the following day. In the evening, a group of masked strikers broke through the fence surrounding the coke ovens and drove the maintenance men away. The

(1) Ibid. - p.13.

(2) Labour Gazette - August - 1923 pps.861,866-73.
Nov. pps.1273-74

seriousness of the situation led to the requisition of the active militia by Judge Findlayson that day. The militia arrived from Halifax on the following day. The force numbered two hundred and thirty men. This force was augmented by a detachment of Provincial Police, which arrived the next day. The detachment comprised sixteen mounted men and nineteen unmounted men.

Intimidation and violence was used by the strikers to prevent the men from reporting for work. The number at work diminished rapidly until after the reinforcements of militia had arrived. When the strike was declared on June 28, there were 2,774 men on day shift and 1,097 on night shift. The following day the number had fallen off to 1,037 on day shift and 1,134 on night shift. On the arrival of the militia, the men began to go back to work in increasing numbers. The following table shows the extent of that increase:-

	<u>Day</u>	<u>Night</u>
July 2	417	255
July 9	922	230
July 16	1214	211
July 23	1458	409
July 30	1720	515
Aug. 2	1978	754

(3)

The riots were continued on the first two days after the arrival of the militia. On the first day of the

soldiers' arrival a large crowd assembled at the gates of the plant. The barrage of stones that were hurled at the soldiers forced them to retreat out of range. The reading of the Riot Act was successfully completed, without injury to the magistrate. The riotous crowd did not fully disperse. The following evening the performance was repeated by the crowd. The provincial police issued forth to suppress the riot. The mounted police rode through the crowd and dispersed it in an effective fashion. From that night on, there was no rioting. (1)

On July 14, two weeks after the strike had been in effect, a committee of 1,400 men working in ^{the} plant at that date declared: (a) " that it believed it represented the opinion of seventy-five per cent of all the employees; (b) that the strike had been improperly called; (c) that the strike had been declared by the executive committee in defiance of the rules of the International Union; and (d) that it commended the action of the Government in sending the provincial police to protect property and denounced the "Red" element among the strikers who were the cause of the trouble. " (2)

(1) Report of Comm. -.14-15.

(2) Ibid. - p.13.

The strike ended on August 2, 1923. The cause of the cessation was the disability of the Union to keep the men away from work. During the last two weeks of the strike, there were more men applying for positions than there were places for them. Prior to the end of the strike, serious damage was done to the water supply system. On July 30, two water mains that furnished the plant with fresh water were blasted, completely depriving the plant of its fresh water supply and putting certain equipment in jeopardy until repairs were effected. The explosions coincided with the withdrawal of the soldiers from Sydney. (3) A number of men were arrested for the rioting and eleven were convicted and sentenced to terms ranging from forty days to two years.

The Commission that was appointed by the Federal Government to investigate the situation conducted a very thorough enquiry. All sides of the questions were studied and a large number of witnesses heard. A survey was made of several steel plants in the United States to form some conception of conditions obtaining in that country. In the case of the hours of labour, the conditions at Sydney were most unfavourable.

(3) Report of Comm. p.14-15-16.

Concerning the reductions in the wage scale the Commission was of the opinion that in view of the intermittent periods of prosperity and depression that characterize the steel industry, the "fat" years should carry the "lean" years. It was pointed out that the Company had accumulated large surplus during the years 1916-1921. Just as soon as the earnings of the Company fell off in 1921, the first wage reductions went into effect. It was also disclosed that the reserve fund was drawn upon only slightly to provide employment during the depression of 1921. (1) The following quotation summarized the opinion:

