

GEOLOGICAL SURVEY OF CANADA

A. P. LOW, B.Sc., DIRECTOR

SECTION OF MINES

ANNUAL REPORT ON THE MINERAL
INDUSTRIES OF CANADA

FOR

1905



OTTAWA

PRINTED BY S. E. DAWSON, PRINTER TO THE KING'S MOST
EXCELLENT MAJESTY

1907

[No. 26a-1907] *Price, 10 cents.*

No. 971

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STAFF OF THE MINES SECTION.

ELFRIC D. INGALL, M.E., A.R.S.M.,
in charge.

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THEO. C. DENIS, B.Sc. JNO. MCLEISH, B.A.

MRS. W. SPARKS, Records Clerk.

OTTAWA, January 10, 1907.

To A. P. Low, Esq., B. Sc.,
Director and Deputy Head,
Geological Survey Dept.

SIR,—I beg herewith to hand you the Annual Statistical Report of the Mineral Industries of Canada giving the complete and revised information regarding these industries for the year ending December 31, 1905. This has been preceded by an advance statement of the Mineral Production dated March 2, 1906, which, as usual, was only provisional and subject to alteration. Complete data relating to the mineral industries cannot be obtained until well on in the year following that dealt with so that compilation of the final report can only be commenced late in the succeeding year and its issue is thus delayed.

Besides the preparation of the accompanying report, the staff of the Section has, as usual, been kept busy in many other kindred directions, such as answering numerous inquiries regarding the mineral resources, the mining and metallurgical industries of the country, as well as in collecting, filing and indexing all available information regarding the same. Mining districts have been visited and studied as far as time and means permitted.

Acknowledgment is heartily accorded of the work performed by the staff of the Section in respect of all its functions. Apart from the collection and compilation of the Statistics, which is Mr. McLeish's chief charge, he has taken especial interest in the Structural Materials and has made some preliminary studies in the field in this connexion. For several years now Mr. Denis has been engaged in the field in investigation of the coal, gas and petroleum fields of Canada, and the results of his work will appear shortly in bulletin form. A similar work covering copper in Eastern Canada has been commenced by myself and will appear as a re-issue of the Bulletin on this subject already issued by the Survey.

I am Sir,

Your obedient servant,

ELFRIC DREW INGALL,
Mining Engineer to the Geological Survey.



EXPLANATORY NOTES.

YEAR AND TON USED.

The year referred to throughout this report is the calendar year, except for the figures of imports, which refer to the fiscal year ending June 30. The ton is that of 2,000 pounds, unless otherwise stated.

EXPORTS AND IMPORTS.

The figures given throughout the report referring to exports and imports are compiled from data obtained from the books of the Customs Department, and will occasionally show discrepancies, which, however, there are no means of correcting.

The exports and imports under the headings of each province do not necessarily represent the production and consumption of the province; e.g., material produced in Ontario is often shipped from Montreal and entered there for export, so falling under the heading, Quebec.

NOTE.—N.E.S. = Not elsewhere specified.

VALUES ADOPTED.

The values of the metallic minerals produced, as per returns to this Department, are calculated on the basis of their metallic contents at the average market price of the metal for the current year. Spot values have been adopted for the figures of production of the non-metallic minerals.

GENERAL NOTES.

As in the past, care is taken to avoid interference with private interests in the manner of publishing results, and all returns of production of individual mines are treated as confidential, unless otherwise arranged with those interested. The confidence of the mining community, thus gained, has resulted in an increasingly general response to our circulars, although to complete our data, personal application is still necessary in a small number of instances, and a yet more prompt response on the part of all applied to, will help still further towards an earlier publication of the material.

The figures given throughout the reports are based, as far as possible, upon returns obtained direct from the various operators, or from official data, and the totals are checked by comparison with railway shipments, exports, and all other available sources of information. It can be therefore fairly claimed that they are as accurate as it is possible to make such figures.

After investigation of the subject we have, however, found that in the nature of things, export and railway figures can only be taken as approximately correct in most instances. In the case of the export figures entries are made, as a rule, by those having no technical knowledge of mineral substances, and in the case of the railways but few of the shipments are actually weighed, so that car-load lots, for instance, may differ considerably from the theoretical load of the car.

The lists of operators given throughout the report are not put forward as complete in every case, only those known to be active being included. Producers finding their names omitted are invited to communicate with this office that they may be included in the next issue.

CORRECTIONS—ALTERATIONS.

Corrections and alterations have been made throughout this report wherever they seemed to be called for, according to more complete and reliable data, available since previous issues.

The tabulated statement given in the folded sheet at the beginning of the report represents a compilation of all the similar statements found in previous reports, re-modelled and further revised wherever possible.

INTRODUCTION.

A reference to the accompanying general table shows that the grand total of the mineral production of Canada for 1905 was valued at \$69,525,170. For 1904, as compared with 1903, there was, unfortunately, a shrinkage of about 2·7 per cent to record, so that it is gratifying to find that not only was this falling off made up but that the increase over 1904 amounts to \$9,451,273, or equivalent to nearly 16 per cent.

The uniform basis of valuation invariably adopted by this Department enables a comparison to be made, and it will be noted the present year's total is just about \$40,000,000 greater than that for 1895, or a growth of 200 per cent.

The increases and decreases in the total valuations of the important items in the general table are exhibited in the table following.

INCREASES AND DECREASES IN VALUE.

Products.	Increases.	Decreases.
	Value.	Value.
	\$	\$
Copper.....	2,191,025	
Gold.....		1,852,122
Pig iron (from Canadian ore).....	24,252	
Lead.....	1,059,411	
Nickel.....	3,331,373	
Cobalt.....	63,380	
Silver.....	1,570,580	
Zinc.....		
Asbestos and asbestic.	276,907	
Coal.....	928,032	
Corundum.....	39,608	
Gypsum.....	211,694	
Natural gas.....	51,185	
Petroleum.....		79,867
Pyrites.....		8,547
Salt.....		920
Cement, natural.....		39,973
Cement, Portland.....	625,748	
	10,373,195	1,981,429

It will be noticed that substantial increases are shown by all the leading industries except in the case of gold in which a very considerable falling off has to be recorded. This is altogether due to the continued decrease in the production of the Yukon placers, which has been continuous now for some years. This shrinkage has been offset by increases in all the other gold mining districts of the country, amounting to over \$300,000. An interesting feature is the increase in the output of cobalt, which is a new member among the metallics, appearing for the first time only last year. The items in the above table indicate the great prosperity of the mineral industry of Canada, representing as they do nearly 83 per cent of the whole.

PROPORTIONAL INCREASES AND DECREASES OF DIFFERENT MINERAL PRODUCTS.

Products.	Quantity.		Value.	
	Increase.	Decrease.	Increase.	Decrease.
	p.c.	p.c.	p.c.	p.c.
Metallic—				
Copper	16·21		41·28	
Gold		11·25		11·25
Pig iron (from Canadian ore only)		18	2·41	
Pig iron (from both home and imported ores)	73·11		75·57	
Lead	51·51		65·50	
Nickel	78·96		78·96	
Silver	67·55		76·72	
Cobalt	313·70		173·07	
Non-metallic—				
Asbestos and asbestic.	40·85		22·57	
Coal	5·00		5·59	
Corundum	65·55		36·15	
Gypsum	27·80		56·53	
Mica			10·58	
Natural gas			15·58	
Petroleum	25·94			8·53
Salt		3·06		28
Portland cement	47·91		48·58	
Granite			50·86	

In the above table the proportional increases and decreases in the chief industries are given both for quantity and value. A study of the figures given will show to what extent the increased or decreased values given in the preceding table are due to higher or lower prices obtainable for the various products. It will be noticed that leaving gold out, the prices of copper, lead and silver were much higher than for the previous year, whilst pig iron shows a slight advance and cobalt a very marked decrease in value. The latter feature is due to the depressing effect on the market of the large supply of this metal rendered available as a result of the discoveries at Cobalt, Ontario.

GEOLOGICAL SURVEY OF CANADA.

MINES SECTION.

Mineral Production of Canada, Calendar Years 1895 to 1905.

PRODUCTS.	1895.		1896.		1897.		1898.		1899.		1900.		1901.		1902.		1903.		1904.		1905.		PRODUCTS.									
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.										
METALLIC.																																
Antimony ore.....Tons.																							Antimony ore.....Tons.									
Copper (c).....Lbs.	7,771,639	836,228	9,393,012	1,021,960	13,300,802	1,501,660	17,747,136	2,134,980	15,078,475	2,655,319	18,537,133	3,065,922	37,827,019	6,096,581	38,804,259	4,511,383	42,684,454	5,649,487	41,383,722	5,306,635	48,092,753	7,497,660	Copper (c).....Lbs.									
Gold (d).....Oz.	100,806	2,083,674	133,274	2,754,774	291,582	6,027,016	666,445	13,775,420	1,028,620	21,261,584	1,350,176	27,908,153	1,167,320	24,128,503	1,032,253	21,336,667	911,639	18,843,590	796,445	16,462,517	706,841	14,610,395	Gold (d).....Oz.									
Pig Iron (n).....Tons.																							Pig Iron (n).....Tons.									
Iron ore (a).....Tons.	102,797	238,070	91,906	191,557	50,705	130,290	58,343	152,788	74,617	240,542	(o) 50,657	126,642	(o) 157,033	392,582	(o) 278,339	695,847	(o) 153,513	384,927	(o) 37,000	174,000	117,000	1,032,116	Iron ore (a).....Tons.									
Lead (e).....Lbs.	16,461,794	531,716	24,199,977	721,159	39,018,219	1,396,853	31,913,319	1,206,399	21,862,436	977,250	63,169,821	2,760,521	51,900,958	2,249,387	22,956,381	934,095	18,139,283	768,562	37,531,244	1,617,221	56,864,915	2,676,632	Lead (e).....Lbs.									
Mercury.....Lbs.	5,431	2,343	4,437	1,940	688	324																	Mercury.....Lbs.									
Nickel (f).....Oz.	3,888,525	1,360,984	3,397,113	1,188,990	3,997,647	1,399,176	5,517,690	1,820,838	5,744,000	2,067,840	7,080,227	3,327,707	9,189,047	4,594,523	10,693,410	5,025,903	12,005,510	5,002,204	10,547,883	4,219,153	18,876,315	7,550,526	Nickel (f).....Oz.									
Platinum.....Oz.		3,800		750	1,600	100	1,500		55	825				457	2,385	46,502	1,710	33,345	571	10,872		500	Platinum.....Oz.									
Palladium.....Oz.															4,411	86,014	3,177	61,952	952	18,564		500	Palladium.....Oz.									
Cobalt.....Lbs.																							Cobalt.....Lbs.									
Silver.....Oz.	1,578,275	1,030,299	3,205,343	2,149,503	5,558,446	3,323,395	4,452,333	2,593,929	3,411,644	2,032,658	4,468,225	2,740,362	5,539,192	3,265,354	4,291,317	2,238,351	3,198,581	1,709,642	3,577,526	2,047,095	5,994,292	100,000	Silver.....Oz.									
Zinc.....Lbs.																							Zinc.....Lbs.									
Total value, Metallic.....		6,087,114		8,030,633		13,780,314		21,741,865		29,282,823		40,521,807		41,939,500		35,924,651		33,210,147		30,924,897		37,400,204	Total value, Metallic.....									
NON-METALLIC.																																
Actinolite.....Tons.		(a)		(a)		(a)		(a)		(a)		(a)		(a)		(a)		(a)		(a)		(a)	Actinolite.....Tons.									
Arsenic (white).....Tons.																							Arsenic (white).....Tons.									
Asbestos.....Tons.	8,756	368,175	12,250	429,856	30,442	445,368	23,785	491,197	25,536	485,849	29,141	748,431	40,217	1,259,759	40,416	1,148,319	41,677	929,757	35,611	1,213,502	50,669	1,486,359	Asbestos.....Tons.									
Chromite.....Tons.	3,177	41,300	2,342	27,004	2,637	32,474	2,021	24,252	2,010	21,842	2,335	27,000	1,274	16,744	900	13,000	3,509	51,129	12,854	12,850	17,594	16,900	Chromite.....Tons.									
Coal (g).....Tons.	3,478,344	6,739,153	3,745,716	7,226,462	3,786,107	7,303,597	4,173,108	8,224,288	4,925,051	10,283,497	5,777,319	13,742,178	6,486,325	12,699,243	7,466,681	15,210,877	7,960,364	15,942,833	8,254,595	16,592,231	8,667,943	17,520,263	Coal (g).....Tons.									
Corundum.....Tons.																							Corundum.....Tons.									
Feldspar.....Tons.		(k) 2,545	972	(k) 2,583	1,400	3,290	2,500	6,250	3,000	6,000	318	1,112	5,350	10,700	7,576	15,152	13,928	18,966	11,083	22,166	11,700	23,400	Feldspar.....Tons.									
Fire-clay.....Tons.	1,329	3,492	842	2,118	5,759	670			599	1,295	1,245	4,130	3,979	5,920	2,741	4,283	2,639	3,523	1,997	5,592	1,584	6,096	Fire-clay.....Tons.									
Graphite.....Tons.	220	6,150	139	9,455	436	16,240			13,698	1,310	24,179	1,922	31,040	2,210	38,780	1,095	28,300	728	23,745	452	11,760	541	Graphite.....Tons.									
Grindstones.....Tons.	475	31,932	3,713	33,310	4,572	42,340	4,935	44,775	4,511	43,265	5,539	53,450	4,581	45,690	6,433	49,118	5,538	48,302	4,649	42,782	5,540	62,375	Grindstones.....Tons.									
Gypsum.....Tons.	226,178	202,608	207,032	178,061	239,691	244,531	219,256	232,515	244,566	257,329	252,101	259,009	293,799	340,148	332,045	359,277	314,489	388,459	345,961	373,474	442,158	586,168	Gypsum.....Tons.									
Limestone for flux.....Tons.	34,579	32,916	37,462	36,140	31,273	30,258	33,913	31,153	51,826	44,286	52,966	39,332	169,399	183,162	293,594	219,295	277,452	249,251	211,278	177,595	309,405	235,108	Limestone for flux.....Tons.									
Lithographic stone.....Tons.		2,000																					Lithographic stone.....Tons.									
Manganese ore.....Lbs.	125	8,464	123	(k) 3,975	15	1,166	50	1,600	1,581	20,004	30	1,800	440	4,820	172	4,062	91	2,775	66	2,740	22	1,720	Manganese ore.....Lbs.									
Mica.....Lbs.		65,000		60,000		76,000		118,375		163,000		166,000		160,000		135,904		177,837		160,777		178,235	Mica.....Lbs.									
Mineral pigments—																																
Baryta.....Tons.		145		715		571		3,060		1,125		5,533		720		4,402		1,337		7,605		653	3,842	1,096	3,957	1,163	3,931	1,382	3,702	3,360	7,500	Baryta.....Tons.
Ochres.....Tons.	1,339	16,600	2,362	16,045	3,905	23,560	2,226	17,450	3,919	20,000	1,966	15,398	2,233	16,735	4,955	30,495	6,266	32,760	3,925	24,995	5,105	34,675	100,000	Ochres.....Tons.								
Mineral waters.....Galls.	739,372	126,048	706,372	111,736	749,691	141,477	555,000	100,000		+ 100,000				75,000				+ 100,000					100,000	Mineral waters.....Galls.								
Molybdenite.....Lbs.																								Molybdenite.....Lbs.								
Moulding sand.....Tons.	6,765	13,530	5,739	11,478	5,485	10,931	10,572	21,038	13,724	27,430	6,181	12,316	14,705	29,410	13,352	27,651	3,658	7,256	3,423	6,790	379,561	379,561	Moulding sand.....Tons.									
Natural gas.....Tons.		423,032		276,301		325,873		322,123		387,271		417,094		339,476		195,992		202,210		328,376		379,561	Natural gas.....Tons.									
Peat.....Tons.																								Peat.....Tons.								
Petroleum (h).....Brls.	726,138	1,086,738	726,822	1,155,647	709,857	1,011,546	758,391	1,061,747	808,570	1,202,020	710,498	1,151,007	622,392	1,008,275	530,624	951,190	486,637	1,348,974	503,474	935,895	634,095	856,028	856,028	Petroleum (h).....Brls.								
Phosphate (Apatite).....Tons.	1,822	9,565	570	3,420	908	3,984	733	3,665	3,000	18,000	1,415	7,105	1,033	6,280	856	4,953	1,329	8,214	817	4,590	1,300	8,425	125,486	Phosphate (Apatite).....Tons.								
Precious stones.....Tons.	34,198	102,594	33,715	101,155	38,910	116,730	32,218	128,872	27,687	110,748	40,031	155,164	35,261	130,544	35,616	138,939	33,982	127,713	37,180	134,033	33,339	125,486	Precious stones.....Tons.									
Pyrites.....Tons.	10	570		50		284		570		600		1,260		400		220		400		202,210		379,561	Pyrites.....Tons.									
Quartz.....Tons.	52,376	160,455	43,960	169,693	51,348	225,730	57,142	248,639	59,339	254,990	62,055	279,458	59,428	262,328	64,456	292,581	62,452	297,517	69,477	321,778	67,340	320,858	Quartz.....Tons.									
Salt.....Tons.	475	2,138	410	1,230	157	350		1,000		1,960		420		1,365		1,458		1,950		1,950		1,950	1,950	Salt.....Tons.								
Soapstone.....Tons.																								Soapstone.....Tons.								
Structural materials and clay products—																																
Bricks.....M	308,836	1,670,000		1,600,000		+ 1,600,000		1,900,000		2,195,000		2,275,000		2,400,000		2,593,000		2,800,000		2,983,200		3,933,925	Bricks.....M									
Building stone.....C. yd.		1,095,000		1,000,000		+ 1,000,000		1,300,000		1,500,000		1,520,000		1,650,000		1,900,000		1,975,000		1,930,000		1,830,000	Building stone.....C. yd.									
Cement, natural.....Brls.																								Cement, natural.....Brls.								
" Portland....." "	128,294	173,675	78,385	141,151	119,763	209,380	163,084	324,168	255,366	513,983	292,124	562,916	317,066	64,415	127,931	92,252	74,655	56,814	50,247	14,184	10,274	10,274	Cement, natural.....Brls.									
Flagstones.....Sq. ft.																																

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Amongst the non-metallic products the increases and decreases are fairly evenly distributed. In this class the matter is often complicated by the proportions of different grades of products contributing to the total for each industry. Thus a proportional raise in the values does not necessarily mean higher prices throughout, it may indicate a relatively larger output of the higher priced products of any given industry.

PROPORTIONATE VALUE OF DIFFERENT MINERAL PRODUCTS, 1905.

Products.	Contri- buting over 10 p.c.	Contri- buting between 10 and 1 p.c.	Contri- buting under 1 p.c.	Total.
1 Coal	25·20			
2 Gold	21·01			
3 Nickel	10·86			
4 Copper	10·78			
5 Bricks		5·66		
6 Silver		5·20		
7 Lead		3·85		
8 Cement		2·75		
9 Building stone		2·63		
10 Asbestos and Asbestic		2·16		
11 Iron and iron ore (Canadian).....		1·74		
12 Petroleum.....		1·23		
13 Clay products (pottery, tiles, &c., except bricks).....		1·08		
14 Lime.....		1·08		
15 Gypsum.....			0·84	
16 Natural gas.....			0·55	
17 Salt.....			0·46	
18 Granite.....			0·33	
19 Mica.....			0·26	
20 Corundum.....			0·22	
21 Sundry under 1 per cent.			1·85	
Total.....				100·00

In studying the mineral industry of the country as a whole it becomes interesting to realize to what extent the different branches are to be credited as contributors to the grand total. This view of the matter is set forth in the foregoing table.

It will be noticed that the most valuable of the mineral assets of the country is coal, which stands pre-eminent, and if to this be added the other fuel items, viz : petroleum and natural gas, 27 per cent of the whole is accounted for. The rest of the non-metallic class, other than structural materials, are to be credited only with some 5 per cent. The aggregate contribution of the structural material class is nearly 14 per cent, the balance of nearly 54 per cent being contributed by the metallic class.

Thus nearly 81 per cent of the whole value of the mineral output of Canada for 1905 is due to the activities in those industries exploiting our fuels and metallic mineral deposits.

The figures given in the table illustrate the relative importance of the individual industries without further comment. It may be pointed out, however, in regard to bricks, building stone, clay products and lime that, as explained elsewhere in the report, the available figures are probably incomplete and were it possible to get fuller data these items would take a much higher proportional rank.

With regard to the iron and iron ores item it should be remarked that the figures deal only with the results of treating Canadian ore and therefore are not to be taken as illustrative of the proportional importance of the iron smelting industries of the country. The smelting industries, as distinct from mining proper, are dealt with fully in the body of the report.

PRODUCTION BY PROVINCES, 1904 AND 1905.

Province.	1904.		1905.	
	Value of Production.	Per cent.	Value of Production.	Per cent.
	\$		\$	
Nova Scotia.....	11,212,746	18.7	11,507,047	16.55
New Brunswick.....	559,913	0.9	559,035	0.80
Quebec	3,688,482	6.1	4,405,975	6.33
Ontario	12,582,843	20.9	18,833,292	27.09
Manitoba, Alberta, Sask- atchewan and Yukon	12,713,613	21.2	11,841,634	17.04
British Columbia.	19,316,300	32.2	22,378,187	32.19
Total	60,073,897	100.00	69,525,170	100.00

In the above table are compared the proportional contributions for 1904 and 1905 of the several provinces of the Dominion. As the figures given are reduced to a uniform basis of valuation a comparison is rendered possible.

It will be observed that whilst the mineral industry of the eastern provinces show a steady growth the figures for Ontario and British Columbia are considerably augmented. In the former case this results partly from the working of the rich veins of the Cobalt district, although the higher prices ruling for metals have been an important factor in both cases.

In the prairie provinces and Yukon the falling off is of course due to the shrinkage in the gold output of the Yukon placers.

SESSIONAL PAPER No. 26a

EXPORTS.

MINERALS AND MINERAL PRODUCTS OF CANADA DURING CALENDAR YEAR 1905.

Products.	Value.	Products.	Value.
Aluminum	\$ 509,777	Manufactures of metals, other than iron or steel..	\$ 81,945
Antimony ore.....	27,118	Mica.....	179,049
Arsenic.....	5,400	Mineral pigments.....	7,704
Asbestos.....	1,386,115	" water.....	2,137
Barytes.....	14,343	Nickel.....	1,569,693
Bricks.....	5,888	Oil, crude.....	2
Cement.....	3,143	" refined.....	2,078
Clay, manufactures of.....	35	Ores unspecified.....	687,565
Chromite.....	45,072	Platinum.....	283
Coal.....	4,029,457	Phosphate.....	1,253
Coke.....	509,908	Plumbago, crude.....	7,596
Copper.....	5,443,873	" mfrs. of.....	518
Feldspar.....	27,660	Pyrites.....	55,767
Gol.....	13,706,969	Salt.....	6,112
Grindstones.....	17,461	Sand and gravel.....	152,805
" rough.....	7,497	Silver.....	2,777,218
Gypsum, crude.....	388,474	Stone unwrought.....	13,089
" ground.....	2,673	" wrought.....	3,545
Iron and steel.....	1,287,558	Other articles.....	71,331
Iron ore.....	407,881		
Lead.....	1,046,541		
Lime.....	85,723		
Manganese ore.....	1,720	Total.....	34,579,886

EXPORTS.

DESTINATION OF PRODUCTS OF THE MINE, DURING THE FISCAL YEAR, 1904-1905.

Destination.	Value.	Destination.	Value.
United States.....	\$28,764,461	St. Pierre.....	\$26,765
Great Britain.....	991,874	Mexico.....	18,131
Belgium.....	841,121	Denmark.....	16,017
Newfoundland.....	370,968	British West Indies.....	9,895
China.....	289,540	Holland.....	7,236
Germany.....	251,155	Cuba.....	775
Bermuda.....	72,379	Australia.....	695
Hong Kong.....	66,693	New Zealand.....	559
France.....	54,853	Spain.....	347
Japan.....	40,789	Argentine.....	208
Italy.....	39,077		
Norway and Swede.....	36,764		
British Africa.....	32,027		
			\$31,932,329

The foregoing two tables are compiled from figures to be found in the reports of the Department of Trade and Commerce illustrative of the exports of mineral substances from the country.

As might be expected the metallic ores and products form the greater bulk of the sales to other countries. Under the headings Gold, Silver, Copper, Nickel, Lead, Iron and Steel comes nearly 75 per cent of the values of all the exports and if to these be added Coal and Coke, only about 14 per cent is left for the balance of the mineral substances exported. In the order of their importance the chief items are as follows :—Gold, 39·8 per cent ; Copper, 15·72 per cent ; Coal and Coke, 11·65 ; Silver, 8·30 ; Nickel, 4·54 per cent ; Asbestos, 4·20 per cent ; Iron and Steel, 3·72 per cent and Lead, 3·03 per cent.

As might be expected when the amount of United States capital invested in mining in Canada is considered, most of Canada's mineral which is exported finds its way into the United States. The figures in the table of destinations show that over 90 per cent is there marketed. Other American countries take about 0·15 ; Asia, 1·06 and Europe 3·84 per cent. To various points in the British Empire the exports of mineral and metallic substances amount to 4·95 per cent. of the whole.

The foregoing tables are all made to cover the calendar year for comparison with the data so presented throughout the body of the report. The subjoined statement of imports is made to cover the fiscal year ending June 30, 1904. The items therein contained have been selected from the reports of the Trade and Commerce Department.

Although the selection is necessarily made in a more or less arbitrary manner many interesting points come to light. In the items running over one million it will be noted that very much the largest number, representing over 44·7 per cent of the grand total, are those including machinery, hardware and highly manufactured articles, &c., and which would come in competition with the manufacturer rather than with the miner or smelter. Semi-finished products of iron such as pig, blooms, plates, etc., together with various iron alloys used as raw material by manufacturers of more finished products amounts to nearly eleven and a half million dollars or about 13·7 per cent. The country imports nearly twenty and a-half million dollars worth of coal, of which about half is anthracite and half bituminous. The items before mentioned, although comprising but 13 entries out of the seventy-seven in the table, cover 83 per cent of the whole. The remaining sixty-four items cover a great variety of substances, many of which will doubtless be eventually replaced by home products, whilst others will continue to come in owing to the greater proximity of the foreign source of production and for other similar causes.

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IMPORTS.

MINERAL AND MINERAL PRODUCTS FOR FISCAL YEAR 1904-1905.

Products.	Value.	Products.	Value.
Alumina.....	\$ 129,822	Litharge.....	\$ 57,736
Alum and aluminous cake.	58,385	Lithographic stone.....	13,683
Aluminium.....	182,970	Manganese, oxide of.....	6,832
Antimony.....	6,664	Magnesia.....	3,747
" salts.....	6,164	Marble and mfrs. of.....	145,466
Arsenic.....	7,661	Mercury.....	48,412
Asbestos and mfrs. of.....	116,836	Metallic alloys—	
Asphaltum.....	133,615	Babbitt metal.....	33,961
Bells and gongs.....	80,251	Brass and mfrs. of.....	1,340,349
Bismuth.....	1,410	Britannia metal.....	32,979
Blast furnace slags.....	7,017	German silver.....	76,874
Borax.....	88,923	Type metal.....	6,136
Bricks and tiles.....	369,561	Mineral and bituminous	
" fire.....	392,195	substances, N. E. S.....	58,569
Buhrstones.....	2,607	Mineralogical specimens.....	2,997
Cement.....	1,263,826	Mineral and metallic pig-	
Chalk.....	26,172	ments, paints and colours.....	1,337,159
Clays.....	176,805	Mineral waters.....	161,790
Coal.....	20,439,723	Nickel.....	19,076
" tar and pitch.....	150,141	Ores of metals, N. E. S.....	1,775,158
Coke.....	807,842	Paraffine wax.....	7,795
Copper and mfrs. of.....	2,042,429	" candles.....	15,293
Cryolite.....	11,966	Petroleum and products of.....	2,151,514
Crucibles, clay or plumbago	31,353	Phosphate (fertilizer).....	15,377
Chloride of lime.....	54,889	Phosphorus.....	1,415
Earthenware.....	1,636,214	Platinum, mfrs. of.....	61,719
Electric carbons.....	31,622	Precious stones.....	1,489,076
Emery.....	55,230	Pumice.....	8,447
Feldspar, quartz, flint, &c.	18,770	Salt.....	399,010
Fullers' earth.....	4,967	Saltpetre.....	96,304
Gold and silver and mfrs. of	502,357	Sand and gravel.....	92,722
Graphite and mfrs. of.....	46,434	Slate and mfrs. of.....	93,228
Gypsum, plaster of Paris, &c	47,710	Stone and mfrs. of.....	302,724
Iron and steel—		Sulphate of copper.....	94,182
Pigs, scraps, blooms, &c.	1,463,983	" iron.....	3,164
Rolled, bars, plates, &c.,		Sulphur.....	242,251
including chrome steel	9,711,620	Sulphuric acid.....	8,227
Ferro-silicon, ferro-man-		Tin and manufactures of.....	2,791,757
ganes, &c.....	246,815	Whiting.....	51,215
Manufactures of, machi-		Zinc and mfrs. of.....	363,404
nery, hardware, &c....	29,357,106		
Kainite.....	6,427	Total.....	83,521,375
Lead and mfrs. of.....	261,555		
Lime.....	71,588		

PRECIOUS METALS.

Under this heading, the metals gold and silver, are considered together. The rarer metals of the platinum group are considered under their respective names as platinum and palladium in miscellaneous metals.

GOLD.

The Geological Survey Department is indebted to the various Provincial Mining Bureaus for much of the statistical information given in the following tables.

The gold output of Canada in 1905 was \$14,610,395 as compared with an output of \$16,462,517 in 1904, a total decrease of \$1,852,122 or 11.25 per cent. The gold production has steadily decreased since 1900, when a maximum output of \$27,908,153 was reached, the falling off being due in the main to the gradual lessening of the output of the Yukon placer deposits which reached their highest production in the year mentioned. The other gold producing districts of Canada all show increases in 1905.

Of the total output, 57 per cent was derived from the Yukon district, and 96 per cent from the Yukon and British Columbia combined. Nearly 64 per cent of the whole was obtained from placer and hydraulic workings, &c., and 36 per cent from lode mining.

TABLE 1.
PRECIOUS METALS.
GOLD.—ANNUAL PRODUCTION IN CANADA.

Calendar Year.	*Ounces. Fine.	Value.	Calendar Year.	*Ounces. Fine.	Value.
1887.....	57,465	\$ 1,187,804	1897.....	291,582	\$ 6,027,016
1888.....	53,150	1,098,610	1898.....	666,445	13,775,420
1889.....	62,658	1,295,159	1899.....	1,028,620	21,261,584
1890.....	55,625	1,149,776	1900.....	1,350,176	27,908,153
1891.....	45,022	930,614	1901.....	1,167,320	24,128,503
1892.....	43,909	907,601	1902.....	1,032,253	21,336,667
1893.....	47,247	976,603	1903.....	911,639	18,843,590
1894.....	54,605	1,128,688	1904.....	796,445	16,462,517
1895.....	100,806	2,083,674	1905.....	706,341	14,610,395
1896.....	133,274	2,754,774			

*Calculated from the value at the rate of \$20.67 per ounce.

