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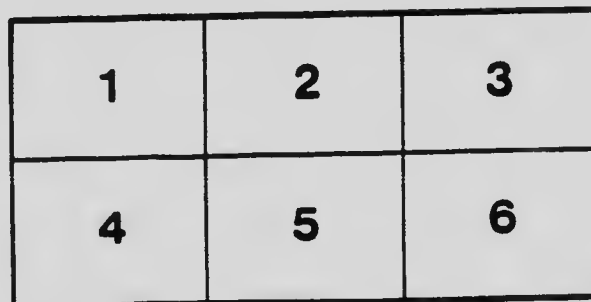
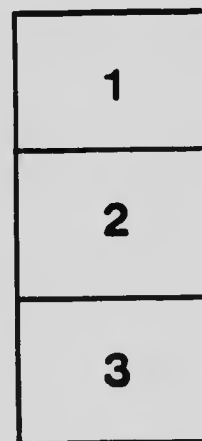
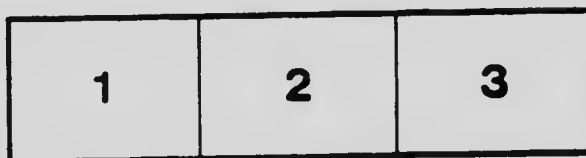
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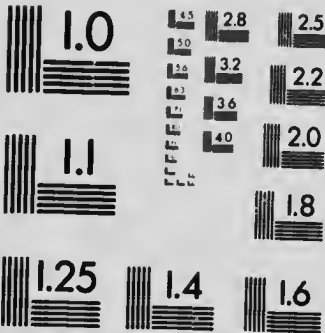
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THE  
**PRODUCTION OF IRON AND STEEL**  
IN  
**CANADA**

During the Calendar Year  
1910 ·

**JOHN McLEISH, B.A.**

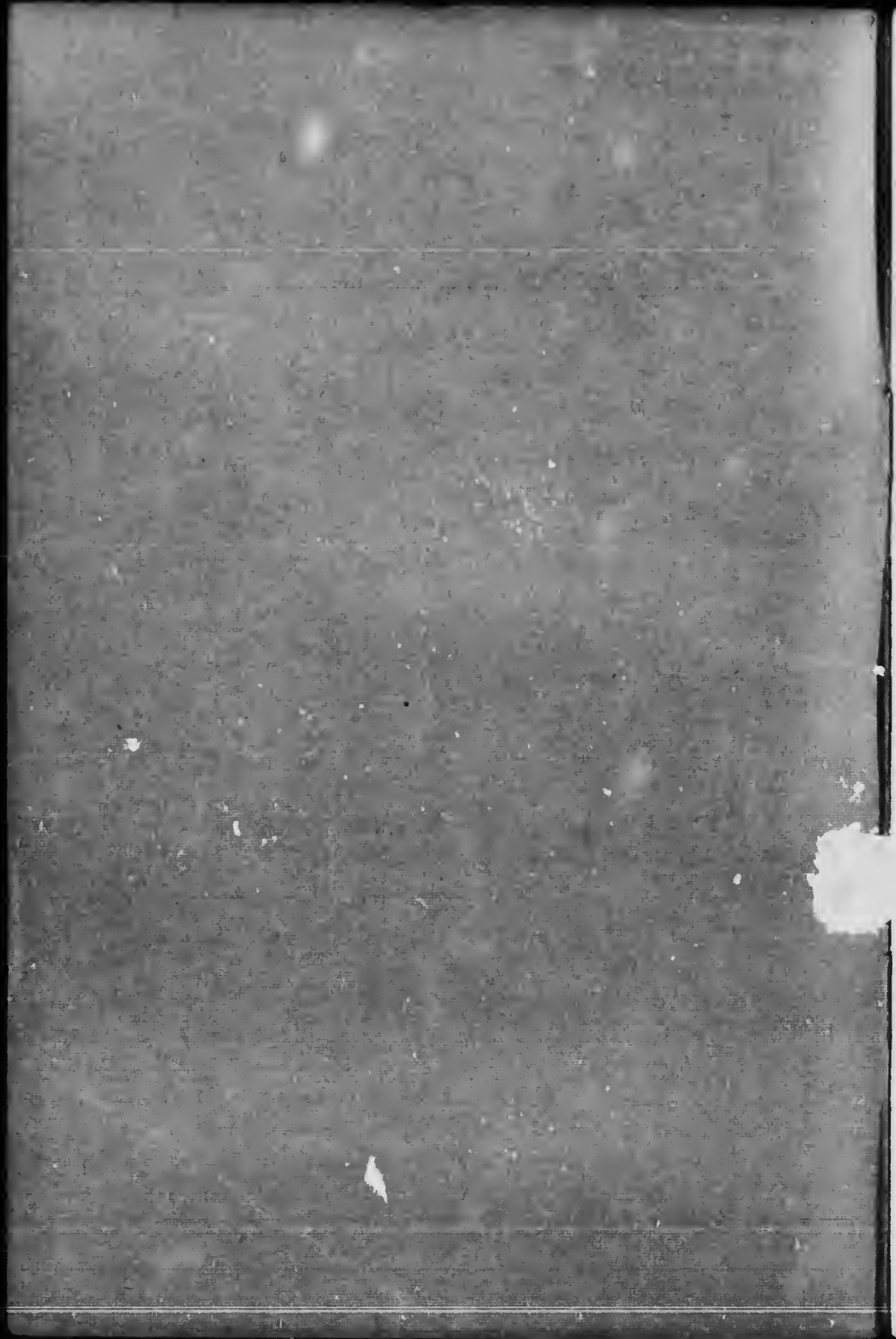
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## ADVANCE CHAPTER OF THE ANNUAL REPORT ON THE MINERAL PRODUCTION OF CANADA DURING THE CALENDAR YEAR, 1910.

*(Tons used throughout this report are short tons of 2,000 pounds, except where otherwise stated.)*

### IRON AND STEEL.

#### INTRODUCTORY.

The iron and steel industry in Canada has had a fairly steady and continued development during the past few years. The serious depression under which this industry suffered in the United States in 1908 had comparatively little effect in Canada although there was a general falling off in output during that year. The production of 1909, however, greatly exceeded that of 1907, while the year 1910 again shows a very substantial increase in the production of pig iron and steel over the year 1909. The actual shipments of iron ore, however, from Canadian mines in 1910, were less than in 1909, although greater than the 1908 shipments.

The total shipments of iron ore from mines in Canada in 1910 were 250,418 short tons; there were used in blast furnaces 1,548,226 tons of iron ore, and in steel furnaces 39,332 tons; 800,797 tons pig iron were made, a large part of which was used directly in the manufacture of steel, and a total of 822,284 tons steel ingots and castings were made.

As has been pointed out in previous reports, the development of iron ore mining in Canada has not kept pace with the growth of the metallurgical industry in iron and steel. The rate of production of iron ore has shown practically no increase during the past ten years, while the production of pig iron during the same period has increased nearly eight fold.

About 11 per cent, only, of the iron ore used in Canadian blast furnaces during 1910, was of domestic origin; of the coke used 49 per cent was either imported or made from imported coal, and 18 per cent of the limestone flux used was from sources outside of Canada. It is evident that this industry is now to a very large extent dependent upon imported raw materials.

The total production of iron ore in Canada to the end of 1910 has probably only slightly exceeded 5,250,000 tons, while the total consumption of ore in blast furnaces since 1886 has been 11,732,336 tons. During 1910 the tonnage of imported ores used was 1,377,035 which was derived chiefly from Newfoundland and the south shore of Lake Superior.

The assistance granted by the Federal Government to the iron and steel industries in the form of bounties, ceased on December 31, 1910, with the expiration of the bounty on steel rods which is being continued to June 30, 1911. The total amount of bounties paid from 1895 to December 30, 1910, was \$16,485,078.

The accompanying table gives a summary of the chief statistics of production of iron ore, pig iron, and steel, while more detailed records will be found in subsequent pages.

### Summary of Iron and Steel Statistics 1908, 1909, and 1910.

	1908	1909	1910
	Tons.	Tons.	Tons.
Iron ore shipped ..	238,082	268,043	259,418
Canadian iron ore charged to blast furnaces....	200,266	257,502	171,191
Imported iron ore charged to blast furnaces ..	1,051,415	1,235,000	1,377,035
Iron ore charged to steel furnaces ..	(a)	(a)	39,332
Pig iron made.....	630,835	757,162	800,797
Pig iron exported.....	290	5,063	9,763
Pig iron imported.....	58,365	148,338	213,859
Pig iron consumption (calculated) ..	688,910	900,437	1,031,893
Pig iron used in steel furnaces..	(a)	(a)	690,913
Steel ingots and castings made	588,763	754,719	822,294
Steel rails made.....	267,102	377,642	399,762
Canadian coke used in iron blast furnaces ..	492,076	412,016	491,281
Imported coke used in iron blast furnaces ..	325,670	507,255	476,838
Iron and steel imported.....	(b) 1,079,000	565,740	979,639
Number of completed blast furnaces.....	No. 16	16	17
Number of men employed in blast furnaces.....	No. 1,380	1,486	1,403
Wages paid in blast furnaces.....	\$ 750,224	879,429	1,006,727
Value of pig iron produced.....	\$ 8,111,194	9,481,864	11,245,622
Value of iron and steel goods exported.....	(c) \$ 5,907,792	7,112,413	7,895,489
Value of iron and steel goods imported.....	(d) \$ 61,819,668	40,523,431	59,952,197

(a) Not collected.

(b) Figures cover the fiscal year ending March 31 and include all iron and steel goods for which weights are given. For details see Table 20.

(c) Figures cover the calendar year. For details see Table 19.

(d) Figures cover the fiscal year ending March 31. For details see Tables 21 and 22.

### IRON ORE.

The total shipments of iron ore from mines in Canada in 1910 were 259,418 tons valued at \$574,362 at the shipping point, as compared with 268,043 tons valued at \$659,316 in 1909, and 238,082 tons valued at \$568,189 in 1908. Of the 1910 production 130,380 tons are classed as hematite, 127,768 as magnetite, and 1,270 tons as bog ore. Ontario is the largest producer, having shipped 231,445 tons or nearly 90 per cent of the total production. New Brunswick enters the list of producers with shipments of 5,336 tons from the mines near Bathurst. In Nova Scotia 18,134 tons were shipped from the Torbrook mines and in Quebec province, in addition to the bog ores, a small tonnage (3,233 tons) of titaniferous iron sands was shipped from the north shore of the St. Lawrence. Although no production of iron ore is credited to British Columbia, a shipment of a small barge load of copper iron ore was made from the Raven mine, Texada island, to Seattle, Wash.

The production by provinces during the past three years, was as follows:—

IRON.—TABLE 1.

**Production of Iron Ore by Provinces, 1908-9-10.**

Provinces.	1908.		1909.		1910.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
		\$		\$		\$
New Brunswick..					5,336	11,910
Nova Scotia	11,802	17,620			18,131	40,478
Quebec ..	10,103	22,094	4,150	5,508	4,503	8,252
Ontario	216,177	528,475	263,893	653,808	231,777	513,722
British Columbia						
	238,082	568,189	268,043	659,316	236,308	574,362

The production during 1909 and 1910 classed as magnetites (including titaniferous iron sands and some ores with an admixture of hematite), hematites (including brown ores), and bog ores, was as follows:—

IRON.—TABLE 2.