" The Commissioners are of the opinion that while no legal right to share in the surplus of a company, accumulated under such circumstances, belongs to the workmen of a plant it would be good business policy, in the interests alike of the shareholders and the employees, to regard the surplus to some extent as a trust fund to be used for the protection of the interests of the whole enterprise. The interests of the enterprise include, in a vital way, the interests of the employees and to a less extent the public interest of the community. The labour of the employees cannot be justly regarded by them as a commodity in the transactions between them and the company. The Commissioners do not suggest that the control of the surplus and the decision as to how it should be used should be withdrawn from the directors of the Company, but the Commissioners do suggest that since the employees are a very important factor in the enterprise and may even be the determining factor as to its prosperity and continued success the company would do well through its representatives to discuss this question with the representatives of the employees when changes in the rates of wages are in contemplation and when the prospect of full and regular work is not good." (2)

(1) Report of Royal Comm. - 1924 - Industrial Unrest p.22.
(2) Ibid. - p.23.

In this especial case, the earnings produced during the Great War were even greater than hinted above. When it is considered that dividends had been paid on approximately twenty-seven millions of dollars of "watered stock" it is evident that the workers had been receiving considerably less than was their desert. The wage reductions could easily have been absorbed by the surplus of the company. The formation of the British Empire Steel Corporation had rather confused the whole background of the war earnings, as the individual surpluses were placed in a consolidated fund.

In the case of the eight hour day in the continuous operation departments, the Commission strongly advocated its adoption. The conditions obtaining under the old system - eleven hour day shift and thirteen hour night shift for a seven day week, with a twenty-four hour changeover shift once a fortnight- were very strenuous and took a terrific toll on labour efficiency. The fight for its adoption and the final victory in the Nova Scotia will be described in subsequent pages.

The Commission reported that the calling out of the militia was a necessary procedure in the light of the conditions in Sydney at the time of the strike. It recommended that the Militia Act be amended that a requisition for troops must be jointly demanded by a

judge and the Attorney General of the province concerned. The 1923 strike was the second occasion that the militia had been summoned to Sydney to quell disturbances in the steel industry. (1)

The action of the union in the strike is open to a considerable amount of criticism. The militant attitude and the attempts to destroy the property of the plant constituted a grave mistake. The strikes were called by a Union which did not represent the men as a body. Consequently the outbursts only provoked the Company to take a determined stand. The lack of any common medium of joint discussion complicated the situation. The establishment of the Employees Representatives' Plan has contributed a great deal towards alleviating the situation. The main result of this scheme has been the elimination of strikes in the steel industry of Nova Scotia.

Proposals for the formation of employees' representation committees had been advanced before the strikes of 1923. In September 1922, the Steel Workers' Union proposed a scheme for the formation of committees of workmen. The proposal was refused by the Company evidently because any proposal advanced by the Union

(1) Militia called out in the 1904 strike.

was taboo. In December 1922 a plan of employees' representation similar to that which had been in operation for some years in a number of steel plants in the United States, was proposed by the Company to the workmen. The proposal was rejected on a vote by a majority of 500 out of a total 3000 votes. The Union played a large part in the refusal of the proposal. (2)

On the conclusion of the 1923 strikes, a committee of the workers approached the management with a proposal to revive the scheme that had been voted down in 1922. The Company immediately agreed and without calling a vote of the workmen on the question of its adoption, arranged that the election of the General Works Committee be held. The election took place on August 30, 1923. The vote polled represented about 93% of the workers in the plant.

The Employees Representation Plan as used in the steel industry of Nova Scotia is based on the plan introduced into the mines and mills of the Colorado Fuel and Iron Company in 1915. (1) The leader of the Opposition, Mr. Mackenzie King, had been instrumental in the adoption of the plan in the Colorado Company.

(2) Report of Ind. Comm. - 1924 - p.16.

(1) "Employees' Representation in the Coal Mines" - Selekman and Van Kleeck. - p.352.

The general nature of the scheme is the joint meetings of elected committee of workmen with a committee representing the management. Many variations have been introduced in the establishment of joint councils, but the scheme is essentially the same.