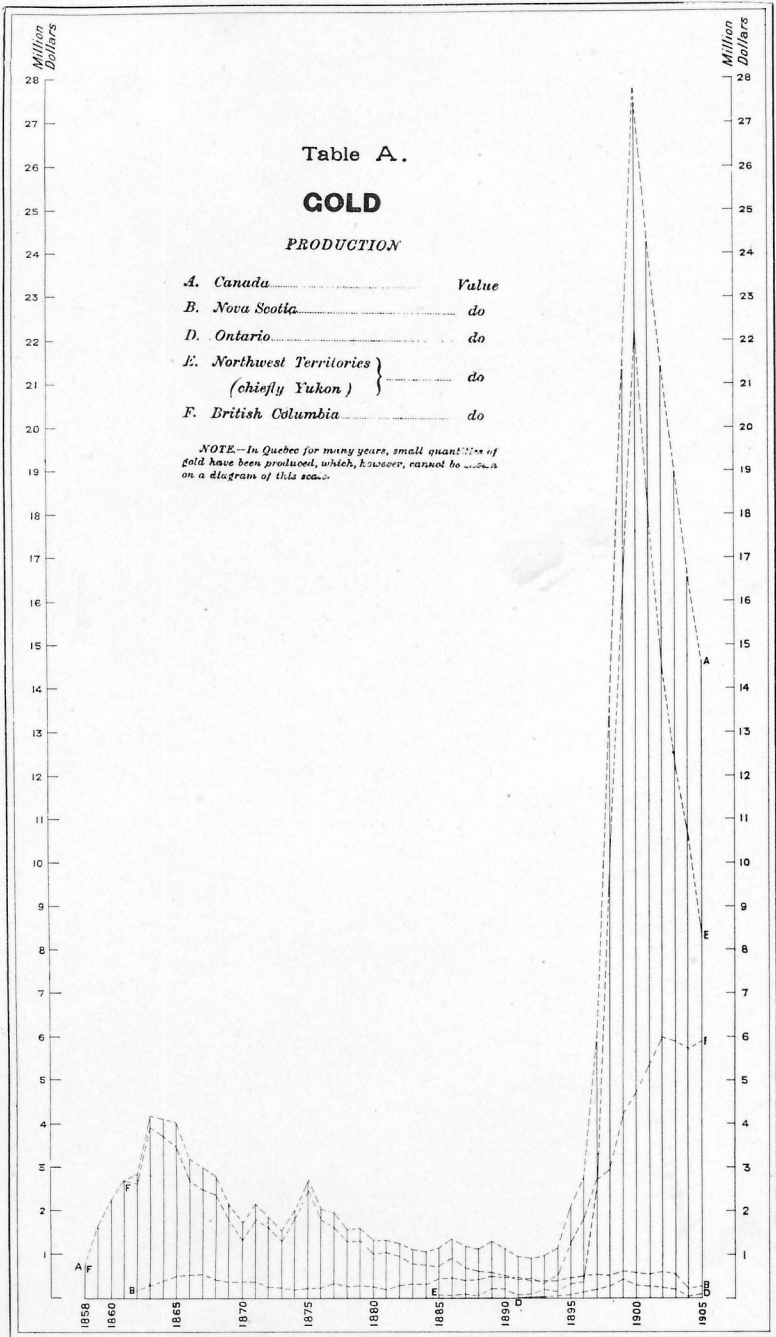
Mr. Weatherbe, deputy inspector, reports in the Nova Scotia Mines Report that 'the industry generally, has fallen off to a very marked degree, and with the closing of Dolliver Mountain, Brookfield (one of the most regular and largest producers for the past twelve years) the Blugnose, Nova Scotia and Mexican, Ecum Secum, Wine Harbour, &c., and the serious falling off in the returns from Caribou, Nova Scotia gold mining operations present a gloomy aspect.'

At the instance of the Nova Scotia Mining Society the Provincial Government employed an eminent mining engineer, Mr. T. A. Rickard, of New York, to report on the gold fields. Mr. Rickard spent from August 16th to Sept. 13th, 1905, in the province and visited the following districts: "Montague, Waverly, Renfrew, Oldham, Mount Uniacke, Caribou, Salmon River, Harrigan Cove, Goldenville, Cochran Hill, Forest Hill, Middle Country Harbour, Isaac Harbour, Goldboro, Lower Seal Harbour, West Gore, Leipsigate and Brookfield." His report has not yet been published.

Statistics of production in Nova Scotia are given in tables 3, 4, 5 and 6 following: Table 3 shows the annual gold output. Table 4 the tons of quartz crushed and the average yield per ton. Table 5 shows the total production of each district from 1862 to the end of 1895 as well as the average yield per ton, and table 6 shows the amount of ore crushed and its yield per district for 1905.

TABLE 3.
PRECIOUS METALS.
GOLD.—NOVA SCOTIA:—ANNUAL PRODUCTION.

Calendar Year.	Value.	Calendar Year	Value.
1862.....	\$141,871	1884.....	\$313,554
1863.....	272,448	1885.....	432,971
1864.....	390,349	1886.....	455,564
1865.....	496,357	1887.....	413,631
1866.....	491,491	1888.....	436,939
1867.....	532,563	1889.....	510,029
1868.....	400,555	1890.....	474,990
1869.....	348,427	1891.....	451,503
1870.....	387,392	1892.....	389,965
1871.....	374,972	1893.....	381,095
1872.....	255,349	1894.....	389,338
1873.....	231,122	1895.....	453,119
1874.....	178,244	1896.....	493,568
1875.....	218,629	1897.....	562,165
1876.....	233,585	1898.....	538,590
1877.....	329,205	1899.....	617,604
1878.....	245,253	1900.....	598,553
1879.....	268,328	1901.....	546,963
1880.....	257,823	1902.....	627,357
1881.....	209,755	1903.....	527,806
1882.....	275,090	1904.....	214,209
1883.....	301,207	1905.....	283,353



Million Dollars

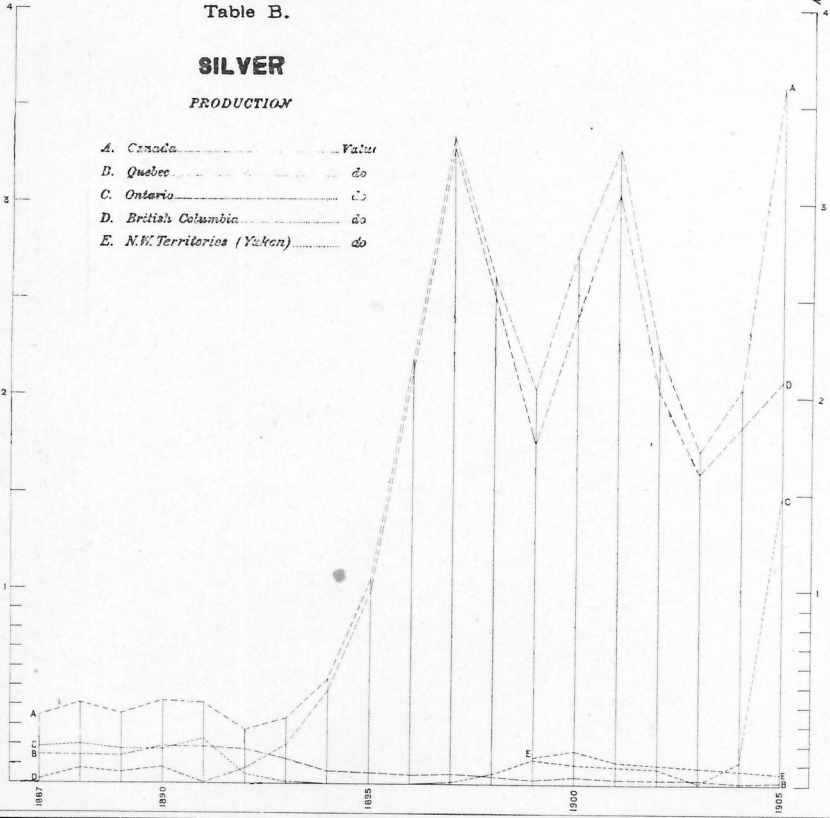
Million Dollars

Table B.

SILVER

PRODUCTION

- A. Canada.....Yukon
- B. Quebec.....do
- C. Ontario.....do
- D. British Columbia.....do
- E. N.W. Territories (Yukon).....do



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TABLE 4.

PRECIOUS METALS.

GOLD.—NOVA SCOTIA: ORE TREATED AND YIELD OF GOLD PER TON.

Calendar Year.	Tons Treated.	Yield of Gold per Ton.	Calendar Year.	Tons Treated.	Yield of Gold per Ton.
1862.....	6,473	\$21·91	1884.....	25,186	12·44
1863.....	17,000	16·02	1885.....	28,890	14·98
1864.....	21,431	18·21	1886.....	29,010	15·70
1865.....	24,421	20·32	1887.....	32,280	12·81
1866.....	32,157	15·28	1888.....	36,178	12·08
1867.....	31,384	16·96	1889.....	39,160	13·02
1868.....	32,259	12·41	1890.....	42,749	11·11
1869.....	35,144	19·91	1891.....	36,351	12·42
1870.....	30,824	12·56	1892.....	32,552	11·98
1871.....	30,787	12·17	1893.....	42,354	8·99
1872.....	17,089	14·94	1894.....	55,357	7·04
1873.....	17,708	13·05	1895.....	60,600	7·47
1874.....	13,844	12·87	1896.....	69,169	7·13
1875.....	14,810	14·76	1897.....	73,192	7·68
1876.....	15,490	15·08	1898.....	82,774	6·50
1877.....	17,369	18·95	1899.....	12,226	5·50
1878.....	17,989	13·63	1900.....	87,390	6·85
1879.....	15,936	16·83	1901.....	91,948	5·32
1880.....	13,997	18·42	1902.....	93,842	6·68
1881.....	16,556	12·66	1903.....	103,856	5·08
1882.....	21,081	13·04	1904.....	45,436	4·71
1883.....	25,954	\$11·60	1905.....	57,774	4·90

TABLE 5.

PRECIOUS METALS.

GOLD.—NOVA SCOTIA:—PRODUCTION OF THE DIFFERENT DISTRICTS FROM 1862 TO 1905, INCLUSIVE.

Districts.	Tons of Ore crushed.	Total Yield.				Average Yield per ton of 2000 lbs.
		Oz.	Dwt.	Grs.	Value at \$19.00 per oz.	
Brookfield.....	98,092	43,214	2	8	\$ 821,068	8·37
Caribou.....	176,370	54,786	5	7	1,040,939	5·90
Central Rawdon..	13,340	10,121	11	21	192,310	14·42
Fifteen Mile Stream	42,483	18,800	0	5	357,200	8·41
Lake Catcha.....	18,613	15,075	11	18	286,436	15·39
Malaga.....	24,787	17,486	12	4	332,246	13·40
Montague.....	27,529	40,483	11	4	769,188	27·94
Oldham.....	52,997	56,739	8	21	1,078,050	20·34
Renfrew.....	52,452	45,439	19	13	863,360	16·46
Salmon River.....	104,136	34,100	11	21	647,911	6·32
Sherbrooke.....	318,157	159,841	6	13	3,036,985	9·55
Stormont.....	327,274	91,557	16	0	1,739,598	5·32
Tangier.....	40,677	23,124	17	6	439,373	10·80
Uniacke.....	64,495	43,765	18	3	831,552	12·89
Waverly.....	155,908	70,833	12	23	1,345,839	8·63
Wine Harbour....	69,856	39,798	7	3	756,169	10·82
Other districts.....	135,705	84,103	4	13	1,597,961	11·78
Total.....	1,722,871	849,272	17	15	16,136,185	9·37

TABLE 6.
PRECIOUS METALS.
GOLD.—NOVA SCOTIA :—DISTRICT DETAILS, CALENDAR YEAR, 1905.

Districts.	Mines	Mills.	Tons Crushed.	Total Yield of Gold.			Average Yield of Gold per Ton.		
				Oz.	Dwt	Grs.	Oz.	Dwt.	Grs.
Brookfield	2	2	10,315	3,993	6	14	..	7	18
Caribou.....	5	4	8,336	861	10	0	..	1	23
Cow Bay.....	1	1	112	127	11	11	1	2	19
Harrigan Cove.....	1	1	65	15	0	0	..	4	15
Kemptville.....	1	1	20	7	9	0	..	7	11
Killag.....	1	1	215	35	6	0	..	3	7
Lawrencetown.....	1	1	199	26	1	0	..	2	15
Leipsigate.....	1	1	6,235	2,210	11	0	..	7	2
Lake Catcha.....	1	1	48	35	1	0	..	14	14
Miller's Lake.....	1	1	50	59	0	0	1	3	14
Montague.....	1	1	523	124	8	8	..	4	18
Oldham.....	3	1	1,342	1,565	1	0	1	3	8
Renfrew.....	2	1	241	30	5	0	..	2	12
Sherbrooke.....	3	3	5,381	984	10	0	..	3	16
Stormont.....	6	6	21,970	3,042	7	5	..	2	18
Tangier.....	1	1	220	26	12	4	..	2	10
Uniacke.....	3	2	80	133	9	6	1	13	8
Vogler's Cove.....	1	1	200	43	7	19	..	4	8
Whiteburn.....	1	1	4	4	3	0	1	0	18
Wine Harbour.....	1	1	1,691	332	10	0	..	3	22
Mortared.....	.....	.....	.....	22	19	15	..	..	..
Stibnite ore.....	.....	.....	527	1,232	16	23	2	6	19
Total.....	37	32	57,774	14,913	6	9	..	5	4

Quebec.—There was practically no gold derived from alluvial workings in the province of Quebec during 1905, although some prospecting work was being done in Dudswell district. The figures of production for 1905, given in table 7, represent the small quantity of gold saved from the pyritous ores mined near Sherbrooke, in the Eastern Townships.

TABLE 7.
PRECIOUS METALS.
GOLD.—QUEBEC :—ANNUAL PRODUCTION.

Calendar Year.	Value.	Calendar Year.	Value.
1877.....	\$12,057	1892.....	\$12,987
1878.....	17,937	1893.....	15,696
1879.....	23,972	1894.....	29,196
1880.....	33,174	1895.....	1,281
1881.....	56,661	1896.....	3,000
1882.....	17,093	1897.....	900
1883.....	17,787	1898.....	6,089
1884.....	8,720	1899.....	4,916
1885.....	2,120	1900.....	Nil.
1886.....	3,981	1901.....	3,000
1887.....	1,604	1902.....	8,073
1888.....	3,740	1903.....	3,712
1889.....	1,207	1904.....	2,900
1890.....	1,350	1905.....	3,940
1891.....	1,800		

Ontario—About \$91,000 worth of gold was mined in Ontario during 1905.

Statistics of production in previous years are given in Table 8.

TABLE 8.
PRECIOUS METALS.
GOLD.—ONTARIO :—ANNUAL PRODUCTION.

Calendar Year.	*Ounces. Fine.	Value.
1887.....	327	\$ 6,760
1888.....		
1889.....		
1890.....		
1891.....	97	2,000
1892.....	344	7,118
1893.....	708	14,637
1894.....	1,917	39,624
1895.....	3,015	62,320
1896.....	5,563	115,000
1897.....	9,158	189,294
1898.....	12,864	265,889
1899.....	20,395	421,591
1900.....	14,392	297,495
1901.....	11,845	244,837
1902.....	11,119	229,828
1903.....	9,097	188,036
1904.....	1,935	40,000
1905.....	4,403	91,000

*Calculated from the value at the rate of \$20.67 per ounce.

Alberta and Yukon District.—The placer deposits of the Saskatchewan river in the vicinity of Edmonton, produced about \$2,500 in gold during 1905.

The production of gold in the Yukon, based on sales made to the various receiving offices of the United States Mint was in 1905 \$8,327,200. This is a decrease of \$2,172,800 as compared with the production in 1904.

TABLE 9.
PRECIOUS METALS.
GOLD.—NORTH-WEST TERRITORIES :—PRODUCTION.

Calendar Year.	Yukon District.		Saskatchewan River.	
	*Ounces. Fine.	Value.	*Ounces Fine.	Value.
		\$		\$
1885 } 1886 }	4,838	100,000	.....	.....
1887.....	3,387	70,000	102	2,100
1888.....	1,935	40,000	58	1,200
1889.....	8,466	175,000	968	20,000
1890.....	8,466	175,000	194	4,000
1891.....	1,935	40,000	266	5,500
1892.....	4,233	87,500	508	10,506
1893.....	8,515	176,000	466	9,640
1894.....	6,047	125,000	725	15,000
1895.....	12,095	250,000	2,419	50,000
1896.....	14,514	300,000	2,661	55,000
1897.....	120,948	2,500,000	2,419	50,000
1898.....	483,793	10,000,000	1,209	25,000
1899.....	774,069	16,000,000	726	15,000
1900.....	1,077,649	22,275,000	242	5,000
1901.....	870,827	18,000,000	726	15,000
1902.....	701,500	14,500,000	484	10,000
1903.....	592,646	12,250,000	48	1,000
1904.....	507,983	10,500,000	24	500
1905.....	402,864	8,327,200	121	2,500
Total.....	5,606,710	115,890,700	14,366	296,946

* Calculated from the value at the rate of \$20.67 per ounce.

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The following statement of gold production of the Yukon royalty paid, etc., is taken from the report of the Timber and Mines Branch of the Department of the Interior :—

Fiscal Year.	Total Gold Production.	Total Exemption.	Royalty Collected on.	Royalty Paid.
	\$	\$	\$	\$
1898.....	3,072,773	339,845	2,732,928	273,292
1899.....	7,582,283	1,699,667	5,882,626	588,262
1900.....	9,809,464	2,501,744	7,307,720	730,771
1901.....	9,162,082	1,927,666	7,236,522	592,660
1902.....	9,566,340	1,199,114	8,367,225	331,436
1903.....	12,113,015	.....	12,113,015	302,893
1904.....	10,790,663	.....	10,790,663	272,217
1905.....	8,222,054	.....	8,222,054	206,760

British Columbia.—The value of the output of gold in British Columbia in 1905 was, \$5,902,402 as compared with \$5,704,908 in 1904 an increase of \$197,494 or nearly 3½ per cent. Of the output of 1905 \$969,300 was derived from placer workings, dredging, hydraulic-ing, &c., and \$4,933,102 from lode ores.

The Provincial Mineralogist in his report to the Minister of Mines for the province, gives the special features of the gold production during the year as follows :

“The production of placer gold this past year is valued at \$969,300 a decrease of some \$146,000, or 13 per cent as compared with that of 1904, and is the smallest output made any year since 1901. This falling off in production is attributable to a very dry summer, preceded by a winter with little snow, with a resulting decreased supply of water for hydraulic-ing, in which class of mining the output seems to be in direct proportion to the water available for use, since the deposits of gravel seem to be fairly regular in their tenure of gold, and the output is measured by the amount of gravel washed.

“In the Atlin district, the output this past year was about \$475,000, considerably less than in 1904, but still in excess of any year previous to that.

“In this district the drought was not so severely felt, as about 40 per cent of the gold is mined by ‘individual’ methods in which a large amount of water is not necessary.

“In the Dease lake section of Cassiar, mining is carried on largely by hydraulic methods, and between the dryness of the season and the obstacles presented in getting in over a long pack trail, the season was not successful.

"The Cariboo Mining Division of the Cariboo district about held its own this past season, but the production of the Quesnel division was some 40 per cent less, owing to the very short run made by the largest producing property—The Consolidated Cariboo—due to an unprecedentedly low water supply, a trouble which the company has set about remedying by bringing in water from another watershed to supplement the present supply, at the expenditure of a large amount of money.

"In the Fraser River district, the dry season should not have had so much effect, but individual mining on the bars appears to have been replaced by dredging, and the dredges have not met the expectations of the operators, for the reason, it is claimed, that the dredges built have proved to have been of too weak construction, and were so constantly under repair as to reduce the actual working time below the margin of profit.

"Steam shovels have not yet been fully proven, and the one formerly operated in south east Kootenay, has been, at least temporarily abandoned.

"The Atlin shovel apparently worked very well, but the appliances for handling the tailings and for washing the gravel proved quite inadequate, so much so that the capacity of the shovel was never fully demonstrated. Enough was learned, however, to indicate that for our conditions in the north, the steam shovel is apt to prove much more effective than the dredge.

"The value of the output of gold from this province from lode mining for the year 1905 was \$4,933,102, an increase over the preceding year of some \$343,494 or about $7\frac{1}{2}$ per cent due entirely to the increased tonnage of gold-bearing copper ore smelted in the Boundary district.

"The greater part of the lode gold produced is found in combination with copper; in fact only 11 per cent of the total gold is produced from stamp-mills and even in these mills about half the values are obtained in concentrates, which are afterwards smelted."

Statistics of the yearly production in this province since 1858 are given in table 10, and detailed statistics of the production by districts are shown in table 11.

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TABLE 10.
PRECIOUS METALS.
GOLD:—BRITISH COLUMBIA:—ANNUAL PRODUCTION.

Calendar Year.	Value.	Calendar Year.	Value.
1858.....	\$ 705,000	1882.....	\$ 954,085
1859.....	1,615,072	1883.....	794,252
1860.....	2,228,543	1884.....	736,165
1861.....	2,666,118	1885.....	713,738
1862.....	2,656,903	1886.....	903,651
1863.....	3,913,563	1887.....	693,709
1864.....	3,735,850	1888.....	616,731
1865.....	3,491,205	1889.....	588,923
1866.....	2,662,106	1890.....	494,436
1867.....	2,480,868	1891.....	429,811
1868.....	2,372,972	1892.....	399,525
1869.....	1,774,978	1893.....	379,535
1870.....	1,336,956	1894.....	530,530
1871.....	1,799,440	1895.....	1,266,954
1872.....	1,610,972	1896.....	1,788,206
1873.....	1,305,749	1897.....	2,724,657
1874.....	1,844,618	1898.....	2,939,852
1875.....	2,474,904	1899.....	4,202,473
1876.....	1,786,648	1900.....	4,732,105
1877.....	1,608,182	1901.....	5,318,703
1878.....	1,275,204	1902.....	5,961,409
1879.....	1,290,058	1903.....	5,873,036
1880.....	1,013,827	1904.....	5,704,908
1881.....	1,046,737	1905.....	5,902,402

TABLE 11.
PRECIOUS METALS.
GOLD:—BRITISH COLUMBIA.—PRODUCTION BY DISTRICTS—1905.

Districts.	Gold, Placer.		Gold, Lode.	
	Ounces.	Value.	Ounces.	Value.
Cariboo—		\$		\$
Cariboo Division.....	15,000	300,000		
Quesnel ".....	4,800	96,000		
Omineca ".....	500	10,000		
Caesiar—				
Atlin Lake Division . . .	25,750	475,000		
All other divisions.....	1,250	25,000	187	3,865
East Kootenay—				
Fort Steele Division. . .	708	14,160		
Other divisions.....	50	1,000	14	289
West Kootenay—				
Ainsworth Division . . .			28	579
Nelson ".....	150	3,000	17,667	365,177
Slocan and Slocan City.....			134	2,770
Trail Creek.....			129,843	2,683,855
All other divisions.....	280	5,600	2,707	55,954
Lilloet.....	1,500	30,000	125	2,584
Yale:				
Grand Forks, etc.....	90	1,800	78,689	1,626,501
Similkameen.....	57	1,140	19	393
Yale.....	230	4,600	610	12,608
Coast and other districts....	100	2,000	8,637	178,527
Totals.....	48,465	969,300	238,660	4,933,102

The following tables show the production of the Rossland mines and illustrate the average results attained during the past twelve years:—

NET PRODUCTION PER SMELTER RETURNS.

Year.	Ore, tons, 2,000 lb.	Gold, oz.	Silver, oz.	Copper, lb.	Value.
1894.....	1,856	3,723	5,357	106,229	\$ 75,510
1895.....	19,693	31,497	46,762	840,420	702,459
1896.....	38,075	55,275	89,285	1,580,635	1,243,360
1897.....	68,804	97,024	110,068	1,819,586	2,097,280
1898.....	111,282	87,343	170,804	5,232,011	2,470,811
1899.....	172,665	102,976	185,818	5,693,889	3,229,086
1900.....	217,636	111,625	167,378	2,071,865	2,739,300
1901.....	283,360	132,333	970,460	8,333,446	4,621,299
1902.....	329,534	162,146	373,101	11,667,507	4,893,395
1903.....	360,786	145,353	209,537	8,652,127	4,255,958
1904.....	312,991	133,095	181,830	7,119,876	3,760,866
1905.....	330,618	129,843	147,753	5,800,294	3,672,828

AVERAGE NET SMELTER RETURNS OR ACTUAL YIELD PER TON.

Year.	Gold.	Silver.	Copper.	Value.
	Ounces.	Ounces.	Per cent.	\$ cts.
1894.....	2·00	2·89	2·85	40·69
1895.....	1·60	2·41	2·10	35·67
1896.....	1·45	2·34	2·08	32·65
1897.....	1·42	1·60	1·32	30·48
1898.....	·78	1·54	2·35	22·10
1899.....	·596	1·07	1·65	18·70
1900.....	·513	·769	·476	12·58
1901.....	·467	3·424	1·470	16·31
1902.....	·492	1·132	1·770	14·85
1903.....	·403	·581	1·199	11·80
1904.....	·425	·581	1·137	12·01
1905.....	·393	·447	·877	11·11

SILVER.

Silver is produced in Canada in the provinces of Quebec, Ontario and British Columbia and a certain quantity is also recovered from the placer gold found in the Yukon. The total output in Canada in 1905 was 5,994,292 ounces valued at \$3,617,675 or 60·35 cents per ounce, the average value of fine silver in New York for the year. Compared with the output in 1904 an increase in quantity of 2,416,766 ounces or 67 per cent is shown and in value of \$1,570,580 or over 76 per cent. This large increase is due in a measure to the doubling of the output of argentiferous lead ore from East Kootenay, B.C., but chiefly to a large output from the recently opened up native silver deposits at Cobalt, Ontario.

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Statistics of the production of silver are shown in Table 12, while the details of provinces are given in Table 13.

TABLE 12.
PRECIOUS METALS.
SILVER.—ANNUAL PRODUCTION.

Year.	Ounces.	Value.	Average Price per ounce.	Year.	Ounce.	Value.	Average Price per ounce.
		\$	Cts.			\$	Cts.
1887....	355,083	347,271	98·0	1897....	5,558,446	3,323,395	59·79
1888....	437,232	410,998	94·0	1898....	4,452,333	2,593,929	58·26
1889....	383,318	358,785	93·6	1899....	3,411,644	2,032,658	59·58
1890....	400,687	419,118	104·6	1900....	4,468,225	2,740,362	61·33
1891....	414,523	409,549	98·0	1901....	5,539,192	3,265,354	58·95
1892....	310,651	272,130	86·0	1902....	4,291,317	2,238,351	52·16
1893....	.....	330,128	77·0	1903....	3,198,581	1,709,642	53·45
1894....	847,697	534,049	63·0	1904....	3,577,526	2,047,095	57·22
1895....	1,578,275	1,030,299	65·23	1905....	5,994,292	3,617,675	60·35
1896....	3,205,343	2,149,503	67·06				

TABLE 13.
PRECIOUS METALS.
SILVER.—PRODUCTION BY PROVINCES.

CALENDAR YEAR.	ONTARIO.		QUEBEC.		BRITISH COLUMBIA.		YUKON TERRITORY.	
	Ounces.	Value.	Ounces.	Value.	Ounces.	Value.	Ounces.	Value.
		\$		\$		\$		\$
1887..	190,495	186,304	146,898	143,666	17,690	17,301	.....	.....
1888..	208,064	195,580	149,388	140,425	79,780	74,993	.....	.....
1889..	181,609	169,986	148,517	139,012	53,192	49,787	.....	.....
1890..	158,715	166,016	171,545	179,436	70,427	73,666	.....	.....
1891..	225,633	222,926	185,584	183,357	3,306	3,266	.....	.....
1892..	41,581	36,425	191,910	168,113	77,160	67,592	.....	.....
1893..	.....	8,689	.....	126,439	.....	195,000	.....	.....
1894..	.....	.....	101,318	63,830	746,379	470,219	.....	.....
1895..	.....	.....	81,753	53,369	1,496,522	976,930	.....	.....
1896..	.....	.....	70,000	46,942	3,135,343	2,102,561	.....	.....
1897..	5,000	2,990	80,475	48,116	5,472,971	3,272,289	.....	.....
1898..	85,000	49,521	74,932	43,655	4,292,401	2,500,753	.....	.....
1899..	202,000	120,352	40,231	23,970	2,939,413	1,751,302	230,000	137,034
1900..	161,650	99,140	58,400	35,817	3,958,175	2,427,548	290,000	177,857
1901..	151,400	89,250	41,459	24,440	5,151,333	3,036,711	195,000	114,953
1902..	145,000	75,632	42,500	22,163	3,917,917	2,043,586	185,900	96,965
1903..	17,777	9,502	28,600	15,287	2,996,204	1,601,471	156,000	83,382
1904..	206,875	118,376	15,000	8,583	3,222,481	1,843,935	133,170	76,201
1905..	2,441,000	1,473,192	19,620	11,841	3,439,417	2,075,757	94,255	56,885

Since 1894, the argentiferous lead ores of British Columbia have been responsible for the greater part of the silver output in Canada,

over ninety per cent being obtained from that province. In 1905, however, the large silver production at Cobalt, Ontario, has somewhat reduced the relative importance of the western province in the total output. The proportions in this year were Ontario nearly 41 per cent, British Columbia 57 per cent.

Quebec.—The output from the Province of Quebec is represented by the small amount contained in the pyrite ore mined in the vicinity of Carleton in the Eastern Townships.

Ontario.—In this province the chief interest centres, of course, about the recent discoveries of very rich silver ores at Cobalt on the Temiscaming and Northern Ontario railway.

Descriptions of this camp are to be found in the Summary report of the Director of the Geological Survey and in a special report by Mr. W. G. Miller, the Provincial Geologist, issued by the Bureau of Mines of Ontario to which reference may be made for details.

A short visit of a few days was made by Mr. Ingall also.

The peculiar features of this camp consist in the small thickness of the veins which is, however, more than offset by their great number and wide distribution and the great richness of their contents.

In the prominence of native silver as a constituent of the ores and in their cutting a younger, flat-lying sedimentary formation over-lying Archæan rocks as well as in the presence of basic intrusives, they show some similarity to the well known silver veins of the Thunder Bay district worked for several years with startling results.

Whilst these points of similarity exist, however, there are many prominent features in which the two districts differ.

At Cobalt smaltite and niccolite are prominent whilst they were rare constituents of the Thunder bay ores in which zinc-blende and galena were most largely in evidence.

In the latter case too, an almost constant association of the rich ore bodies was the carbonaceous character of the enclosing country rocks a phenomenon not characteristic of the Cobalt camp. Then too, in the Port Arthur district the veins were much thicker and more persistent but less in number.

The similarity of the Geological formation enclosing the Cobalt veins is with the rocks exhibited in the typical Huronian district of Bruce Mines and other places along that belt rather than with the Animikie of Thunder bay.

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British Columbia.—The production by districts in British Columbia is shown in the following table.

TABLE 14.
PRECIOUS METALS.
SILVER :—BRITISH COLUMBIA.—PRODUCTION BY DISTRICTS.

District.	1902.	1903.	1904.	1905.
	Ounces.	Ounces.	Ounces.	Ounces.
Cariboo.....	4			
Cassiar.....	224	53	185	477
Kootenay East—				
Fort Steele division.....	114,506	28,537	590,186	1,137,872
Other divisions.....	27,918	59,006	20,964	16,880
Kootenay West—				
Ainsworth division.....	320,719	108,678	90,004	99,781
Nelson ".....	273,870	190,003	198,795	116,729
Slocan ".....	2,223,810	1,466,931	1,540,170	1,045,948
Trail Creek ".....	373,101	209,537	181,830	147,753
Other divisions.....	241,584	392,354	148,201	121,551
Lillooet.....		12		
Yale—				
Osoyoos division.....	219,798	320,749	245,155	630,407
Yale.....	542	15	625	3,863
Coast and other districts.....	121,841	220,329	206,366	118,156
Totals.....	3,917,917	2,996,204	3,222,481	3,439,417

According to the provincial mineralogist: "About 70 per cent of silver produced in the province was found associated with lead in argentiferous galena, the remainder being chiefly in conjunction with copper ores.

"The total silver production was 3,439,417 ounces, valued at \$1,971,818, the largest output the province has made since 1901 despite the fact of a decrease in the Slocan of 494,000 ounces. The increase is due primarily to the extensive working this year of the low grade argentiferous galena of the Fort Steele district, which district shows an increased production of nearly 550,000 ounces; and secondly to the increased tonnage of the large copper mines in the Boundary and the working of certain smaller but higher grade properties in that district, resulting in an increased silver production in the Boundary of about 385,000 ounces."

TABLE 15.

PRECIOUS METALS.

SILVER.—EXPORTS OF ORE.

Calendar Year.	Value.	Calendar Year.	Value.
1886.....	\$ 25,957	1896.....	\$ 2,271,959
1887.....	206,284	1897.....	3,576,391
1888.....	219,008	1898.....	2,902,277
1889.....	212,163	1899.....	1,623,905
1890.....	204,142	1900.....	2,341,872
1891.....	225,312	1901.....	2,026,727
1892.....	56,688	1902.....	1,820,058
1893.....	213,695	1903.....	1,989,474
1894.....	359,731	1904.....	1,904,394
1895.....	994,354	1905.....	2,777,218

Yukon.—As already stated the silver output credited to the Yukon represents that alloyed with the gold yielded by the placers worked in that district.