**Classified Production of Iron Ore, 1909-10.**

Character of Ore.	1909.			1910.		
	Short Tons.	Value.	Per Ton.	Short Tons.	Value.	Per Ton.
		\$	\$ cts.		\$	\$ cts.
Magnetite.....	74,240	162,280	2 19	127,778	289,876	2 27
Hematite.....	190,473	452,348	2 58	130,380	281,090	2 16
Bog.....	3,330	4 688	1 41	1,270	3,402	2 68
	268,043	659,316	2 46	259,418	574,362	2 21

A record of the production by provinces in past years is shown in Tables 3 and 4. There was considerable production in Ontario previous to 1886 which is not recorded.

IRON.—TABLE 3.

## Production of Iron Ore by Provinces, 1886-1910.

Calendar Year.	New Brunswick.	Nova Scotia.	Quebec.	Ontario.	British Columbia.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1886.....		44,388		16,032	3,941	64,361
1887.....		43,532	13,404	16,598	2,796	76,330
1888.....		42,611	10,710	16,894	8,372	78,587
1889.....		54,161	14,533		15,487	84,181
1890.....		49,206	22,305			76,511
1891.....		53,649	14,380		950	68,979
1892.....		78,258	22,690		2,300	103,248
1893.....		102,201	22,076		1,325	125,602
1894.....		89,379	19,492		1,120	109,991
1895.....		83,792	17,783		1,222	102,797
1896.....		53,810	17,630	15,270	196	91,906
1897.....		23,400	22,436	2,770	2,099	50,705
1898.....		19,079	17,873	21,111	280	58,343
1899.....		28,000	19,420	25,126	2,071	74,617
1900.....		18,940	19,000	82,950	1,110	122,000
1901.....		18,619	15,489	272,538	7,000	313,646
1902.....		16,172	18,524	359,288	10,019	404,003
1903.....		40,335	12,035	209,634	2,290	264,294
1904.....		61,293	16,152	141,601		219,046
1905.....		84,952	12,681	193,464		291,097
1906.....		97,820	9,933	141,078		248,831
1907.....		89,839	12,748	207,769	2,500	312,856
1908.....		11,802	10,103	216,177		238,082
1909.....			4,150	263,893		268,043
1910.....	5,336	18,134	4,503	231,445		259,418

IRON.—TABLE 4.

## Production of Iron Ore in Nova Scotia, 1876-1885.

Calendar Year.	Tons.	Calendar Year.	Tons.
1876.....	15,274	1881.....	39,843
1877.....	16,879	1882.....	42,135
1878.....	36,600	1883.....	52,410
1879.....	29,889	1884.....	54,885
1880.....	51,193	1885.....	48,129

*Nova Scotia.*—The Torbrook mines were the only shippers during 1910, the quantity shipped being 18,134 tons in three cargoes to Philadelphia, Pa., Glasgow, Scotland, and Middlesborough, England, respectively. The ore is a hematite and the shipments averaged about 48 per cent metallic iron. The total quantity of ore mined during the year was 53,054 tons, a large part of which was in the stock piles at the mines at the close of the year.

Some development work was done at Arisaig, Antigonish county, by the Arisaig Iron Company, but no ore was shipped.

The blast furnaces at Sydney and North Sydney receive their ore supplies from Newfoundland chiefly. The two Canadian Companies operating at Wabana, shipped during the year 1,259,626 short tons of hematite ore averaging from 50 to 52 per cent iron: of which 808,762 tons were shipped to Sydney and 450,864 tons to the United States and Europe.

*New Brunswick.*—Shipments were made from the mines at Austin Brook, near Bathurst, to the extent of 5,336 tons, the ore being sent to Philadelphia. The ore is a magnetite with an intermixture of hematite, and the properties are being developed by the Canada Iron Corporation. About 24,515 tons of ore were mined during the year. Shipments are made from the Company's docks at Newcastle, at which there was a considerable tonnage in stock at the close of the year.

*Quebec.*—The iron ore production in Quebec in 1910 included 1,270 tons of bog ore shipped to Drummondville, and 3,233 tons of titaniferous magnetic sands shipped from St. Urbain, Champlain county, to the United States. In 1909 the shipments were 3,330 tons of bog ores and about 820 tons of titaniferous iron sands.

These titaniferous sands have been shipped largely for experimental purposes and a nominal value of \$1.50 per ton has been placed upon the production, although the actual cost of placing the ore on board vessels was possibly several times this amount.

*Ontario.*—Shipments were made by four mines in this Province during the year, viz.: the Mayo, at Bessemer, Hastings county; the Moose Mountain, at Sellwood, 30 miles north of Sudbury; the Helen, north of Michipicoten, and the Atikokan, 130 miles northwest of Port Arthur, on the Canadian Northern railway. In addition to these a considerable tonnage of ore was reported as having been raised at the Wilbur mine in Lanark county, but no shipments were made.

The total shipments of ore during the year were 231,445 tons, valued at \$513,722; as compared with shipments of 263,893 tons, valued at \$653,808, in 1909.

*British Columbia.*—No regular shipments of iron ore were reported from the Province. Some prospecting work was done on the Raven mine on Texada island, and a small scow load of cupriferous iron ore shipped to Seattle, Wash., for experimental purposes.

Following is a list of the principal producers of iron ore in Canada:—

Canada Iron Corporation, Limited, Mark Fisher Bldg., Montreal.

E. H. Duval, Levis, Que., (Guay P. O.).

H. C. Bosse, 92 St. Peter St., Quebec, Que.

Joseph Bouchard, Baie St. Paul, Que.

The Canadian Iron Ore Co., 1231 St. Valier St., Quebec, Que.

Exploration Syndicate of Ontario, Limited, Wilbur, Ont.

The Lake Superior Power Company, Sault Ste. Marie, Ont.

Atikokan Iron Company, Port Arthur, Ont.

Moose Mountain, Limited Sellwood, Ont.  
 Dominion Bessemer Ore Company, Limited, 472 Bullitt Bldg., Philadelphia,  
 Pa.

#### IMPORTS AND EXPORTS.

The Customs Department does not keep a separate record of the imports of iron ore into Canada, but as the imports are practically all used in blast furnaces the statistics of consumption of imported ores in these furnaces will serve the same purpose.

There were used in Canadian iron furnaces during 1910, 1,377,035 tons of imported iron ores, as compared with 1,235,000 tons in 1909. Increasing amounts of iron ores have been imported since 1896, the total quantity imported during the fifteen years being 8,898,121 tons.

According to United States reports of Commerce and Navigation there were exported to Canada during the twelve months ending June 30, 1910, 609,617 tons (2,000 pounds) of iron ore valued at \$1,636,917, and during the previous year 449,755 tons (2,000 pounds), valued at \$1,264,048.

The shipments from Newfoundland to Canada, during the calendar year 1910, were 808,762 tons, as compared with 697,068 tons during the year 1909.

There were exported during 1910 about 114,499 tons of iron ore, valued at \$324,186, as compared with exports of 21,956 tons, valued at \$61,954, in 1909.

The ores exported in 1910 were chiefly those from Torbrook, N.S., Bathurst, N.B., Moose mountain, Ont., and titaniferous iron sands from Quebec.

Annual statistics of exports are shown in the following tables:—

IRON.—TABLE 5.

#### Exports of Iron Ore, Calendar Years, 1893-1910.

Calendar Year.	Tons.	Value.	Calendar Year.	Tons.	Value.
		\$			\$
1893.....	2,419	7,590	1902*.....	428,901	1,065,019
1894.....		21,294	1903*.....	368,233	922,571
1895.....	1,571	3,909	1904*.....	168,828	401,738
1896.....	1,033	1,911	1905*.....	168,289	407,881
1897.....	403	811	1906.....	74,778	149,177
1898.....	182	278	1907.....	25,901	45,907
1899.....	4,145	9,538	1908.....	(a)	.....
1900.....	5,527	13,511	1909.....	21,956	61,954
1901*.....	306,199	762,283	1910.....	114,499	324,186

\*The export figures for the five years indicated are incorrect owing to a duplication of entries.

(a) The figures of the Trade Report for this year include ferro-products, and are, therefore, omitted.

## IRON.—TABLE 6.

## Exports of Iron Ore, Fiscal Years, 1879-1910.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
		\$			\$
1879.....	3,562	7,530	1895.....	2,315	5,743
1880.....	30,524	76,474	1896.....	14	35
1881.....	44,677	114,850	1897.....	1,320	2,492
1882.....	43,835	135,463	1898.....	360	402
1883.....	44,914	138,775	1899.....	1,849	4,968
1884.....	25,308	66,549	1900.....	4,327	7,689
1885.....	54,367	132,074	1901*.....	58,401	150,657
1886.....	7,542	23,039	1902*.....	525,983	1,303,961
1887.....	23,345	71,934	1903*.....	293,510	733,230
1888.....	13,544	39,945	1904*.....	233,850	579,883
1889.....	24,752	60,289	1905*.....	224,908	540,909
1890.....	13,811	31,376	1906*.....	148,040	345,540
1891.....	14,648	32,582	1907†.....	34,191	65,367
1892.....	7,707	36,935	1908.....	26,310	46,686
1893.....	7,811	26,114	1909.....	3,933	71,663
1894.....	1,859	9,026	1910.....	31,535	80,540

\*See foot-note to Table 5. †Nine months ending March 31, 1907.

## IRON.—TABLE 7.

## Imports of Iron Ore into the United States from Canada, 1893-1910.\*

Year ending June 30.	Short. Tons.	Value.	Year ending June 30.	Short Tons.	Value.
		\$			\$
1893.....	7,706	17,186	1902.....	309,527	685,540
1894.....	301	756	1903.....	144,725	320,263
1895.....	2,681	10,114	1904.....	126,995	283,765
1896.....	39	142	1905.....	120,241	245,623
1897.....	2,535	5,243	1906.....	113,809	220,112
1898.....	1,313	2,904	1907.....	34,731	52,765
1899.....	2,585	5,120	1908.....	32,124	55,617
1900.....	4,477	5,550	1909.....	3,490	12,660
1901.....	34,453	76,159	1910.....	35,070	97,984

\*Compiled from the 'Foreign Commerce and Navigation of the United States.'

## PIG IRON AND STEEL.

An increase of 5.58 per cent is shown in the production of pig iron in Canada in 1910 over the production of 1909, as compared with an increase of 20 per cent in 1909 over that of 1908.

At the close of the year Canada had seventeen completed furnaces and two under construction, grouped in ten separate plants and operated by eight separate companies or corporations.

The total production in 1910 was 800,797 short tons (714,998 long tons), valued at approximately \$11,245,622; as compared with 757,162 short tons (676,038

long tons), valued at \$9,581,864, in 1909, and 630,835 short tons (563,246 long tons), valued at \$8,111,194, in 1908. The Londonderry furnace was not in operation during either of the past two years. These figures do not include the output from electric furnaces making ferro-products which are situated at Welland and Sault Ste. Marie, Ont., and Buckingham, Que. Ferro-silicon was made at Welland during 1910, but the Sault Ste. Marie and Buckingham plants were not in operation during the year.