There are several committees involved in the scheme, but only one of these is elected by the workmen - the General Works Committee. The proportion of representation is about one representative for every hundred workers and the representation is equitably divided. The small departments are able to be represented by combining with other small departments. In the Sydney plant, the General Works Committee numbers on the average thirty men. The General Works Committee is elected by the General Works Committee from its own members. It consists of about eight members. The Central Works Committee is the committee that confers with the Management Committee. The latter is appointed by the Company. It consists of a corresponding number of members as represented on the Central Works Committee. The title Joint Committee is applied to the combination of the Central and Management Committees.

Any employee who is eighteen years of age or over is eligible to vote; but foremen, assistant fore-

men and others in official capacities are debarred. To be eligible for election, the additional qualifications of one year's service and a minimum age of twenty-one are necessary. Meetings of the General Works Committee are held once a month. The Joint Council meets on occasion. (2)

The scope of the Joint Committee theoretically extends to working conditions, working relations in the plant, wages and hours of labour. It performs a two-fold function of a grievance adjuster and a means of inter-communication between the officials and the workers. The Plan has eliminated the union movement in the Nova Scotia industry. Disputes are settled by the Committee. However, if a deadlock occurs, there is still the arbitration as provided by the Government of Nova Scotia. The General Works Committee, essentially the workmen's committee, enables grievances to be aired from all sections of the establishment. Discussions enable the representatives of the men on the Joint Committee to become thoroughly acquainted with the situation. The value of the Joint Committee as an adjusting medium can be deduced from its record. From 1923 to 1930 the committee has satisfactorily settled 225 cases. (1)

(2) Report of Ind. Comm. - 1924 - p.16.

(1) "A survey of the Steel Industry". - Soc. Service Council of Canada - p.22.

The chief advantage of the plan is that it has removed the barrier between the officials and the workers. It has provided a channel through which grievances can be adjusted. The important factor is the spirit of the plan and not the machinery by which it operates. The main advantages undoubtedly accrue to the Company. The union movement has been supplanted. The committees are composed entirely of employees. Outside influence is eliminated. The workers have been stripped of their power to enforce their demands. "When the discussion really touches vital issues, its usual tendency is to degenerate into a debating society. " (2)

In the settlement of minor claims, the plan is much more effective. Working conditions have been improved. Lighting and ventilation defects have been remedied. The social welfare of the workers has received a great deal of consideration. Medical service has been improved. Arrangements for pension and benefit funds have been perfected. In short, the complexion of industrial relation has been improved by the plan. Strikes have been eliminated.

Examination of the minutes of a meeting of the Works Committee discloses a general frankness of discussion. (3) The representatives readily voice their opinions. The officials are quite willing to explain matters that concern the Company as an organization. Demands for wage increases just about end when the officials take the attitude that such are impossible. There is evidence to show that some of the officials did not especially favour the scheme. The cost of the meetings was set at \$100. per month and some protest was raised on this point.

The workers pointed out that the co-operation of the men was worth at least that amount. The refusal of the wage increase was linked up with the Tariff. The General Superintendent pointed out "that they (the Company) were not looking for anything big, and if they got it, it would only be a drop in the bucket," He stated on the question of wage increase that he "did not intend to give it until they could afford it."

Wages have increased under the Plan. The increase can be attributed to the efficiency of the management. The first evidence of this efficiency was in 1924, when savings of \$86,000 monthly were effected without changing the wage scale. (1) Despite the receivership, the forced economies did not include wage reductions. On the

(3) Held April 10, 1929.

(1) Evidence - Royal Comm. - N.S. - 1925 - pps.3052, 3065-67, 3098.

contrary, the average wage was increased. In 1926, the year of the failure of the Company, of 2,134 employees, 476 or 22% received below \$1,000 and 1,658 or 78% received above \$1,000. In 1929 of 2738 employed, 381 or 14% received below \$1,000, and 2,357 or 86% received above \$1,000. (2) The average wage in 1929 was about forty-two cents an hour. (3)

The number of men on the payroll in 1929 was only 2,738. In 1909, the enrollment was close to four thousand. The effect of labour saving devices is apparent. The year 1929 forms a good year for comparison as activity was intense. The problem of unemployment in the steel industry is very grave. Intermittent operations are the lot of the industry. The pressure of this unemployment in the steel industry can only be eliminated by a larger volume of business. At times, this is an obvious impossibility. Yet, on the average it can be realized. Again efficiency production is the remedy.