The discoveries of promising deposits of rich silver ores in the most southerly portion of the Territory on the Windy Arm of Tagish lake, seem to give promise of another fruitful source of the metal. These discoveries are described by Mr. R. G. McConnell in a bulletin recently issued by the Geological Survey.

According to his description there would seem to be a series of strong and persistent veins carrying silver in the form of sulph-antimonides and sulph-arsenides with some native silver, argentite, etc., accompanied by sulphurets of copper, iron, zinc, etc.

COPPER.

The special features of interest in the copper output of Canada in 1905 were the greatly increased production of copper from the nickel copper ores of the Sudbury district, Ontario, and the continued increase in the output of the low grade copper ores of the Boundary district, British Columbia.

The higher prices ruling for copper during the year have also stimulated the exploration and development of both new and old copper properties through the Dominion, and a continuation of these prices will no doubt tend toward a considerable increase in output in the near future.

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So far, most of the ores from which copper is obtained in Canada contain considerable values in other constituents. In Quebec the copper is derived from the pyrite deposits near Sherbrooke, which are primarily mined for the manufacture of sulphuric acid but which contain also, in addition to the copper, slight values in gold and silver. The production in Ontario is still practically represented by the copper contents of the nickel-copper ores of the Sudbury district, which contain also values in gold, silver, cobalt and the platinum group of metals. In British Columbia much the greater part of the output is now derived from the low grade sulphide ores of the Boundary district, the values of which in gold and silver would enable them to be worked at a profit, it is believed, even should the price of copper fall much below its present high level.

The total production of copper in Canada, in 1905, was 48,092,753 pounds, valued at \$7,497,660, and is the highest output yet recorded, being an increase over 1904, of 6,709,031 pounds or 16.21 per cent, and more than twice the output of any year previous to 1901. The value given is at the average price for the year of refined copper in New York.

Owing to the higher prices prevailing during 1905, the increase in total value was over 41 per cent.

The production by Provinces was as follows :—

Quebec.....	1,621,243 lbs.
Ontario.....	8,779,259 "
British Columbia.....	37,692,251 "
Total.....	48,092,753 "

It will thus be seen that of the total output, British Columbia contributed in 1905, over 78 per cent., Ontario over 18 per cent. and Quebec a little over three per cent.

Statistics of production, exports and imports, are given in the following tables:—

TABLE I.
COPPER.
ANNUAL PRODUCTION.*

Calendar Year.	Lbs.	Increase or Decrease.		Value.	Increase or Decrease.		Average Price per Pound.
		Lbs.	%		\$	%	
				\$			Cts
1886.....	3,505,000			385,550			11·00
1887.....	3,260,424	244,576	6·99	366,798	18,752	4·86	11·25
1888.....	5,562,864	<u>2,302,440</u>	<u>70·60</u>	927,107	<u>560,309</u>	<u>152·70</u>	16·66
1889.....	6,809,752	<u>1,246,888</u>	<u>22·40</u>	936,341	<u>9,234</u>	<u>0·99</u>	13·75
1890.....	6,013,671	796,081	11·69	947,153	<u>10,812</u>	<u>1·15</u>	15·75
1891.....	9,529,401	<u>3,515,730</u>	<u>58·46</u>	1,226,703	<u>279,550</u>	<u>29·51</u>	12·87
1892.....	7,087,275	2,442,126	25·63	818,580	408,123	33·27	11·55
1893.....	8,109,856	<u>1,022,381</u>	<u>14·40</u>	871,809	<u>53,229</u>	<u>6·50</u>	10·75
1894.....	7,708,789	401,067	4·94	736,960	134,849	15·46	9·56
1895.....	7,771,639	<u>62,850</u>	<u>·81</u>	836,228	<u>99,268</u>	<u>13·47</u>	10·76
1896.....	9,393,012	<u>1,621,373</u>	<u>20·86</u>	1,021,960	<u>185,732</u>	<u>22·21</u>	10·88
1897.....	13,300,802	<u>3,907,790</u>	<u>41·60</u>	1,501,660	<u>479,700</u>	<u>46·94</u>	11·29
1898.....	17,747,136	<u>4,446,334</u>	<u>33·43</u>	2,134,980	<u>633,320</u>	<u>42·17</u>	12·03
1899.....	15,078,475	2,668,661	15·04	2,655,319	<u>520,339</u>	<u>24·37</u>	17·61
1900.....	18,937,138	<u>3,858,663</u>	<u>25·59</u>	3,065,922	<u>410,603</u>	<u>15·46</u>	16·19
1901.....	37,827,019	<u>18,889,881</u>	<u>99·75</u>	6,096,581	<u>3,030,659</u>	<u>98·84</u>	16·117
1902.....	38,804,259	<u>977,240</u>	<u>2·58</u>	4,511,383	1,585,198	26·00	11·626
1903.....	42,684,454	<u>3,880,195</u>	<u>10·00</u>	5,649,487	<u>1,138,104</u>	<u>25·23</u>	13·235
1904.....	41,383,722	1,300,732	3·05	5,306,635	342,852	6·07	12·823
1905.....	48,092,753	<u>6,709,031</u>	<u>16·21</u>	7,497,660	<u>2,191,025</u>	<u>41·29</u>	15·590

* The production is altogether represented by the copper contained in ore, matte, &c., produced and shipped valued at the average market price for the year for fine copper in New York.

Note.—In the above table, increases are shown underlined, and decreases in the ordinary way.

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TABLE 2.

COPPER.

EXPORTS OF COPPER IN ORE, MATTE, ETC.

Calendar Year.	Pounds.	Value.
		\$
1885.....		262,600
1886.....		249,259
1887.....		137,966
1888.....		257,260
1889.....		168,457
1890.....		398,497
1891.....		348,104
1892.....		277,632
1893.....	4,792,201	269,160
1894.....	1,625,389	91,917
1895.....	3,742,352	236,965
1896.....	5,462,052	281,070
1897.....	14,022,610	850,336
1898.....	11,572,381	840,243
1899.....	11,371,766	1,199,908
1900.....	23,631,523	1,741,885
1901.....	32,488,872	3,404,908
1902.....	26,004,498	2,476,516
1903.....	38,364,676	3,873,827
1904.....	38,553,282	4,216,214
1905.....	40,740,861	5,443,873

TABLE 3.

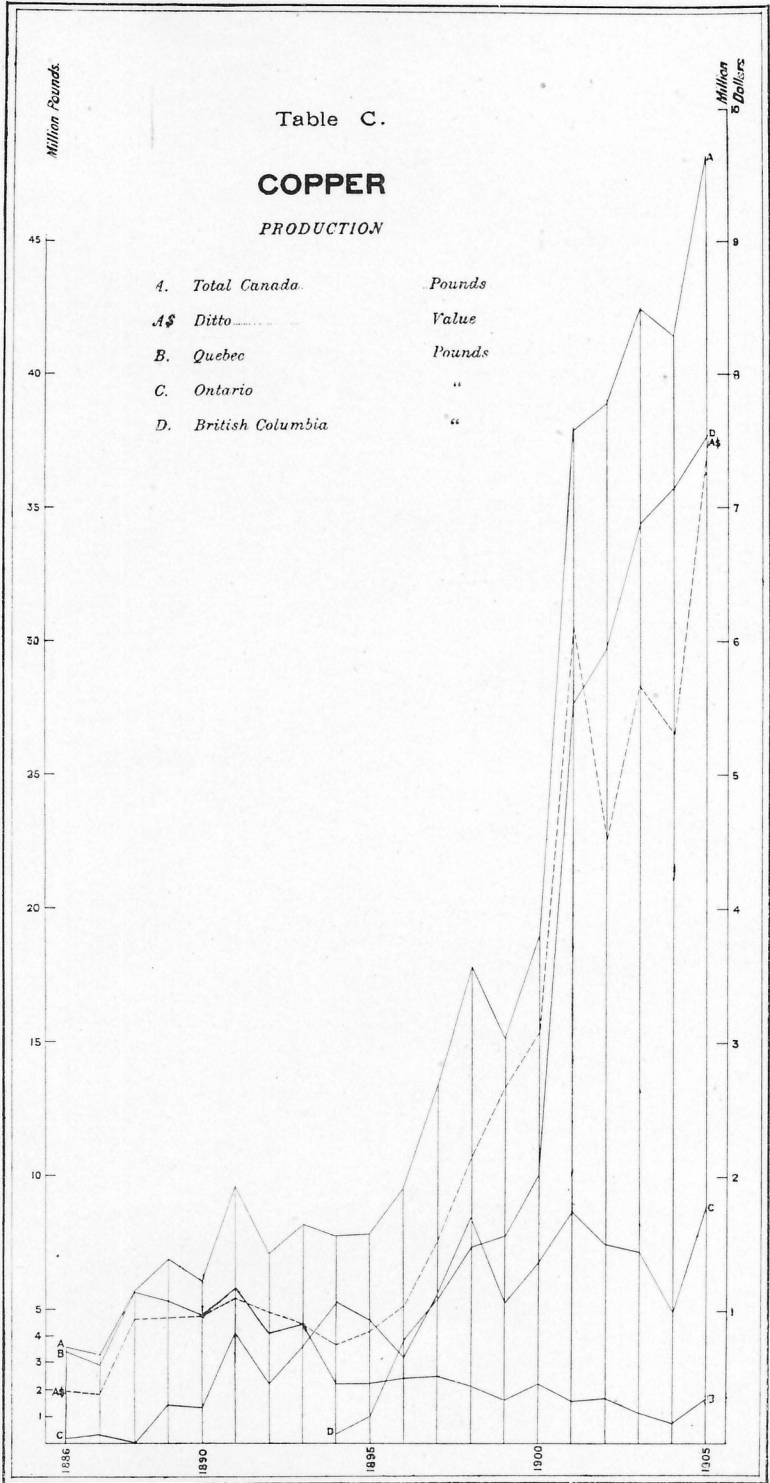
COPPER.

IMPORTS OF PIGS, OLD, SCRAP, ETC.

Fiscal Year.	Lbs.	Value.	Fiscal Year.	Lbs.	Value.
		\$			\$
1880.....	31,900	2,130	1893.....	168,300	16,331
1881.....	9,800	1,157	1894.....	101,200	7,397
1882.....	20,200	1,984	1895.....	72,062	6,770
1883.....	124,500	20,273	1896.....	86,905	9,226
1884.....	40,200	3,180	1897.....	49,000	5,449
1885.....	28,600	2,016	1898.....	1,050,000	80,000
1886.....	82,000	6,969	1899.....	1,655,000	246,740
1887.....	40,100	2,507	1900.....	1,144,000	180,990
1888.....	32,300	2,322	1901.....	951,500	152,274
1889.....	32,300	3,288	1902.....	1,767,200	225,832
1890.....	112,200	11,521	1903.....	2,038,400	252,594
1891.....	107,800	10,452	1904.....	2,115,300	270,315
1892.....	343,600	14,894			
1905	{ Copper, old and scrap or in blocks Duty free 222,000 { Copper in pigs or ingots..... " 1,722,400				
	Total, 1905.....			1,944,400	266,548

TABLE 4.
COPPER.
IMPORTS OF MANUFACTURES.

Fiscal Year.		Value.		
		\$		
1880	.....			123,061
1881	.....			159,163
1882	.....			220,235
1883	.....			247,141
1884	.....			134,534
1885	.....			181,469
1886	.....			219,420
1887	.....			325,365
1888	.....			303,459
1889	.....			402,216
1890	.....			472,668
1891	.....			563,522
1892	.....			422,870
1893	.....			458,715
1894	.....			175,404
1895	.....			251,615
1896	.....			285,220
1897	.....			264,587
1898	.....			786,529
1899	.....			551,586
1900	.....			1,090,280
1901	.....			951,045
1902	.....			1,281,522
1903	.....			1,291,635
1904	.....			1,191,610
1905.	Copper in bolts, bars and rods, in coils, or otherwise in lengths not less than 6 feet, unmanufactured.....	Duty.	Pounds.	\$
		Free.	8,634,900	1,231,729
	Copper, in strips, sheets or plates, not planished or coated, &c	"	2,054,600	347,877
	Copper tubing in lengths not less than 6 feet, and not polished, bent or otherwise manufactured	"	326,154	77,587
	Copper rollers, for use in calico printing, imported by calico printers for use in their own factories.	"		9,762
	Copper and manufactures of :—			
	Nails, tacks, rivets and burrs or washers..	30 p. c.		3,043
	Wire, plain, tinned or plated.....	15 "	176,744	24,766
Wire cloth, &c.....	25 "		1,870	
All other manufactures of, N.O.P.....	30 "		79,247	
Total				1,775,881



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Quebec.—As usual, the copper production in Quebec was derived chiefly from the pyrites ores of the Eastern Townships, which are mined primarily for the manufacture of sulphuric acid.

The Ascot mine on the west half of lot 8. Con. VIII of Ascot was worked for a short time, producing a small quantity of good grade ore which was treated at Capelton.

Statistics of production are given in table 5 below.

TABLE 5,
COPPER.
QUEBEC :—PRODUCTION.

Calendar Year.	Pounds.	Value.
		\$
1886.....	3,340,000	367,400
1887.. ..	2,937,900	330,514
1888.....	5,562,864	927,107
1889.	5,315,000	730,813
1890.	4,710,606	741,920
1891.	5,401,704	695,469
1892.....	4,883,480	564,042
1893.....	4,468,352	480,348
1894.....	2,176,430	208,067
1895.....	2,242,462	241,288
1896.....	2,407,200	261,903
1897.....	2,474,970	279,424
1898.....	2,100,235	252,658
1899.....	1,632,560	287,494
1900.....	2,220,000	359,418
1901.....	1,527,442	246,178
1902.	1,640,000	190,666
1903.....	1,152,000	152,467
1904.....	760,000	97,445
1905... ..	1,621,243	252,752

Ontario—Statistics of the production of copper in Ontario since 1886 are shown in Table 6. This has nearly all been derived from the nickel-copper ores of Sudbury. The total quantity of nickel copper ore mined during the year was 277,766 tons, while 251,421 tons were smelted, producing 17,388 tons of high grade matte. The quantity of matte shipped during the year was 17,405 tons while 2,675 tons remained in stock at the close of the year. The copper contents of the matte shipped, including a small output of copper from a couple of mines in process of development was 8,779,259 pounds valued at \$1,386,686.

Two copper properties were being developed at Massey station during the year, but these have not yet become serious factors so far as output is concerned.

TABLE 6.
COPPER.
ONTARIO :—PRODUCTION.

Calendar Year.	Pounds.	Value.
		\$
1886.....	165,000	18,150
1887.....	322,524	36,284
1888.....	Nil.	Nil.
1889.....	1,466,752	201,678
1890.....	1,303,065	205,233
1891.....	4,127,697	531,234
1892.....	2,203,795	254,538
1893.....	3,641,504	391,461
1894.....	5,207,679	497,854
1895.....	4,576,337	492,414
1896.....	3,167,256	344,598
1897.....	5,500,652	621,023
1898.....	8,375,223	1,007,539
1899.....	5,723,324	1,007,877
1900.....	6,740,058	1,091,215
1901.....	8,695,831	1,401,507
1902.....	7,408,202	1,861,278
1903.....	7,172,533	949,285
1904.....	4,913,594	630,070
1905.....	8,779,259	1,386,686

British Columbia—As compared with the previous year, the copper production in British Columbia shows an increase in 1905 of over 5 per cent., the total output being 37,692,251 pounds. Of this amount, over 73 per cent was derived from the Boundary district, chiefly from the Granby mines, at Phoenix, the B.C. Copper Company (Mother Lode) at Deadwood and the Dominion Copper Company (Brooklyn, Stemwinder and Rawhide) at Phoenix; 15 per cent. was obtained from the Rossland Camp, the principal mines contributing being Le Roi, Centre Star, War Eagle, Le Roi No. 2, and Jumbo. Nine per cent.

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was obtained from the Coast districts, chiefly contributed by the Tye and Marble Bay Mines.

Statistics of production are shown in tables 7 and 8.

TABLE 7.

COPPER.

BRITISH COLUMBIA—PRODUCTION.

Calendar Year.	Copper contained in ores, matte, &c.	Increase.		Value.
		Lb.	Lb. %	
1894	324,680			\$ 31,039
1895	952,840	628,160	193	102,526
1896	3,818,556	2,865,716	301	415,459
1897	5,325,180	1,506,624	39	601,213
1898	7,271,678	1,946,498	36	874,783
1899	7,722,591	450,913	6	1,359,948
1900	9,977,080	2,254,489	29	1,615,289
1901	27,603,746	17,626,666	177	4,448,896
1902	29,636,057	2,032,311	7	3,445,488
1903	34,359,921	4,723,864	16	4,547,735
1904	35,710,128	1,350,207	3·7	4,579,110
1905	37,692,251	1,982,123	5·6	5,876,222

IRON.

Iron Ore.—The production of iron ore in Canada in 1905 is estimated at about 291,097 tons as compared with 219,046 tons in the previous year, an increase of 72,051 tons, or over 32 per cent.

Although there are numerous iron prospects and properties of possible great potential value in Canada, the actual output of ore is obtained from a very few mines.

In Nova Scotia the only iron mining done was by the Londonderry Iron and Mining Company, at their mines near Londonderry, Colchester county, and Torbrook, Annapolis county. The total output was 84,952 tons and was all utilized at the Company's blast furnaces at Londonderry.

In Quebec the bog ores of Champlain, Joliette, Drummond, and Nicolet counties, were as usual mined and used in the furnaces at Radnor Forges and Drummondville, the output of these ores for the year being 12,681 tons.

In Ontario comparatively small shipments were made from the Radnor mine, Eganville, Renfrew county, the greater part of the output coming from the Helen mine at Michipicoten. The total output was 193,464 tons. The output of the Radnor mine was used in the furnaces at Radnor Forges, Que., while of the output of the Helen mine, a little over 60 per cent. was exported to lower Lake Erie ports, the balance going chiefly to Hamilton, Ont.

No production was recorded for British Columbia.

TABLE 1.

IRON.

PRODUCTION OF ORE BY PROVINCES.

Calendar Year.	Nova Scotia.	Quebec.	Ontario.	British Columbia.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.
1886.....	44,388	.....	16,032	3,941	64,361
1887.....	43,532	13,401	16,598	2,796	76,330
1888.....	42,611	10,710	16,894	8,872	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.....	58,810	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

TABLE 2.

IRON.

NOVA SCOTIA:—ANNUAL PRODUCTION OF ORE.

(Previous to 1886).

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

The exports of iron ore from Canada, as compiled from Custom-Reports, are shown in tables 3 and 4 for the calendar and fiscal years respectively. Nearly all the iron ore exported goes to the United States. Table 4a, which has therefore been added to show the quantity of iron ores imported into the United States from Canada, has been compiled from 'The Foreign Commerce and Navigation of the United States' published at Washington.

A comparison of table 4 and 4a, shows large discrepancies for the years 1901 to 1905, inclusive. The Canadian figures of exports for these years are evidently much too high, and an investigation has shown that an error had crept into the Customs returns, owing to a duplication of certain entries.

TABLE 3.

IRON.

EXPORTS OF IRON ORE.

Calendar Year.	Tons.	Value.	Calendar Year.	Tons.	Value.
		\$			
1893.....	2,419	7,590	1900.....	5,527	13,511
1894.....		21,294	1901*.....	306,199	762,283
1895.....	1,571	3,909	1902*.....	428,901	1,065,019
1896.....	1,033	1,911	1903*.....	368,233	922,571
1897.....	403	811	1904*.....	168,828	401,738
1898.....	182	278	1905*.....	168,289	407,881
1899.....	4,145	9,538			

*The export figures for these years are incorrect owing to a duplication of entries in Customs returns.

TABLE 4.

IRON.

EXPORTS OF IRON ORE.

Fiscal Year ending June 30.	Tons.	Value.	Fiscal Year.	Tons.	Value.
		\$			\$
1879.....	3,562	7,530	1893.....	7,811	26,114
1880.....	30,524	76,474	1894.....	1,859	9,026
1881.....	44,677	114,850	1895.....	2,315	5,743
1882.....	43,835	135,463	1896.....	14	35
1883.....	44,914	138,775	1897.....	1,320	2,492
1884.....	25,308	66,549	1898.....	260	402
1885.....	54,367	132,074	1899.....	1,849	4,968
1886.....	7,542	23,039	1900.....	4,327	7,689
1887.....	23,345	71,934	1901*.....	58,401	150,657
1888.....	13,544	39,945	1902*.....	525,983	1,303,901
1889.....	24,752	60,289	1903*.....	293,510	733,230
1890.....	13,811	31,376	1904*.....	233,850	579,883
1891.....	14,648	32,582	1905*.....	224,908	540,909
1892.....	7,707	36,935			

*See foot note to table 3.

TABLE 4a.

IRON.

IMPORTS OF IRON ORE INTO THE UNITED STATES FROM CANADA.*

Year ending June 30.	Tons.	Year ending June 30.	Tons.
1893..	6,880	1900.....	3,997
1894..	269	1901.....	30,762
1895..	2,394	1902.....	276,363
1896..	35	1903.....	129,219
1897..	2,263	1904.....	113,388
1898..	1,172	1905.....	107,358
1899..	2,308		

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

Pig iron.—A very substantial growth has been made in the pig iron industry in Canada in recent years, though unfortunately a very large proportion of the iron ore used has been imported. The total quantity of the pig iron made in Canada in 1905, from both Canadian and imported ores was 525,306 tons, valued at the furnaces at \$6,475,186 or an average of \$12.33 per ton. The output in 1904 was 303,454 tons valued at \$3,687,985, or an average of \$12.15 per ton, so that an increase is shown in 1905 of 221,852 tons or over 73 per cent. Five years ago the production was about 100,000 tons, while ten years ago it was less than 50,000. Statistics of the production of pig iron, together with the iron ore, fuel and flux used, are given in table 5 for the years 1887 to 1905, inclusive. Previous to 1896 the pig iron manufactured was entirely from Canadian ore. Since that date, however, increasing quantities of imported ore have been used, which will be found separately stated in the table.

It is a matter of regret that an industry of such increasing importance, and to which so much assistance has been given, should be dependent, to such an extent, on imported raw material. A total of 978,821 tons of iron were charged to Canadian blast furnaces in 1905, and of this amount 861,847 tons, or 88 per cent, were imported chiefly from Newfoundland and the south shore of Lake Superior. The Canadian ore charged in 1905 amounted to only 116,974 tons compared with 180,932 tons in 1904, and 156,613 tons in 1901, while as long ago as 1893, 124,053 tons of Canadian ore were used and 60,432 tons in 1887. Considerable attention, however, is being paid at present to Canadian iron ore deposits, and it is quite possible that in the near future an increasing proportion of these ores will be used.

TABLE 5.
IRON.
PIG IRON PRODUCTION : CONSUMPTION OF ORE, FUEL, &c.

CALENDAR YEAR.	IRON ORE CONSUMED.		FUEL CONSUMED.						FLUX CONSUMED.		PIG IRON MADE.		
	Tons.	Value.	Charcoal.		Coke.		Coal.		Tons.	Value.	Tons.	Value.	Value per ton.
			Bushels.	Value.	Tons.	Value.	Tons.	Value.					
1887.....	60,434	\$ 130,808	940,400	\$ 48,593	30,248	\$ 89,123	3,333	\$ 5,877	17,171	\$ 17,500	24,827	\$ 866,192	\$ 14.75
1888.....	54,956	102,343	804,286	41,800	28,051	82,986	2,197	4,709	16,857	16,533	21,799	313,235	14.37
1889.....	65,670	126,064	755,800	41,568	33,289	94,791	3,044	6,525	22,122	21,909	25,921	499,872	19.28
1890.....	57,304	117,880	589,860	29,498	32,832	97,659	1,241	2,638	18,478	18,361	21,772	331,688	15.23
1891.....	60,935	130,955	441,812	22,091	30,626	98,402	2,170	2,868	11,377	11,546	23,891	368,901	15.44
1892.....	96,948	250,968	1,121,365	78,291	50,882	152,311	1,740	1,797	22,967	21,687	42,443	637,421	15.02
1893.....	124,053	296,979	1,302,720	90,976	58,711	163,849	6,621	13,539	27,797	27,519	55,947	790,283	14.13
1894.....	108,871	223,861	1,173,970	53,958	52,373	142,303	7,653	14,571	35,101	34,847	49,967	646,447	12.94
1895.....	93,208	218,386	789,561	31,582	48,540	139,475	3,089	5,396	31,565	29,922	42,454	586,736	13.82
1896.....	(a) 96,560	200,887	756,600	32,256	(a) 48,660	106,939	1,407	2,288	37,462	36,140	67,268	924,129	13.74
	(b) 46,300	100,205			(b) 33,990	109,253			31,273	30,258	58,007	738,701	12.73
1897.....	(a) 53,658	131,705	1,031,800	43,230	(b) 27,810	94,553			33,913	31,153	77,015	912,395	11.85
	(b) 55,722	138,504			(a) 31,952	63,904			51,826	44,286	102,940	1,377,306	13.38
1898.....	(a) 57,881	151,760	836,400	41,820	(a) 50,407	158,783			52,966	39,332	96,575	1,501,698	15.55
	(b) 77,107	213,165			(b) 44,844	134,532			169,369	183,162	274,376	3,512,923	12.80
1899.....	(a) 66,384	216,322	1,928,025	87,858	(b) 64,648	193,944			293,594	219,295	357,002	4,243,541	11.85
	(b) 120,650	402,860			(a) 45,021	180,084			277,462	249,251	297,885	3,742,710	12.56
1900.....	(a) 71,341	184,191	1,799,737	82,408	(a) 59,345	255,892			211,278	177,595	303,454	3,687,985	12.15
	(b) 113,042	351,382			(b) 205,796	539,328	2,039	6,117	369,715	282,711	525,306	6,475,186	12.83
1901.....	(a) 156,613	544,144	1,835,736	100,978	(a) 115,367	497,386			5,006	219,295	297,885	3,742,710	12.56
	(b) 361,010	846,398			(b) 360,593	898,518			293,594	219,295	357,002	4,243,541	11.85
1902.....	(a) 125,664	429,753	2,146,623	118,275	(a) 112,314	494,433			211,278	177,595	303,454	3,687,985	12.15
	(b) 559,381	964,979			(b) 350,190	819,019			369,715	282,711	525,306	6,475,186	12.83
1903.....	(a) 82,035	247,229	2,322,030	159,717	(b) 96,540	356,091			277,462	249,251	297,885	3,742,710	12.56
	(b) 485,911	823,147			(a) 257,152	729,585			211,278	177,595	303,454	3,687,985	12.15
1904.....	(a) 180,932	489,687	3,477,470	191,404	(b) 130,210	551,445			369,715	282,711	525,306	6,475,186	12.83
	(b) 454,671	922,594			(a) 365,897	962,518			369,715	282,711	525,306	6,475,186	12.83
1905.....	(a) 116,974	351,965	4,404,394	222,156	(b) 243,882	1,233,515			369,715	282,711	525,306	6,475,186	12.83
	(b) 861,847	1,802,539											

(a) Canadian. (b) Imported.

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In the tabulated statement showing the mineral production of Canada, the production from Canadian ore only is given. This has been arrived at by separating the total production at each furnace into two classes, viz. : pig iron from Canadian ore and pig iron from imported ore, the separation being made on the basis of the Canadian and imported ore entering into the production of pig iron at each respective furnace.

The production for the past ten years separated in this way has been as follows :—

Calendar Year.	Pig iron from Canadian ore.	Pig iron from Imported ore.
	Tons.	Tons.
1896.....	40,720	26,548
1897.....	26,200	31,807
1898.....	30,553	46,462
1899.....	34,244	68,699
1900.....	35,387	61,188
1901.....	83,100	191,276
1902.....	71,664	286,238
1903.....	42,052	255,833
1904.....	68,297	235,157
1905.....	68,170	457,136

During the year there were thirteen furnaces in blast for varying periods, operated by the following companies :—

Dominion Iron and Steel Company, Sydney, C.B.—Four completed furnaces of which three were operated during the year.

Nova Scotia Steel and Coal Company, New Glasgow, N.S.—One furnace at Sydney Mines, C.B.

Londonderry Iron and Mining Company, Ltd., Londonderry, N.S.—Furnace plant at Londonderry.

Canada Iron Furnace Co. Ltd., Montreal, Que.—Furnace plants at Radnor Forges, Que., and Midland, Ont.

John McDougall and Co., Montreal, Que.—Two small furnaces at Drummondville, Que.

Deseronto Iron Co., Ltd., Deseronto, Ont.—Furnace plant at Deseronto.

Hamilton Steel and Iron Co., Ltd.—Furnace near Hamilton, Ont.

The Algoma Steel Co., Ltd., (Lake Superior Corporation).—Two furnaces at Steelton, Ont., near Sault Ste. Marie.

Of fourteen completed furnaces on December 31st, 1905, nine were in blast and five were idle. The total capacity of the fourteen furnaces if in continuous operation, would be over 800,000 tons per annum.

The statistics of the production of pig iron and steel and of rolled iron and steel in Canada as well as in the United States, are admirably presented in the Annual Statistical Report of the American Iron and Steel Association, and the following information concerning the production of steel and rolled iron and steel in Canada, is taken from the above mentioned report for 1905 :—

‘The production of all kinds of steel ingots and castings in Canada in 1905, was much the largest in the history of the Dominion, and exceeded by 221,412 tons that of 1902, the year of next largest production, when 182,037 tons were made. As compared with 1904, the increase amounted to 254,665 tons, or over 171 per cent. Bessemer and open hearth steel ingots and castings were made in both 1904 and 1905, the production of Bessemer steel amounting to 164,488 tons in 1905, against 42,738 tons in 1904, and open hearth steel to 238,681 tons in 1905, against 106,046 tons in 1904. Almost all the open hearth steel reported in 1904 and 1905, was made by the basic process. The Bessemer steel was all made by the acid process. A few hundred tons of steel castings were made in 1905 by minor processes. All the steel castings made in 1905 by various processes amounted to 9,394 tons against 6,505 tons in 1904. Canada does not make crucible steel ingots or castings.

The following table gives the production of all kinds of steel ingots and castings in Canada from 1894 to 1905, in gross tons.

Years.	Gross Tons.
1894.....	25,685
1895.....	17,000
1896.....	16,000
1897.....	18,400
1898.....	21,540
1899.....	22,000
1900.....	23,577
1901.....	26,084
1902.....	182,037
1903.....	181,514
1904.....	148,784
1905.....	403,449

Production of Rolled Iron and Steel in Canada.

The production of finished rolled iron and steel in Canada in 1905 was also much larger than in any previous year and amounted to 385,826 tons, as compared with 180,038 tons in 1904, the year of next largest production, an increase of 205,788 tons, or over 114 per cent.

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The following tables gives the production of all kinds of finished rolled iron and steel in Canada from 1895 to 1905, in gross tons. Rolled forging blooms and forging billets are included for 1905.

Years.	Gross Tons.
1895.....	66,402
1896.....	75,043
1897.....	77,021
1898.....	90,303
1899.....	110,642
1900.....	100,690
1901.....	112,007
1902.....	161,485
1903.....	129,516
1904.....	130,038
1905.....	385,826

The production of Bessemer steel rails in 1905, amounted to 133,690 gross tons, as compared with 35,155 tons in 1904; open-hearth steel rails. 45,195 tons, against 1,061 tons in 1904; structural shapes 885 tons, against 447 tons in 1904; nail and spike plate 4,110 tons, against 5,030 tons in 1904; plates and sheets 4,944 tons, against 3,102 tons in 1904; all other finished roiled products, excluding muck and scrap bars, blooms, billets, sheet bars, and other unfinished forms, but including for 1905, 1,120 tons of forging blooms for billets 197,002 tons, against 135,243 tons in 1904; total 385,826 tons, against 180,038 tons in 1904. Of the 385,826 tons of finished iron and steel reported for 1905, about 318,405 tons were rolled from steel and 67,421 tons from iron, as compared with about 126,850 tons rolled from steel and about 53,188 tons rolled from iron in 1904.

In 1905 the rolling mills and steel works in Canada which operated cut nail or wire nail factories, produced 366,800 kegs of cut nails and wire nails of 100 pounds each, as compared with 324,000 kegs in 1904.

On December 31, 1905, there were 21 completed rolling mills and steel works in Canada. In addition 1 plant was being built and two plants were projected. Of the completed plants, 3 were equipped for the manufacture of steel castings only, one for the manufacture of open hearth steel ingots only, 5 for the manufacture of Bessemer or open hearth steel ingots and rolled products and 12 for the manufacture of rolled products only. The building plant was being equipped for the manufacture of black plates and tinplates and tern plates.