Of the total output of pig iron in 1910, 17,164 tons, valued at \$333,956 or \$19.78 per short ton, were made with charcoal as fuel, and 783,633 tons, valued at \$10,911,674 or \$13.92 per ton, with coke. The amount of charcoal iron made in 1909 was 17,003 tons, and in 1908, 6,709 tons; while the quantity made with coke in 1909 was 740,159 tons and in 1908, 624,126 tons.

The classification of the production in 1910 according to the purpose for which it was intended was as follows:—

Bessemer 219,492 tons, basic 425,400 tons, foundry (including miscellaneous) 138,741 tons.

The classification of the production in 1909 was:—

Bessemer 221,931 tons, basic 400,921 tons, foundry (including miscellaneous) 116,307 tons.

The American Iron and Steel Association reported the production of Bessemer pig iron in 1908 as 126,348 short tons, as against 173,499 tons in 1907; and the production of basic pig iron in 1908 as 375,659 short tons, as against 382,208 tons in 1907.

The total production of pig iron in 1910 and 1909 is shown by provinces in the following table, the average value per ton being also indicated. In the case of Nova Scotia a large proportion of the pig iron is directly converted to steel, and as a very small portion of the metal is sold as pig iron it is somewhat difficult to place a satisfactory valuation upon the output. For statistical purposes a value of \$12 per short ton has been placed upon this production in 1910. The Quebec production is entirely charcoal iron, which has for many years commanded a high price.

IRON.—TABLE 8.

## Production of Pig Iron by Provinces, 1909-10.

Provinces.	1909.			1910.			Percentage increase or decrease in quantity.
	Tons.	Value.	Value per Ton.	Tons.	Value.	Value per Ton.	
		\$	\$		\$	\$	%
Nova Scotia .....	345,380	3,453,800	10 00	350,287	4,203,444	12 00	+ 1.4
Quebec.....	4,770	125,623	26 34	3,237	85,255	26 34	-32.1
Ontario.....	407,012	6,002,441	14 75	447,273	6,956,923	15 55	+ 9.9
Total.....	757,162	9,581,864	12 65	800,797	11,245,622	14 04	+ 5.8



A record of the production by provinces since 1887 is shown in Table 9. It will be observed that while the production in Nova Scotia has remained fairly constant during the past five years, the Ontario production has increased from 275,558 tons in 1906 to 447,273 tons in 1910. The proportions of the whole contributed by the several provinces were in 1910: Nova Scotia, 43.7 per cent; Ontario, 55.8 per cent, and Quebec, less than half of one per cent.

IRON. TABLE 9.

## Annual Production of Pig Iron by Provinces, 1887-1910.

Year.	NOVA SCOTIA.		ONTARIO.		QUEBEC.		TOTAL.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
		\$		\$		\$		\$
1887.....	19,320	250,000			5,507	116,192	24,827	366,192
1888.....	17,556	211,403			4,243	101,832	21,799	313,235
1889.....	21,289	383,202			4,632	116,670	25,921	499,872
1890.....	18,382	262,608			3,390	69,080	21,772	331,688
1891.....	21,353	309,527			2,538	59,374	23,891	337,901
1892.....	40,049	583,556			2,394	53,865	42,443	673,421
1893.....	46,472	553,408			9,475	236,875	55,947	790,283
1894.....	41,344	449,533			8,623	196,914	49,967	646,447
1895.....	35,192	417,083			7,262	169,653	42,454	586,736
1896.....	32,351	400,829	28,302	368,942	6,615	154,358	67,268	924,129
1897.....	22,500	230,000	26,115	291,466	9,392	217,235	58,007	738,701
1898.....	21,627	221,677	48,253	530,789	7,135	159,929	77,015	912,395
1899.....	31,100	404,300	64,749	808,157	7,094	164,849	102,943	1,377,306
1900.....	28,133	421,995	62,387	938,725	6,055	140,978	96,575	1,501,698
1901.....	151,130	1,764,017	116,371	1,599,413	6,875	149,493	274,376	3,512,923
1902.....	237,244	2,477,767	112,688	1,584,273	7,970	181,501	357,902	4,243,541
1903.....	201,246	2,186,273	87,004	1,345,464	9,635	210,973	297,885	3,742,710
1904.....	164,488	1,700,130	127,845	1,746,126	11,121	241,729	303,454	3,687,985
1905.....	261,014	2,440,722	256,704	3,868,197	7,588	166,267	525,306	6,475,186
1906.....	315,008	3,439,217	275,558	4,338,275	7,845	177,644	598,411	7,955,136
1907.....	366,456	4,211,913	275,459	4,581,309	10,047	232,004	651,982	9,125,226
1908.....	352,642	3,554,540	271,484	4,385,271	6,709	171,383	630,835	8,111,194
1909.....	345,380	3,453,800	407,012	6,002,441	4,770	125,623	757,162	9,581,864
1910.....	350,287	4,203,444	447,273	6,956,923	3,237	85,255	800,797	11,245,622

*Pig Iron Prices.*—With respect to prices of pig iron in Canada during 1910, we are indebted to a prominent firm of iron merchants in Montreal for the following information. It is practically impossible to give information respecting iron prices in detailed form since much depends on the quantity purchased, brand of iron, prevailing freight rate, etc.; nevertheless it may be said that good average brands of Scotch iron sold in Montreal during the first three months of 1910 at about \$20 per gross ton. Later in the year, particularly after the opening of navigation, prices eased up somewhat and an average price would be \$19.50 per gross ton. On the other hand good foundry iron of English manufacture could have been purchased during the early part of 1910 at \$18 per gross ton, then shading down to \$17.25 per gross ton during the summer months. There was little competition from Canadian made iron in the Montreal district during 1910 the Sydney furnaces not marketing anything there during that period.

In Toronto the situation was somewhat different. It costs approximately \$2 per ton more to lay down Scotch and English iron at that point than it does in Montreal, and during the early part of the year such advance in price was obtained. Later in the year, however, the American situation seriously affected prices in Ontario, and United States pig iron competed very keenly in the Toronto-Hamilton district, practically cutting out Scotch and English iron and compelling the local furnaces to reduce their prices to an equivalent of \$18.50 and down to \$18, f.o.b. cars Toronto, for good average grades of foundry iron.

In Pittsburgh, Bessemer iron was quoted at \$19 per gross ton in January, 1910, falling to \$17.50 in March, \$17 in May, \$15.75 in June, and \$15 from the latter part of August to the close of the year. Basic iron ruled from \$1.75 to \$2 per ton less.

The quantities of iron ore, coke, charcoal, limestone, etc., consumed in blast furnaces in 1909 and 1910, are shown as follows:—

IRON.—TABLE 10.

## Ore, Fuel, and Flux Charged to Blast Furnaces, in Years 1909-10.

	1909.			1910.		
	Quantity.	Value.	Canadian and Imported.	Quantity.	Value.	Canadian and Imported.
		\$	%		\$	%
Canadian iron ore and mill-cinder..... Tons.	257,502	892,947	17	171,191	564,838	11
Imported iron ore..... "	1,235,000	2,989,512	83	1,377,035	3,668,409	89
Canadian coke..... "	412,016	1,339,032	45	491,281	1,596,664	51
*Imported coke..... "	507,255	2,214,578	55	476,838	2,263,917	49
Charcoal..... Bus.	1,779,258	170,050		1,615,919	159,662	
Canadian limestone..... Tons.	428,140	328,091	81	464,584	360,756	82
Imported limestone..... "	97,936	83,091	19	104,771	85,636	18

\*Including coke made from imported coal.

Previous to 1896 pig iron was made entirely from Canadian ore. Since that date, however, increasing quantities of imported ore have been used as well as imported fuels and fluxes, and in 1910 about 89 per cent of the ore charged, 49 per cent of the coke, and 18 per cent of the limestone, were imported. This condition is due largely to questions of cost and transportation affecting each furnace. The Newfoundland iron ores can be cheaply and conveniently laid down in Sydney, N.S.; in fact the iron industry here has been built up on the basis of these ores and of the local coal supplies. In Ontario, also, large quantities of imported ores are used. In 1910 the imported ores used in Ontario amounted to 681,918 tons and the Canadian ores 143,283 tons, the imported ores being derived from Michigan and Minnesota deposits: thus during 1910 about 83 per cent of the ore used in this Province was imported, as compared with 71 per cent in 1909

and about 67 per cent in 1908. The fuel used in Ontario was also altogether imported as well as a portion of the limestone flux.

According to returns made to the Department of Trade and Commerce in connexion with claims for bounty, 84,759 tons only of the total pig iron production in Canada in 1910 were credited to Canadian ore and 659,891 tons to imported ore and bounty paid upon it as such. In 1909 bounty was paid upon 126,298 tons of pig iron from Canadian ore, and 607,718 tons from imported ore. No bounty is paid on the iron credited to the mill cinder, scale, etc., charged, so that the above figures do not represent the total output of the furnaces. Statistics of the quantities of ores, fuel, and flux charged to Canadian blast furnaces since 1887, are shown in the following table.

IRON.—TABLE II.

## Iron Ore, Fuel, and Flux Charged to Furnaces since 1887.

Calendar Year.	IRON ORE CHARGED.		FUEL CHARGED.			Lime- stone.
	Canadian.	Imported.	Charcoal.	*Coke from Cana- dian Coal.	Imported Coke.	
	Tons.	Tons.	Bus.	Tons.	Tons.	
1887.....	60,434		940,400	33,581		17,171
1888.....	54,956		804,286	30,228		16,857
1889.....	65,670		755,800	36,333		22,122
1890.....	57,304		589,860	34,073		18,478
1891.....	60,933		441,812	32,796		11,377
1892.....	96,948		1,121,365	52,622		22,967
1893.....	124,053		1,302,720	65,332		27,797
1894.....	108,871		1,173,970	60,026		35,101
1895.....	93,208		789,561	51,629		31,585
1896.....	96,560	46,300	756,600	50,067	33,990	37,462
1897.....	53,658	55,722	1,031,800	35,800	27,810	31,273
1898.....	57,881	77,107	836,400	31,952	50,407	33,913
1899.....	66,384	120,650	1,928,025	44,844	64,648	51,826
1900.....	71,341	112,042	1,799,737	45,021	59,345	52,966
1901.....	156,613	361,010	1,835,736	207,835	115,367	169,399
1902.....	125,664	559,381	2,146,623	362,208	112,314	293,534
1903.....	82,035	485,911	2,322,030	350,190	96,540	277,452
1904.....	180,932	454,671	3,477,470	257,182	130,210	211,278
1905.....	116,674	861,847	4,404,394	365,897	142,882	369,715
1906.....	221,733	982,740	2,168,476	462,672	304,676	456,036
1907.....	244,104	1,117,260	1,682,085	521,068	327,082	483,462
1908.....	209,266	1,051,445	1,121,990	492,076	325,670	483,065
1909.....	257,502	1,235,000	1,779,258	412,016	507,055	526,076
1910.....	171,191	1,377,035	1,615,919	491,981	476,838	569,355

\*Includes for the first ten years small quantity of coal.