One more important development - perhaps the most important development - in the industrial relations remains for consideration. This is the adoption of the eight hour day and the general reduction of working hours

(2) Soc.Service Council - 1930 - p.20-21

(3) Minutes of Meeting - Gen.Works.Comm.Disco.-April 10,1929.

in the steel industry of Nova Scotia. The battle for shorter hours had waged incessantly since the National Industrial Conference, held at Ottawa in 1919. Various agencies had employed their power and influence in an attempt to influence public opinion in this direction. The economic arguments in favour of the shorter hours were admitted by all. Yet the vital spark was lacking. The disgraceful social conditions that the long hours of labour entailed were remarked by all who came in contact with them. The various commissions that have investigated these conditions had recommended the abolition of the chief cause - the long working day. It was an intolerable burden on the worker and exercised an influence that threatened to ruin the family life. The industry in the United States had remedied these conditions in 1923. Public opinion formed and ripened by various agencies and finally voiced by President Harding compelled the steel makers to abandon the long shift. Belgium had remedied the outrage as early as 1921. Public opinion in Canada was not so powerful. The pleas of the producers that financial conditions could not permit a change was accepted. Yet the strength of public opinion was growing. The operators were being forced to alter this condition.

Official opinion changed. The eight hour day was used to enable concessions that might not otherwise be given to be extended.

The steel industry of Nova Scotia after going through the pains of re-organization was in a difficult position. The extension of the bonus on coal to the steel industry provided relief. It also provided the public with a weapon to enforce the abolition of the terrible conditions. The labour in the industry had made pleas to the Tariff Board (1) but even in that case, there was no assurance that the situation would be remedied even if increased protection was granted. With the bounty provision, attempts were made in the House of Parliament to stipulate that the bounty be applied to easing the labour situation. The motions were defeated, but the agitation had the right effect.

On December 22, 1930, the Vice-President of the Dominion Steel and Coal Corporation announced that the eight hour shift would become effective in the steel plant at Sydney on January 1, 1931. Under the new schedule that was drafted to meet the proposed eight hour day law of Nova Scotia, all twelve and thirteen

(1) Jan. Reference - 1929 - Iron and Steel-p.7-9.

hour shifts were eliminated. The maximum shift was ten hours. The new provision applied to the continuous operations - blast furnaces, open hearths and coke ovens. The hours and wages were effected as follows:-

<u>Original Shift</u>	<u>New Shift</u>	<u>Increase in Wages.</u>
12 hours	8 hours	25%
12 hours	10 "	10%
11 "	10 "	5%
10 "	10 "	No Change (2)

Under normal conditions, the adoption of the eight hour shift entails additional expenditure arising from the 20% increase in the working staff. However, there is a tendency to gradually lessen this additional staff, as the efficiency of the labour increases under better hours.

As conditions permitted, the reduction in the hours of labour was applied to the other departments of the plant - with a corresponding increase in wages. The following were placed on the eight hour shift: watchmen, gatemen, scalemen, blooming mill employees. The mechanical departments were placed on a ten hour shift prior to the introduction of the eight hour day in January. These departments received no compensation for the reduced hours. (1)

(2) Sydney "Record" - Dec.24, 1930.

(1) From private correspondence.

The economic conditions that have prevailed in the past few years have caused untold hardships in the steel industry of Nova Scotia. The effects of the shorter day have been lost as a result of the enforced idleness. The return of better conditions in the economic world will permit the resumption of activity in the steel industry and the effects of the eight hour day will then be manifest. Conditions in the industry are reflected in the following excerpt from the Sydney "Record" - January 21, 1931.