Of the 21 completed rolling mills and steel works in Canada on December 31, 1905, 4 were located in Nova Scotia, 5 in Quebec, 10 in Ontario, 1 in New Brunswick and 1 in Manitoba. The building plant and the two projected plants, are also in Ontario.

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 Act of 1903 also provides for the gradual extinguishment of the bounties authorized in 1897 as follows:—

Périod.	On steel ingots, puddled iron bars, and pig iron from Cana- dian ore.	On pig iron from foreign ore.
	Per ton.	Per ton.
From July 1, 1903 to June 30, 1904.....	\$ 2 70	\$ 1 80
" 1904 to June 30, 1905.....	2 25	1 50
" 1905 to June 30, 1906.....	1 65	1 10
" 1906 to June 30, 1907.....	1 05	0 70

The payments by the Dominion government on account of iron and steel bounties during the fiscal year ending June 30, 1905, were as follows, the figures having been compiled from the Auditor General's Reports for 1905.

BOUNTIES PAID ON PIG IRON MANUFACTURED IN CANADA, FISCAL YEAR, 1904-5.

Company.	On Pig Iron from Canadian Ore.		On Pig Iron from Imported Ore.		Total Bounties.
	Tons.	Bounties.	Tons.	Bounties.	
		\$ cts.		\$ cts.	\$ cts.
Algoma Steel Co., Ltd.	165'66	372 80	70,434'95	105,652 36	106,025 16
Canada Iron Furnace Co., Ltd.—					
Midland, Ont.	1,506'29	3,389 15	34,666'18	51,999 27	55,388 42
Radnor Forges, Que.	5,145'96	11,578 44	2,236'25	3,354 41	14,932 85
Deseronto Iron Co., Ltd.	571'00	1,284 75	10,371'00	15,556 50	16,841 25
Dominion Iron and Steel Co., Ltd.	216'45	487 01	131,878'81	197,818 22	198,305 23
Electric Reduction Co., Buckingham, Que.	176'51	397 15	.....	.....	397 15
Hamilton Steel and Iron Co., Ltd.	29,319'31	65,968 43	32,627'07	48,940 60	114,909 03
John McDougall & Co.	2,485'53	5,592 44	.....	.....	5,592 44
Londonderry Iron & Mining Co., Ltd.	19,864'77	44,695 72	.....	.....	44,695 72
Nova Scotia Steel and Coal Co., Ltd.	45,053'15	67,579 73	67,579 73
	59,451'48	133,765 89	327,267'41	490,901 09	624,666 98

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BOUNTY ON STEEL INGOTS AND PUDDLED IRON BARS, FISCAL YEAR, 1904-5.

Company.	Tons.	Bounty.
		\$ cts.
Algoma Steel Company, steel ingots	132,858·34	298,931 25
Dominion Iron and Steel Company, steel ingots	113,893·32	256,259 98
" " " steel ingots made during year 1903-4	825·71	2,229 42
Hamilton Steel and Iron Co., Ltd., steel ingots	26,981·90	60,709 26
" " " puddled iron bars	3,508·81	7,894 83
Nova Scotia Steel and Coal Co., Ltd., steel ingots	25,861·56	58,188 52
	303,929·64	684,213 26

BOUNTIES PAID ON ARTICLES MANUFACTURED FROM STEEL, FISCAL YEAR, 1904-5.

Company.	Tons.	Bounty.
		\$ cts.
Dominion Iron and Steel Co., Ltd., Sydney, C.B.— Rolled round steel wire rods at \$6	36,680·93	220,085 62
Hamilton Iron and Steel Co., Ltd.— Rolled angle bars at \$3	1,493·48	4,480 44
Montreal Rolling Mills Co.— Rolled round wire rods at \$6	213·35	1,280 10
Nova Scotia Steel and Coal Co., Ltd.— Rolled angles at \$3	1,740·92	5,222 77
Rolled plates, at \$3	84·77	254 31
.....		231,323 24

The total amount of bounties on iron and steel, paid by the Dominion Government during the fiscal year, ending June 30th, 1905, was therefore as follows :

Bounties on pig iron	\$ 624,666 98
" " on steel ingots and puddled iron bars	684,213 26
" " on articles manufactured from steel	231,323 24
	<hr/>
	1,540,203 48

Total bounties paid to each company—Fiscal year ending June 30th, 1905.

Algoma Steel Co., Ltd.....	\$ 404,956	41
Canada Iron Furnace Co., Ltd.....	70,321	27
Deseronto Iron Co., Ltd.....	16,841	25
Dominion Iron and Steel Co., Ltd.....	676,880	25
Electric Reduction Co., Ltd.....	397	15
Hamilton Steel & Iron Co., Ltd.....	187,993	56
John McDougall & Co.....	5,592	44
Londonderry Iron & Mining Co., Ltd.....	44,695	72
Montreal Rolling Mills Co....	1,280	10
Nova Scotia Steel & Coal Co., Ltd.....	131,245	33
Total.....	\$1,540,203	48

Table 6, illustrates the extent of the foreign trade of the country in regard to iron and steel products and machinery &c., made therefrom.

TABLE 6.

IRON.

EXPORTS OF IRON AND STEEL GOODS, THE PRODUCT OF CANADA.

Calendar Year 1905.	Quantity.	Value.
		\$
Stoves..... No.	986	11,637
Castings, N.E.S..... \$		64,970
Pig iron..... Tons.	866	22,284
Machinery, N.E.S..... \$		393,170
Sewing machines..... No.	977	21,972
Typewriters..... "	4,100	138,941
Scrap iron and steel..... Cwt.	482,179	240,105
Hardware..... \$		170,262
Steel and manufactures of..... \$		224,217
Total.....		1,287,558

The Canadian consumption of iron and steel products, is illustrated in the following tables, Nos. 7, 8, 9, 10a, 10b and 11. The first three of these deal with the cruder forms of the metal the next two, with the manufactured articles wholly or largely composed of iron and steel, while the last table summarizes all the preceeding ones. They all cover the fiscal year ending June 30, 1905.

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TABLE 7.

IRON.

IMPORTS OF IRON, PIG, SCRAP, &C.

Fiscal Year.	Pig Iron.		Charcoal Pig Iron.		Old and Scrap Iron.		Wrought Scrap and Scrap Steel.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
1880	(a) 23,159	\$ 371,956	.....	.....	928	14,042	.....	.....
1881	(a) 43,630	715,997	.....	.....	584	8,807	.....	.....
1882	56,594	811,221	6,837	211,791	1,327	20,406	.....	.....
1883	75,295	1,085,755	2,198	58,994	709	7,776	.....	.....
1884	49,291	653,708	2,893	66,602	3,136	44,223	.....	.....
1885	42,279	545,426	1,119	27,333	3,552	46,275	.....	.....
1886	42,463	528,483	3,185	60,086	10,151	158,100	.....	.....
1887	46,295	554,388	3,919	77,420	17,612	220,167	(b) 79	1,086
Pig Iron, &c. (c)								
	Tons.	Value.						
		\$						
1888	48,973	648,012	.....	.....	.....	.....	23,293	297,496
1889	72,115	864,752	.....	.....	.....	.....	26,794	335,090
1890	87,613	1,148,078	.....	.....	.....	.....	47,846	678,574
1891	81,317	1,085,929	.....	.....	.....	.....	43,967	652,842
1892	68,918	886,485	.....	.....	.....	.....	32,627	433,695
Pig Iron.			Charcoal Pig Iron.		Cast Scrap Iron.			
	Tons.	Value.	Tons.	Value.	Tons.	Value.		
		\$		\$		\$		
1893	56,849	682,209	5,944	84,358	729	9,317	45,459	574,809
1894	42,376	483,787	2,906	34,968	78	771	30,850	369,682
1895	31,637	341,259	2,780	31,171	643	4,347	23,390	244,388
1896	36,131	394,591	917	11,726	93	741	13,607	157,996
1897	25,766	291,788	2,936	35,373	238	1,362	7,903	93,541
1898	37,186	382,103	2,250	23,533	1,559	13,251	(e) 48,903	534,577
1899	44,261	452,911	1,955	19,123	2,378	22,594	(e) 28,352	301,268
1900	49,767	811,490	1,816	38,736	13,747	150,681	(e) 38,753	638,505
1901	35,293	548,033	490	7,121	4,499	51,032	(e) 24,773	242,189
1902	39,978	585,077	38	726	3,048	38,958	(e) 36,150	520,909
1903	91,730	1,338,574	(f) 882	16,352	7,137	94,028	(e) 43,115	670,402
1904	62,515	894,728	.....	.....	.....	11,385	(e) 21,027	298,806
1905	(d) 71,005	857,879	.....	.....	(f) 6,533	75,521	(e) 15,479	210,900

(a) Comprises pig-iron of all kinds.

(b) From May 13 only.

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

(d) Duty \$2.50 per ton.

(e) Scrap iron and scrap steel, old, and fit only to be remanufactured, being part of, or recovered from, any vessel wrecked in waters subject to the jurisdiction of Canada. Duty free.

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, crop ends of tin plate bars, blooms and rails, the same not having been in actual use. Duty \$1 per ton.

(f) Duty \$2.50 per ton.

TABLE 8.

IRON.

IMPORTS OF FERRO-MANGANESE, &C.

Fiscal Year.	Tons.	Value.
*1887	123	\$ 1,435
*1888	1,883	29,812
*1889	5,868	72,108
*1890	696	18,895
*1891	2,707	40,711
*1892	1,311	23,930
*1893	529	15,858
*1894	284	9,885
†1895	164	5,408
†1896	652	12,811
†1897	426	9,233
†1898	1,418	22,516
†1899	1,160	22,539
†1900	1,149	39,064
†1901	1,512	38,954
†1902	6,513	150,977
†1903	6,350	162,710
†1904	2,975	75,554
†1905.....(Duty, 5 p.c.)	12,935	246,815

*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.

TABLE 9.

IRON.

IMPORTS: IRON IN SLABS, BLOOMS, LOOPS AND PUDDLED BARS, &C.

Fiscal Year.	Cwt.	Value.	Fiscal Year.	Cwt.	Value.
1880.....	195,572	\$244,601	1892.....	64,397	\$ 56,186
1881.....	111,666	111,374	1893.....	65,269	58,533
1882.....	203,888	222,056	1894.....	50,891	45,018
1883.....	258,639	269,818	1895.....	78,639	67,321
1884.....	252,310	264,045	1896.....	128,535	110,757
1885.....	312,329	287,734	1897.....	56,560	48,954
1886.....	273,316	248,461	1898.....	162,891	122,426
1887.....	522,853	421,598	1899.....	124,311	103,198
1888.....	110,279	93,377	1900.....	255,145	362,463
1889.....	80,383	67,181	1901.....	234,925	206,975
1890.....	15,041	45,923	1902.....	401,306	419,543
1891.....	41,567	38,931	1903.....	394,418	380,034
			1904.....	200,295	216,571
			1905*.....	317,829	319,665

*Iron or steel ingots, clogged ingots, blooms, slabs, billets, puddled bars, and loops or other forms, N.O.P., less finished than iron or steel bars, but more advanced than pig-iron, except castings. Duty \$2 per ton.

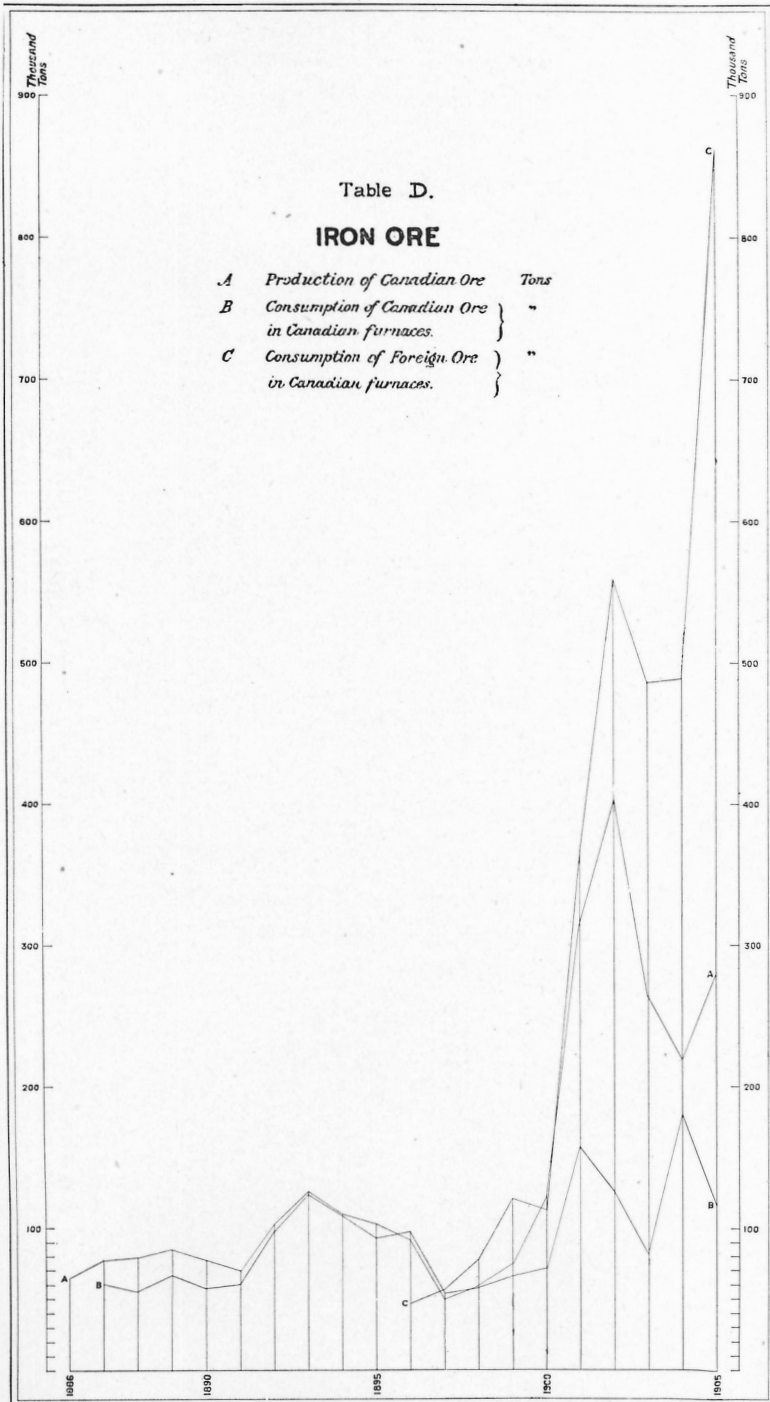
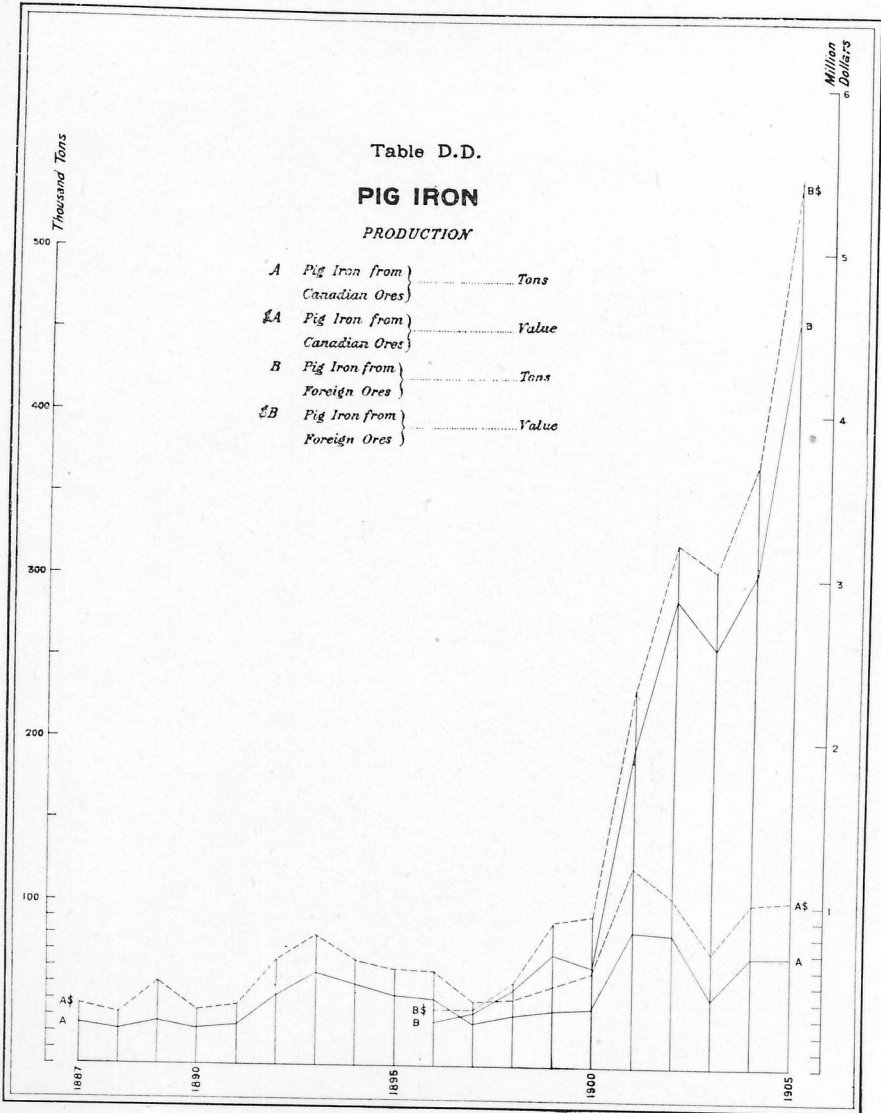


Table D.D.

PIG IRON

PRODUCTION

- A Pig Iron from } Tons
Canadian Ores
- £A Pig Iron from } Value
Canadian Ores
- B Pig Iron from } Tons
Foreign Ores
- £B Pig Iron from } Value
Foreign Ores



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TABLE 10a.

IRON.

IMPORTS OF IRON AND STEEL GOODS.—1904-1905.

Fiscal Year, 1905.	Duty.	Quantity.	Value.
Bar iron or steel rolled, whether in coils, bundles, rods or bars, comprising rounds, ovals, squares and flats and rolled shapes, N.O.P.			\$
Castings, iron or steel, in the rough, N.E.S. Canada plates, Russia iron, flat galvanized iron or steel sheets, terne plates and rolled sheets of iron or steel coated with zinc, spelter or other metal, of all widths or thicknesses, N.O.P.	Cwt. \$ 25 %	587,140	875,067 291,214
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.E.S.	Cwt. 5 "	322,187	684,586
Malleable iron castings and iron or steel castings, N.E.S.	" 25 "	275,022	719,284
Mould boards, or shares or plough plates land sides and other plates for agricultural implements, cut to shape from rolled plates of steel but not moulded, punched, or otherwise manufactured.	" 5 "	4,461	15,170
Iron or steel railway bars or rails of any form, punched or not punched, N.E.S., for railways, which term for the purposes of this item shall include all kinds of railways, street railways and tramways, even although the same are used for private purposes only, and even although they are not used or intended to be used in connection with the business of common carrying of goods or passengers.	Tons. 30 "	60,911	175,155
Railway fish-plates and tie plates.	" \$8 per ton.	17,904	421,084
Rolled iron or steel angles, tees, beams, channels, joists, girders, zees, stars or rolled shapes, or trough, bridge, building, or structural rolled sections, or shapes not punched, drilled or further manufactured than rolled, N.E.S., and flat-iron blanks not punched or drilled.	Cwt. 10 %	5,396	176,002
Rolled iron or steel hoop, band, scroll or strip, 8 inches or less in width, No. 18 gauge and thicker, N.E.S.	" \$7 per ton.	997,880	1,380,841
Rolled iron or steel hoop, band, scroll or strip, thinner than No. 18 gauge, N.E.S.	" 5 %	63,922	98,889
Rolled iron or steel angles, tees, beams, channels, girders and other rolled shapes or sections, weighing less than 35 lbs. per lineal yard, not punched, drilled or further manufactured than rolled, N.O.P.	" \$7 per ton.	39,265	81,645
Rolled iron or steel plates or sheets, sheared or unsheared, and skelp iron or steel, sheared or rolled in grooves, N.E.S.	" \$7 "	282,339	385,997
Rolled iron or steel plates, not less than 30 inches in width and not less than ¼ inch in thickness, N.O.P.	" 10 %	185,467	287,239
Carried forward.		416,246	640,776
			6,232,949

TABLE 10a—Continued.

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1905.	Duty.	Quantity.	Value.
Brought forward.....			\$ 6,232,949
Rolled iron or steel sheets No. 17 gauge and thinner, N.O.P..... Cwt.	5 p. c.	300,518	641,276
Rolls of chilled iron or steel..... "	30 "	5,459	17,619
Skelp iron or steel, sheared or rolled in grooves, imported by manufacturers of wrought iron or steel pipe for use only in the manufacture of wrought iron or steel pipe in their own factories..... "	5 "	659,801	864,631
Swedish rolled iron and Swedish rolled steel nail rods under half an inch in diameter for the manufacture of horse-shoe nails... "	15 "	9,576	18,172
Switches, frogs, crossings and intersections for railways..... "	30 "	12,488	41,833
Steel—chrome steel..... "	15 "	2,770	13,543
Steel plate, universal mill or rolled edge bridge plates imported by manufacturers of bridges..... "	10 "	263,836	407,380
Steel in bars, bands, hoops, scroll or strips, sheets or plates, of any size, thickness or width when of greater value than 2½c. per lb., N.O.P..... "	5 "	132,227	684,725
Iron or steel beams, sheets, plates, angles, knees and cable chains for wooden, iron, steel, or composite ships or vessels.... "	Free.	60,484	102,728
Locomotive and car wheel tires of steel, in the rough..... "	"	63,780	128,639
Steel for saws and straw cutters cut to shape, but not further manufactured.... "	"	12,974	120,034
Crucible sheet steel, 11 to 16 gauge, 2½ to 18 inches wide, imported by manufacturers of mower and reaper knives for manufacture of such knives in their own factories..... "	"	5,851	29,958
Steel of 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 the manufacturers of such articles for the exclusive use in the manufacture thereof in their own factories..... "	"	1,020	3,869
Steel valued at 2½ cents per lb. and upward, imported by the manufacturers of skates, for use exclusively in the manufacture thereof in their own factories.... "	"	2,365	9,335
Steel, under ½-inch in diameter, or under ½ inch square, imported by the manufacturers of cutlery, or of knobs, or of locks, for use exclusively in the manufacture of such articles in their own factories..... "	"	2,717	7,246
Carried forward.....			9,323,937

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TABLE 10a—*Concluded.*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1905.	Duty.	Quantity.	Value.
Brought forward.....			9,323,937
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 thereof in their own factories..... Cwt.	Free.	2,825	7,988
Steel of No. 24 and 17 gauge, in sheets sixty-three inches long, and from 18 inches to 32 inches wide, imported by the manufacturers of tubular bow sockets for use in the manufacture of such articles in their own factories..... "	"	2,110	4,482
Steel for the manufacture of bicycle chains, imported by the manufacturers of bicycle chain for use in the manufacture thereof in their own factories..... "	"	526	1,720
Steel for the manufacture of files, augers auger bits, hammers, axes, hatchets, scythes, reaping hooks, hoes, hand rakes, hay or straw knives, windmills and agricultural or harvesting forks imported by the manufacturers of such or any of such articles for use exclusively in the manufacture thereof in their own factories.... "	"	90,319	173,482
Steel springs for the manufacture of surgical trusses imported by the manufacturers for use exclusively in the manufacture thereof in their own factories..... lbs.	"	1,710	1,114
Flat spring steel, steel billets and steel axle bars, imported by manufacturers of carriage springs and carriage axles for use exclusively in the manufacture of springs and axles for carriages or vehicles other than railway or tramway, in their own factories.. cwt.	"	86,590	121,638
Spiral spring steel for spiral springs for railways, imported by the manufacturers of railway springs for use exclusively in the manufacture of railway spiral springs in their own factories..... "	"	44,489	75,749
Steel for the manufacture of cutlery when imported by manufacturers of cutlery to be used in their own factories in the manufacture of such article, O.C..... "	"	678	1,560
Total.....			9,711,620

TABLE 10b.

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1905.		Duty.	Quantity.	Value.
				\$
Agricultural implements, N.E.S., viz:				
Cultivators and weeders	No.	20 %	2,532	15,142
Drills, grain seeders,	"	20 "	3,446	121,777
Farm, road or field rollers	"	25 "	24	431
Forks, pronged	"	25 "	8,351	5,527
Harrows	"	20 "	2,603	44,874
Harvesters, self binding	"	20 "	3,594	357,550
Hay loaders	"	25 "	492	15,094
Hay tedders	"	25 "	922	35,176
Hoes	"	25 "	3,115	808
Horse rakes	"	20 "	1,890	35,161
Knives, hay or straw	"	25 "	396	269
Lawn mowers	"	35 "	4,558	17,325
Manure spreaders	"	20 "	37	2,183
Mowing machines	"	20 "	2,212	71,375
Ploughs	"	20 "	10,384	253,829
Post hole diggers	"	25 "	1,228	1,120
Potato diggers	"	25 "	154	4,719
Rakes, N.E.S.	"	25 "	5,369	1,034
Reapers	"	20 "	402	18,113
Scythes	Doz.	25 "	4,288	21,377
Sickles or reaping hooks	"	25 "	648	422
Spades and shovels and spade and shovel blanks, and iron or steel cut to shape for the same	"	35 "	11,107	38,718
Parts of agricultural implements paying 20 p.c.	\$	20 "		490,876
All other agricultural implements, N.E.S.	"	25 "		35,351
Anvils and vises	"	30 "		47,056
Cart or wagon skeins or boxes	Lbs.	30 "	123,246	5,553
Springs, axles, axle bars, N. E. S., and axle blanks and parts thereof of iron or steel, for railway or tramway or other vehicles	Cwt.	35 "	21,966	63,080
Butts and hinges, N.E.S.	\$	30 "		60,369
Cast iron pipe of every description	Cwt.	\$8 per ton	260,894	393,684
Chains, coil chains, chain links and chain shackles of iron or steel 5-16 of an inch in diameter and over	"	5 %	48,255	148,285
Chain, malleable sprocket or link belting, for binders	\$	20 "		26,229
Chains, N.E.S.	"	30 "		83,155
Tacks, shoe	Lbs.	35 "	28,777	2,531
Cut tacks, brad sprigs, or shoe nails, double pointed, and other tacks of iron and steel, N.O.P.	"	35 "	64,055	4,478
Engines, locomotives for railways, N.E.S.	No.	35 "	113	674,084
Fire engines	"	35 "	11	8,958
Fire extinguishing machines	"	35 "		46,805
Gasoline engines	"	25 "	929	194,074
Steam engines and boilers	"	25 "	1,107	437,432
Fittings, iron or steel, for iron and steel pipe	Lbs.	30 "	6,743,138	366,060
Carried forward				4,155,145

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TABLE 106—Continued.

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1905.	Duty.	Quantity.	Value.
			\$
Brought forward			4,155,149
Forgings of iron or steel, of whatever shape or size, or in whatever stage of manufacture, N.E.S., and steel shafting, turned, compressed or polished, and hammered iron or steel bars or shapes, N.O.P. Lbs.	30 %	3,857,689	150,422
Hardware, viz:			
Builders', cabinet-makers', upholsterers', harness-makers', saddlers' and carriage hardware, including currycombs and horse boots, N.E.S. \$	30 "		658,338
Horse, mule and ox shoes	30 "		11,616
Locks of all kinds	30 "		217,614
Machines and machinery, &c.:			
Automobiles	No. 25 "	390	453,904
Fanning mills	" 25 "	177	2,538
Grain crushers	" 25 "	11	452
Windmills	" 25 "	696	37,939
Ore crushers and rock crushers, stamp mills, cornish and belted rolls, rock drills, air compressors, cranes, derricks and percussion coal cutters. \$	25 "		135,076
Portable machines:			
Fodder or feed cutters	No. 25 "	32	1,298
Horse powers	" 25 "	44	5,656
Portable engines	" 25 "	396	420,543
Portable saw mills and planing mills.	" 25 "	41	15,991
Threshers and separators	" 25 "	568	165,908
All other portable machines	" 25 "	744	37,162
Parts of portable machines	\$ 25 "		165,771
Sewing machines and parts of	No. 30 "	11,330	259,974
Slot machines	" 25 "	1,683	25,224
Machines, type-writing	" 25 "	3,338	187,152
All other machinery composed wholly or in part of iron or steel, N.O.P. \$	25 "		4,467,397
Nails and spikes, composition and sheathing nails	Lbs. 15 "	17,813	2,481
Nails and spikes, wrought and pressed, trunk, clout, coopers, cigar box, Hungarian horseshoe and other nails, N.E.S. "	30 "	334,846	25,544
Nails and spikes, cut, and railway spikes ..	pc. per lb. "	6,546,874	115,513
Nails, wire of all kinds, N.O.P.	pc. "	694,061	23,400
Pumps, N.E.S. \$	25 %		207,290
Sad or smoothing, hatters' or tailors' irons, plated wholly or in part or not.	" 25 "		9,022
Safes, doors for safes and vaults	" 30 "		99,077
Screws, iron and steel, commonly called 'woodscrews,' N.E.S. Lbs.	35 "	157,196	26,877
Scales, balances, weighing beams and strength testing machines	\$ 30 "		94,255
Skates of all kinds and parts thereof.	Pairs 35 "	103,430	49,579
Stoves of all kinds and parts thereof, N.E.S. \$	25 "		410,672
Sheets, flat of galvanized iron or steel. Cwt.	5 "	322,523	925,900
Carried forward			13,564,734

TABLE 106—Continued.

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1905.	Duty.	Quantity.	Value.
			\$
Brought forward			13,564,734
Sheet iron or steel corrugated, galvanized.. Cwt.	25 "	4,210	8,713
Sheet iron or steel corrugated not galvanized "	30 "	1,471	2,683
Tubing:			
Boiler tubes of wrought iron or steel, including flues and corrugated tubes for marine boilers	\$ 5 %		408,814
Tubes of rolled steel, seamless, not joined or welded, not more than 1½ inches in diameter	" 10 "		2,551
Tubes, seamless steel, for bicycles	" 10 "		6,154
Tubing, wrought iron or steel, plain or galvanized, threaded and coupled or not, over 2 inches in diameter, N.E.S.	" 15 "		497,727
Tubing, wrought iron or steel, plain or galvanized, threaded and coupled or not, 2 inches or less in diameter, N.E.S.	" 35 "		90,861
Other iron or steel tubes or pipes, N.O.P.	" 30 "		145,686
Ware, galvanized sheet iron or of galvanized sheet steel, manufactures of, N.O.P.	" 25 "		26,255
Ware, agate, granite or enamelled iron or steel hollow ware	" 35 "		90,851
Ware, enamelled iron or steel ware, N.E.S., iron or steel hollow ware, plain black, tinned or coated, and nickel and aluminium kitchen or household hollow ware, N.E.S.	" 30 "		181,185
Wire bale ties	Bundles of 250 ties	3,061	2,261
Wire cloth or wove wire and netting of iron or steel	Lbs. 30 "	1,001,572	45,809
Wire screens, doors and windows	\$ 30 "		11,166
Wire fencing, woven, buckthorn strip and wire fencing of iron or steel, N.E.S.	Lbs. 15 "	1,276,757	41,564
Wire, single or several, covered with cotton, linen, silk, rubber or other material, &c., N.E.S.	" 30 "	2,509,696	354,272
Wire of all kinds, N.O.P.	" 20 "	8,962,380	214,599
Wire rope, stranded or twisted wire, clothes lines, picture or other twisted wire and wire cables, N.E.S.	" 25 "	2,002,691	148,236
Iron or steel nuts, washers, rivets and bolts with or without threads and nut bolt and hinge blanks, and T. and strap hinges of all kinds, N.E.S.	" ¾ c. p. lb. and 25 %	3,560,665	124,545
Pen-knives, jack-knives and pocket knives of all kinds	\$ 30 %		174,560
Table cutlery, all kinds, N.O.P.	" 30 "		268,482
All other cutlery, N.E.S.	" 30 "		240,261
Guns, rifles, including air guns and air rifles, (not being toys) muskets, cannons, pistols, revolvers, or other firearms	" 30 "		457,706
Carried forward			17,109,675

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TABLE 106—Continued.