Of seventeen completed furnaces, six were in blast in 1910, for varying periods of time. The operating companies, with numbers and capacities of furnaces, were as follows:—

Dominion Iron & Steel Company, Sydney, C.B., one of the constituent companies of the Dominion Steel Corporation, Ltd.: four completed furnaces of 280 tons capacity each per day, operated throughout 1910, two for 365, one for 112

days, and the fourth for 255 days. A fifth furnace has been completed and will go into blast early in 1911, while the erection of a sixth furnace has been arranged for, the completion of which will give this Company a capacity of over 400,000 tons per annum.

Nova Scotia Steel and Coal Company, Limited, New Glasgow, N.S.: one furnace at Sydney Mines, C.B., of 200 tons capacity, operated 311 days. Furnace was blown out on May 1, when, according to the report of the General Manager, a new crucible jacket of 2½" plate, steel reinforced with cast-iron, water-cooled slabs 4½" thick, dovetailed into each other, new bosh jacket and mantel were installed; the furnace lined throughout, hot blast stoves, down-comers, gas-mains, boilers, blowing engines, and pumps were all overhauled and renewed where necessary. The furnace again went into blast June 24, and from this date to December 31, made an average daily output of 243 tons. For the same period, previous to relining, the average daily output was 160 tons.

Londonderry Iron & Mining Company, Limited, Londonderry, N.S.: one furnace of 100 tons capacity; idle throughout the year.

Canada Iron Corporation, Limited, Montreal, Que.: two small furnaces of seven and eight tons capacity, at Drummondville, Que., operated 272 days; one furnace of 25 tons daily capacity, at Radnor Forges, Que., operated 41 days during 1910; two furnaces of 125 tons and 250 tons at Midland, Ont., operated for 7 months and 4 months respectively.

Standard Chemical Company of Toronto, Deseronto, Ont.: one furnace with a daily capacity of 50 tons, operated for 253 days, during 1910.

Hamilton Steel & Iron Company (now the Steel Company of Canada, Ltd.), Hamilton, Ont.: two furnaces, one of 200 tons capacity, operated throughout 1910, a second furnace of 300 tons capacity, operated 329 days in 1910.

Algoma Steel Company, Limited, Sault Ste. Marie, Ont., a constituent Company of the Lake Superior Corporation: two furnaces at Steelton, near Sault Ste. Marie, of 250 tons capacity each, operated throughout the year. This Company also has under construction a 400 ton furnace, a 12" and 18" merchant mill, and a complete installation of by-product coking ovens (110 ovens, Koppers type, with capacity of 1,100 tons of coke per day).

The Atikokan Iron Company, Limited, Port Arthur, Ont.: one furnace of 100 tons capacity, operated for 8 months during 1910.

The total daily capacity of the seventeen completed furnaces is about 2,985 tons. The two furnaces approaching completion at the close of the year will increase this capacity to about 3,650 tons per day.

The average number of men employed in the blast furnace operations in 1910 is reported as 1,403 and the total wages paid \$1,006,727. Of the seventeen completed furnaces eleven were in blast and six idle on December 31, 1910.

#### IMPORTS AND EXPORTS OF PIG IRON.

There has been comparatively little pig iron exported from Canada. During 1910, the exports were 2,763 tons valued at \$296,310, or an average value per ton of \$30.35. The exports during 1909 were 5,063 tons valued at \$186,778, an

average of \$36.89; while during 1908 the exports were 290 tons valued at \$10,614, an average of \$42.45 per ton. These exports probably include ferro-silicon as well as ordinary pig iron.

Considerable quantities of pig iron are annually imported into Canada. During the calendar year 1910, the imports of ordinary pig iron were 227,753 tons valued at \$3,122,695, an average of \$13.71 per ton, and of charcoal pig iron 16,106 tons, valued at \$242,152, an average of \$15.03 per ton; or a total importation of 243,859 tons valued at \$3,364,847. During the calendar year 1909 the imports were: ordinary pig iron, 147,925 tons valued at \$1,798,172, and charcoal pig iron, 413 tons valued at \$5,727; and during the calendar year 1908, the imports were: ordinary pig iron 57,343 tons valued at \$771,715, and charcoal iron 1,022 tons, valued at \$18,818. The annual imports of these two classes of pig iron since 1880 are shown in the accompanying table, No. 12, the statistics being given therein for the fiscal year. The duty, or general tariff, on pig iron is \$2.50 per ton.

IRON.—TABLE 12.

## Annual Imports of Pig Iron Since 1880.

Fiscal Year.	PIG IRON.		CHARCOAL PIG IRON.		TOTAL.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
		\$		\$		\$
1880, year ending June 30.....	(a) 22,159	371,956			22,159	371,956
1881 " " .....	(a) 43,630	715,907			43,630	715,907
1882 " " .....	56,594	811,221	6,837	211,791	63,431	1,023,012
1883 " " .....	75,295	1,085,755	2,198	58,994	77,493	1,144,749
1884 " " .....	49,291	653,708	2,893	66,602	52,184	720,310
1885 " " .....	42,279	545,426	1,119	27,373	43,398	572,799
1886 " " .....	42,463	528,483	3,185	60,086	45,648	588,569
1887 " " .....	46,295	554,388	3,919	77,420	50,214	631,808
1888 " " .....	(b) 48,973	648,012			48,973	648,012
1889 " " .....	(b) 72,115	864,752			72,115	864,752
1890 " " .....	(b) 87,613	1,148,078			87,613	1,148,078
1891 " " .....	(b) 81,317	1,085,929			81,317	1,085,929
1892 " " .....	(b) 68,918	886,485			68,918	886,485
1893 " " .....	56,849	682,209	5,944	84,358	62,793	766,567
1894 " " .....	42,376	483,787	2,906	34,968	45,282	518,755
1895 " " .....	31,637	311,259	2,780	31,171	34,417	372,430
1896 " " .....	36,131	394,591	917	11,726	37,048	406,317
1897 " " .....	25,766	291,788	2,936	35,373	28,702	327,161
1898 " " .....	37,186	382,103	2,250	23,533	39,436	405,636
1899 " " .....	44,261	452,911	1,955	19,123	46,216	472,034
1900 " " .....	49,767	811,490	1,816	38,736	51,583	850,226
1901 " " .....	35,293	518,033	190	7,121	35,483	525,154
1902 " " .....	39,978	585,077	38	726	40,016	585,803
1903 " " .....	91,730	1,338,374	882	16,352	92,612	1,354,726
1904 " " .....	62,515	894,728			62,515	894,728
1905 " " .....	71,005	857,879			71,005	857,879
1906 " " .....	96,797	1,401,047			96,797	1,401,047
1907, nine months ending March 31.....	150,127	2,280,860	30	675	150,157	2,281,535
1908, year ending March 31 .....	210,053	3,418,125	2,237	45,475	212,290	3,463,600
1909 " " .....	57,669	857,357	922	16,575	58,591	873,932
1910 " " .....	158,910	2,118,445	596	8,690	159,506	2,127,135

(a) Comprises pig iron of all kinds.

(b) These figures appear in Customs reports under heading 'iron in pigs, iron kentledge, and cast-iron.'

IRON.—TABLE 13.  
Annual Exports of Pig Iron, 1896-1910.

Calendar Year.	Tons.	Value.	Calendar Year.	Tons.	Value.
		\$			\$
1896.....	2,187	55,448	1903.....	4,400	78,382
1897.....	3,099	81,381	1904.....	21,016	200,363
1898.....	1,278	32,643	1905.....	866	22,284
1899.....	6,981	149,190	1906.....	305	7,429
1900.....	3,513	88,052	1907.....	439	13,501
1901.....	57,650	593,739	1908.....	290	10,611
1902.....	75,195	778,619	1909.....	5,063	186,778
			1910.....	9,763	296,310

*World's Production*—The production of pig iron in other countries is given hereunder for the past five years, in order to show the relative position occupied by Canada in the production of this metal.

IRON.—TABLE 14.

Production of Pig Iron in Principal Countries of the World, from 1906 to 1910: metric tons.

—	1906.	1907.	1908.	1909.	1910.
United States.....	25,713,556	26,195,340	16,191,907	26,209,677	27,741,990
Germany.....	12,202,819	12,875,159	11,805,321	12,644,946	14,227,455
United Kingdom.....	10,347,385	10,276,699	9,202,280	9,685,045	10,380,799
France.....	3,314,162	3,590,235	3,400,771	3,573,848	4,032,459
Russia.....	2,601,606	2,823,309	2,805,394	2,874,822	3,042,302
Austria-Hungary.....	1,687,581	1,872,694	2,041,523	2,044,573	**
Belgium.....	1,375,775	1,406,980	1,270,050	1,616,370	1,803,500
Canada.....	542,875	591,456	572,290	686,893	726,478
Sweden.....	604,789	615,778	567,821	444,764	604,300
Spain.....	379,241	355,240	403,554	389,000	**
Italy.....	135,296	112,232	112,024	207,800	**
China.....	*34,305	*36,306	66,409	74,000	**
Japan.....	42,679	51,943	45,396	**	**
Australasia.....		29,902	30,393	29,762	42,268

\* Exports.

\*\* Not available.

## FERRO-PRODUCTS.

Ferro-silicon, ferro-chrome, ferro-phosphorus, etc., have been made in electric furnaces at Buckingham, Que., by the Electric Reduction Company, Limited; the furnaces, however, were not in operation during 1910. Ferro-silicon has also been made in electric furnaces at Sault Ste. Marie, and at Wolland, Ont. The electric furnaces operated by the Electric Metals Company were in operation during 1910. These furnaces, constructed some three years ago, consist of 12 furnaces of from 1,000 to 1,500 horse-power each, the daily production being from 5 to 8 tons.

The imports of ferro-silicon, manganese, etc., during the calendar year 1910, were 18,900 tons valued at \$411,741, or an average of \$24.59 per ton. The imports during the calendar year 1910 were 17,699 tons valued at \$411,536, an average of \$23.25 per ton. The imports since 1887 are shown in Table 15, the figures of the table being for the fiscal year.

IRON.—TABLE 15.

## Imports of Ferro-Manganese, Etc., 1887-1910.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
		\$			\$
*1887.....	123	1,435	†1899.....	1,160	22,539
*1888.....	1,883	29,812	†1900.....	1,149	39,064
*1889.....	5,868	72,108	†1901.....	1,512	38,954
*1890.....	696	18,895	†1902.....	6,513	150,977
*1891.....	2,707	40,711	†1903.....	6,350	162,710
*1892.....	1,311	23,930	†1904.....	2,975	75,554
*1893.....	529	15,858	†1905.....	12,935	246,815
*1894.....	284	9,885	†1906.....	18,023	462,739
†1895.....	164	5,408	†1907 (9 months).....	16,41	610,875
†1896.....	652	12,811	†1908.....	17,41,	112,062
†1897.....	426	9,233	†1909.....	13,053	388,024
†1898.....	1,418	22,516	†1910.....	14,952	332,486

\* These amounts include: ferro-manganese, ferro-silicon, spiegel, steel bloom ends and crop ends of steel rails, for the manufacture of iron or steel.

† Ferro-silicon, spiegeleisen, and ferro-manganese.