" I was directed to inform you of the intolerable conditions of need of the bare necessities of life that exist among many of our fellow workers as a result of unemployment in the Sydney steel plant.

The inauguration of the much heralded eight hour day as effective on January 1st, has not relieved the situation one iota; in fact, indications point to the contrary. Forces in some cases are reduced, two men are doing the work of three etc., certain jobs employing one, two and three men are eliminated entirely.

We call your attention to the case of the nail and wire mills and the General Yard Department employing normally 350 to 400 men which are practically idle

The management has been advancing coal and even cash, but this charity must not be abused and we hold that assistance other than the Corporation's dole is the just due of the people who cannot work through no fault of their own. " (Letter to the Premier.)

These evidences of suffering are not confined to the

steel industry. The remedy, therefore, is not specific. The introduction of unemployment insurance and other forms of relief would undoubtedly help the situation tremendously. That is for the future to effect.

The history of the industrial relations in the steel industry has revealed gradually improving conditions. Many of the glaring defects have been rectified. The re-organization of the Dominion Iron and Steel has permitted the industry to "turn over a new leaf." Improved conditions should be reflected in the labour situation. The closer relations that have been brought about by the Employees' Representation Plan will also allow a closer co-ordination of earnings to wages. The adoption of the British practice of a sliding scale of wages to profits can now be favourably introduced, since the water has been squeezed from the capitalization of the company.

The steel industry of the United States has demonstrated that high wages and low cost of production are compatible. This has been effected by the introduction of labour saving devices. A certain proportion of technological displacement has resulted, yet the expansion of the industry has absorbed the displacement to a large degree. The steel industry of Nova Scotia has introduced labour saving devices, yet the industry has not expanded.

Consequently the displacement has been more serious. The future of the industry demands that the latest of machinery be introduced. Upon the success of the industry and its consequent growth will depend the fortunes of the labour in the steel trade of Nova Scotia. When the logical and most profitable outlet for the output of the industry has been determined, the mills will be reconstructed to meet those conditions. Employment will be stabilized by a dependable outlet. Then the conditions of the steel industry will have to be considered. Provision will have to be made for the intermittent operations that are the heritage of the industry.

.....

CONCLUSION

The history of the steel industry of Nova Scotia has shown that little progress has been made in the past twenty years. However, the evils that have hitherto stunted its growth have been eradicated. The financial position has been strengthened by a thorough reorganization, which divested the industry of its top-heavy capitalization and eliminated the "water" that had accumulated in the past. The labour problem has been partially solved and costly strikes have been practically removed. The efficiency of the management has developed to a high degree. A definite plan has been formulated by the Royal Commission of Nova Scotia this year for the rationalization of the coal industry. This source of raw material has been stabilized and future costs can be gauged with some degree of accuracy. The development of the Wabana ore deposits has provided a definite foundation for the growth of the industry. In short, almost all the fundamental conditions have been adjusted. One factor alone remains as a barrier to a constructive planning movement - the logical and most profitable outlet for the products has yet to be determined. Once this feature is settled, a definite plan for the future can be drawn up. The necessity of a plan is apparent. The history of the industry in the past thirty years has disclosed the almost exclusive use of the "trial and error"

method. The results have demonstrated the waste and inefficiency that have characterized the period. The definite concessions that have been extended to the Nova Scotia industry in the past few years permit the application of a rationalization scheme. Costs of production have been reduced, and these can be reduced even more if a steady volume of production can be obtained. The problem is one of marketing.

It has been noted that any great amount of prosperity that has accrued to the Nova Scotia industry from time to time has coincided with the expansion of the export trade. This trade furnishes the extra volume of business that is favourably reflected in earnings. The relative growth of the Ontario iron and steel industry indicates that the economic setting of Nova Scotia precludes any great expansion in Canada for the present. Another outlet must be sought.