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1905.	Duty.	Quantity.	Value.
			\$
Brought forward.....			17,109,675
Bayonets, swords, fencing foils and masks..	30 "		3,234
Needles of any material or kind, not otherwise provided	30 "		86,314
Tools and implements :			
Adzes, cleavers, hatchets, wedges, sledges, hammers, crow bars, cant dogs and track tools, picks, mattocks and eyes or poles for the same.....	\$ 30 %		62,218
Axes.....	Doz. 25 "	4,469	24,717
Saws.....	\$ 30 "		176,943
Files and rasps, N.E.S.	" 30 "		78,012
Tools, hand or machine, of all kinds, N.O.P	" 30 "		859,908
Knife blades, or blanks, and forks of iron or steel, in the rough not handled, filed, ground or otherwise manufactured..	" 10 "		67
Manufactures : articles or wares not specially enumerated or provided for, composed wholly or in part of iron or steel, and whether partly or wholly manufactured.	" 30 "		2,524,182
Anchors.....	Cwt. Free	3,605	13,736
Iron or steel, rolled round wire rods, in the coil not over $\frac{3}{8}$ -inch in diameter, imported by wire manufacturers for use in making wire in the coil in their own factories.....	" "	634,597	792,078
Iron or steel masts, or parts of.....	" "	18	60
Rolled iron, tubes not welded, or joined, under $1\frac{1}{2}$ inch in diameter, angle iron 9 and 10 gauge, not over $1\frac{1}{2}$ inch wide, iron tubing lacquered or brass covered, not over $1\frac{1}{2}$ inch diameter, all of which are to be cut to lengths for the manufacture of bedsteads, and to be used for no other purpose, and brass trimmings for bedsteads imported for the manufacture of iron or brass bedsteads.....	" "		163,329
Steel bowls for cream separators and cream separators	\$ "		674,618
Cream separators : articles for the construction or manufacture of—when imported by manufacturers of cream separators to be used in their own factories for the manufacture of cream separators, O.C....	" "		58,859
Steel rails weighing not less than 45 lbs. per lineal yard for use only in the tracks of railways which are employed in the common carrying of goods and passengers, and are operated by steam motive power only.....	Cwt. "	4,249,816	5,051,762
Carried forward.....			27,679,712

TABLE 10b—*Concluded.*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1905.	Duty.	Quantity.	Value.
			\$
Brought forward			27,679,712
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, imported by manufacturers of wire mattresses, to be used in their own factories in the manufacture of such articles.	Free.	4,584	11,146
Machinery and structural iron for beet root sugar factories	\$		9,071
Flat steel wire of No. 16 gauge or thinner imported by the manufacturers of crinoline, corset wire and dress stays, for use in the manufacture of such articles in their own factories.	Cwt.	2,936	12,159
Wire, crucible cast steel	"	2,113,355	94,523
Galvanized iron or steel wire Nos. 9, 12 and 13 gauge.	Cwt.	333,845	658,123
Barbed fencing wire of iron and steel.	"	411,579	892,367
Total			29,357,106

TABLE 11.

IRON.

IMPORTS OF PIG IRON, IRON AND STEEL GOODS, &c., FISCAL YEAR, 1904-1905.

Recapitulation of Tables, 7, 8, 9, 10a and 10b.

	Tons.	Value.
Pig iron	71,005	\$857,879
Pig iron, charcoal		
Scrap iron, cast	6,533	75,521
Scrap steel, wrought.	15,479	210,900
Ferro-manganese, &c.	12,935	246,815
Iron in slabs, blooms, puddled bars, &c.	15,891	319,665
Iron and steel goods partially manufactured.		9,711,620
Iron and steel goods more highly manufactured*		29,357,106
Total		40,779,506

*Machinery, &c., classed under iron and steel goods in Customs report.

LEAD.

The production of lead in Canada has again increased, and shows a total output in 1905 of 56,864,915 pounds as compared with 37,531,244 pounds in 1904, an increase of 19,333,671 pounds or 51 per cent.

The average monthly price of refined lead on the New York market during 1905 was 4.707 cents, which is over 9 per cent higher than the average price in 1904, and is the highest average price received for lead, recorded in the tables which date back to 1887. This high level price, together with the bounty paid on the production of lead ores, have no doubt stimulated the production of the metal, although the output is not yet as great as was attained in 1900, when 63,169,821 pounds were produced without the assistance of any bounty, and when the price of lead was lower than during the past year.

The total amount paid in bounties during the Calendar year 1905, was \$334,224. The payment of bounty on lead in ore exported to Europe, ceased on June 30, 1905, and in the case of ore treated in Canada or exported to the United States, the rate of bounty was gradually diminished, owing to the rise in the price of lead (as per the terms of the bounty act), and all payments ceased in November, when the price of lead reached £16 per long ton.

Previous to 1904, lead ores mined in Canada, were either exported or were reduced in Canadian furnaces to lead bullion carrying gold, silver, etc. which product, was then exported for further treatment.

The Canadian Smelting Works at Trail, B.C. however, has had an electrolytic lead refinery in operation for two years producing pig lead, lead pipe, sheet lead, &c., of exceptional purity. The production of refined lead by this firm has been as follows:—

Year.	Refined lead produced.
1904.....	7,519,440 lbs.
1905.....	15,804,509 "

At the close of 1905, about 50 tons per day were being treated and lead is being supplied to the corroding works recently established by the Carter White Lead Company of Canada, Ltd., at Montreal. The latter plant is equipped with machinery for an immediate capacity of

7000 tons per annum, but is designed for an ultimate capacity of 15,000 tons, and will use Trail lead exclusively.

The whole of the output of lead in 1904 was derived from mines in British Columbia, with the exception of a small amount which was mined by the Ontario Mining and Smelting Company at the Hollandia mine, Bannockburn, Hastings county, Ont., and treated at the Stanley Smelting Works at Bannockburn.

TABLE 1.

LEAD.

ANNUAL PRODUCTION.

Calendar Year.	Pounds.	Price per Pound.	Value.
		cts.	
1887.....	204,800	4·50	\$ 9,216
1888.....	674,500	4·42	29,812
1889.....	165,100	3·93	6,488
1890.....	105,000	4·48	4,704
1891.....	88,665	4·35	3,857
1892.....	808,420	4·09	33,064
1893.....	2,135,023	3·73	79,636
1894.....	5,703,222	3·29	187,636
1895.....	16,461,794	3·23	531,716
1896.....	24,199,977	2·98	721,159
1897.....	39,018,219	3·58	1,396,853
1898.....	31,915,319	3·78	1,206,399
1899.....	21,862,436	4·47	977,250
1900.....	63,169,821	4·37	2,760,521
1901.....	51,900,958	4·334	2,249,387
1902.....	22,956,381	4·069	934,095
1903.....	18,139,283	4·237	768,562
1904.....	37,531,244	4·309	1,617,221
1905.....	56,864,915	4·707	2,676,632

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Exports of lead in ore, according to Customs returns were 7,284 tons to the United States and 20,175 to other countries, or a total export of lead of 20,852 tons, equivalent to a little over 78 per cent. of the total output.

Statistics of exports and imports are given in the following tables:

TABLE 2.

LEAD.

EXPORTS

Calendar Year.	Value.
1873	\$1,993
1874	127
1875	7,510
1876	66
1877	720
1878	
1879	230
1880	
1881	
1882	32
1883	5
1884	36
1885	
1886	
1887	724
1888	18
1889	
1890	
1891	5,000
1892	2,509
1893	3,099
1894	144,509
1895	435,071
1896	462,095
1897	925,144
1898	885,485
1899	466,950
1900	1,917,690
1901	1,804,687
1902	457,170
1903	426,466
1904	559,461
1905	1,046,541

TABLE 3.

LEAD.

IMPORTS OF LEAD.

Fiscal Year	OLD, SCRAP AND FIG.		BARS, BLOCKS, SHEETS.		TOTAL.	
	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.
1880					30,298	\$124,117
1881	16,236	\$6 56,919	18,222	\$70,744	34,458	127,663
1882	36,655	120,870	10,540	35,728	47,195	156,598
1883	48,780	148,759	8,591	28,785	57,371	177,544
1884	39,409	103,413	9,704	28,458	49,113	131,871
1885	36,106	87,088	9,362	24,396	45,468	111,434
1886	39,945	110,947	9,793	28,948	49,738	139,895
1887	61,160	173,477	14,153	41,746	75,313	215,223
1888	68,678	196,845	14,957	45,900	83,635	242,745
1889	74,223	213,132	14,173	43,482	88,396	256,614
1890	101,197	283,096	19,083	59,484	120,280	342,580
1891	86,382	243,033	15,646	48,220	102,028	291,253
1892	97,375	254,384	11,299	32,368	108,674	286,752
1893	94,485	215,521	12,403	32,286	106,888	247,807
1894	70,223	149,440	8,486	20,451	78,709	169,891
1895	67,261	139,290	6,739	16,315	74,000	155,605
1896	72,433	173,162	8,575	23,169	81,008	196,331
1897	65,279	158,381	10,516	29,175	75,795	187,556
	OLD, SCRAP, FIG AND BLOCK.*		BARS AND SHEETS.†		TOTAL.	
1898	88,420	\$260,779	22,214	\$39,041	110,634	\$299,820
1899	114,659	283,432	44,796	39,833	159,455	323,265
1900	62,361	207,819	15,493	53,506	77,854	251,325
1901	(a) 85,321	97,011	16,295	78,316	101,616	175,327
1902	(a) 122,279	104,672	18,596	49,261	140,875	153,933
1903	(a) 98,530	87,821	11,535	35,398	110,065	103,219
1904	(a) 94,602	121,165	14,102	39,644	108,704	160,809
1905	(a) 57,074	133,775	17,792	51,972	74,866	185,747

* Duty 15 p. c.

† Duty 25 p. c.

(a) Includes Canadian lead ore sent to the United States for refining, imported at price of refining only.

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TABLE 4.

LEAD.

IMPORTS OF LEAD MANUFACTURES.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880.	\$15,400	1893	\$ 33,783
1881.	22,629	1894.	29,361
1882.	17,282	1895.	38,015
1883.	25,556	1896.	50,722
1884.	31,361	1897.	60,735
1885.	36,340	1898.	63,179
1886.	33,078	1899.	91,497
1887.	19,140	1900.	104,736
1888.	18,816	1901.	107,260
1889.	16,315	1902.	120,020
1890.	25,600	1903.	134,151
1891.	23,893	1904.	129,093
1892.	22,636		

	Duty.	Cwt.	
1905 { Lead Tea	Free.	17,648	\$ 71,869
" Pipe	35 p. c.	1,649	7,273
" Shot and bullets	35 "	1,241	4,512
" Manufactures, N.E.S.	30 "		64,023
Total			\$147,177

TABLE 5.

LEAD.

IMPORTS OF LITHARGE.

Fiscal Year.	Cwt.	Value.	Fiscal Year.	Cwt.	Value.
1880.	3,041	\$14,334	1893.	7,685	\$24,401
1881.	6,126	22,129	1894.	38,547	28,685
1882.	4,900	16,651	1895.	11,955	32,953
1883.	1,532	6,173	1896.	10,710	32,817
1884.	5,235	18,132	1897.	12,028	34,538
1885.	4,990	16,156	1898.	11,446	32,904
1886.	4,928	16,003	1899.	9,530	32,518
1887.	6,397	21,865	1900.	9,139	29,176
1888.	7,010	23,808	1901.	11,132	51,944
1889.	8,089	31,082	1902.	13,002	47,021
1890.	9,453	31,401	1903.	13,921	47,761
1891.	7,979	27,613	1904.	9,894	32,633
1892.	10,384	34,343	1905 ... Duty free	17,865	57,736

In July, 1905, the duty on dry white lead was increased from 5 per cent to 30 per cent, and on white lead ground in oil to 35 per cent. while the duty on red lead, orange mineral and zinc white remained at 5 per cent.

Statistics of the imports of white lead, etc., are given in table 6 following.

TABLE 6.

LEAD.

IMPORTS OF DRY WHITE AND RED LEAD AND ORANGE MINERAL.

Fiscal Year.	Pounds.	Value.
		\$
1885.....	5,404,753	198,913
1886.....	6,703,077	213,258
<i>a</i> 1887.....	6,998,820	233,725
1888.....	6,361,334	216,654
1889.....	7,066,465	267,236
1890.....	10,859,672	381,959
1891.....	8,560,615	337,407
1892.....	10,288,766	351,686
1893.....	10,865,183	364,680
1894.....	10,958,170	353,053
1895.....	8,780,052	282,353
1896.....	11,711,496	367,569
<i>b</i> 1897.....	10,310,463	347,539
1898.....	12,682,808	448,659
1899.....	14,507,945	514,842
1900.....	14,679,920	634,492
1901.....	10,241,601	461,368
1902.....	15,584,164	603,582
1903.....	19,208,786	758,371
1904.....	16,925,585	662,098
<i>c</i> 1905..... Duty, 5 p.c.	17,376,588	638,381

(a) Imports of dry white and red lead and orange mineral.

(b) Imports of dry white and red lead, orange mineral and zinc white.

(c) Imports of dry white and red lead.

Statistics of lead production in British Columbia, comprising the greater part of the output in Canada are given separately in table 7, while the details by districts for the past four years are given in table 8. The increase in output over the previous year is over 54 per cent

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and with the exception of the production attained in 1900, the output is the largest ever mined in British Columbia. The Slocan has fallen away behind in relative importance as a lead producing district, over 86 per cent of the output having been obtained in Fort Steele division and less than 10 per cent in the Slocan.

TABLE 7.

LEAD.

BRITISH COLUMBIA : PRODUCTION.

Calendar Year.	Pounds.	Price per Pound.	Value.
		cts.	
1887.....	204,800	4·50	\$ 9,216
1888.....	674,500	4·42	29,813
1889.....	165,100	3·93	6,488
1890.....	Nil.		
1891.....	"		
1892.....	806,420	4·09	33,064
1893.....	2,131,092	3·73	79,490
1894.....	5,703,222	3·29	187,636
1895.....	16,461,794	3·23	531,716
1896.....	24,199,977	2·98	721,159
1897.....	38,841,135	3·58	1,390,513
1898.....	31,693,559	3·78	1,198,017
1899.....	21,862,436	4·47	977,250
1900.....	63,158,621	4·37	2,760,031
1901.....	51,582,906	4·334	2,235,603
1902.....	22,536,381	4·069	917,005
1903.....	18,089,283	4·237	766,443
1904.....	36,646,244	4·309	1,579,086
1905.....	56,580,703	4·707	2,663,254

TABLE 8.

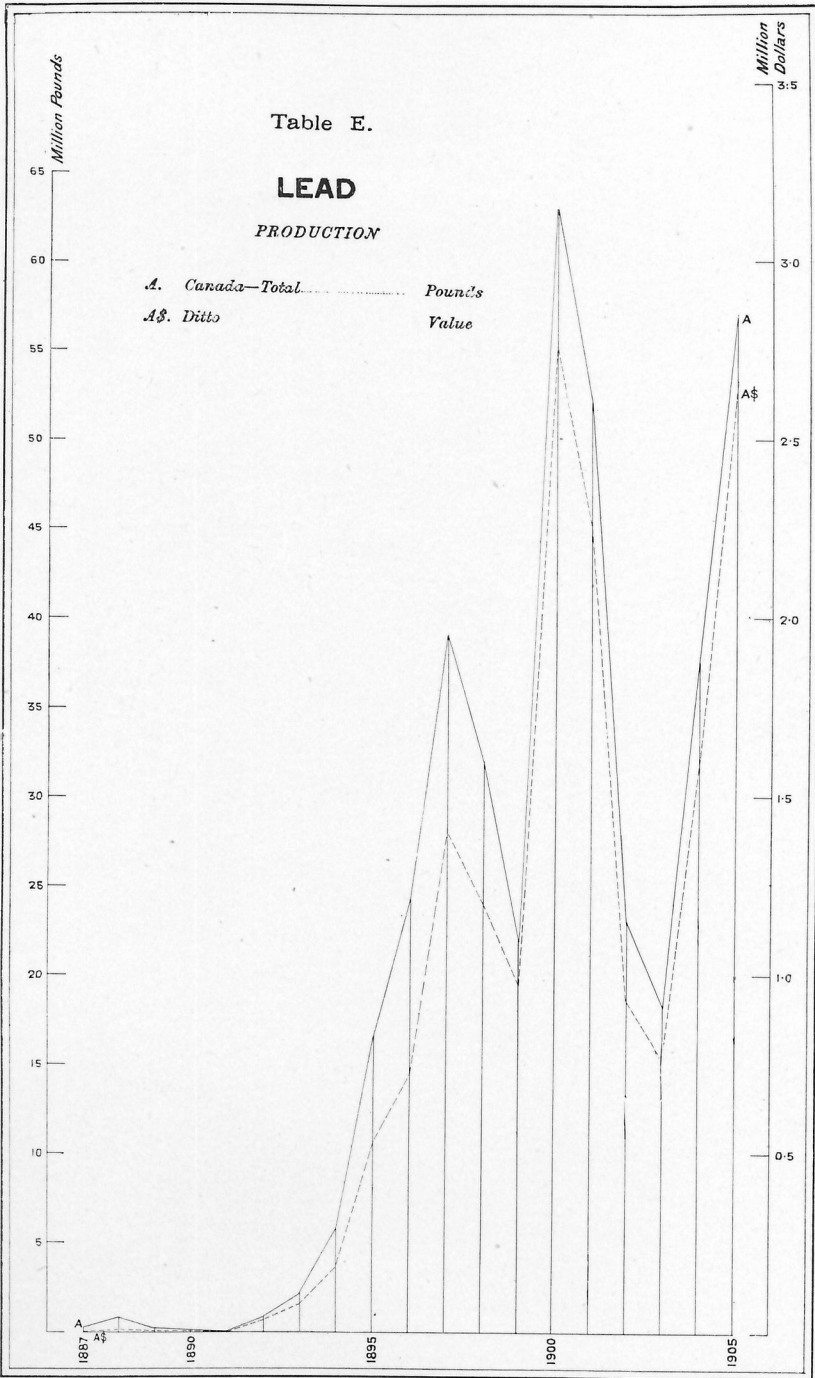
LEAD.

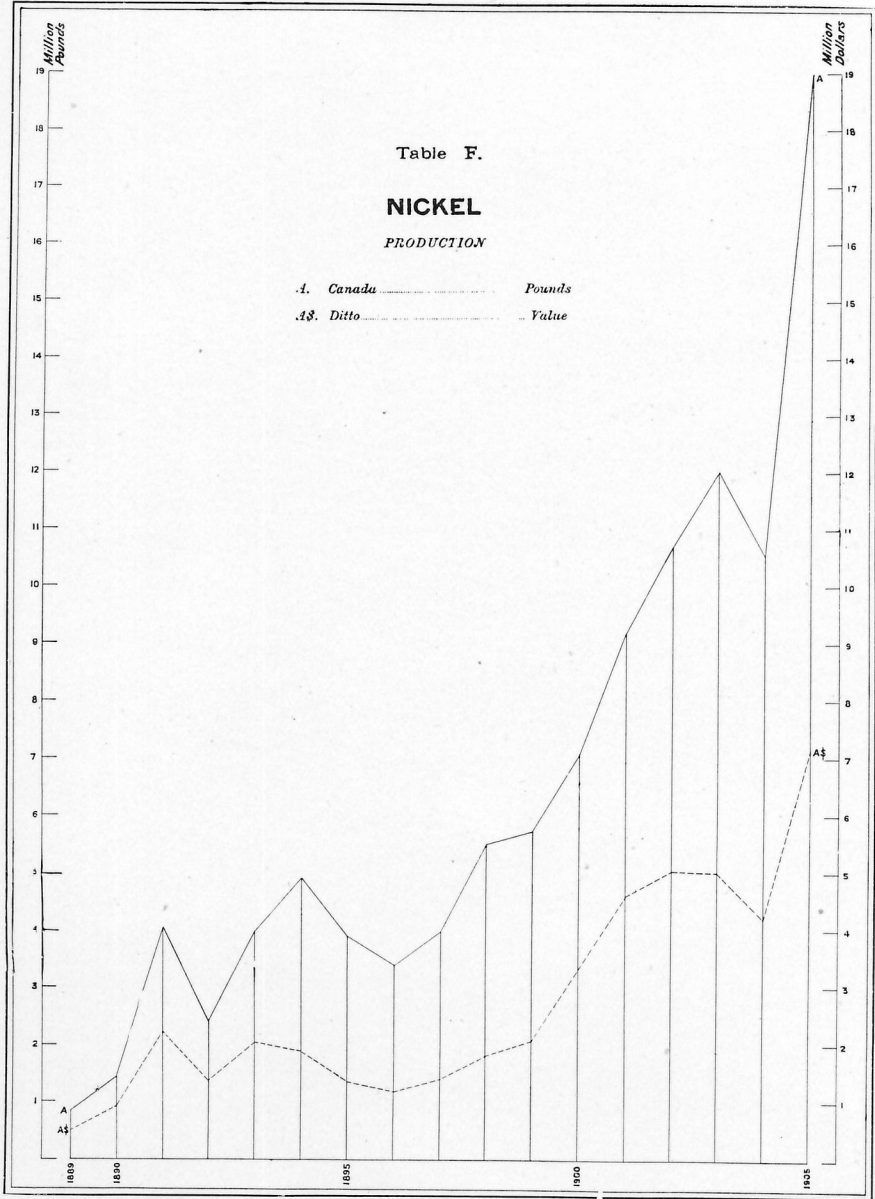
BRITISH COLUMBIA : PRODUCTION BY DISTRICTS.

	1902.	1903.	1904.	1905.
	Pounds.	Pounds.	Pounds.	Pounds.
Cassiar.....				5,500
East Kootenay—				
Fort Steele.....	3,017,756	717,479	21,071,236	48,248,828
Other districts.....	204,652	951,296	401,022	149,584
West Kootenay—				
Ainsworth.....	3,083,039	4,299,727	3,091,648	1,002,114
Nelson.....	1,680,948	1,072,542	976,570	1,368,388
Slocan.....	13,651,144	9,880,469	10,611,227	5,399,330
Other districts.....	885,734	1,144,239	485,520	339,883
Yale.....	13,108	23,531	9,021	67,076
	22,536,381	18,089,283	36,646,244	56,580,703

The Provincial Mineralogist remarks—"In the Fort Steele Mining division of East Kootenay the St. Eugene mine has this year more than doubled its output of the previous year, despite the fact that several months were lost at the most important opening through the head works being completely destroyed by fire. The property is a large low grade concentrating proposition, galena, low in silver in a siliceous gangue. This years output was nearly 150,000 tons of ore, producing about 900,000 ounces of silver and 36,500,000 lbs. of lead, the largest lead production of any property in British Columbia, and about 65 per cent of the total production of the Province. The North Star, which has been for many years one of the largest and steadiest producers of silver-lead ore, has been worked out and practically abandoned, as development on an extensive scale, failed to disclose further ore bodies, and the small shipments made this year are only the results of the clearing out of the workings.

"With the passing of the North Star, an adjacent property, the Sullivan, has taken its place, and is today the second largest lead producer in the Province, producing nearly 11,500,000 lbs of lead or 20 per cent of the production of the Province."





NICKEL.

The production of nickel (contents of matte shipped) from the copper-nickel ores of the Sudbury district of Ontario, reached a total of 18,876,315 lbs. in 1905, the largest output ever reached in the district, being over twice the production of 1901 and an increase of 8,328,432 lbs. or nearly 79 per cent. over 1904.

The value of the output in 1905 at the average price of refined nickel in New York, 40 cents per pound, was \$7,550,526. The companies employed in mining nickel ores were as follows:—

The Canadian Copper Company (The International Nickel Co.) Copper Cliff, Ont. and New York.

The Mond Nickel Company, Victoria Mines, Ont. and London, England.

The Lake Superior Power Company (The Lake Superior Corporation) Sault Ste. Marie, Ont.

The first two only were operating smelting plants during the year.

Details of the production of ore, matte, etc., in 1905 were as follows:

	Tons of 2,000 lbs.
Ore mined.....	277,766 tons.
Ore smelted.....	251,421 "
Matte produced.....	17,388 "
Matte shipped.....	17,405 "
Matte in stock at end of year.....	2,675 "
Copper contents of matte shipped.....	4,386 "
Nickel.....	9,438 "
Value of matte shipped.....	\$4,019,814.

According to Customs returns, exports of nickel in matte, etc., were for the twelve months ending Dec. 31, as follows:

To Great Britain.....	1,281,594 lbs.
To United States.....	16,036,465 "
Total.....	17,318,059 "

The price of refined nickel remained fairly steady throughout the year; according to the 'Engineering and Mining Journal' of New York, quotations for large lots, New York or other parallel delivery, were 40 to 47 cents per pound, according to size and condition of order. For small quantities prices ranged from 48 to 60 cents, also according to size for order and delivery.

Some of the ores from the now famous Cobalt district contain from 4 to 7 per cent. of nickel in addition to the cobalt, silver and arsenic, but no statistics of production of nickel from this district have been available for inclusion in the table of production.

TABLE 1.

NICKEL.

ANNUAL PRODUCTION.

Calendar Year.	Pounds of Nickel in Matte.	Final Average Market Price per lb. at New York.	Value.
1889.....	*830,477	60c.	\$ 498,286
1890.....	1,435,742	65c.	933,232
1891.....	4,035,347	60c.	2,421,208
1892.....	2,413,717	58c.	1,399,956
1893.....	3,982,982	52c.	2,071,151
1894.....	4,907,430	38½c.	1,870,958
1895.....	3,888,525	35c.	1,360,984
1896.....	3,397,113	35c.	1,188,990
1897.....	3,997,647	35c.	1,399,176
1898.....	5,517,690	33c.	1,820,838
1899.....	5,744,000	36c.	2,067,840
1900.....	7,080,227	47c.	3,327,707
1901.....	9,189,047	50c.	4,594,523
1902.....	10,693,410	47c.	5,025,903
1903.....	12,505,510	40c.	5,002,204
1904.....	10,547,883	40c.	4,219,153
1905.....	18,876,315	40c.	7,550,526

* Calculated from shipments made by rail.

TABLE 2.

NICKEL.

EXPORTS.*

Calendar Year.	Value.	Calendar Year.	Value.
1890.....	\$ 39,568	1898.....	\$ 1,019,363
1891.....	667,280	1899.....	939,915
1892.....	293,149	1900.....	1,031,030
1893.....	629,692	1901.....	751,080
1894.....	559,356	1902.....	1,007,211
1895.....	521,783	1903.....	1,116,099
1896.....	658,213	1904.....	1,091,349
1897.....	723,130	1905.....	1,569,693

*Practically all the nickel-bearing ore and matte produced in Canada is exported, the apparent discrepancy between Tables Nos. 1 and 2 being due to the different basis of valuation adopted in the two instances. Table 1 represents the total final values of the nickel produced in Canada, for the years represented. In Table 2 the worth of the product shipped is entered at its spot value to the operators, and depends upon the particular stage to which they happen to carry the process of extraction at the time, *e.g.*, whether the shipments made are raw ore, low grade matte or high grade matte, &c.

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TABLE 3.
NICKEL.
IMPORTS.

Calendar Year.		Value.
1890	\$ 3,154
1891	3,889
1892	3,208
1893	2,905
1894	.....	3,528
1895	.....	4,267
1896	.....	4,787
1897	.....	4,737
1898	.....	5,882
1899	.....	9,449
1900	.....	6,988
1901	.....	12,029
1902	.....	15,448
1903	.....	26,177
1904	.....	14,682
1905	{ Nickel anodes.....	10 p. c. 15,351
	{ Nickel*.....	Free. 3,725
		\$ 19,076

* Classified under the general heading of minerals in the Trade and Navigation Report.

ZINC.

The zinc smelting plant being erected at Frank, Alberta, by the Canadian Metal Company, Limited, was not yet completed at the close of 1905 consequently there was not any production of spelter to report in Canada.

The total shipments of zinc ore, concentrates, etc., during the year were 9,413 tons, valued at \$139,200, derived altogether from mines in British Columbia. No returns have been received of any production in Ontario.

TABLE 1.
ZINC.
ANNUAL PRODUCTION OF ZINC.

Calendar Year.	Zinc Ore Shipped		Metallic Zinc in Ore Shipped.	
	Tons.	Spot Value	Pounds.	Final Value.
1898.....	1,162	\$ 11,000	788,000	\$ 36,011
1899.....	865	18,165	814,000	46,805
1900.....	261	4,810	212,000	9,342
1901.....				
1902.....	158	1,659	142,200	6,882
1903.....	1,000	10,500	900,000	48,660
1904.....	597	3,700	477,568	24,356
1905.....	9,413	139,200	*	*

*Figures not available.

TABLE 2.
ZINC.
IMPORTS OF ZINC IN BLOCKS, PIGS AND SHEETS.

Fiscal Year.	Cwt.	Value.	Fiscal Year.	Cwt.	Value.
1880.....	13,805	\$67,881	1893.....	26,446	124,360
1881.....	20,920	94,015	1894.....	20,774	90,680
1882.....	15,021	76,631	1895.....	15,061	63,373
1883.....	22,765	94,799	1896.....	20,223	80,784
1884.....	18,945	77,373	1897.....	11,946	57,754
1885.....	20,954	70,598	1898.....	35,148	112,785
1886.....	23,146	85,599	1899.....	18,785	107,477
1887.....	26,142	98,557	1900.....	28,748	156,167
1888.....	16,407	65,827	1901.....	20,527	103,457
1889.....	19,782	83,935	1902.....	34,871	141,560
1890.....	18,236	92,530	1903.....	26,646	142,827
1891.....	17,984	105,023	1904.....	25,553	138,057
1892.....	21,881	\$127,302	1905.....	Duty free	25,141
					141,514

TABLE 3.

ZINC.

IMPORTS OF SPELTER.

Fiscal Year.	Cwt.	Value.	Fiscal Year.	Cwt.	Value.
1880.....	1,073	\$ 5,310	1893.....	10,721	\$49,822
1881.....	2,904	12,276	1894.....	8,423	35,615
1882.....	1,654	7,779	1895.....	9,249	30,245
1883.....	1,274	5,196	1896.....	10,897	40,548
1884.....	2,239	10,417	1897.....	8,342	32,826
1885.....	3,325	10,875	1898.....	2,794	13,561
1886.....	5,432	18,238	1899.....	5,450	29,687
1887.....	6,908	25,007	1900.....	5,836	29,416
1888.....	7,772	29,762	1901.....	14,621	58,283
1889.....	8,750	37,403	1902.....	18,356	80,757
1890.....	14,570	71,122	1903.....	23,159	110,817
1891.....	6,249	31,459	1904.....	33,952	164,751
1892.....	13,909	62,550	1905Duty free	37,941	206,244

*Spelter in blocks and pigs.

TABLE 4.

ZINC.

IMPORTS OF ZINC, MANUFACTURES OF.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880.....	\$ 8,327	1893.....	\$ 7,464
1881.....	20,178	1894.....	6,193
1882.....	15,526	1895.....	5,581
1883.....	22,599	1896.....	6,290
1884.....	11,952	1897.....	5,145
1885.....	9,459	1898.....	10,503
1886.....	7,345	1899.....	14,661
1887.....	6,561	1900.....	11,475
1888.....	7,402	1901.....	6,882
1889.....	7,233	1902.....	6,683
1890.....	6,472	1903.....	9,754
1891.....	7,178	1904.....	12,682
1892.....	7,563		
1905 { Zinc seamless drawn tubing.....		Duty.	
" manufactures of, N.O.P.....		Free.	
		25 %	
Total.....		\$ 11,912	
		11,912	

This is the first record of shipments of zinc ore from British Columbia. The shipments of zinc ore previous to 1905, shown in table 1, were derived from mines in Eastern Canada, spasmodically operated, chiefly the Calumet mines on Calumet island, Pontiac county, Quebec; the Zenith mine near Rossport Station, Canadian

Pacific Railway, Thunder Bay district, Ont., and the Richardson mine, Frontenac county, Ont.

The following notes on zinc ore mining in British Columbia have been taken from the report of the Minister of Mines for the Province for 1905:—

“This year, for the first time, have any important sales of zinc ore to be recorded. Plants for the ‘enrichment’ of zinc ores have been started at Kaslo, Roseberry and Pilot bay. These plants are merely concentrators, in which ores, or ordinary zinc concentrates, are more carefully separated, with the elimination of minerals undesirable in the smelting of zinc ores, such as iron pyrites or carbonate, galena and gangue matter.