## STEEL.

Returns of steel production received direct from the producers showed a total production of ingots and castings for 1910 of 822,284 tons, as compared with 754,719 tons in 1909, and 588,763 tons in 1908. In 1910 the production of open-hearth ingots was reported as 580,932 tons, Bessemer ingots 222,668 tons, direct open-hearth castings 18,085 tons, and other steels 599 tons; compared with 1909 there was an increase in total production of 67,565 tons, or nearly 9 per cent. The production during the past four years is shown in Table 16 following:—

IRON.—TABLE 16.

## Production of Steel, 1907, 1908, 1909, 1910.

	1907.	1908.	1909.	1910.
	Tons.	Tons.	Tons.	Tons.
<i>Ingots</i> —Open-hearth (basic).....	459,240	443,442	535,988	580,932
Bessemer (acid).....	225,989	135,557	203,715	222,668
<i>Castings</i> —Open-hearth.....	20,602	9,051	14,013	18,085
Other steels.....	1,151	713	1,003	599
Total.....	706,982	588,763	754,719	822,284

Statistics showing the quantities of the principal materials used in steel furnaces have been obtained for the first time for the year 1910, and it may be of interest to refer to these here. The total quantity of pig iron used in steel furnaces during 1910 was 600,013 tons: of which 601,219 tons were produced by firms reporting, and 89,694 tons purchased. The quantity of ferro-alloys used was 8,143 tons purchased. Scrap, etc., was used to the extent of 211,453 tons, being 140,913 tons produced by the firms reporting, and 70,540 tons purchased. Ores used included 1,317 tons of manganese ore and 30,332 tons of iron ore, while 144,110 tons of limestone or dolomite flux were used and 7,461 tons of fluorspar. In Ontario a little over 600 million cubic feet of natural gas were used, while in Nova Scotia, coke oven gas was used at Sydney, of which a record of quantity is not obtained.

Statistics of the production of steel ingots and castings since 1894 are given in the following table, the figures from 1894 to 1906 inclusive having been collected and published by the American Iron and Steel Association; those for the years 1907 to 1910 have been collected by this Department and are as shown in detail in Table 16.

IRON.—TABLE 17.

## Annual Production of Steel Ingots and Castings, 1894-1910.

Calendar Year.	Short Tons.	Calendar Year.	Short Tons.	Calendar Year.	Short Tons.
1894.....	28,767	1900.....	26,406	1906.....	639,396
1895.....	19,040	1901.....	29,214	1907.....	706,982
1896.....	17,920	1902.....	203,881	1908.....	588,763
1897.....	20,608	1903.....	203,296	1909.....	754,719
1898.....	24,125	1904.....	166,381	1910.....	822,284
1899.....	24,640	1905.....	451,863		

Following is a list of firms making steel in Canada:—

- Dominion Iron and Steel Company, Sydney, N.S.
- Nova Scotia Steel and Coal Company, New Glasgow, N.S.
- Montreal Steel Works, Limited, Montreal, Que.
- The Algoma Steel Company, Sault Ste. Marie, Ont.
- The Hamilton Steel and Iron Company, Hamilton, Ont.
- The Wm. Kennedy Sons, Limited, Owen Sound, Ont.
- The Ottawa Steel Castings Company, Limited, Ottawa, Ont.
- The Ontario Iron and Steel Company, Limited, Welland, Ont.

*Rolled Products, etc.*—Complete statistics of the production of rolled products and of manufactured steel have not been received; returns from seven of the largest producers, however, show a production of blooms, billets, slabs, etc., of 625,100 tons, of which 580,533 tons were used by the producer for further manufacture, and 47,567 tons sold to other rolling mills.



The production of rails was 399,762 tons., of rods 88,456 tons, of bars 125,778 tons, of other rolled products 31,516 tons. The production of steel rails in 1909 was returned as 377,642 tons, and in 1908, 300,935 tons.

The production of finished rolled iron and steel in Canada from 1906 to 1910, as ascertained and published by the American Iron and Steel Association, was as follows, in long tons:—

IRON.—TABLE 18.

**Annual Production of Rolled Iron and Steel, 1906-10.**

Products—Gross Tons.	1906.	1907.	1908.	1909.	1910.
Rails.....	312,877	311,461	268,602	344,830	366,465
Structural shapes and wire rods.....	48,351	65,841	41,520	74,136	80,993
Plates and sheets.....	15,202	18,493	11,656	36,241	26,642
Nail plate, merchant bars, and all other finished rolled forms.....	195,312	204,684	174,649	207,534	265,711
Totals.....	571,742	600,479	496,517	622,741	739,811

## BOUNTIES.

Bounties on iron and steel made in Canada were provided for by the Dominion government in 1897 (Chapter 6, Statutes of Canada, 1897). This Act was amended in 1899 (Chapter 8, Statutes of Canada, 1899), and again in 1903 (Chapter 68, Statutes of Canada, 1903). The latter Act provided for the payment of bounty until June 30, 1907. On April 27, 1907, a new Act was passed (Chapter 24, Statutes of Canada, 1907), providing for the further payment of bounties from January 1, 1907, to December 31, 1910, and in the case of pig iron made by electric smelting, until December 31, 1912. An Act assented to May 4, 1910 (Chapter 33, 1910, Edward VII), provided that the bounty on rolled round wire rods should cease after the 30th day of June, 1911. The two last mentioned Acts are as follows:—

*Chapter 24, Statutes of Canada, 1907.***An Act Respecting Bounties on Iron and Steel made in Canada.**

(Assented to, 27th April, 1907.)

His Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:—

1. The Governor in Council may authorize the payment out of the Consolidated Revenue Fund of the following bounties on the undermentioned articles when manufactured in Canada for consumption therein, viz.:—

(a) In respect of pig iron manufactured from ore, on the proportion from Canadian ore produced during the calendar year:—

1907.. . . . .	\$2 10 per ton.
1908.. . . . .	2 10 "
1909.. . . . .	1 70 "
1910.. . . . .	0 90 "

(b) In respect of pig iron manufactured from ore, on the proportion from foreign ore produced during the calendar year:—

1907.. . . . .	\$1 10 per ton.
1908.. . . . .	1 10 "
1909.. . . . .	0 70 "
1910.. . . . .	0 40 "

(c) On puddled iron bars manufactured from pig iron made in Canada during the calendar year:—

1907.. . . . .	\$1 65 per ton.
1908.. . . . .	1 65 "
1909.. . . . .	1 05 "
1910.. . . . .	0 60 "

(d) In respect of rolled, round wire rods not over three-eighths of an inch diameter, manufactured in Canada from steel produced in Canada from ingredients of which not less than fifty per cent of the weight thereof consists of pig iron made in Canada, when sold to wire manufacturers for use, or when used in making wire in their own factories in Canada, on such wire rods made after the thirty-first day of December, one thousand nine hundred and six, six dollars per ton.

(e) In respect of steel manufactured from ingredients of which not less than fifty per cent of the weight thereof consists of pig iron made in Canada, on such steel made during the calendar year:—

1907.. . . . .	\$1 65 per ton.
1908.. . . . .	1 65 "
1909.. . . . .	1 05 "
1910.. . . . .	0 60 "

(2) No bounty shall be paid under the foregoing provisions in respect of iron or steel made in Canada by electric process after the thirty-first day of December, one thousand nine hundred and eight.

2. The Governor in Council may authorize the payment out of the Consolidated Revenue Fund of the following bounties on the undermentioned articles when manufactured in Canada for consumption therein, viz.:—

(a) On pig iron manufactured from Canadian ore by the process of electric smelting during the calendar year:—

1909.. . . . .	\$2 10 per ton.
1910.. . . . .	2 10 "
1911.. . . . .	1 70 "
1912.. . . . .	0 90 "

(b) On steel manufactured by electric process direct from Canadian ore, and on steel manufactured by electric process from pig iron smelted in Canada by electricity from Canadian ore during the calendar year:—

1909. . . . .	\$1 65 per ton.
1910. . . . .	1 65 "
1911. . . . .	1 05 "
1912. . . . .	0 60 "

(2) Bounty, as on pig iron under this section, may be paid upon the molten iron from the ore which in the electric furnace enters into the manufacture of steel by the direct process, the weight of such iron to be ascertained from the weight of the steel so manufactured.

3. No bounty shall be paid on steel ingots from which steel blooms and billets for exportation from Canada are manufactured.

4. The Governor in Council may make regulations to carry out the intention of this Act.

5. The Minister of Trade and Commerce shall be charged with the administration of this Act.

6. Chapter 8 of the Statutes of 1899, Chapter 68 of the Statutes of 1903, and Chapter 39 of the Statutes of 1904, are repealed.

7. This Act shall be deemed to have come into force on the first day of January, one thousand nine hundred and seven.

*Chapter 33, Statutes of Canada, 1910.*

**An Act respecting Bounties on Iron and Steel made in Canada.**

(Assented to 4th May, 1910).

His Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:—

1. No bounties shall be payable in respect of rolled, round wire rods after the thirtieth day of June, one thousand nine hundred and eleven, under paragraph (d) of subsection 1 of section 1 of chapter 24 of the statutes of 1907, intituled "An Act respecting Bounties on Iron and Steel made in Canada."

2. Nothing in section 1 of this Act shall prevent the payment, after the said thirtieth day of June, one thousand nine hundred and eleven, of the bounty otherwise payable under the said paragraph (d) in respect of rolled, round wire rods if such rods were, on or before the said thirtieth day of June, one thousand nine hundred and eleven, sold to wire manufacturers for use or used in making wire by the makers of such rods in their own factories in Canada.

3. For the purposes of this Act wire rods shall be deemed to be sold when such rods are delivered to the purchaser, or are delivered to a common carrier for transport to the purchaser.

The following statistics respecting bounty payments have been furnished by the Department of Trade and Commerce, or compiled from reports of the Auditor General.

The total bounty payments on account of iron and steel made during the calendar year 1910 were \$1,344,144.59, as compared with \$1,895,011.55 paid on account of iron and steel made during 1909, and \$1,998,283.58 paid for 1908.

Since 1896 a total of about \$17,500,000 has been paid by the government of Canada in bounties for the production of iron and steel. Further details with respect to the amounts of bounties paid will be found in the accompanying tables.