Examination of the market that the Nova Scotia industry has enjoyed furnishes an inkling of the solution of the market problem. In 1928, Canada absorbed 88% of the production of the Nova Scotia steel industry. The remaining 12% of the output was consumed by the export market. Percentage consumption by countries was as follows:-

New Zealand and Australia,	38%	
India,	24%	
Japan and China,	20%	
British West Indies	12%	
Great Britain	6%	(1)

It is evident that 80% of the export trade was within the Empire. Herein is the solution of the problem. The Imperial Economic Conference offers a medium for its solution. Great Britain imports a considerable volume of semi-manufactured iron and steel from Germany and Belgium. With the aid of a preference, the Nova Scotia steel industry might capture this market. A similar expansion could be effected in the other markets of the Empire, if trade agreements were formulated. Canada in return offers a large market for the iron and steel products of Great Britain, a market which is largely enjoyed by the steel industry of the United States. Reciprocity within the Empire can provide a solution. Once the problem is solved the Nova Scotia industry can formulate definite plans for expansion. Costs of production will govern the results. The natural equipment of the Nova Scotia industry should enable costs to be reduced to a desirable minimum. Based on these broad lines, the industry of Nova Scotia is indeed facing a new era.

The remedies for the industry have been applied. The results have only been partially determined. The present depression has reduced operations in the steel industry to the lowest point in years. Accordingly all basis for a definite comparison have been distorted. Generalizations have been substituted. The recommendations that specifically concern

the industry have been recounted. These refer chiefly to the formulation of a definite plan for the future and place great emphasis on efficient management. The market problem has also fallen within these references.

The history of the Nova Scotia industry has revealed the need of definite legislation for the protection of the investor. The existing machinery is inadequate for this purpose. The investor, especially the foreign investor, is a necessary factor in the development of Canada. Canada must realize this fact and encourage investment by eliminating the abuses. Speculation within limits is permissible, but there are limits and these limits should be specified. Over-capitalization should be controlled as far as possible.

The toll of inefficiency on the people of Canada has been demonstrated in the tariff problem. When protection produces definite results, it can be defended, but when waste absorbs the largesse of the people, no argument can be produced in justification. Definite evidence of efficiency should be found by official experts before protection is considered. Only in this way can the interests of the consumer, the tax-payer, the worker and the investor, be safeguarded. This condition should be applied to all industry, as there is no reason to believe that waste which preyed on the Nova Scotia steel industry has not been rampant in many other industrial enterprises in Canada.

The future of the Nova Scotia industry is wrapped up in the enforcement of these conditions. The fact that it has survived despite the handicaps which assailed it, leads one to predict that under the improved conditions the future will provide a vastly different situation. Progress can be expected.

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ANNUAL PRODUCTION OF PIG IRON

1887 - 1931

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<u>YEAR</u>	<u>NOVA SCOTIA</u>	<u>ONTARIO</u>	<u>QUEBEC</u>	<u>CANADA</u>
1887	17,250		4,917	22,167
1888	15,675		3,788	19,463
1889	19,008		4,136	23,144
1890	16,412		3,027	19,439
1891	18,607		2,724	21,331
1892	30,708		7,187	37,895
1893	41,493		8,460	49,953
1894	36,914		7,699	44,613
1895	31,421		6,484	37,905
1896	28,885	25,270	5,906	60,061
1897	20,089	23,317	8,386	51,792
1898	19,310	43,083	6,370	68,763
1899	27,768	57,811	6,334	91,913
1900	25,119	55,703	5,406	86,228
1901	134,938	103,903	6,138	244,979
1902	211,825	100,614	7,116	319,555
1903	179,684	77,682	8,603	265,969
1904	146,864	114,147	9,930	270,941
1905	233,048	229,200	6,775	469,023
1906	281,257	246,034	7,004	534,295
1907	327,193	245,946	8,971	582,110
1908	314,859	242,396	5,990	563,245
1909	308,375	363,403	4,259	676,037
1910	312,756	399,351	2,890	714,997
1911	348,430	470,210	588	814,228
1912	379,459	526,422	-----	905,881
1913	428,632	579,374	-----	1,008,006
1914	202,725	496,529	-----	699,254
1915	375,246	440,625	-----	815,871
1916	419,692	624,287	-----	1,043,979
1917	421,560	611,287	12,224	1,044,071
1918	371,313	667,545	28,598	1,067,456
1919	254,542	558,029	6,876	819,447
1920	296,869	668,812	7,887	973,568
1921	151,343	441,876	610	593,829
1922	120,769	262,198	-----	382,967
1923	277,654	602,168	-----	879,822
1924	177,078	415,971	-----	593,049
1925	201,795	368,971	-----	570,766
1926	250,238	507,079	-----	757,317
1927	249,549	460,148	-----	709,697
1928	302,756	734,971	-----	1,037,727
1929	310,801	769,359	-----	1,080,160
1930	212,964			
1931	101,393			