“The resulting ‘enriched’ zinc concentrates, thus rendered saleable, have found a ready market, at prices varying according to the zinc contents and freedom from impurities, from about \$25 a ton for 53 per cent. zinc in a pure ore, to about \$10 a ton for a 40 per cent. zinc ore not so free from impurities.

“Approximately 9,413 tons of zinc ore or zinc concentrates were sold this past year, having a value at point of shipment of about \$139,200.

“Almost all of this zinc ore comes from the Slocan district, but has not been all mined this past year, as the sales include zinc concentrates which have accumulated and for which only this year has a market been found.

“As yet, most of the zinc ore sold has gone to the United States, but a zinc smelting plant having this year been erected at Frank, in Alberta, just east of the British Columbia boundary, in all probability the larger part of the British Columbia output will in future be treated there.*

“A commission appointed by the Dominion Government, and including Mr. W. R. Ingalls, of New York, and Mr. Philip Argall, of Colorado, spent the season of 1905 in investigating the possibilities of zinc ore mining in British Columbia and methods of treating the ore. The report of this commission has not as yet been published.†

“Practical demonstrations of smelting zinc-lead ores by electricity were, upon two occasions, attempted at Vancouver, to witness which the Provincial Government was invited to send a representative. Mr. Carmichael, the Provincial Assayer, who was present, reports that the demonstrations did not succeed, for reasons which, he hopes, may yet be overcome.

* This plant was completed in June, 1906, and spelter first turned out during that month. Notes by Mr. Theo. Denis on the equipment at this plant will be found at the end of this article.

† The report of this commission was issued 1906.

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“Of the undeveloped properties carrying strictly zinc ores those on Pingston creek, in the Arrow lake mining division, present the greatest surface showing”

Zinc Smelter at Frank, Alberta.

The Canadian Metal Company, Ltd., a syndicate composed mainly of French capitalists, has erected at Frank, Alberta, a large zinc smelting plant where it is intended to treat all these ores which were previously sent to United States smelters. The new plant will produce spelter, and it is also the intention to make provision to save the silver contents of the zinc ores.

The Canadian Metal Company has also purchased several zinc properties in the Slocan district, and intends to start work on them immediately. They have acquired the Pilot Bay smelter, which they will transform into a concentrating and enriching plant. Moreover, they own coal lands at Frank, and they are at present developing a coal mine within a few hundred feet of the smelter.

The smelter is situated at Frank, Alberta, on the Crows nest line of the Canadian Pacific Railway, within twelve miles of the boundary between Alberta and British Columbia. This location was decided upon on account of its being a coal producing centre.

The ores treated are the British Columbia zinc ores, both crude and concentrated. The smelter is capable of treating 60 tons of ore per day, and provision has been made for an increase to a capacity of 120 tons.

The following are average analyses of the ores treated at the smelter :—

Zinc ore, Slocan district—Lead, 3 per cent ; zinc, 48 per cent ; iron, 7 per cent ; silica, 8 per cent ; lime, traces ; silver, 10 oz. per ton.

Roasted ore—Lead, 3·2 ; zinc, 42·9 per cent ; iron, 6·5 per cent ; lime, 7·0 ; sulphur, (due to lime) 3·9.

The process adopted in the smelter is simple. The zinc ores are crushed and sampled and stored in bins. The smelting process comprises a roasting in furnaces, which converts the zinc sulphide into zinc oxide. This is mixed with the proper proportion of a reducing agent, which is here coal dust ; this mixture is distilled, the metallic zinc resulting cast into plates, and the residue from the distillation saved and treated for silver contents.

The crushing and sampling plant comprises :

One Allis-Chalmers vertical crusher.

Steel crushing rolls, 26 in. x 20 in.

Automatic sampler.

Bucket elevators.

Shaking screens (Jeffrey).

Screw and belt conveyors.

The ore, after being weighed, is dumped into the vertical crusher. The crushed product is raised to the shaking screen (10 mesh) where it is separated into coarse and fine. The coarse, which goes over 10 mesh, is sent to the rolls by means of a screw conveyor, and screened again. This cycle is repeated until all the ore goes through the screen. The screened ore is conveyed to the automatic sampler, whence a bucket elevator and a chain conveyor with steel disks, distribute it into the ore bins, which have a capacity of 900 tons. These are discharged from below, into cars which convey the ore to the roasting furnaces. It is dumped into the pit of a bucket elevator, which raises it, and it is then distributed to the roasting furnaces by a screw conveyor. The roasting is done in Merton furnaces equipped with mechanical rakes and water jacketed. They consist of five chambers, or shelves, placed one above the other, and of a hearth twelve feet in diameter where the process is completed. The fuel used is producer gas. The ore moves in a direction opposite to the flow of gas. These furnaces are entirely new as applied to the zinc industry and were constructed by the Union Iron Works of San Francisco. There are four of them, and space for increasing the number to eight.

The mixing of roasted ore and coal dust (reducing agent) is done in two pug-mills.

The ore from the roasting furnaces is first allowed to cool on a cooling floor, then dumped into the pug-mills with the right proportion of coal dust. The mixture is then raised by a bucket elevator, loaded on cars, and sent to the distillation furnaces. These are arranged into five groups of 240 retorts each, in four horizontal tiers, gas firing, with regenerator for air only. The current of gas is reversed every half hour.

The gas plant comprises 4 producers of a diameter of 9 ft. 6 in. and two of 8 ft., Taylor system, water gas, with hydraulic joints. The coal, which is obtained from the Canadian Metal Company's own mine, is stored in the gas producer building. The pottery comprises a pug-mill, crusher for fire-clay; a Mahler hydraulic press for muffles, &c.; stamp mill for clay. All the refractory bricks used in the smelter were made in the pottery. The clay has to be imported from St. Louis, Missouri, as no satisfactory clay has yet been found near at hand.

There are three engines in various parts of the smelter, two of 35 h.p. and one of 60 h.p.

There are also well equipped machine and carpenter shops, laboratories, offices, &c.

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MISCELLANEOUS METALLIC.

ALUMINIUM.

The Northern Aluminium Company have extensive works at Shawenegan Falls, Que., where they manufacture aluminium from ores imported from France and Germany. They have also a well equipped wire mill where the metal is made into aluminium wire and cables which are now used extensively in transmission of electricity. No Canadian raw material is used, but it is interesting to mention the industry inasmuch that it may stimulate search and prospecting for ores of aluminium. The Northern Aluminium Company use bauxite imported from France and Germany.

ANTIMONY.

The mining of antimony ores in Canada has been exceedingly irregular, as, previous to 1905, no production has been reported since 1898. In 1905 the auriferous antimony ores at West Gore, Hants county, Nova Scotia, were actively worked, about 20 men being employed. Not only was a considerable tonnage of ore mined but a good deal of experimenting was done during the year, in order to more fully recover the gold values and concentrate the antimony to save heavy freight rates now paid.

A description of the development of the mines and of different methods of treating the ore will be found in the report of the Department of Mines of Nova Scotia for 1905 pages 69 to 108.

According to the same report, there were mined about 4,000 tons of ore divided into two classes as follows:—

430 tons said to contain 46 per cent antimony and 5.56 ounces of gold per ton.

3,570 tons, said to contain 8 per cent antimony and \$10 in gold per ton.

There were shipped to english smelter companies 527 tons of mined ore containing gold valued at \$24,657. (Antimony contents not stated.)

TABLE 1.
MISCELLANEOUS.
METALLIC.
ANNUAL PRODUCTION OF ANTIMONY ORE.

Calendar Year.	Tons.	Value.
1886	665	\$31,490
1887	584	10,860
1888	345	3,696
1889	55	1,100
1890	26½	625
1891	10	60
1892 to 1897	Nil.	Nil.
1898	1,344	20,000
1899 to 1904	Nil.	Nil.
1905	527	.....

TABLE 2.
MISCELLANEOUS.
METALLIC.
EXPORTS OF ANTIMONY ORES.

Calendar Year.	Tons.	Value.	Calendar Year.	Tons.	Value.
1880.....	40	\$ 1,948	1890.....	38	\$ 1,000
1881.....	34	3,308	1891.....	3½	60
1882.....	323	11,673	1892 to 1897..	Nil.	Nil.
1883.....	165	4,200	1898.....	1,232	15,295
1884.....	433	17,875	1899.....	6¾	190
1885.....	758	36,250	1900.....	210	3,441
1886.....	665	31,390	1901.....	10	1,643
1887.....	229	9,720	1902.....	90	13,658
1888.....	352½	6,894	1903.....	33	4,332
1889.....	30	695	1904.....	160	7,237
			1905.....	525	27,118

TABLE 3.
MISCELLANEOUS.
METALLIC.
IMPORTS OF ANTIMONY.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1880.....	42,247	\$ 5,903	1892.....	190,308	17,680
1881.....		7,060	1893.....	181,823	14,771
1882.....	183,597	15,044	1894.....	139,571	12,249
1883.....	105,946	10,355	1895.....	79,707	6,131
1884.....	445,600	15,564	1896.....	163,209	9,557
1885.....	82,012	8,182	1897.....	134,661	8,031
1886.....	89,787	6,951	1898.....	156,451	12,350
1887.....	87,827	7,122	1899.....	289,066	16,851
1888.....	120,125	12,242	1900.....	186,997	20,001
1889.....	119,034	11,206	1901.....	350,737	24,714
1890.....	117,066	17,439	1902.....	504,822	39,276
1891.....	114,084	17,483	1903.....	868,146	65,434
			1904.....	418,943	27,112
			Duty.		
1905	{ Antimony, or regulus of, not ground, pulverized or otherwise manufactured. Antimony salts.....		Free.	92,785	6,664
			"	93,669	6,164
Total.....				186,454	12,828

COBALT.

According to returns made to the Ontario Bureau of Mines the production of cobalt in 1904 was 29 tons, valued at \$36,620, derived partly from the nickeliferous ores of the Sudbury district and partly from the silver-cobalt arsenides of Coleman township. In 1905, accord-

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ing to the same authority, the production of the latter district, was 120 tons, valued at \$100,000.

MERCURY.

There has been no production of mercury since 1897. The small production reported in 1895, 1896, and 1897, was derived from the deposits at the western end of Kamloops lake, B.C. These deposits consist of quartz veins containing pockets of cinnabar. These veins are in a zone of decomposed volcanic rock of Tertiary age.

TABLE 4.
MISCELLANEOUS.
METALLIC.
PRODUCTION OF MERCURY.

Calendar Year.	Flasks (76½ lb.)	Price per flask.	Value.
1895.....	71	\$ 33 00	\$ 2,343
1896.....	58	33 44	1,940
1897.....	9	36 00	324

TABLE 5.
MISCELLANEOUS.
METALLIC.
IMPORTS OF MERCURY.

Fiscal Year.	Pounds.	Value.
1882.	2,443	\$ 965
1883.	7,410	2,991
1884.	5,848	2,441
1885.	14,490	4,781
1886.	13,316	7,142
1887.	18,409	10,618
1888.	27,951	14,943
1889.	22,931	11,844
1890.	15,912	7,677
1891.	29,775	20,223
1892.	30,936	15,038
1893.	50,711	22,998
1894.	36,914	14,483
1895.	63,732	25,703
1896.	77,869	32,343
1897.	76,058	33,534
1898.	59,759	36,425
1899.	103,017	51,695
1900.	85,342	51,987
1901.	140,610	94,564
1902.	97,283	56,615
1903.	164,968	91,625
1904.	151,107	80,658
1905. Duty free	103,330	48,412

PLATINUM.

Although the occurrence of platinum in the placer gravels is so wide spread throughout British Columbia, only about \$500 worth was obtained from gravels near Granite creek, Similkameen. While the Consolidated Cariboo Hydraulic Mining Company of Cariboo, and the Berry Creek Mining Company of Thiebert creek, Cassiar, each recovered small quantities in an experimental way. The manager of the latter company reports—"Experiments were made to concentrate the black sands containing minerals belonging to the platinum group. For this purpose an undercurrent and a series of tables covered with cocoa matting, canvas and burlap, were installed at the end of No. 2 sluice.

"Although it was this year largely experimental, the mechanical concentration was quite satisfactory. During the 21 days that the concentrating plant was in operation it yielded 250 pounds of concentrates, and this amount could have been greatly increased by a man in attendance with some experience in concentration.

"Assays of these concentrates, made at the British Columbia Government Assay Office, gave 60 ounces of platinum to the ton of concentrates, and assays obtained in San Francisco gave up to 15 ounces of platinum and 7 ounces of gold per ton. These results were obtained almost entirely from top gravel, and as the bottom gravels will naturally contain more of the heavier minerals the concentrates from the latter should be very much better than this year's output."

TABLE 6.

MISCELLANEOUS.

METALLIC.

ANNUAL PRODUCTION OF PLATINUM.

Calendar Year.	Value.	Calendar Year.	Value.
1887.....	\$ 5,600	1897.....	\$ 1,600
1888.....	6,000	1898.....	1,500
1889.....	3,500	1899.....	825
1890.....	4,500	1900.....	Nil.
1891.....	10,000	1901.....	457
1892.....	3,500	1902.....	46,502
1893.....	1,800	1903.....	33,345
1894.....	950	1904.....	10,872
1895.....	3,800	1905.....	500
1896.....	750		

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TABLE 7.
MISCELLANEOUS.
METALLIC.
IMPORTS OF PLATINUM.

Fiscal Year.	Value.	Fiscal Year.	Value.
1883.....	\$ 113	1895.....	\$3,937
1884.....	576	1896.....	6,185
1885.....	792	1897.....	9,031
1886.....	1,154	1898.....	9,781
1887.....	1,422	1899.....	9,671
1888.....	13,475	1900.....	57,910
1889.....	3,167	1901.....	20,263
1890.....	5,215	1902.....	19,357
1891.....	4,055	1903.....	21,251
1892.....	1,952	1904.....	28,112
1893.....	14,082	1905*.....	61,719
1894.....	7,151		

* Platinum wire and platinum in bars, strips, sheets or plates, platinum retorts, pans, condensers, tubing and pipe, imported by manufacturers of sulphuric acid for use in their works. Duty free.

The larger production shown for the years 1902, 1903, 1904 was obtained from the ores of the Sudbury district, Ontario, or rather it was derived from the residues accumulated during a number of previous years during the treatment of the nickel copper mattes shipped from this district.

PALLADIUM.

It has been known for a long time that palladium was present in the nickel ore of the Sudbury district, but in past years no definite information could be obtained as to whether the metals of the platinum group were saved in the treatment which the ores and mattes underwent. As far back as 1889 it was discovered that sperrylite, the arsenide of platinum, which is present in the Sudbury ores, contained traces of palladium, but the occurrence was noted as being only of mineralogical interest. Of late years, however, the sources of platinum have not been able to supply the demand and palladium is being considered as a possible substitute on account of its malleability and high melting point (Palladium 1500°C, Platinum 1750°C).

The metal palladium is now being recovered from the Sudbury ores and according to figures received by the Ontario Bureau of Mines, the production for the past three years has been as follows :

	Ounces	Value
1902.....	4,411.....	\$86,014
1903.....	3,177.....	61,952
1904.....	952.....	18,564

The high figures for 1902 and 1903 are perhaps due to working over some accumulation of old residue from matte treated in previous years.

TIN.

No deposits of tin of an economic nature, have yet been discovered in Canada, although reports that tin ores have been discovered in large quantities in this country are very frequent. We give in the table below, figures relating to the Canadian tin trade.

TABLE 8.
MISCELLANEOUS.
METALLIC.
IMPORTS OF TIN AND TINWARE.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880.....	\$ 281,880	1893.	\$1,242,994*
1881.....	413,924	1894.....	1,310,389
1882.....	790,285	1895.....	973,397
1883.....	1,274,150	1896.....	1,237,684
1884.....	1,018,493	1897.....	1,274,108
1885.....	1,060,883	1898.....	1,550,851
1886.....	1,117,368	1899.....	1,372,813
1887.....	1,187,312	1900.....	2,418,455
1888.....	1,164,273	1901.....	2,339,109
1889.....	1,243,794	1902.....	2,293,958
1890.....	1,289,756	1903.....	2,712,186
1891.....	1,206,918	1904.....	2,389,557
1892.....	1,594,205		
		Duty.	
1905	Tin crystals.....	Free.	\$ 2,064
	Tin in blocks, pigs and bars.....	"	819,038
	Tin plates and sheets.....	"	1,751,507
	Tin foil.....	"	62,813
	Tinware, plain, japanned, or lithographed and all manufactures of tin, N.E.S.....	25 %	156,335
Total.....			\$2,791,757

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NON METALLIC.

ABRASIVE MATERIALS.

Included under this heading, there are produced in Canada, corundum, the various sandstone abrasives, such as grindstones, pulpstones, whetstones, etc., and tripolite or infusorial earth.

Corundum.—The total shipments of grain corundum in 1905 from mills in Canada, was 1,644 tons, valued at \$149,153 f.o.b. at railway shipping points. Compared with the shipments in 1904 there is an increase of 651 tons or over 65 per cent.

Detailed statistics of output and sales for 1905 were as follows:

Rock treated	23,570 tons
Grain corundum graded	3,361,838 pounds
Shipments—	
Grain corundum sold in Canada	280,050 pounds
Grain corundum sold in other countries.....	3,008,217 "
Total sales	3,288,717 pounds

Two companies were mining corundum rock and operating mills during the year. The Canada Corundum Company, Ltd., Toronto, the largest operator, worked the Craig mine at Craigmont, Renfrew county, but the mill was shut down a good part of the year, while making changes. There were 190 men employed during the year. The Ashland Emery and Corundum Company have taken over the mills and chattels of the Ontario Corundum Company. The property is located at Burgess Mines, P. O., Hastings county, Ont., and 20 men were employed for about half the year. The Corundum Refineries Ltd., were opening up a property at Jewelville, Ont., but were not in a position to produce during the year.

Statistics of shipments since 1900, are as follows:—

	Quantity.	Value.
1900 grain corundum.....	3 tons.	\$ 300
1901 "	387 "	46,415
1902 "	768 "	84,465
1903 " 703 } corundum ore 267 }	970 "	80,180
1904 grain corundum	993 "	109,545
1905 "	1644 "	149,153

Statistics since 1900 showing the quantities of ore treated, the corundum produced, and the sales or shipments, are given in the following tables.

TABLE NO. 1.
 ABRASIVE MATERIALS.
 PRODUCTION OF CORUNDUM ORE AND CORUNDUM.

Calendar Year.	Corundum bearing rock treated.	Grain Corundum Graded	Grain Corundum Sold in Canada.	Grain Corundum Exported.	Total of Sales of Grain Corundum.
	Tons.	Tons.	Tons.	Tons.	Tons.
1900.....		60			3
1901.....	4,134	434	85	302	387
1902.....	7,996	805	106	662	768
1903.....	(a) 8,877	839	85	618	703
1904.....	28,187	1,654	116	877	993
1905.....	23,570	1,680	140	1,504	1,644

(a) In addition to this amount which was milled in Canada, 267 tons of ore were mined and shipped to the United States for treatment there.

Grindstones, Pulpstones, etc.—The production of grindstones, including wood-pulp stones, etc., in 1905, from quarries in Nova Scotia and New Brunswick, reached a total of 5,540 tons, valued \$62,375, showing an increase over the production in 1904 of 891 tons or over 19 per cent., and although it is the largest production reached since 1888, there has been comparatively little variation in the yearly output for the past 20 years.

These abrasives are quarried from the Millstone Grit of the Carboniferous formation which occupies a large portion of the surface of the eastern half of the province of New Brunswick and the northern and north western parts of Nova Scotia.

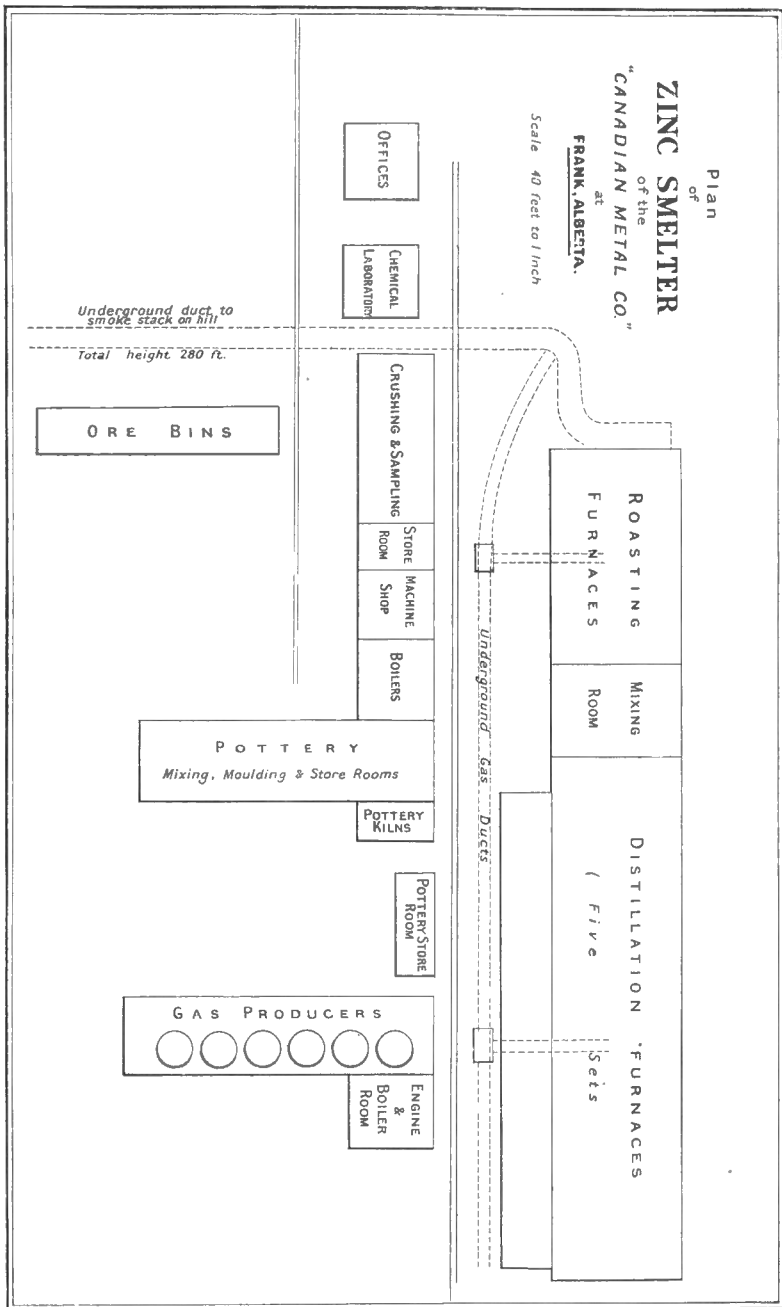
The grindstones are all shipped in a finished condition and are worth from \$10 to \$12 per ton. Pulp stones are sold at about \$75 per stone, the weight of the stones being about $2\frac{3}{4}$ tons. The production of them in 1905 was about 25 stones, which found a market in Canadian and United States pulp mills. Scythe or whetstones are manufactured by one firm. These are put up in one quarter gross boxes, thirty pounds to the box, and are worth about \$50 per ton. About 200 gross were made in 1905. At some of the quarries there is a considerable production of foundation and building stone, besides rough stones for breakwater and harbour works.

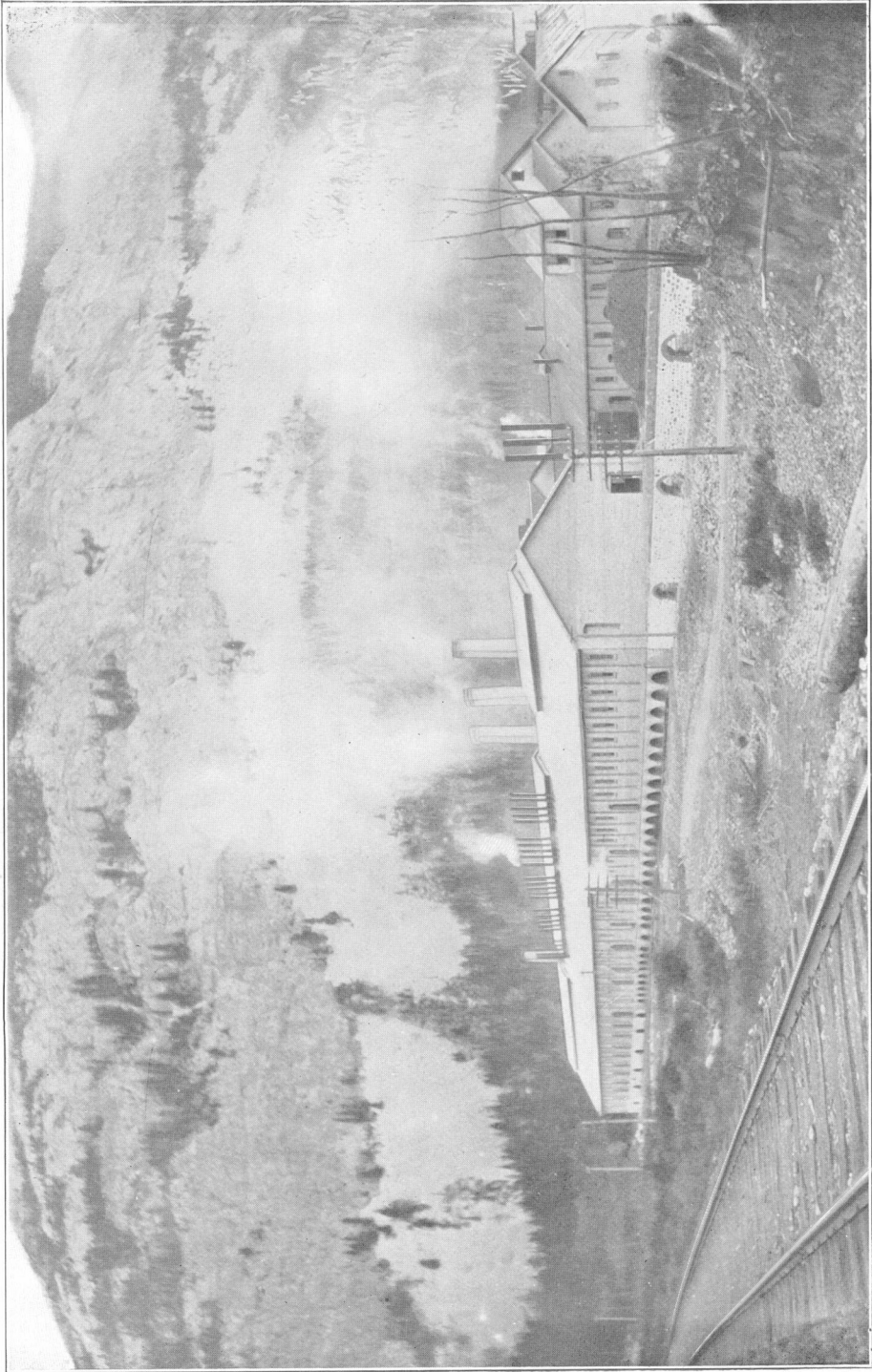
ZINC SMELTER

of the
"CANADIAN METAL CO."
at
FRANK, ALBERTA.