**Bounties Paid on Pig Iron, manufactured in Canada, during the Twelve Months ending December, 1909.**

Name of Claimant.	Tons of Canadian ore used.	Tons of foreign ore used.	Tons of pig iron made from Canadian ore.	Bounty on pig iron from foreign ore.	Tons of pig iron from foreign ore.	Bounty on pig iron from foreign ore.	Total tons of pig iron produced.	Amount of claim.
						\$ cts.		\$ cts.
Dominion Iron and Steel Co., Ltd.	1,742 00	577,065 00	908 27	1,544 06	277,042 95	193,930 06	277,951 22	195,474 12
Hamilton Steel and Iron Co., Ltd.	121,121 14	181,131 15	68,001 34	115,602 30	88,916 55	62,241 59	156,917 89	177,843 89
Nova Scotia Steel and Coal Co., Ltd.	66,930 67	110,649 00	35,041 07	59,569 82	57,885 00	40,519 50	57,885 00	40,519 50
Algoma Steel Co., Ltd.	13,452 12	283,531 65	8,882 22	15,089 76	140,525 98	98,368 19	175,587 05	157,938 01
Atikokan Iron Co., Ltd.	17,280 83	.....	19 94	33 90	.....	.....	8,882 22	15,089 76
Canada Iron Corp., Ltd. (Drummondville)	9,884 84	58,421 12	9,207 27	1,652 37	30,602 43	21,421 73	39,809 70	37,074 10
" (Midland)	622 21	1,487 81	3,939 56	6,687 22	810 42	567 28	4,749 98	7,264 50
" (Radnor)	.....	23,201 73	297 88	506 37	11,934 76	£,354 29	12,232 64	8,860 66
Standard Chemical Co. of Toronto, Deseronto.	231,094 71	1,235,487 46	126,297 55	214,705 80	607,718 09	425,402 64	734,015 64	640,108 44

**Bounties Paid on Steel Ingots during the Twelve Months ending December, 1909.**

Name of Claimant.	Tons of Canadian pig iron used.	Tons of foreign pig iron used.	Tons of other ingredients.	Tons of steel made.	Bounty paid.
					\$ cts.
Dominion Iron and Steel Co., Ltd.	279,651 44	.....	95,346 60	332,320 99	348,837 06
Hamilton Steel and Iron Co., Ltd.	43,722 56	.....	40,108 49	76,847 94	80,690 36
Nova Scotia Steel and Coal Co., Ltd.	52,006 42	.....	20,966 45	64,239 94	67,451 95
Algoma Steel Co., Ltd.	181,842 04	6,978 82	31,045 71	199,770 05	209,758 55
Lake Superior Iron and Steel Co., Ltd.	28,466 77	54 50	26,940 74	51,740 24	54,327 26
*Ontario Iron and Steel Co., Ltd.	3,222 17	.....	2,883 07	4,270 21	5,305 23
	588,911 40	7,033 32	217,291 06	729,189 37	766,470 41

\*Includes a small quantity produced in 1908.  
During the year bounty to the amount of \$488,432.70 was paid the Dominion Iron and Steel Co., Ltd., for 81,465.42 tons of wire rods made.

**Bounties Paid on Pig Iron, manufactured in Canada, during the Twelve Months ending December, 1910.**

Name of Claimant.	Tons of Canadian ore used.	Tons of foreign ore used.	Tons of pig iron made from Canadian ore.	Bounty on pig iron from Canadian ore.	Tons of pig iron from foreign ore.	Bounty on pig iron from foreign ore.	Total tons of pig iron produced.	Amount of claim.
				\$ cts.		\$ cts.		\$ cts.
Dominion Iron and Steel Co., Ltd.	78,373.57	569,949.00	44,484.18	40,035.77	280,937.93	112,375.17	280,937.93	112,375.17
Hamilton Steel and Iron Co., Ltd.	25,861.49	259,980.07	14,265.30	12,838.67	128,775.31	51,510.14	173,259.49	91,545.91
Nova Scotia Steel and Coal Co., Ltd.	24,951.13	122,009.00	17,103.31	15,392.97	64,562.00	25,824.40	64,562.00	25,824.80
Algoma Steel Co., Ltd.	5,897.3	305,250.53	2,566.12	2,039.51	167,041.24	66,816.50	181,306.44	79,655.17
Atikokan Iron Co., Ltd.	12,364.25	423.87	6,281.87	5,653.72	234.99	94.00	17,338.30	15,436.97
Canada Iron Corp., Ltd., (Drummondville)	507.54	321.72	208.32	187.48	39,800.63	15,920.27	46,082.50	21,573.99
" " (Midland)	288.39	48.47	149.70	134.71	599.34	239.73	807.66	427.21
" " (Radnor)		27.5669			13,776.27	5,510.50	13,925.97	5,645.21
Standard Chemical Co. of Toronto, Deseronto	148,244.27	1,361.51	84,758.70	76,282.83	695,891.23	278,356.52	780,649.93	354,639.35

**Bounties Paid on Steel Ingots during the Twelve Months ending December, 1910.**

	Tons of Canadian pig iron used.	Tons of foreign pig iron used.	Tons of other ingredients.	Tons of steel made.	Bounty paid.
					\$ cts.
Dominion Iron and Steel Co., Ltd.	306,051.68		87,101.19	339,450.03	203,670.04
Hamilton Steel and Iron Co., Ltd.	52,774.51		47,299.78	90,353.28	54,211.95
Nova Scotia Steel and Coal Co., Ltd.	58,043.10		28,918.14	72,927.72	43,756.63
Algoma Steel Co., Ltd.	187,994.56	34,823.05	26,524.40	222,637.21	133,582.33
Lake Superior Iron and Steel Co., Ltd.	23,631.80	722.50	20,928.26	42,011.15	25,206.69
	628,495.65	35,545.55	204,771.77	767,379.39	460,427.64

During the year bounty to the amount of \$529,077.60 was paid Dominion Iron and Steel Co., Ltd., for 88,179.58 tons of wire rods made.

**Total Bounty paid to each Company during the past three Fiscal years.**

Corporations.	1908.		1909.		1910.	
	\$	cts.	\$	cts.	\$	cts.
Algoma Steel Co., Ltd.	534,025	50	304,789	25	318,814	17
Atikokan Iron Company, Ltd.	17,210	46			15,099	76
*Canada Iron Furnace Co., Ltd.	51,213	12				
John McDougall and Co.	5,308	12	56,831	92	40,148	06
†Deseronto Iron Co., Ltd.	7,299	30			10,120	46
Dominion Iron and Steel Co., Ltd.	1,228,915	39	1,067,528	92	1,029,503	85
Hamilton Steel and Iron Co., Ltd.	222,490	31	252,311	20	238,408	35
Londonderry Iron and Mining Co., Ltd.	37,411	52				
Lake Superior Iron and Steel Co.	17,500	60	45,800	58	54,628	56
Nova Scotia Steel and Coal Co., Ltd.	181,436	26	130,374	69	97,315	79
Ontario Iron and Steel Co.	251	77	6,887	30	4,463	73
	2,303,152	35	1,864,614	16	1,808,018	84

\* Amalgamated in 1909 to form Canada Iron Corporation, Ltd.

† In 1909 worked by the Standard Chemical Co. of Toronto.

**Total Bounties on Iron and Steel paid by the Government of Canada since 1896.**

Year ended.	Pig Iron.	Puddled iron bars.	Steel.	Manufactures of Steel.
	\$	\$	\$	
June 30, 1896	104,105	5,611	59,499	
" 1897	66,509	3,019	17,366	
" 1898	165,654	7,706	67,454	
" 1899	187,954	17,511	74,644	
" 1900	238,296	10,121	64,360	
" 1901	351,259	16,703	100,058	
" 1902	693,108	20,550	77,431	
" 1903	666,001	6,792	729,102	
" 1904	533,982	11,669	347,990	15,321
" 1905	624,667	7,895	676,318	231,324
" 1906	687,632	5,875	941,000	369,832
March 31, 1907 (9 months)	385,231	312	575,259	338,999
" 1908	863,817		1,092,201	347,135
" 1909	693,423		838,100	333,091
" 1910	573,969		695,752	538,812
Totals	6,835,607	113,674	6,356,534	2,174,514

**EXPORTS AND IMPORTS OF IRON AND STEEL GOODS.**

Iron and steel goods were exported from Canada during 1910 to the total value of \$7,895,489; as compared with the value of exports in 1909 of \$7,172,413, and 1908, \$5,907,792. Of the total exports in 1910, stoves, castings, and machinery contributed a total valuation of \$1,141,027; pig iron, \$296,310; scrap iron and steel, \$171,603; steel and manufactures of steel, \$1,110,925; agricultural implements, \$4,712,597; and automobiles and bicycles, \$465,027. Details of these exportations during the past two years are shown in the accompanying table.

## IRON.—TABLE 19.

Exports of Iron and Steel goods, the product of Canada, during the Calendar Years 1909 and 1910.

		1909.		1910.	
		Quantity.	Value.	Quantity.	Value.
			\$		\$
Stoves.....	No.	774	10,330	1,058	15,832
Castings, N.E.S.....	\$		25,038		51,958
Pig iron.....	Tons.	5,063	186,778	9,763	296,310
Machinery (linotype machines).....			43,686		39,438
Machinery, N.E.S.....			421,707		301,961
Sewing machines.....	No.	12,759	147,402	17,834	188,196
Typewriters.....	"	3,749	238,167	5,970	409,326
Scrap iron and steel.....	Cwt.	410,506	305,250	233,204	171,603
Hardware, tools, etc.....	\$		52,207		88,844
Hardware, N.E.S.....	"		35,507		43,472
Steel and manufactures of.....	"		1,132,678		1,110,925
Agricultural implem'ts—					
Mowing machines.....	No.			18,745	634,326
Reapers.....	"			3,411	220,517
Harvesters.....	"			11,382	1,234,794
Ploughs.....	"			16,888	540,677
Harrow's.....	"			8,924	115,068
Hay forks.....	"				
Hay rakes.....	"		4,226,280	6,344	205,342
Seeders.....	"			256	13,727
Threshing machines.....	"			29	8,576
All other.....	"				1,163,722
Parts of.....	"				575,848
Automobiles.....	"	213	279,924	387	433,663
Bicycles.....	"	84	2,703	72	2,710
Bicycles, parts of.....	"		64,750		28,654
Total.....			7,172,413		7,895,489

The detailed statement of the imports of iron and steel, as compiled from the annual reports of Trade and Navigation, is shown in Tables 21 and 22, Table 24 showing the imports subjects to duty and Table 22 showing the imports free of duty.

The total value of the imports during the fiscal year ending March, 1910, was \$59,952,197, as compared with the valuation of imports in 1909 of \$40,393,431, and \$61,819,698 during the fiscal year 1908. These imports include all classes of iron and steel goods manufactured, as well as those of a crude form. In many cases the imports of manufactured goods are given only in dollars, so that the total tonnage of imports cannot be estimated. In the case of most of the cruder materials, however, the quantities are given, and a compilation of these shows a minimum importation of iron and steel during the fiscal year ending March, 1910, of 915,425 tons, as compared with 565,734 tons in 1909 and 1,079,000 tons in 1908. A summary of these importations is shown in Table 20.

In addition to the imports of pig iron and of ferro-products which have already been referred to, this record shows an importation in 1910 of ingots,



blooms, billets, puddled bars, etc., of 36,819 tons; scrap iron and scrap steel, 28,797 tons; plates and sheets, 200,575 tons; bars, rods, hoops, bands, etc., 117,159 tons; structural iron and steel, 195,748 tons; rails and connexions, 55,183 tons; pipe and fittings, 16,705 tons; nails and spikes, 3,476 tons; wire, 68,211 tons; forgings, castings, and manufactures, 18,093 tons.

The total value of the 915,425 tons imported was \$27,874,437, or an average value per ton of \$30.44. Other iron and steel goods of which the weights are not recorded were imported to the value of \$32,077,760, making up the total value of \$59,952,197 shown in detail in Tables 21 and 22.

A very large proportion of these imports is derived from the United States, and it may be of interest here to quote from the records published in the "Commerce and Navigation of the United States" showing the exports of iron and steel goods from that country to Canada.

According to this authority there was exported to Canada from the United States during the twelve months ending June 30, 1910, 574,807 tons of iron and steel goods, valued at \$19,673,740, together with other iron and steel goods of which the weight is not given, valued at \$28,153,628, or a total value of \$47,827,368.