Item No.		RATES			Year
375	Iron in pig, and iron kentledge	\$1.50 1.50	\$2.25 2.50	2.50 2.50	1897 1906 1914
376)					
377	Ingots of iron or steel N.O.P.	1.50 1.50 1.50	2.25 2.50 3.00	2.00 2.50 3.00	1897 1906 1930 1930
(376)					
377-a	Blooms or cogged ingots, slabs, billets, n.o.p. sheet bars, n.o.p.	Prior to 1930...as in 377			
		2.50 2.50	4.00 4.50	4.50 4.50	1930 1930
378	Bars and rods of iron and steel, billets weighing less than 60 lbs. per lineal yd.				
(a)	Not further processed than hot rolled, n.o.p. (Former item 378)	4.25 4.25	6.00 7.00	7.00 7.00	1906 1931
(b)	Not further processed than hammered or pressed	20% 15%	27½% 25%	30% 30%	1897 1906 1930
(d)	Hot rolled, valued at not less than 4¢ per lb. n.o.p. (Former item 386)	Free 7% 5% 5%	5% 12½% 12½% 12½%	5% 12½% 12½% 15%	1897 1906 1919 1923 1930
379	Bars and rods including billets weighing less than 60 lbs. per lineal yard			Free	1897
(a)	Rods when imported by Manufacturers of chain (Former item 471a)	Free 2.25 Free	Free 3.50 3.50	Free 3.50 3.50	1906 1914 1930
(c)	Bars imported by manufacturers of shovels (Former item 387a)	2.00 Free	2.75 2.75	3.00 3.00	1906 1930
(d)	Rods not over .375 in diameter imported by makers of wire (Former item 471)	Free 2.25 2.25 2.25	Free 3.50 4.50 5.00	Free 3.50 5.00 5.00	1897 1906 1914 1930 1930
380	Hot plates or cold rolled, n.o.p. (Former items 379a) (381, 382, 454)	2.00 2.00 4.25	2.75 4.00 6.00	10% 3.00 6.00 7.00	1897 1906 1930 1930
381	Sheets, hot or cold rolled, n.o.p.			5%	1897
(a)	(Former items 384, 384a)	Free 7½%	5% 12½%	5% 12½%	1906 1919
(b)	More than .080 in thickness (Former items 382, 384a)	4.25	6.00	7.00 7.00	1897 1906
New item 382					
(a)	Same as 381 a				
(b)	Same as 381 b.				
387	Railway Rails of iron or steel, any weight or purpose (Former item 388)	4.50	6.00	30% 7.00	1897 1906

SHIPMENTS OF IRON ORE FROM WABANA MINES, NEWFOUNDLAND.