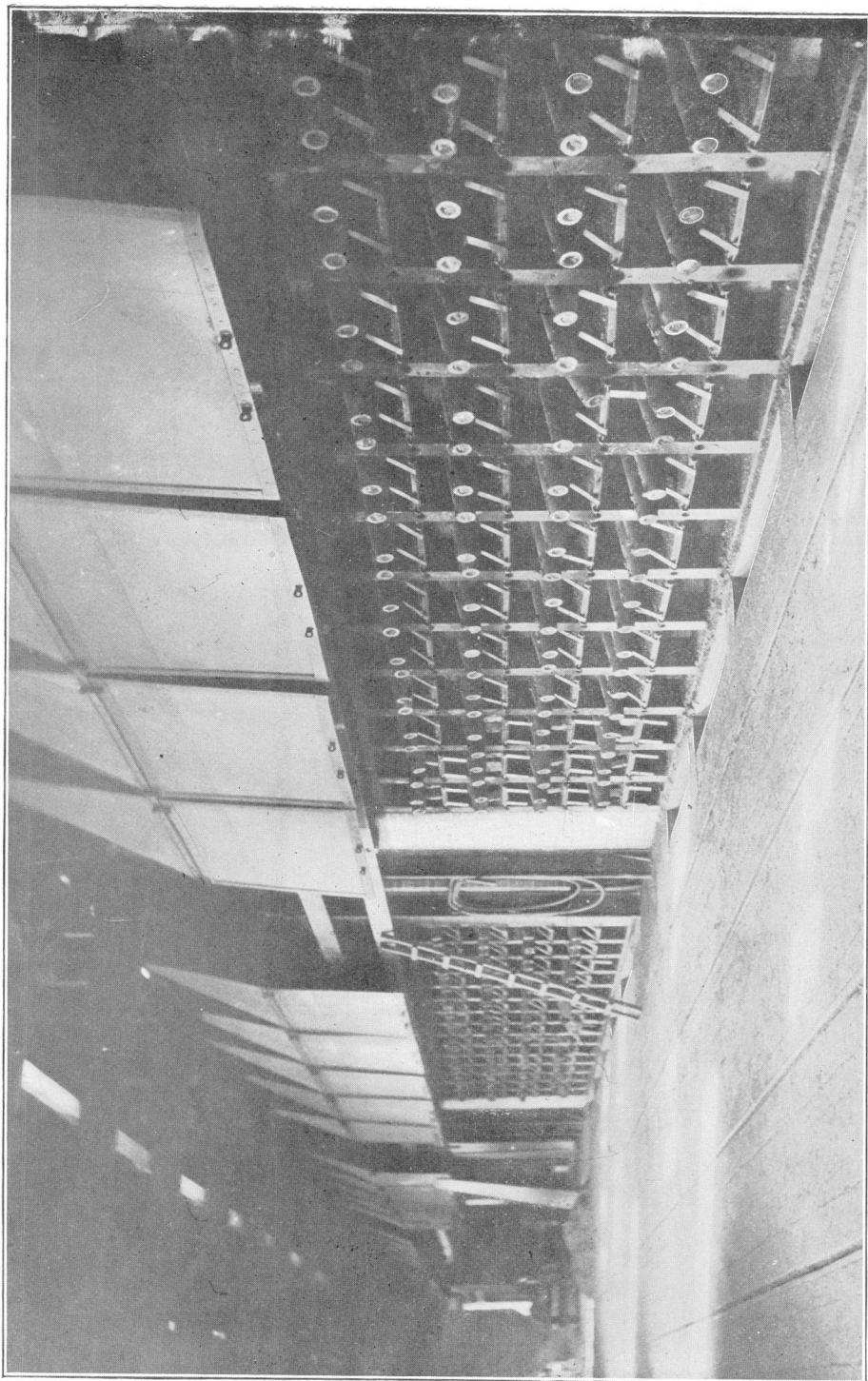
Plan

Scale 40 feet to 1 inch

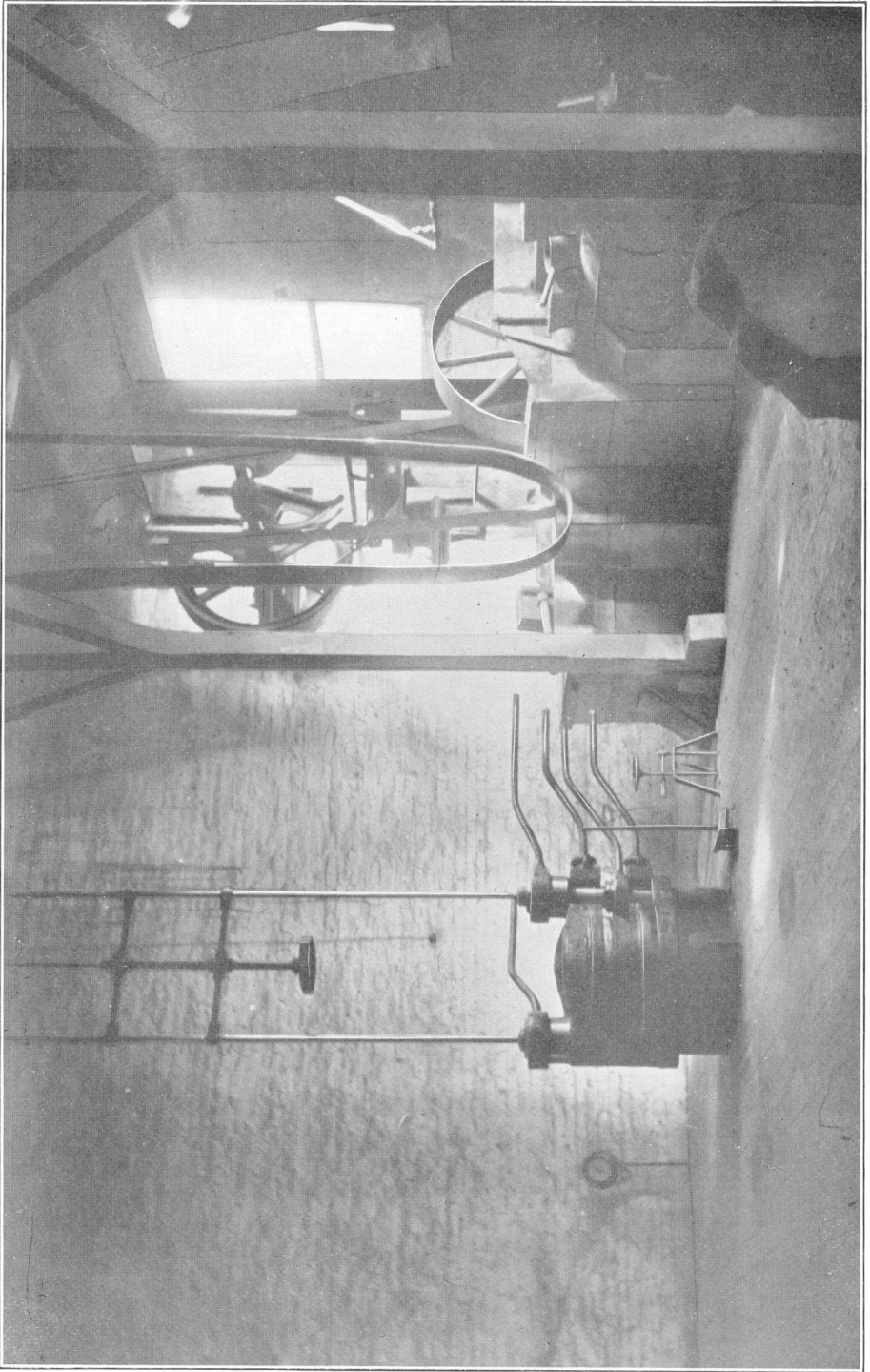




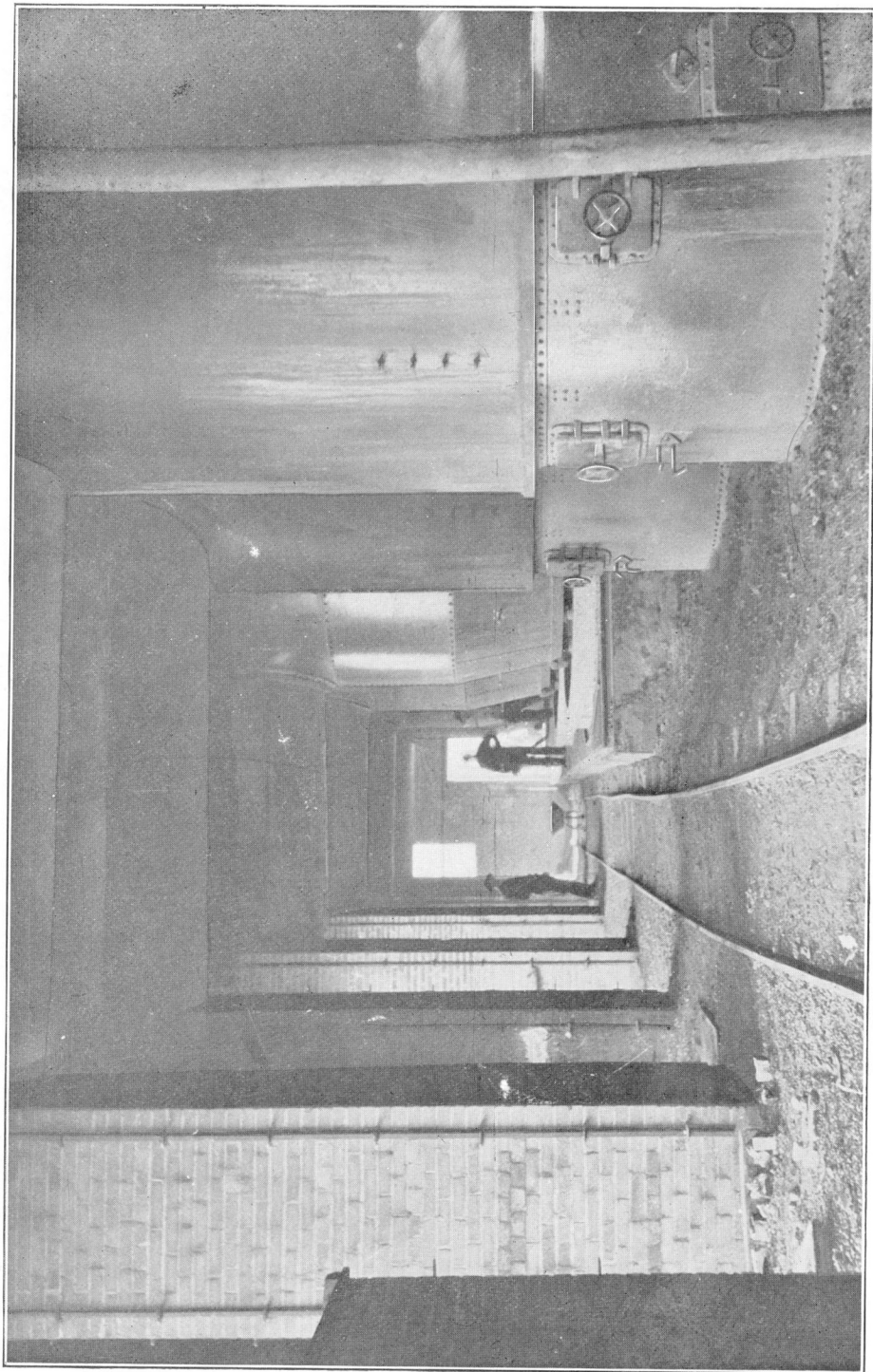
THE CANADIAN METAL CO., (LIMITED.)—ZINC SMELTER, FRANK, ALTA.



CANADIAN METAL CO.—FRANK, ALBERTA.—DISTILLATION OVENS.



THE CANADIAN METAL CO., (LIMITED.)—ZINC SMELTER.—POTTERY.



CANADIAN METAL CO.—GAS PRODUCERS.

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Statistics of the production by provinces since 1886, are given in table 2 below :—

TABLE 2.
 ABRASIVE MATERIALS.
 ANNUAL PRODUCTION OF GRINDSTONES.

CALENDAR YEAR.	NOVA SCOTIA.		NEW BRUNSWICK.		TOTAL.		AVERAGE VALUE PER TON.
	Tons.	Value.	Tons.	Value.	Tons.	Value.	
1886.....	1,765	\$24,050	2,255	\$22,495	4,020	\$46,545	\$11 58
1887.....	1,710	25,020	3,582	38,988	5,292	64,008	12 10
1888.....	1,971	20,400	3,793	30,729	5,764	51,129	8 37
1889.....	712	7,128	2,692	23,735	3,404	30,863	9 07
1890.....	850	8,536	4,034	33,804	4,884	42,340	8 67
1891.....	1,980	19,800	2,499	22,787	4,479	42,587	9 51
1892.....	2,462	27,610	2,821	23,577	5,283	51,187	9 69
1893.....	2,112	21,000	2,488	17,379	4,600	38,379	8 34
1894.....	2,128	16,000	1,629	16,717	3,757	32,717	8 71
1895.....	1,400	14,000	2,075	17,932	3,475	31,932	9 19
1896.....	1,450	14,500	2,263	18,810	3,713	33,310	8 97
1897.....	1,407	17,500	3,165	24,840	4,572	42,340	9 26
1898.....	1,422	12,350	3,513	32,425	4,935	44,775	9 07
1899.....	1,378	10,300	3,133	32,965	4,511	43,265	9 59
1900.....	1,411	12,600	4,128	40,850	5,539	53,450	9 65
1901.....	358	3,200	4,223	42,490	4,581	45,690	9 97
1902.....	1,074	8,118	3,559	36,000	4,633	44,118	9 52
1903.....	1,337	9,562	4,201	38,740	5,538	48,302	8 72
1904.....	1,029	7,332	3,620	35,450	4,649	42,782	9 20
1905.....	1,020	10,200	4,520	52,175	5,540	62,375	11 25

The imports of grindstones into Canada, principally into the provinces of Ontario and Quebec, reached a total value in 1905, of \$49,747, made up of grindstones not mounted and not less than three feet in diameter to the value of \$40,869 and other grindstones to the value of \$8,878.

Statistics of the exports of grindstones and of the imports of grindstones, burrstones, emery and pumice stone, are shown in tables 3, 4, 5, 6 and 7, following:—

TABLE 3.

ABRASIVE MATERIALS.
EXPORTS OF GRINDSTONES.

Calendar Year.	Value.
1884.....	\$28,186
1885.....	22,606
1886.....	24,185
1887.....	28,769
1888.....	28,176
1889.....	29,982
1890.....	18,564
1891.....	28,433
1892.....	23,567
1893.....	21,672
1894.....	12,579
1895.....	16,723
1896.....	19,139
1897.....	18,807
1898*	25,588
1899*	23,288
1900*	42,128
1901*	29,130
1902*	24,489
1903*	27,659
1904*	35,612
1905*	24,868

* Including stone for the manufacture of grindstones.

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TABLE 4.
 ABRASIVE MATERIALS.
 IMPORTS OF GRINDSTONES.

Fiscal Year.	Duty.	Tons.	Value.
1880.....		1,044	\$11,714
1881.....		1,359	16,895
1882.....		2,098	30,654
1883.....		2,108	31,456
1884.....		2,074	30,471
1885.....		1,148	16,065
1886.....		964	12,808
1887.....		1,309	14,815
1888.....		1,721	18,263
1889.....		2,116	25,564
1890.....		1,567	20,569
1891.....		1,381	16,991
1892.....		1,484	19,761
1893.....		1,682	20,987
1894.....		1,918	24,426
1895.....		1,770	22,834
1896.....		1,862	26,561
1897.....		1,521	25,547
1898.....			22,217
1899.....			27,476
1900.....			34,382
1901.....			39,068
1902.....			40,838
1903.....			53,388
1904.....			46,039
1905 {	Grindstones not mounted and not less than 36 inches in diameter.....	15 p. c.	40,869
		25 p. c.	8,878
			49,747

TABLE 5.
 ABRASIVE MATERIALS.
 IMPORTS OF BURRSTONES.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880.....	\$12,049	1893.....	\$ 3,552
1881.....	6,337	1894.....	3,029
1882.....	15,143	1895.....	2,172
1883.....	13,242	1896.....	2,049
1884.....	5,365	1897.....	1,827
1885.....	4,517	1898.....	1,813
1886.....	4,062	1899.....	1,759
1887.....	3,545	1900.....	1,546
1888.....	4,753	1901.....	5,762
1889.....	5,465	1902.....	2,559
1890.....	2,506	1903.....	586
1891.....	2,089	1904.....	35
1892.....	1,464	1905*.....	2,607

* Burrstones in blocks, rough or unmanufactured, not bound up or prepared for binding into mill-stones. Duty free.

TABLE 6.
 ABRASIVE MATERIALS.
 IMPORTS OF EMERY.

Fiscal Year.	Emery. <i>a.</i>	Mfrs. of Emery. <i>b.</i>
1885.....	\$ 5,066	\$ 4,920
1886.....	11,877	5,832
1887.....	12,023	4,598
1888.....	15,674	4,001
1889.....	13,565	3,948
1890.....	16,922	5,313
1891.....	16,179	6,665
1892.....	17,782	6,492
1893.....	17,762	5,606
1894.....	14,433	2,223
1895.....	14,569	7,775
1896.....	16,287	11,913
1897.....	16,318	11,231
1898.....	17,661	15,478
1899.....	21,454	22,343
1900.....	19,312	25,615
1901.....	16,311	22,190
1902.....	14,476	23,892
1903.....	18,058	22,177
1904.....	21,626	29,273
1905.....	21,980	33,250

a Emery in bulk, crushed or ground. Duty free.

b Emery wheels and manufactures of emery. Duty 25 p.c.

TABLE 7.
 ABRASIVE MATERIALS.
 IMPORTS OF PUMICE STONE.

Fiscal year.	Value.
1885.....	\$ 9,384
1886.....	2,777
1887.....	3,594
1888.....	2,890
1889.....	3,232
1890.....	3,003
1891.....	3,696
1892.....	3,282
1893.....	3,798
1894.....	4,160
1895.....	3,609
1896.....	3,721
1897.....	2,903
1898.....	3,829
1899.....	5,973
1900.....	5,604
1901.....	5,516
1902.....	7,254
1903.....	6,152
1904.....	6,537
*1905.....	8,447

* Pumice and pumice stone, ground or unground. Duty free.

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Tripolite.—Owing to the destruction by fire of the mill at Bass River, Nova Scotia, in October, 1905, after having run about two months only, the shipments of tripolite were comparatively small, amounting to only 200 tons, valued at \$3,600 at the mill. Practical nothing was done on the tripolite deposits at St. Anns bay, Cap Breton.

Statistics of production since 1896, are given in the following table :—

TABLE 8.
ABRASIVE MATERIALS.
PRODUCTION OF TRIPOLITE.

Calendar Year.	Tons.	Value.
		\$
1896	664	9,960
1897	15	150
1898	1,017	16,660
1899	1,000	15,000
1900	336	1,950
1901	850	15,300
1902	1,052	16,470
1903	835	16,700
1904	320	6,400
1905	200	3,600

Grindstone Quarries.

NOVA SCOTIA.—In Nova Scotia at the present time, only two quarries are operated for stone for the manufacture of grindstones, one at Lower Cove about three miles above Joggins on the Bay of Fundy in Cumberland county, the other on Quarry Island, a mile and half across the harbour from West Merigomish in Pictou county.

Lower Cove—The Lower Cove quarry is operated by the Atlantic Grindstone Coal and Railway Company, (Fred Huestis, manager). Located on the Bay of Fundy shore, the stone, a light gray in colour, was at first quarried at the water's edge, but the present point of operation is just a little to the east. The rock dips steeply to the south with a strike east and west. The quarry as now operated is down to a depth of 60 feet. A wire cable $2\frac{1}{2}$ inches in diameter and span of nearly 1,000 feet with travelling clutch and lifting capacity of about 20 tons, delivers the stone to tram cars which convey it to the gang saws of which there are six in operation. The plant is very complete and ample for a large output. Power is supplied by two Mumford boilers of 125 horse-power each, built by the Robb

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Engineering Company of Amherst, operating through a 250 h.p. tandem cylinder compound engine built by the same firm.

In the quarry there are several ledges of very good stone; there is also a great deal of 'bull' and broken rock, so that quarrying has been somewhat expensive. Grindstones are being made in all sizes from 5 inches to 7 feet in diameter and varying in width from $\frac{3}{4}$ of an inch to 15 inches. About five different grits are met with. The coarser grits are used for grinding axes, &c., the medium for grinding scythes, hay knives, &c., and the finer grit or blue stone for cutlery. Preparations are being made to make scythestones, whetstones, oil stones, &c. Some of the waste not suitable for grindstones is trimmed to shape and sold for foundation stone. The larger grindstones measuring 14 inches in width by 7 feet in diameter weigh about $3\frac{1}{2}$ tons.

Shipments are made chiefly by boat to Portland and Providence for points throughout the New England States and west to Chicago. A small quantity of the smaller stones is shipped by rail from Joggins station, chiefly for local markets in Nova Scotia and New Brunswick.

Quarry Island—The grindstone quarry at Quarry Island, Pictou county, is operated by James Stevenson and Jas. W. Sutherland. It is situated a mile and a half across the harbour from West Merigomish, and about 12 or 13 miles from New Glasgow, and can be approached either by boat from West Merigomish or by driving direct from New Glasgow. On the south side of the island the rock ledges from which the stone is obtained dip away from the water's edge to the northeast or north and into the bank on which there is a very heavy and rising covering of clay of a height of 21 feet and upwards so that it is not profitable to follow the stone very far under the bank. For a distance of 400 feet or more along the shore stone has been taken out at various places, operations having extended over a long period of time with a comparatively small annual output. The stone is got out by hand-drilling and blasting, is rough trimmed into shape by hand and turned on a lathe, and grindstones are made varying from 4 to 6 feet in diameter. Two derricks operated by steam power are used to raise stone from the main opening. When sufficient stone is accumulated, shipments are made by schooner to New England points, and occasionally car load lots are shipped from Merigomish, in which case the stone is scowed across the harbour and hauled a half mile up hill to Merigomish Station. Coal for use under the boiler has also to be scowed across the harbour. About 6 or 8 men were employed under Captain Stevenson during 1905.

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NEW BRUNSWICK.—Grindstone quarries were worked in the province of New Brunswick during 1905 at Clifton, Stonehaven and Grande Anse on the Bay of Chaleur in Gloucester county and at Woodpoint and Rockport on Chignecto Bay in Westmoreland county, while stone for grinding wood pulp was made at Wm. Hood and Sons quarry at Indiantown, on the Miramichi river, Northumberland county.

Three quarries were operated on the Bay of Chaleur during 1905, the most important being that at Stonehaven owned by Joseph Read & Co., in fact this and the quarries at Woodpoint owned by Henry Read of Sackville are the largest producing grindstone quarries at present worked. The quarries on the Bay of Chaleur are all on the shore about a mile from the line of the Caraquet and Gulf Shore Railway and from 20 to 30 miles from Bathurst on the Intercolonial Railway.

The Stonehaven quarry was in charge of Mr. Gordon Read with Amos Como as foreman. The stone was formerly quarried at low water, and floated in under rafts at high tide, but at present a sea wall built of clay and stone and being constantly added to by the waste from the quarry protects a considerable area from which stone can be taken below sea level. The stone is taken out and rough trimmed mostly by hand, a great deal being done under a system of piece work. Two gangs of saws and 8 lathes are operated in the mill by a 62-h.p. engine, while an engine of 25-h.p. is used for operating three derricks and pumping the water from the quarry. Grindstones of all sizes are made up to 7 feet by 15 inches as well as the small scythe and whetstones. The annual output is now over 2,500 tons, valued at the quarry at from \$10 to \$12 per gross ton. Shipments are made to wholesale firms in Quebec and Montreal and to New Haven, Boston and other New England points. Freight rates to Montreal are about 16½ cents per hundred pounds and to New Haven, Conn., from \$3 to \$3.50 per gross ton.

About two miles to the west of Stonehaven, grindstones are being made by W. R. Knowles at Clifton. The sandstone is covered by about a depth of 32 feet of clay and shale and occurs at a height of about 70 feet above sea level. There is an available thickness of about 14 feet of stone suitable for grindstone making. Grindstones are made varying in size from 12 inches to 7 feet in diameter and shipments are made chiefly to New England points. Steam machinery is employed to operate a steam shovel for removing the over-burden of clay and shale and for running gang saws and lathes for cutting and finishing the stone. The annual output is from 300 to 400 tons. About 6 feet

below the freestone is found a small 6 inch seam of coal which has been mentioned in early geological reports, and at a further depth of 60 feet, a second 6 inch coal seam is found.

Between Clifton and Stonehaven is a quarry formerly worked by Lombard & Co. This quarry has, however, been abandoned for the present, and the company has opened a new quarry at Grande Anse about 10 miles further along the coast, where the usual machinery, gang saws and lathes, for finishing the stone is set up. This quarry is being worked by Messrs. McGill & Co., for Lombard & Co. of Boston. The sand-tone at Grande Anse was also being used in building a large catholic church at that place.

The grindstone quarries in Westmoreland county, owned by Henry C. Read of Sackville, are worked in much the same way as those on the Bay of Chaleur. The grindstones are largely quarried at Rockport and brought to Woodpoint to be finished on the lathes. The annual output is from 1,200 to 1,500 tons.

At Woodpoint a building stone quarry is also worked by the same operator and a large quantity of good sandstone has been removed and used in many important buildings throughout the country.

At Indiantown, in Northumberland county, Messrs. Wm. Hood & Son of Montreal, have been opening up and working a sandstone quarry. The stone of light gray or buff colour has found a ready market in Montreal and has already been used in some important buildings. Some of the courses of stone are found to be well adapted to the manufacture of woodpulp stones, and since 1899 these have been supplied to Canadian paper makers and are also being exported to the United States.

The stone is highly commended by the firms using them. In size they measure about 54 inches diameter by 27 inches face, and are worth about \$75 each in car load lots at the quarry.

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ASBESTUS.

The variations in this industry during the past twenty-five years are illustrated by the figures in tables Nos. 1 and 2.

TABLE 1.
ASBESTUS.
PRODUCTION.—1896 TO 1905.

	Tons.	Value.	Average Value per ton.
1896—Asbestos	10,892	\$ 423,066	\$ 38.84
Asbestos	1,358	6,790	5.00
	12,250	\$ 429,856	\$ 35.09
1897—Asbestos	13,202	\$ 399,528	\$ 30.26
Asbestos	17,240	45,840	2.66
	30,442	\$ 445,368	\$ 14.63
1898—Asbestos	16,124	\$ 475,131	\$ 29.46
Asbestos	7,661	16,066	2.10
	23,785	\$ 491,197	\$ 20.65
1899—Asbestos	17,790	\$ 468,635	\$ 26.34
Asbestos	7,746	17,214	2.22
	25,536	\$ 485,849	\$ 19.03
1900—Asbestos	21,621	\$ 729,886	\$ 33.76
Asbestos	7,520	18,545	2.46
	29,141	\$ 748,431	\$ 25.68
1901—Asbestos	32,892	\$ 1,248,645	\$ 37.96
Asbestos	7,325	11,114	1.52
	40,217	\$ 1,259,759	\$ 31.32
1902—Asbestos	30,219	\$ 1,126,688	\$ 37.28
Asbestos	10,197	21,631	2.12
	40,416	\$ 1,148,319	\$ 28.41
1903—Asbestos	31,129	\$ 915,888	\$ 29.42
Asbestos	10,548	13,869	1.31
	41,677	929,757	\$ 22.31
1904—Asbestos	35,611	\$ 1,213,502	\$ 34.07
Asbestos	12,854	12,850	1.00
	48,465	\$ 1,226,352	\$ 25.30
1905—Asbestos	57,669	\$ 1,486,359	\$ 29.33
Asbestos	17,594	16,900	.96
	63,263	\$ 1,503,259	\$ 22.02

TABLE 2.

ASBESTUS.

PRODUCTION, ETC.—1880 TO 1895.

Calendar Year.	PRODUCTION.			Exports, Average value per ton.
	Tons (2,000 lbs.)	Value.	Average value per ton.	
		\$	\$ cts.	\$ cts.
1880.....	380	24,700	65.00	} Exports taken as production.
1881.....	540	35,100	65.00	
1882.....	810	52,650	65.00	
1883.....	955	68,750	71.98	
1884.....	1,141	75,097	65.80	
1885.....	2,440	142,441	58.37	
1886.....	3,458	206,251	59.64	
1887.....	4,619	226,976	49.14	
1888.....	4,404	255,007	57.90	
1889.....	6,113	426,554	69.77	
1890.....	9,860	1,260,240	127.81	
1891.....	9,279	999,878	107.75	
1892.....	6,082	390,462	64.19	
1893.....	6,331	310,156	49.02	
1894.....	7,630	420,825	55.15	
1895.....	8,756	368,175	42.05	

TABLE 3.

ASBESTUS.

EXPORTS.

Calendar Year.	Tons.	Value,	Average value per ton.
1892.....	5,380	\$373,103	\$69.35
1893.....	5,917	338,707	57.24
1894.....	7,987	477,837	59.82
1895.....	7,442	421,690	56.66
1896.....	11,842	567,967	47.96
1897.....	15,570	473,274	30.40
1898.....	15,346	494,012	32.19
1899.....	17,883	473,148	26.46
1900.....	16,993	693,105	39.61
1901.....	32,269	1,069,918	33.16
1902.....	31,074	995,071	32.02
1903.....	31,780	891,033	28.04
1904.....	37,272	1,160,887	31.14
1905.....	47,031	1,386,115	29.47

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TABLE 4.
ASBESTUS.
IMPORTS.

Fiscal Year.	Value.	Fiscal year.	Value.
1885.....	\$ 674	1895.....	\$26,094
1886.....	6,831	1896.....	23,900
1887.....	7,836	1897.....	19,032
1888.....	8,793	1898.....	26,389
1889.....	9,943	1899.....	32,607
1890.....	13,250	1900.....	43,455
1891.....	13,298	1901.....	50,829
1892.....	14,090	1902.....	52,464
1893.....	19,181	1903.....	75,465
1894.....	20,021	1904.....	83,827
		*1905.....	116,836

*Asbestos in any form other than crude, and all manufactures of. Duty 25 p.c.

According to the returns received from operators there are three main grades of product, viz.: crude, mill stock and asbestic. The former represents the portions of clean fibre picked out by hand; the mill stock, as its name implies, represents a number of different products of the milling process, whilst the by-product, for which the name 'asbestic' has been adopted, consists of the residual serpentine sand, carrying a large proportion of very short fibre. This finds a sale for plastering and other uses, taking the place of the ordinary sand and hair, over which it has been claimed to have many advantages. The asbestos fibre is sold to manufacturers, who produce with it a great variety of finished articles, mill board, paper, woven goods, &c., for use where a fireproof and non-conducting material is called for.

The asbestos product of Canada comes altogether from one small district in the eastern townships of Quebec province. In this district are two chief centres, viz.: Thetford and Black Lake, both situated on the line of the Quebec Central Railway, which connects the town of Sherbrooke with Point Lévis, opposite the city of Quebec. Outside of the just-mentioned district the only largely producing mine is situated on another small serpentine area at Danville, about twenty miles in a westerly direction from the before mentioned.

These worked asbestos mines are situated on a range of extensive masses of olivine diabase rocks, which extend from the Vermont boundary in a northeasterly direction nearly to the extremity of the Gaspé peninsula. At places these rocks are considerably serpentinised, and where the asbestos occurs are completely changed into serpentine.

These serpentine areas are full of veins of chrysotile or fibrous serpentine, cutting the solid mass in every direction. The fibre lies at right angles to the walls of the little veinlets, which vary in transverse dimensions so that in quarrying fibre of all lengths up to one or two inches is obtained.

The quarrying is done with the aid of power drills and ordinary mining appliances for breaking and hoisting, and the fibre is separated by a combined process of hand sorting and crushing, with separation of the rock from the fibre by special machinery. In the Bulletin on Asbestos, issued by the Geological Survey in 1903, the following description of one of the mills will give a general idea of the method followed, with slight differences, by the operators.

The milling process is largely automatic throughout. After the rock suitable for hand cobbing is extracted, the bulk of the output is run to the mill by steam trams, and the rough material passes at once to a Blake crusher, generally of two dimensions, where it is sized for the rolls. In the King Bros' mills these are corrugated, and the rock from the crusher goes directly through the rolls, from which it passes to a series of cyclones that reduce the rock to powder and separate the contained fibre. Exhausts are provided by which the greater part of this is removed and the material from the cyclone passes on to a set of shaking screens of different sized mesh by which the fiberized material is separated ready for bagging. Boys are stationed at points to regulate the supply of the material along the conveying belts. The bottom of the mine holds a considerable amount of broken fibre, generally wet and dirty, and this before going through the mill is put through a drying cylinder set at an angle of about 5 degrees and revolving slowly, by which the moisture is readily extracted. At present the motive power in all the mills is steam.

While the general principle in all these mills is practically the same, scarcely two are built on precisely the same plan. In some, the rolls are discarded, and other points of difference are seen depending upon the conditions at different mines. The extraction of the fibre is successfully accomplished at all the mines, and a large amount of the rock output which formerly would have gone to the dump as waste material is now profitably utilized. At the present time, at Black Lake, with the exception of Mr. Johnston's new mine, and that of the American Asbestos Co., which is still in the development stage, the greater portion of the output in this district is sent to the mill and the production of crude asbestos which at one time formed an important part of the output at this place has in consequence largely fallen off.

SESSIONAL PAPER No. 26a

COAL.

The production of coal for 1905 has easily retained its first place in the table showing the relative importance of the various Canadian mineral products. Fossil fuel in 1905 contributed nearly 26 per cent of the total mineral production of Canada. (See table, page 9.) Gold, which comes next in the list, contributed slightly over 21 per cent.

For the year ending December 31st 1905, Canada's coal production amounted to 8,667,948 short tons, valued at \$17,520,263, of which the detailed statistics are given in tables 1, 2 and 3.

TABLE 1.
COAL.
PRODUCTION BY PROVINCES, 1903, 1904 and 1905.

Province.	1903.		1904.		1905.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
		\$		\$		\$
Nova Scotia.....	5,653,338	10,095,246	5,596,241	9,993,288	5,646,583	10,083,184
British Columbia	1,676,581	4,490,844	1,862,625	4,989,174	1,945,452	5,211,030
North-west Territories including Yukon	614,445	1,316,743	786,617	1,591,545	1,046,513	2,167,249
New Brunswick.	16,000	40,000	9,112	18,224	29,400	58,800
Total	7,960,364	15,942,833	8,254,595	16,592,231	8,667,948	17,520,263

TABLE 2.
COAL.
PRODUCTION. COMPARISON OF 1904 AND 1905.

Province	INCREASE OR DECREASE.			
	Tons.	Per cent.	Value. \$	Per cent.
Nova Scotia	<i>i</i> 50,342	<i>i</i> .89	<i>i</i> 89,896	<i>i</i> .89
British Columbia.....	<i>i</i> 82,827	<i>i</i> 4.45	<i>i</i> 221,856	<i>i</i> 4.45
North-west Territories including Yukon	<i>i</i> 259,896	<i>i</i> 33.04	<i>i</i> 575,704	<i>i</i> 36.17
New Brunswick.....	<i>i</i> 413,353	<i>i</i> 222.65	<i>i</i> 40,576	<i>i</i> 222.65
Dominion..	<i>i</i> 413,353	<i>i</i> 5.01	<i>i</i> 923,032	<i>i</i> 5.59

i Increase. *d* Decrease.

TABLE 3.

COAL.

ANNUAL PRODUCTION SHOWING THE INCREASE OR DECREASE EACH YEAR

Calendar Year.	Tons.	Value.	Average Value per Ton.	Increase (i) or Decrease (d) in Tonnage.	Incr. (i) or Decr. (d) per cent.
1886	2,116,653	\$3,739,840	\$1 77		
1887	2,429,330	4,388,206	1 81	i 312,677	i 14·8
1888	2,602,552	4,674,140	1 80	i 173,222	i 7·1
1889	2,658,303	4,894,287	1 84	i 55,751	i 2·1
1890	3,084,682	5,676,247	1 84	i 426,379	i 16·0
1891	3,577,749	7,019,425	1 96	i 493,067	i 16·0
1892	3,287,745	6,363,757	1 94	d 290,004	d 8·1
1893	3,783,499	7,359,080	1 95	i 495,754	i 15·1
1894	3,847,070	7,429,468	1 93	i 63,571	i 1·7
1895	3,478,344	6,739,153	1 94	d 368,727	i 9·6
1896	3,745,716	7,226,462	1 93	i 267,372	i 7·7
1897	3,786,107	7,303,597	1 93	i 40,391	i 1·1
1898	4,173,108	8,224,288	1 97	i 387,001	i 10·2
1899	4,925,051	10,283,497	2 09	i 751,943	i 18·0
1900	5,777,319	13,742,178	2 38	i 852,268	i 17·3
1901	6,486,325	12,693,243	1 96	i 709,006	i 12·3
1902	7,466,681	15,210,877	2 04	i 780,356	i 15·1
1903	7,960,364	15,912,833	2 00	i 493,683	i 6·6
1904	8,254,595	16,592,231	2 01	i 294,231	i 3·7
1905	8,667,948	17,520,263	2 02	i 413,353	i 5·0

The following short table is illustrative of the growth of the coal industry, in each of the provinces for some time back. It gives the proportion of the total production to be credited to each province at various periods since 1874.

Province.	1874.	1880.	1890.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.
	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.
Nova Scotia } New Bruns. }	91	79	71	61·6	64·2	62·9	64·4	69·4	71·3	68·0	65·5
Saskatohe- wan Alberta and Yukon.	8	20	4	8·3	6·8	6·1	6·0	6·4	7·7	9·5	12·1
B. Columbia.	.....	.....	25	30·3	29·0	31·0	29·6	24·2	21·0	22·5	22·4

Table 2 shows a total increase for 1905 of 413,353 tons over 1904, which represents 5.01 per cent. All of the provinces contributed to this result, the production this year having in every case been greater than in 1904. Serious labour troubles closed some of the mines on Vancouver island for nearly four months during the year, but in spite of these circumstances even British Columbia shows an increase, which, however, is not as substantial as that of the previous year.