During the twelve months ending June 30, 1909, the corresponding exports to Canada were 332,802 tons valued at \$12,154,770, together with other iron and steel goods to the value of \$19,251,962, or a total value of \$31,406,732. Iron ores are not included in either case.

The detailed items will be found in Table 23.

IRON.—TABLE 20.

Imports of some Iron and Steel products of which the weights are available.

Material.	TWELVE MONTHS ENDING MARCH.		
	1908.	1909.	1910.
	Tons.	Tons.	Tons.
Pig iron.....	212,290	58,591	159,506
Ferro-products and chrome steel.....	17,661	13,206	15,153
Ingots, blooms, billets, puddled bars, etc.....	21,222	8,887	36,819
Scrap iron and scrap steel.....	69,213	26,212	28,797
Plates and sheets.....	126,172	116,610	200,575
Bars, rods, hoops, bands, etc.....	98,631	73,261	117,159
Structural iron and steel.....	373,871	162,735	195,748
Rails and connexions.....	52,706	32,543	55,183
Pipe and fittings.....	25,090	18,309	16,705
Nails and spikes.....	2,741	1,611	3,476
Wire.....	57,046	39,375	68,211
Forgings, castings, and manufactures.....	22,357	14,394	18,093
Total.....	1,079,000	565,734	915,425



Springs, N.O.P., and parts thereof, of iron or steel, for railway, tramway, or other vehicles			3, 105	16, 831	6, 100	36, 652
Axle and axle parts, N.O.P., and axle blanks and parts thereof, of iron or steel for railway, tramway, or other vehicles			39, 153	100, 731	40, 261	164, 891
Bar iron or steel, rolled, whether in coils, bundles, rods or bars, comprising rounds, ovals, squares, and flats, N.O.P.			785, 981	1, 223, 965	1, 402, 674	1, 952, 170
Butts and hinges, N.O.P.			74, 860	323, 753	59, 685	65, 783
Canada plates, Russian iron, tere plate, and rolled sheets of iron and steel coated with zinc, spelter or other metal, of all widths or thicknesses, N.O.P.				328, 368		195, 126
Castings, iron or steel, N.O.P.				370, 085		403, 524
Cast iron pipe of every description			320, 275			357, 175
Cast scrap iron			15, 190			12, 621
Chains, coil chains, chain links, and chain shackles of iron or steel of $\frac{1}{8}$ " diameter, and over			45, 386			153, 578
Chains, N.O.P.				131, 324		158, 251
Tacks, shoe				34, 221		45, 386
Nails, brads, spikes, and tacks of all kinds, N.O.P.			23, 322			2, 519
Engines, etc.			335, 638			483, 265
Locomotives for railways			113	354, 086	99	346, 000
Locomotive parts						41, 823
Motor cars for railways and tramways			2	3, 900	7	7, 141
Engines, fire			17	13, 411	12	7, 638
Engines, gasoline			4, 076	714, 574	5, 617	1, 000, 003
Engines, steam				234, 24		252, 864
Boilers, steam				114, 975		243, 246
Boilers, N.O.P.			287	39, 144	1, 988	120, 753
Fire extinguishing machines, including sprinklers for fire protection				78, 690		78, 248
Fittings, iron or steel, for iron or steel pipe of every description				282, 552		357, 782
Flat eye-bar blanks, not punched or drilled, for use exclusively in the manufacture of bridges or of steel structural work, or in car construction			4, 590, 270		5, 321, 262	
F. 2-silicon, spiegelisen, and ferro-manganese			3	80	190	5, 911
Forgings of iron and steel of whatever size, shape, or in whatever stage of manufacture, N.O.P., and steel shafting, turned, compressed or polished and hammered, drawn or cold rolled iron or steel bars or shapes, N.O.P.			13, 053	388, 024	14, 952	332, 486
Hardware, viz.: builders, cabinet-makers, upholsterers, harness-makers, saddlers and carriage hardware, including curry-combs, N.O.P.			2, 270, 838	96, 388	2, 491, 222	121, 952
Horse, mule, and ox shoes				365, 230		503, 939
Iron or steel billets, weighing not less than 60 pounds per lined yard				5, 880		13, 797
Iron or steel ingots, cogged ingots, blooms, slabs, puddled bars, and hoops, or other forms, N.O.P., less finished than iron or steel bars, but more advanced than pig iron, except castings			78, 797	95, 350	567, 159	518, 102
Iron or steel bridges or parts thereof, iron or steel structural work, columns, shapes or sections, drilled, punched or in any further stage of manufacture than as rolled or cast, N.O.P.			74, 305	53, 135	115, 490	97, 333
Iron in pig						125, 958
Iron in pig charcoal			69, 636	176, 613	48, 940	
Locks of all kinds			57, 699	837, 357	158, 910	2, 118, 440
Machines, machinery, etc.			922	16, 575	596	8, 695
Automobiles and motor vehicles of all kinds				222, 000		353, 243
Automobiles and motor vehicles, parts of			533	585, 067	1, 424	1, 732, 215
Fanning mills				127, 143		260, 566
Grain crushers			1, 160	12, 813	831	10, 854
					12	661

IRON.—TABLE 21—Continued.

Imports of Iron and Steel Goods subject to Duty.

Material.	TWELVE MONTHS ENDING MARCH, 1900.		TWELVE MONTHS ENDING MARCH, 1910.	
	Quantity.	Value.	Quantity.	Value.
Machines, machinery, etc.—		\$		\$
Windmills and complete parts thereof.	No.			
Ore crushers and rock crushers, stamp mills, cornish and belted rolls, rock drills, air compressors, cranes, derricks, and percussion coal cutters		38,284	1,036	48,310
Portable machines—		176,014		259,311
Fodder or feed cutters	187	1,740	180	1,713
Horse-powers for farm purposes	20	958	48	3,912
Portable engines with boilers, in combination and traction engines for farm purposes	602	794,854	1,216	1,817,509
Portable sawmills and planing mills	50	18,739	13	12,303
Steam shovels	29	152,027	20	95,948
Threshing machine separators	624	362,083	1,199	629,799
Threshing machine separators, parts of, including wind-stalkers, baggers, weighers, and self-feeders for same, and finished parts thereof for repairs, when imported separately	\$	239,118		344,329
All other portable machines, N. O. P., and parts	No.	19,891		23,873
Sewing machines	\$	207,265	16,430	323,249
Sewing machines, parts of	No.	52,044		101,584
Slot machines	\$	7,832		670,165
Machines, typewriting, and parts thereof, adapted for use in printing offices	No.	446,831	9,319	297,071
Machines specially designed for ruling, folding, binding, embossing, creasing, or cutting paper or cardboard, when for use exclusively by printers, bookbinders, and by manufacturers of articles made from paper or cardboard, including parts thereof, composed wholly or in part of iron, steel, brass, or wood	\$	123,446	66	
Machines for carding, spinning, weaving, or knitting, imported by manufacturers for such purposes	\$	89,403	310	197,004
Lithographic presses and type-making accessories for same	\$	823,698		62,000
Printing presses	\$	27,151		326,185
Machinery of a class or kind not made in Canada and parts thereof adapted for carding, spinning, weaving, braiding, or knitting fibrous material, when imported by manufacturers for such purposes	\$	160,600		
All machinery composed wholly or in part of iron or steel, N. O. P., and iron or steel castings, and iron or steel integral parts of all machinery specified in tariff item 453	No.		6,338	7,136,558
Machines, washing		5,516,890		36,178



IRON.—TABLE 21—Continued.

Imports of Iron and Steel Goods subject to Duty.

Material.	TWELVE MONTHS ENDING MARCH, 1909.		TWELVE MONTHS ENDING MARCH, 1908.	
	Quantity.	Value.	Quantity.	Value.
Tubing—Continued.		\$		\$
Wrought or seamless tubing, iron or steel, plain or galvanized, threaded and coupled, or not, 4" and less in diameter, N. O. P.		212,283		332,215
Seamless steel tubing, valued at not less than 3¢ cents per lb.	4,102	24,257	5,689	27,497
Roller or drawn square tubing of iron or steel, adapted for use in the manufacture of agricultural implements.....		4,656		5,942
Iron or steel pipe or tubing, plain or galvanized, riveted, corrugated or otherwise specially manufactured, including lockjoint pipe, N. O. P.		167,803		194,545
Iron or steel pipe, not butt or lap welded, and wire bound wooden pipe, not less than 30" internal diameter, when for use exclusively in alluvial gold mining.....		16,850		47,488
Ware—Agate, granite, or enamelled iron or steel ware.....		122,418		143,374
Wire—Iron or steel hollow ware, plain black or coated, N. O. P., and nickel and aluminium kitchen or household hollow ware.....	4,541	20,908		42,307
Wire bale ties.....		5,635		145
Wire bound wooden pipe, N. O. P.		74,422	1,347,439	76,792
Wire cloth or woven wire and netting of iron or steel.....	1,376,974	14,964	114,770	24,743
Wire, crucible cast steel, valued at not less than 6 cents per lb.	77,410	5,864		9,625
Wire screens, doors, and windows.....				
Wire buck thorn strip fencing, woven wire fencing, and wire fencing of iron and steel, N. O. P., not to include woven wire or netting made from wire smaller than No. 14 gauge, not to include fencing or wire larger than No. 9 gauge.....	1,363,438	45,513	1,508,471	51,668
Wire, single or several, covered with cotton, linen, silk, rubber, or other material, including cable so covered.....	1,674,448	277,062	3,157,730	329,229
Wire of iron and steel all kinds, N. O. P.	4,723,315	136,628	7,713,286	210,680
Wire rope, stranded or twisted wire clothes lines, picure or other twisted wire, and wire cables, N. O. P.	3,146,825	225,675	5,379,334	345,756
Iron or steel nuts, rivets, or bolts with or without threads, nut bolt, and hex blank, and T and strap hinges of all kinds, N. O. P.	23,962	88,248	33,875	132,062
Iron or steel scrap, wrought, being waste or refuse, including punchings, cuttings, and clippings of iron or steel plates or sheets having been in actual use.....				
rails, the same not having been in actual use.....	220,444	140,875	302,714	191,782
Penknives, jack-knives, and pocket knives of all kinds.....		102,973		74,868

Knives and forks of steel, plated or not, N. O. P.				187,175	201,445
All other cutlery, N. O. P.				357,603	507,612
Guns, rifles, including air guns and air rifles (not being toys), muskets, cannons, pistols, revolvers, or other firearms.				446,911	377,950
Bayonets, swords, fencing foils, and masks.				7,680	6,043
Needles of any material or kind, N. O. P.				69,460	101,496
Steel, chrome steel.		3,057	4,028	13,947	17,581
Steel plate, universal mill or rolled edge plates of steel over 12" wide, imported by manufacturers of bridges or of structural work, or for use in car construction.		265,356	10,760	370,650	390,953
Steel in bars or sheets to be used exclusively in the manufacture of shovels when imported by the manufacturers of shovels.		17,089	27,723	25,022	56,437
Rolled iron or steel, or cast steel in bars, bands, hoops, scroll, or strip, sheet or plate of any size, thickness or width, galvanized or coated with any material or not, and steel blanks for the manufacture of milling cutters, when of greater value than 3½ cents per pound.		41,848	71,716	298,662	415,331
Steel balls adapted for use in bearings of machinery and vehicles.			386	11,474	14,725
Flat steel, cold rolled, not over ½" thick, for the manufacture of cups and cones for ball bearings.		208	156	2,025	1,429
Steel wool.					2,418
Tools and implements—					
Axes, cleavers, hatchets, wedges, sledges, hammers, crowbars, cant-dogs and track tools, picks, mattocks and eyes or poles for the same.				47,575	63,078
Aces.				26,507	35,667
Saws.		4,380	6,583	73,058	80,677
Files and rasps, N. O. P.				76,581	83,967
Tools, hand or machine, of all kinds, N. O. P.				682,014	628,471
Knife blades or blanks, and table forks of iron and steel, in the rough, not handled, filed, ground or otherwise manufactured.					
Manufactures, articles or wares of iron and steel, or of which iron and steel (or either) are the component materials of chief value, N. O. P.					95
Totals.		3,524,920	4,994,496	33,083,397	49,820,258