	<u>NOVA SCOTIA</u>	<u>UNITED STATES</u>	<u>GREAT BRITAIN & EUROPE</u>	<u>TOTAL</u>
1895	2.686	- - - -	- - - -	2.686
1896	17.410	22.798	- - - -	40.208
1897	12.143	33.039	5.651	50.833
1898	34.622	- - -	78.649	113.262
1899	26.311	98.485	214.322	339.118
1900	195.507	153.867	14.776	364.150
1901	457.064	84.292	279.102	820.458
1902	376.322	96.702	341.421	814.445
1903	273.283	90.711	287.793	651.787
1904	342.710	6.025	298.694	647.429
1905	506.819	6.490	255.846	769.155
1906	628.152	141.854	213.867	983.873
1907	672.561	123.072	167.074	963.607
1908	713.772	59.532	200.033	973.337
1909	697.068	241.207	171.722	1,109.997
1910	808.762	247.336	203.528	1,259.626
1911	737.261	207.193	237.009	1,181.463
1912	956.458	191.779	183.673	1,331.910
1913	1,048.433	229.402	328.086	1,605.921
1914	417.409	43.153	172.998	633.920
1915	802.128	- - - -	66.323	868.451
1916	1,012.060	- - - -	- - -	1,012.060
1917	883.346	- - - -	- - -	883.346
1918	848.574	- - - -	- - -	848.574
1919	499.972	- - - -	- - -	499.972
1920	624.596	- - - -	36.708	661.304
1921	178.519	- - - -	206.010	384.529
1922	311,482		811.845	1,123.327
1923	451,483		356.753	808.236
1924	174.602		919.968	1,094.570
1925	384.795		883.056	1,267.851
1926	465.961		503.640	969.601
1927	480.757	68.354	946.569	1,495.680
1928	690.316	41.493	1,001.833	1,733.642
1929	763.168	85.501	850.370	1,699.039
1930	523.918	54.623	740.774	1,319.315
1931	234.148	25.670	517.982	777.800

RATES OF BOUNTIES ON IRON AND STEEL

1884 - 1912

Year	Pig Iron Made			Puddled Bars	Steel Billets and Ingots		Rolled round wire Rods
	From native ore		From Foreign Ore		Bessemer Open Hearth	Electric Process	
	Usual Process	Electric Process					
1884	\$1.50						
1885	1.50						
1886	1.50						
1887	1.50						
1888	1.50						
1889	1.50						
1890	1.00						
1891	1.00						
1892	1.00						
1893	2.00						
1894	2.00						
1895	2.00			\$2.00	\$2.00		
1896	2.00			2.00	2.00		
1897	2.00			2.00	2.00		
1898	3.00		\$2.00	3.00	3.00		
1899	3.00		2.00	3.00	2.00		
1900	3.00		2.00	3.00	3.00		
1901	3.00		2.00	3.00	3.00		
1902	3.00		2.00	3.00	3.00		
1903	2.70		1.80	2.70	2.70		
1904	2.70		1.80	2.70	2.70		\$6.00
1905	2.25		1.50	2.25	2.25		6.00
1906	1.65		1.10	1.65	1.65		6.00
1907	2.10		1.10	1.65	1.65		6.00
1908	2.10		1.10	1.65	1.65		6.00
1909	1.70	\$2.10	.70	1.05	1.05	\$1.65	6.00
1910	.90	2.10	.40	.60	.65	1.65	6.00
1911		1.70				1.05	6.00
1912		.90				.65	

SHIPMENTS OF IRON ORE BY NOVA SCOTIA

1886-1919

	<u>TONS</u>
1886	44,388
1887	43,532
1888	42,611
1889	54,161
1890	49,206
1891	53,649
1892	78,258
1893	102,201
1894	89,379
1895	83,792
1896	58,810
1897	23,400
1898	19,079
1899	28,000
1900	18,940
1901	18,619
1902	16,172
1903	40,335
1904	61,293
1905	84,952
1906	97,820
1907	89,839
1908	11,802
1909	- - -
1910	18,134
1911	22
1912	30,857
1913	20,436
1914	- - - -
1915	- - - -
1916	- - - -
1917	- - - -
1918	130
1919	- - - -