Machinery:—

Articles of metals as follows when for use exclusively in mining or metallurgical operations, viz: coal cutting machines, except percussion coal cutters; coal heading machines; coal cutters; rotary coal drills; core drills; miners safety lamps and parts thereof, also accessories for cleaning, filling, and testing such lamps; electric or magnetic machines for separating or concentrating iron ores; furnaces for the smelting of copper, zinc, and nickel ores; converting apparatus for metallurgical processes in metals; copper plates, plated or not, machinery for extraction of precious metals by the chlorination or cyanide process; amalgam safes; automatic ore-samplers; automatic feeders; retorts; mercury pumps; pyrometers; bullion furnaces; amalgam cleaners; blast furnace blowing engines; wrought iron tubing, butt or lap welded; threaded, or coupled or not, over 4" in diameter; and integral parts of all machinery mentioned in this item; blowers of iron or steel for use in the smelting of ores, or in the reduction, separation, or refining of metals, rotary kilns; revolving roasters, and furnaces of metal designed for roasting ore; mineral rock or clay; furnace slag trucks, and slag pots of a class or kind not made in Canada; buddles, vanners, and slime tables adapted for use in gold mining.

Appliances of iron or steel, of a class or kind not made in Canada, and machinery of floating dredges, when for use exclusively in alluvial gold mining.

Well-drilling, and apparatus of a class or kind not made in Canada for drilling for water, natural gas or oil, and for prospecting for minerals, not to include motive power.

Briquette making machines.....

Newspaper printing presses, of not less value by retail than \$1,500 each, of a class or kind not made in Canada

Machinery and tools not manufactured in Canada up to the required standard necessary for any factory to be established in Canada for the manufacture of rifles for the Government of Canada

All materials, or parts in the rough, unfinished, and screws, nuts, bands, and springs to be used in rifles to be manufactured at any such factory for the Government of Canada

Machinery of every kind, and structural iron and steel for use in the construction and equipment of factories for the manufacture of sugar from beet root

Machinery of a class or kind not made in Canada and parts thereof, for the manufacture of twine cordage, or linen, or for the preparation of flax fibre.....

Mould boards or shares, or plough plates, land slides, and other plate for agricultural implements, when cut to shape from rolled plates of steel, but not moulded, punched, polished or of otherwise manufactured.....

Steel balls adapted for use on bearings on machinery, and vehicles

Steel, rolled, for saws and straw cutters not tempered, or ground, nor further manufactured than cut to shape without indicated edges.....

Steel strips, and flat steel wire when imported into Canada by manufacturers of buckhorn and plain strip fencing, for use exclusively in their own factories in the manufacture of such articles ..

Steel wire, Bessemer soft drawn spring of Nos. 10, 12, and 13 gauge, respectively, and homo steel spring wire of Nos. 11 and 12 gauge, respectively, when imported by manufacturers of wire mattresses, to be used exclusively in their own factories in the manufacture of such articles ..

Steel, crucible sheet, 11 to 16 gauge, 23" to 18" wide, for the manufacture of mower and reaper knives when imported by manufacturers thereof for use exclusively in the manufacture of such articles in their own factories.....

Steel No. 20 gauge and thinner, but not thinner than No. 30 gauge, for the manufacture of corset steels, clock springs, and shoe shanks, imported by manufacturers of such articles for exclusive use in the manufacture of such articles in their own factories.....

	No.	\$	No.	\$
.....	331,197	765,564		
.....	293,407	69,154		
.....	61,380	120,469		
.....	702	3,742		
.....	172,384	391,657	60	97
.....	4,938	9,331		
.....	14,720	54,068		
.....	12,317	51,222		
.....		16,35		
.....	60,183	144,288	103,627	289,044
.....		2,326		3,988
.....	12,097	96,305	19,145	158,438
.....	28	109	19	157
.....	6,421	15,565	8,610	21,885
.....	12,033	30,726	13,830	55,095
.....	5		87	360

Imports of Iron and Steel Goods Free of Duty.

Material.	TWELVE MONTHS ENDING MARCH, 1909.		TWELVE MONTHS ENDING MARCH, 1910.	
	Quantity.	Value. \$	Quantity.	Value. \$
Steel wire, flat, of 16 gauge or thinner, imported by the manufacturers of crinoline, and corset wires and dress stays, for use exclusively in the manufacture of such articles in their own factories.....	4,094	26,495	12,950	46,665
Steel, No. 12 gauge and thinner, but not thinner than No. 30 gauge, for the manufacture of buckle clasps, bed fasts, furniture casters, and ice-creepers, imported by the manufacturers of such articles, for use exclusively in the manufacture of such articles in their own factories.....	1,631	4,385	3,123	7,839
Steel, No. 24 and 17 gauge, in sheets 63" long and from 18" to 22" wide, when imported by the manufacturers of tubular bow-sockets for use exclusively in the manufacture of such articles in their own factories.....			1,565	3,090
Steel springs for the manufacture of surgical trusses, when imported by manufacturers of surgical trusses for use exclusively in the manufacture thereof in their own factories.....	906	774	2,265	479
Swedish rolled iron, and Swedish rolled steel nail rods, under half an inch in diameter, for the manufacture of horse shoe nails.....	18,520	39,002	19,208	39,313
Steel seamless tubing valued at not less than 3½ cents per pound.....	330	2,233	1,448	11,758
Steel rolled or drawn square tubing adapted for use in the manufacture of agricultural implements.....				1,163
Steel or iron tubes, rolled, not joined or welded, not more than 1½" diameter, N. O. P.....		7,181		11,439
Seamless steel, or wrought iron boiler tubes, including flues and corrugated tubes for marine boilers imported by manufacturers of rifles for use in manufacturing rough parts of rifles, when such parts are to be used in rifles for the Government of Canada.....		415,068		522,90
Barbed fencing wire of iron or steel.....	231,627	567,236	351,576	4,180
Wire, crucible cast steel, valued at not less than 6 cents per pound.....	10,588	1,830	6,264	765,427
Wire, curved or not, galvanized iron or steel, Nos. 9, 12, and 13 gauge.....	399,506	858,129	763,538	1,450
Wire, steel, valued at not less than 2½ cents per pound when imported by manufacturers of rope for use exclusively in the manufacture of rope.....	22,120	85,714	34,765	1,524,742
Totals.....		7,310,031		10,101,939

## IRON.—TABLE 23.

## Imports of Iron and Steel into Canada from the United States.\*

MATERIAL.	TWELVE MONTHS ENDING JUNE 30, 1909		TWELVE MONTHS ENDING JUNE 30, 1910.	
	Quantity.	Value.	Quantity.	Value.
		\$		\$
Pig iron..... Short tons	34,918	510,813	75,270·7	1,135,509
Scrap and old, fit only for remanufacture "	14,958·7	205,403	14,071·6	195,316
Bar iron..... "	4,161	150,995	5,802·7	216,228
<i>Bars and Rods of Steel—</i>				
Wire rods..... "	13,052·6	401,083	27,736	781,335
All other..... "	37,473	1,326,158	75,050·9	2,390,235
Billets, ingots, and blooms of steel.. "	8,497	185,544	11,395	306,268
Hoop, band, and scroll..... "	2,967	144,794	4,617·5	200,655
Steel rails for railways..... "	1,049	745,835	30,525·6	801,084
Sheets and plates (iron)..... "	15,099	830,634	25,290	1,264,97
Sheets and plates (steel)..... "	66,219·5	2,965,179	128,277	4,875,466
Sheets and plates (tin plates, terne plates, and taggers tin)..... "	3,854	268,410	11,802·6	826,029
Structural iron and steel..... "	41,148·8	1,585,137	74,574	2,828,338
Wire (barbed)..... "	10,233	493,773	18,202·5	839,818
Wire (all other)..... "	26,564	1,169,197	29,950	1,296,835
<i>Nails and Spikes—</i>				
Cut..... "	565	23,057	1,097·5	39,085
Wire..... "	519	28,324	693·5	37,452
All other, including tacks..... "	205	16,000	328	20,021
Pipes and fittings..... "	23,319	1,104,434	37,031·9	1,618,181
	332,802·6	12,154,770	574,804·0	19,673,740

\*Compiled from "Commerce and Navigation of the United States, 1910." Washington, D.C.  
Table continued on next page.

IRON.—TABLE 23—Continued.

## Imports of Iron and Steel into Canada from the United States.

	1909.		1910.	
	Quantity.	Value.	Quantity.	Value.
		\$		\$
<i>Builders Hardware and Tools—</i>				
Locks, hinges, and other builders hardware.....		893,807		1,272,969
Saws.....		196,278		293,262
Tools, not elsewhere specified.....		826,354		1,025,979
Car wheels..... No. 8,548		67,123	6,592	66,505
Castings, not elsewhere specified.....		644,665		904,412
<i>Cutlery—</i>				
Table.....		15,736		12,226
All other.....		65,955		109,039
Firearms.....		240,825		305,016
<i>Machinery, Machines and parts of—</i>				
Cash registers..... No. 726		73,263	724	45,260
Electrical machinery.....		590,152		1,151,449
Laundry machinery.....		70,618		124,325
Metal working machinery (including metal working machine tools).....		214,029		336,172
Mining machinery.....		501,725		734,631
Printing presses and parts of.....		300,752		756,493
Pumps, and pumping machinery.....		317,282		456,358
Sewing machines and parts of.....		327,696		462,128
Shoes machinery.....		107,726		228,431
Steam engines and parts of (fire).... No. 1		325	16	7,199
Steam engines and parts of (locomotive)..... " 83		363,279	65	247,979
Steam engines and parts of (stationary)..... " 3,337		821,498	3,173	840,418
Steam engines and parts of (traction) " 423		721,373	1,296	2,094,247
Steam engines and parts of (all other engines and parts of engines).... " .....		657,926		1,366,650
Typewriting machines and parts of.....		335,237		430,737
Windmills and parts of.....		45,052		40,041
Wood working machinery.....		277,467		349,094
All other.....		5,395,675		7,343,794
Safes..... No. 2,009		88,057	2,960	136,684
Scales and balances.....		137,911		109,181
Stoves, ranges and parts of.....		448,599		635,900
All other manufactures of.....		4,504,677		6,357,049
		19,251,962		28,153,628
Total value.....		31,406,732		47,827,368