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The new provinces of Alberta and Saskatchewan have been advancing at a very rapid rate. The growing settlement of the country is of course responsible for a largely increased domestic consumption and this market will grow from year to year for a long time to come yet.

Nova Scotia has remained practically stationary since 1903. This year shows a slight increase, whereas last year a diminution had to be recorded as compared with the production for 1903.

In New Brunswick, the coal industry shows signs of great activity as compared with previous years. The production has increased from 9,000 tons in 1904 to over 29,000 tons; although the coal mining operations of this province are on a small scale owing to the thinness of the seams, yet the industry is important from the local standpoint. The quality of the coal is excellent.

The following tables give the statistics of imports and exports of coal.

TABLE 4.

COAL.

EXPORTS.

CALENDAR YEAR.	PRODUCE OF CANADA.	NOT PRODUCE.	CALENDAR YEAR.	PRODUCE OF CANADA.	NOT PRODUCE.
	Tons.	Tons.		Tons.	Tons.
1873.	420,683	5,403	1890.	724,486	82,534
1874.	310,988	12,859	1891.	971,259	77,827
1875.	250,348	14,026	1892.	823,733	93,988
1876.	248,638	4,995	1893.	960,312	102,827
1877.	301,317	4,829	1894.	1,103,694	89,786
1878.	327,959	5,468	1895.	1,011,235	96,836
1879.	306,648	8,468	1896.	1,106,661	116,774
1880.	432,188	14,217	1897.	986,130	101,848
1881.	395,382	14,245	1898.	1,150,029	99,189
1882.	412,682	37,576	1899.	1,293,169	101,004
1883.	436,811	44,388	1900.	1,787,777	62,776
1884.	474,405	62,665	1901.	1,573,661	53,894
1885.	427,937	71,003	1902.	2,090,268	23,453
1886.	520,703	78,443	1903.	1,954,629	27,133
1887.	580,965	89,098	1904.	1,557,412	27,308
1888.	583,627	84,316	1905.	1,635,237	86,792
1889.	665,315	89,294			

TABLE 5.
COAL.
EXPORTS.—NOVA SCOTIA AND BRITISH COLUMBIA.

Calendar Year.	Nova Scotia.		*British Columbia.	
	Tons.	Value.	Tons.	Value.
1874	252,124	\$647,539	51,001	\$ 278,180
1875	179,626	404,351	65,842	356,018
1876	126,520	263,543	116,910	627,754
1877	173,389	352,453	118,252	590,263
1878	154,114	293,795	165,734	698,870
1879	113,742	203,407	186,094	608,845
1880	199,552	344,148	219,878	775,008
1881	193,081	311,721	187,791	622,965
1882	216,954	390,121	179,552	628,437
1883	192,795	336,088	271,214	946,271
1884	222,709	430,330	245,478	901,440
1885	176,287	349,650	250,191	1,000,764
1886	240,459	441,693	274,466	960,649
1887	207,941	390,738	356,657	1,262,552
1888	165,863	330,115	405,071	1,605,650
1889	186,608	396,830	470,683	1,918,263
1890	202,387	426,070	508,882	1,977,191
1891	194,867	417,816	767,734	2,958,695
1892	181,547	407,980	599,716	2,317,734
1893	203,198	470,695	708,228	2,693,747
1894	310,277	633,398	770,439	2,855,216
1895	241,091	534,479	728,283	2,692,562
1896	380,149	787,270	679,799	2,507,752
1897	307,128	642,754	630,341	2,221,737
1898	309,15 ^a	629,363	813,843	2,948,428
1899†	459,260	827,941	781,809	2,947,369

*See foot-note, table 16. †Since 1899, exports by provinces have not been published in Trade and Navigation Report.

TABLE 6.
COAL.
IMPORTS OF BITUMINOUS COAL.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
1880	457,049	\$1,220,761	1893	1,603,154	3,967,764
1881	587,024	1,741,568	1894	1,359,509	3,315,094
1882	636,374	1,992,081	1895	1,444,928	3,321,387
1883	911,629	2,996,198	1896	1,538,489	3,299,025
1884	1,118,615	3,613,470	1897	1,543,476	3,254,217
1885	1,011,875	3,197,530	1898	1,684,024	3,179,595
1886	930,949	2,591,554	1899	2,171,358	3,691,946
1887	1,149,792	3,126,225	1900	2,439,764	4,310,964
1888	1,231,234	3,451,661	1901	2,516,392	4,956,025
1889	1,248,540	3,255,171	1902	3,047,392	5,712,058
1890	1,409,282	3,528,959	1903	3,511,412	7,776,717
1891	1,598,855	4,060,896	1904	4,053,900	9,108,208
1892	1,615,220	4,099,221	1905*	4,176,274	8,002,896

*Duty, 53c. per ton.

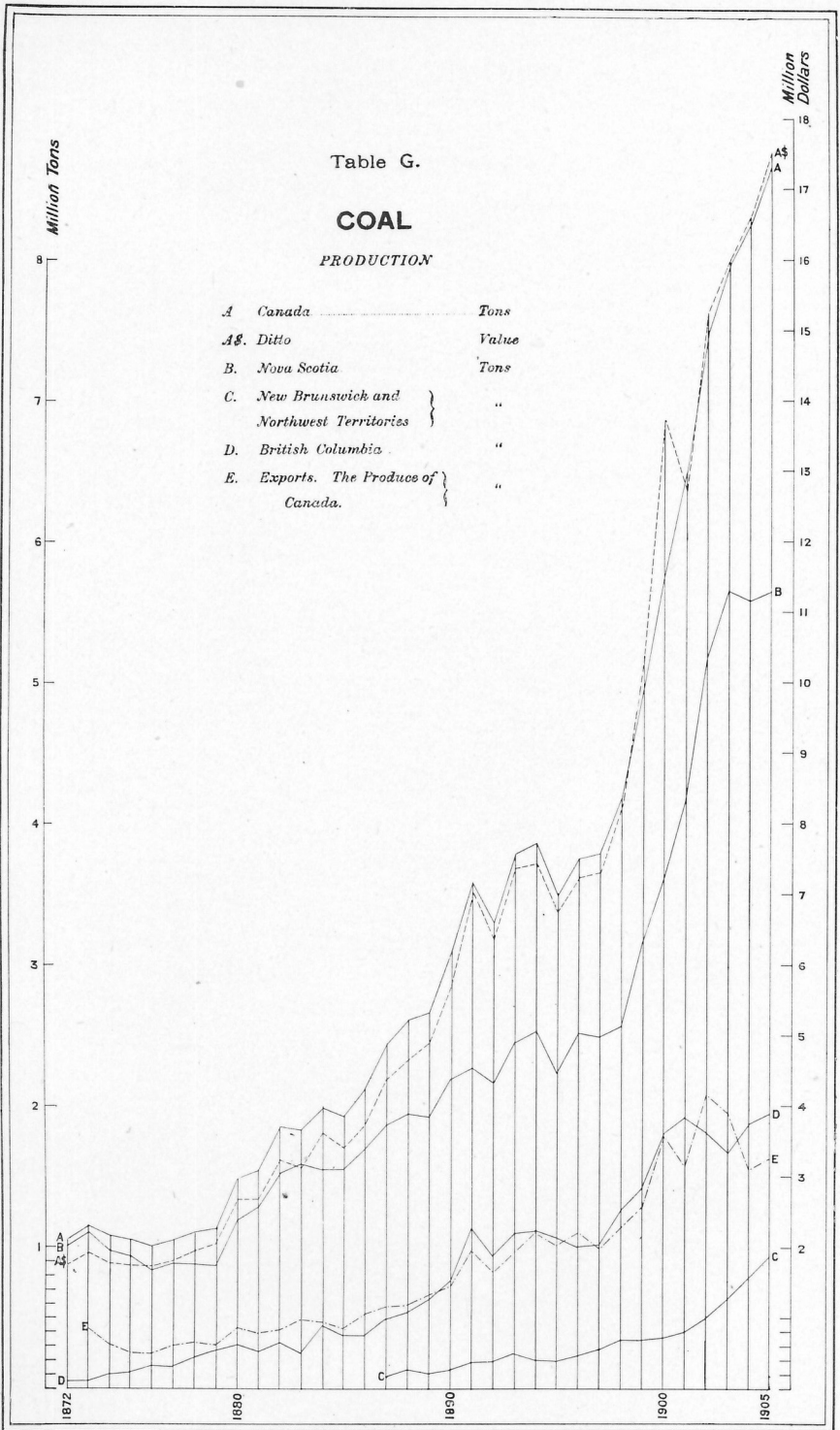


TABLE 7.
COAL.
IMPORTS OF ANTHRACITE COAL.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
1880.....	516,729	\$1,509,960	1893.....	1,500,550	\$ 6,355,285
1881.....	572,092	2,325,937	1894.....	1,530,522	6,354,040
1882.....	638,273	2,666,356	1895.....	1,404,342	5,350,627
1883.....	754,891	3,344,936	1896.....	1,574,355	5,667,096
1884.....	868,000	3,831,283	1897.....	1,457,295	5,695,168
1885.....	910,324	3,909,844	1898.....	1,460,701	5,874,685
1886.....	995,425	4,028,050	1899.....	1,745,460	6,490,509
1887.....	1,100,165	4,423,062	1900.....	1,654,401	6,602,912
1888.....	†2,138,627	5,291,875	1901.....	1,933,233	7,923,950
1889.....	1,291,705	5,199,481	1902.....	1,652,451	7,021,939
1890.....	1,201,335	4,595,727	1903.....	1,456,713	7,028,664
1891.....	1,399,067	5,224,452	1904*.....	2,275,018	10,461,223
1892.....	1,479,106	5,640,346	1905.....	2,604,137	12,083,371

* Coal anthracite, and anthracite coal dust. Duty free.

† In Table 7, Imports of Anthracite Coal, a very considerable increase will be noticed in 1888 over 1887, an increase of over ninety-four per cent, the falling off again in 1889 being quite as remarkable. The average values per ton for the three years 1887, 1888 and 1889, were \$4.02, \$2.47 and \$4.03 respectively. Although a duty of fifty cents per ton on anthracite coal was removed May 13, 1887, it is hardly thought this would account for the changes indicated, and unless some error may possibly have crept into the Trade and Navigation Report, no explanation is available.

TABLE 8.
COAL.
IMPORTS OF COAL DUST.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
1880.....	3,565	\$ 8,877	1893.....	109,585	\$ 44,474
1881.....	337	666	1894.....	117,573	49,510
1882.....	471	900	1895.....	181,318	52,221
1883.....	8,154	10,082	1896.....	210,386	53,742
1884.....	12,782	14,600	1897.....	225,562	59,609
1885.....	20,185	20,412	1898.....	229,445	45,556
1886.....	36,230	36,996	1899.....	276,547	44,717
1887.....	31,401	33,178	1900.....	330,174	98,349
1888.....	28,808	34,730	1901.....	414,432	275,559
1889.....	39,980	47,139	1902.....	489,548	264,550
1890.....	53,104	29,818	1903.....	550,883	420,317
1891.....	60,127	36,130	1904.....	608,041	544,123
1892.....	82,091	39,840	1905*.....	650,261	343,456

* Duty 20 p.c., not over 13c. per ton.

The imports of coal into Canada comprise bituminous and anthracite. The former is mainly to supply the industrial wants of the province of Ontario and Western Quebec, whereas the anthracite is almost exclusively used for domestic purposes. The Western provinces derive

their domestic supply from the Cascades coal field, on the eastern slope of the Rocky Mountains on the main line of the Canadian Pacific Railway, where a good anthracite is produced, and also from the Belly river field, the Crows Nest Pass branch of the same railway, which yields a soft coal, high in fixed carbon, greatly prized for domestic purposes.

The following calculations show that Canada has to import about one half of the coal it consumes, but if we take into consideration the quantities that are exported from British Columbia and Nova Scotia, the Canadian production of coal would fill approximately 60 per cent of the requirements of the Dominion.

CONSUMPTION OF COAL IN CANADA, 1905.

	Tons.	
Production, Table 3.....	8,667,948	
Exports of Canada, Table 4.....	1,635,287	
Home consumption of Canadian coal.....		7,032,661
Imports Tables 6, 7 and 8.....	7,430,672	
Exports net produce.....	86,792	
Canadian consumption of imported coal.....		7,343,880
Total consumption of coal in Canada.....		14,376,541

TABLE 9.

COAL.

CONSUMPTION OF COAL IN CANADA.

Calendar Year	Canadian.	Imported.	Total.	Percentage Canadian.	Percentage Imported.	Consumption per capita.
	Tons.	Tons.	Tons.				Tons.
1886.....	1,595,950	1,884,161	3,480,111	45·9	54·1	·758
1887.....	1,848,365	2,192,260	4,040,625	45·7	54·3	·871
1888.....	2,013,925	3,314,353	5,328,278	37·8	62·2	1·137
1889.....	1,992,988	2,490,931	4,483,919	44·4	55·6	·946
1890.....	2,360,196	2,581,187	4,941,383	47·8	52·2	1·031
1891.....	2,606,490	2,980,222	5,586,712	46·7	53·3	1·153
1892.....	2,464,012	3,082,429	5,546,441	44·4	55·6	1·133
1893.....	2,823,187	3,110,462	5,933,649	47·6	52·4	1·198
1894.....	2,743,376	2,917,818	5,661,194	48·5	51·5	1·130
1895.....	2,467,109	2,933,752	5,400,861	45·7	54·3	1·066
1896.....	2,639,055	3,206,456	5,845,511	45·1	54·9	1·140
1897.....	2,799,977	3,124,485	5,924,462	47·3	52·7	1·143
1898.....	3,023,079	3,274,981	6,298,060	48·0	52·0	1·200
1899.....	3,631,882	4,092,361	7,724,243	47·0	53·0	1·454
1900.....	3,989,542	4,361,563	8,351,105	47·8	52·2	1·561
1901.....	4,912,664	4,810,213	9,722,877	50·5	49·5	1·810
1902.....	5,376,413	5,165,938	10,542,351	51·0	49·0	1·927
1903.....	6,005,735	5,491,870	11,507,605	52·2	47·8	2·055
1904.....	6,697,183	6,909,651	13,606,834	49·2	50·8	2·346
1905.....	7,032,661	7,343,880	14,376,541	48·9	51·1	2·396

We give below the main features of the year's development of the coal mining industry by provinces.

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Nova Scotia.—In Cape Breton county seven of the collieries of the Dominion Coal Company shipped continuously. The eighth colliery, which is the new mine, Dominion No. 6, started to ship in June. This No. 6 is situated on the point of land formed by Big Glace Bay on the one side and Schooner Pond on the other. Two double slopes have been driven on the Phalen seam, one pair being called the East Slope and the other the West Slope. The two pairs are not parallel but converge towards the outcrop, the angle between them being somewhat over 70 degrees. The mouths of the slopes are sufficiently near to one another to be worked by one bank head which will be of steel, while the surface plant will be modern and up to date.

Another feature of the year in the Dominion Coal Company's field is the extensive submarine development, which has been undertaken with the view of extending the workings as far as possible under the sea. The mine chosen for this experiment is the Hub, or Dominion No. 7. The main level in November, 1905, was in 4600 feet from the shaft, or over 3000 feet under the water from high water mark. It is intended to ultimately extract 2000 tons a day from this submarine area in this mine. It might be of interest to mention that the old names of some of the collieries have been discarded by the company and the mines are now officially designated by numbers as follows:—

OLD NAMES.

Dominion No. 1.
 Dominion No. 2 (Phalen Seam)
 Dominion No. 4.
 Caledonia Colliery.
 Reserve Colliery.
 New Mine.
 Hub Colliery.
 International.
 Dominion No. 9 (Harbour Seam)

NEW DESIGNATION.

Dominion No. 1.
 Dominion No. 2.
 Dominion No. 3.
 Dominion No. 4.
 Dominion No. 5.
 Dominion No. 6.
 Dominion No. 7.
 Dominion No. 8.
 Dominion No. 9.

TABLE 10.
COAL.
NOVA SCOTIA:—OUTPUT, SALES, COLLIERY CONSUMPTION, AND PRODUCTION.

Calendar Year.	Output, Tons, 2,240 lbs.	Sales, Tons, 2,240 lbs.	Colliery Consump- tion, Tons, 2,240 lbs.	Production* Tons, 2,240 lbs.	Output, Tons, 2,000 lbs.	Sales, Tons, 2,000 lbs.	Colliery Consump- tion, Tons, 2,000 lbs.	Production* Tons, 2,000 lbs.	Price per Ton, 2,240 lbs.	Value of production.
1872	880,950	785,914	110,341	896,255	986,664	880,224	123,582	1,003,806	\$1 75	\$1,568,846
1873	1,051,467	881,106	108,898	989,504	1,177,643	986,889	121,406	1,108,245	1 75	1,731,632
1874	872,720	749,127	119,582	868,709	977,446	839,022	133,932	972,954	1 75	1,520,240
1875	781,165	706,795	124,110	880,905	874,900	791,610	139,003	930,613	1 75	1,454,084
1876	709,646	634,207	113,788	747,995	794,804	710,312	127,443	837,755	1 75	1,308,991
1877	757,496	687,065	98,641	785,906	848,386	769,513	110,702	880,215	1 75	1,375,339
1878	770,608	693,511	88,627	782,138	863,075	776,732	99,262	875,994	1 75	1,368,741
1879	788,271	688,624	84,787	773,411	882,863	771,259	94,961	866,220	1 75	1,359,469
1880	1,032,710	954,659	96,831	1,051,490	1,156,635	1,069,218	108,451	1,177,669	1 75	1,840,108
1881	1,124,270	1,035,014	107,888	1,142,902	1,259,183	1,159,216	120,834	1,280,050	1 75	2,000,079
1882	1,365,811	1,250,179	111,381	1,361,560	1,523,708	1,400,200	124,747	1,524,947	1 75	2,382,730
1883	1,422,553	1,297,523	111,949	1,409,472	1,593,259	1,453,226	125,383	1,578,609	1 75	2,466,576
1884	1,389,289	1,261,650	116,769	1,378,419	1,556,011	1,413,048	130,781	1,543,829	1 75	2,412,233
1885	1,352,205	1,254,510	127,624	1,382,134	1,514,470	1,405,051	142,939	1,547,990	1 75	2,418,735
1886	1,502,611	1,373,666	142,421	1,516,087	1,682,924	1,538,506	153,512	1,698,018	1 75	2,653,152
1887	1,670,830	1,519,684	139,777	1,659,461	1,871,330	1,702,046	156,550	1,858,596	1 75	2,904,057
1888	1,776,128	1,576,692	157,443	1,734,135	1,989,263	1,765,895	176,336	1,942,231	1 75	3,034,735
1889	1,756,279	1,555,107	158,131	1,713,238	1,967,032	1,741,720	177,107	1,918,827	1 75	2,998,167
1890	1,984,001	1,786,111	161,240	1,947,351	2,222,081	2,000,444	180,589	2,181,033	1 75	3,407,864
1891	2,044,784	1,849,945	174,983	2,024,928	2,290,158	2,071,938	195,981	2,267,919	1 75	3,543,624
1892	1,942,780	1,752,934	175,092	1,928,026	2,175,913	1,963,236	196,103	2,159,389	1 75	3,374,046
1893	2,223,042	1,977,543	205,425	2,182,968	2,489,807	2,214,848	230,076	2,444,924	1 75	3,820,194
1894	2,250,631	2,060,920	196,906	2,257,126	2,520,707	2,308,231	219,751	2,527,982	1 75	3,949,970
1895	1,999,796	1,793,098	193,639	1,986,737	2,289,727	2,008,270	216,875	2,226,145	1 75	3,476,790
1896	2,292,675	2,046,828	192,975	2,259,368	2,567,796	2,292,442	216,132	2,508,579	1 75	3,919,655
1897	2,340,031	2,044,672	181,716	2,296,388	2,620,835	2,290,032	203,522	2,493,554	1 75	3,896,179
1898	2,262,656	2,121,126	167,460	2,288,554	2,584,175	2,375,067	187,519	2,563,180	1 75	4,004,970
1899	2,865,443	2,633,989	177,460	2,811,449	3,209,296	2,950,667	198,755	3,148,822	2 00	5,622,898
1900	3,298,791	2,998,737	236,663	3,235,300	3,694,646	3,358,385	284,951	3,623,536	2 50	8,088,250
1901	3,821,033	3,411,127	301,434	3,712,561	4,279,557	3,820,462	337,606	4,156,068	1 75	6,496,982
1902	4,725,480	4,223,120	379,198	4,608,318	5,292,538	4,736,614	424,702	5,161,316	2 00	9,216,636
1903	5,215,562	4,565,720	481,903	5,047,623	5,841,429	5,113,607	539,731	5,653,338	2 00	10,046,246
1904	5,131,985	4,551,740	444,904	4,996,644	5,747,823	5,097,949	498,292	5,596,241	2 00	9,993,288
1905	5,197,877	4,613,818	427,774	5,041,592	5,821,622	5,167,476	479,107	5,646,583	2 00	10,083,184

* This Production is obtained by adding Sales and Colliery Consumption. For sales previous to 1872, see report of the Department of Mines, Nova Scotia, 1883, page 68.

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TABLE II.
COAL.

NOVA SCOTIA :—COAL TRADE BY COUNTIES.

CALENDAR YEAR.	CUMBERLAND.		PICTOU.		CAPE BRETON.		OTHER COUNTIES.	
	Raised.	Sold.	Raised.	Sold.	Raised.	Sold.	Raised.	Sold.
	Tons, 2,000 lbs.	Tons, 2,000 lbs.	Tons, 2,000 lbs.	Tons, 2,000 lbs.	Tons, 2,000 lbs.	Tons, 2,000 lbs.	Tons, 2,000 lbs.	Tons, 2,000 lbs.
1st quarter.....	131,564	102,666	143,611	111,182	686,523	513,023	31,254	19,872
2nd "	188,951	161,334	174,598	140,971	1,130,453	983,806	55,849	40,925
3rd "	175,151	150,812	164,965	146,779	1,200,703	1,296,063	63,966	47,707
4th, "	197,834	173,262	185,280	162,005	1,231,291	1,065,747	59,629	44,330
Total, 1905.....	693,500	595,064	668,454	560,937	4,248,970	3,858,641	210,698	152,884
" 1904.....	731,316	621,169	716,928	622,358	3,973,433	3,613,169	332,146	241,253

TABLE 12.

COAL.

NOVA SCOTIA:—OUTPUT BY COLLIERIES DURING THE CALENDAR YEAR 1905.

Colliery.	Tons, 2,000 lbs.	Colliery.	Tons, 2,000 lbs.
<i>Cumberland County.</i>		<i>Inverness County.</i>	
Chignecto.....	42,641	Mabou.....	3,549
Joggins.....	59,957	Port Hood.....	16,635
Minudie.....	37,860	Inverness.....	187,789
Scotia.....	3,254	<i>Victoria County.</i>	
Springhill.....	534,116	New Cambellton.....	3,224
Strathcona.....	10,345	<i>Cape Breton County.</i>	
Prospect.....	5,328	Sydney Coal Co.....	4,316
<i>Pictou County.</i>		Dominion Coal Co.....	3,572,416
Acadia.....	358,590	N. Scotia Steel & Coal Co.	625,303
Nova Scotia Steel and Coal Co.....	43,614	Gowrie and Blockhouse collieries.....	46,935
Intercolonial.....	266,240	Total.....	5,821,622

The following table shows the markets to which the Nova Scotia coal finds its way. Outside of the province itself the main outlets are the Province of Quebec and the exports to the United States.

TABLE 13.

COAL.

NOVA SCOTIA:—DISTRIBUTION OF COAL SOLD.

Markets.	Calendar Years.					
	1902.		1903.		1904.	
	Tons, 2,000 lbs.	Per cent.	Tons, 2,000 lbs.	Per cent.	Tons, 2,000 lbs.	Per cent.
Nova Scotia, transported by land.....	727,122	14·2	918,822	18·0	1,145,255	27·4
Nova Scotia, transported by sea.....	977,756	19·1	724,289	14·2	485,574	9·4
Total, Nova Scotia...	1,704,878	33·3	1,643,111	32·2	1,900,829	36·8
New Brunswick.....	435,537	8·5	474,053	9·3	477,360	9·2
Prince Edward Island.....	88,649	1·7	95,177	1·9	85,099	1·7
Quebec.....	1,609,205	31·5	1,916,384	37·6	1,721,751	33·3
Newfoundland.....	155,751	3·1	155,794	3·1	165,117	3·2
United States.....	1,009,420	19·7	730,658	14·3	755,433	14·6
West Indies.....					2,827	·1
Other countries.....	110,167	2·2	82,772	1·6	59,060	1·1
Total.....	5,113,607	100·0	5,097,949	100·0	5,167,476	100·0

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The Cape Breton Coal, Iron and Railway Company have been developing their property situated between Loon Lake and Cochran Lake, about twelve miles south-west of Glace Bay. Two slopes have been driven, one of which is now 700 feet and the other 400 feet in length. A third slope was driven upwards from the bottom of the 700 feet slope and parallel to it. The coal seam measured at the face at the bottom of the 700 foot slope, is 62 inches, but it is said to average nearly 6 feet. The Company are contemplating the erection of an up to date plant and are at present doing very extensive work on the surface, laying out a town site, constructing wide streets, etc. The mine is connected with the Sydney and Louisburg Railway, by a branch some two miles and a half long.

At Sydney Mines the collieries of the Nova Scotia Steel and Coal Company were operated; No. 1 colliery during part of the year and No. 3 during all the year. In July all the work was concentrated on No. 3, but No. 1 was, temporarily at least, closed down.

In Inverness county no very noteworthy new developments have taken place during last year. A bore-hole nearly 650 feet deep, has been put down in 1904 at St. Rose, near Chimney-Corner and it was expected that development work would follow, but all work has been discontinued for the present.

In Pictou county the Acadia Coal Company was pushing very actively the sinking of the Allan shaft, in the hope of reaching the main seam. The intention is to make this the main colliery of the company. It is reported that the seam was struck in October, at a depth of almost 1000 feet. It is the intention to extend the shaft to cut all the seams.

New Brunswick.—In New Brunswick, the Grand Lake district was producing as usual during the year. The railway line of the New Brunswick Coal and Railway Company, which taps the coal district, has just passed under the control of the Provincial Government, and it is expected that much will be done to encourage the coal industry of the Grand Lake district.

TABLE 14.

COAL.

NEW BRUNSWICK :—PRODUCTION.

Calendar Year.	Tons.	Value.	Value per ton.
1887.....	10,040	\$ 23,607	\$2 35
1888.....	5,730	11,050	1 93
1889.....	5,673	11,733	2 07
1890.....	7,110	13,850	1 95
1891.....	5,422	11,030	2 03
1892.....	6,768	9,375	1 39
1893.....	6,200	9,837	1 59
1894.....	6,469	10,264	1 59
1895.....	9,500	14,250	1 50
1896.....	7,500	11,250	1 50
1897.....	6,000	9,000	1 50
1898.....	6,160	9,240	1 50
1899.....	10,528	15,792	1 50
1900.....	10,000	15,000	1 50
1901.....	17,630	51,857	2 94
1902.....	18,795	39,680	2 11
1903.....	16,000	40,000	2 50
1904.....	9,112	18,224	2 00
1905.....	29,400	58,800	2 00

Saskatchewan and Alberta.—In the Estevan district, in the south-east corner of the province of Saskatchewan, the Souris Coal Mining Company has built a new tipple 140 feet long, 35 feet high, near Coalfields. When the equipment is completed it is expected that the tipple will handle 1,000 tons per day of 10 hours. The company has laid out the town site of Taylortown in the vicinity of the mine. This company is also operating, under lease, the C.P.R. colliery at Bienfait, about three miles north-east of Coalfields. The Hudson Bay Company is boring extensively in the vicinity on its own land, but the logs of these boreholes are not available.

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Along the Crow's Nest line of the C.P.R., in Southern Alberta, there has been great activity in coal mining during the past year. Several new collieries have been opened and new coal areas are being developed. In the following brief mention of these, a geographical order will be observed from east to west along the Crow's Nest line.

At Taber, which is 32 miles east of Lethbridge, several coal mining companies are now operating, although the work done so far has been almost altogether of the nature of development. The two largest mines are those of the Taber Coal Mining Company, which controls 9,000 acres, and the Reliance Coal Company, with about 1,500 acres. There are other small mines which supply local wants. Eight analyses of this Taber coal gave the following range of composition: Moisture, 10 to 12 p.c.; volatile, combustible matter, 26 to 31 p.c.; fixed carbon, 46 to 51 p.c.; ash, 7 to 16 p.c.; specific gravity, 1.31 to 1.41 p.c.

In Lethbridge the Alberta Railway and Irrigation Company's mine has been producing very steadily. The workings are being extended to the neighbourhood of the valley of the Bow river, the bed of which is only about 40 feet above them and it is their intention to work out a large section underlying the valley. A very interesting piece of work is now being accomplished at the mine. The old workings, through which all the haulage and hoisting will be done, will be separated from the new underground section by a coal barrier of 200 feet, which will be pierced in only two places. These two tunnels will be lined with masonry and concrete and in each will be installed a system of sluice gates which can be worked from the surface, so that in case of an invasion of water from the Bow river, the old workings could be saved.

At Lundbreck, 39 miles west of McLeod, the Breckenridge and Lund Coal Company is doing a good deal of development work. They are sinking a shaft which was nearly 300 feet deep in September. The plant is at present solely for development but the permanent machinery is ordered and it is expected that the mine will be on a shipping footing before the close of the year.

At Frank, The Canadian American Coal and Coke Company was working the Gebo mine. The seam is here overhanging and is inclined at an angle of 82 degrees. It is worked up the pitch altogether.

The West Canadian Colliery Company has built a new tippie and screening plant at their No. 1 mine, about 4 miles north of Frank and 1 mile south of the old plant at Lille. All the coal is now taken out by the No. 1 tippie, and the screenings are sent to the coking plant at

Lille, where a washer was being built in September. This washer is designed for a capacity of 300 tons per 24 hours, and it is expected that washing the coal will greatly reduce the ash contents of the coke, which at present is rather high. The same company is operating the Bellevue Colliery, which is on the main line of the Crows Nest branch, about 3 miles east of Frank. The extreme work done here has been mainly with a view to development.

The International Coal and Coke Company at Coleman has worked steadily. The company has only been in operation two years, but it has a very up-to-date plant and an output of 900 tons a day. With little addition the plant could handle 1,500 tons.

On the main line of the C.P.R. the Pacific Coal Company has done a great deal of work during the year at their Bankhead colliery, near Banff, Alberta. The coal here is an anthracite admirably suited for domestic purposes. The company has just erected a breaker, a screening and loading plant which will at first handle 1,000 tons a day; this output could on short notice be increased to 2,000 tons. The plant which was not quite completed in September, besides the breaker and screening plant, comprised well equipped and extensive work-shops, power house, etc. When in working order the mine will produce all sizes of domestic coal, egg, stove, pea, etc., and the screenings will be briquetted.

At Canmore, four miles from Banff, the McNeil Coal Company has erected a new tipple and a picking plant; they are putting in a Howe washer to wash all coal under $\frac{1}{2}$ inch in size. The washing plant will have a capacity of 400 tons in ten hours, and is expected to be in running order before the end of the year.

At Anthracite the mine has been completely abandoned, for the present at least, and the greater part of the surface plant removed to the Canmore Colliery.

In the district around Edmonton, several small mines were worked, as in the past, from the banks of the Saskatchewan river. Preparations were being made for greatly increasing the output of several collieries, to keep pace with the demand created by the growth and development of the country.

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TABLE 15.

COAL.

NORTH-WEST TERRITORIES :—PRODUCTION.

Calendar Year.	Tons.	Value.	Value per ton.
1887.....	74,152	\$ 157,577	\$ 2 13
1888.....	115,124	183,354	1 59
1889.....	97,364	179,640	1 85
1890.....	128,953	198,498	1 54
1891.....	174,131	437,243	2 51
1892.....	184,370	469,930	2 55
1893.....	238,395	598,745	2 51
1894.....	199,991	488,980	2 45
1895.....	185,654	414,064	2 23
1896.....	225,868	606,891	2 69
1897.....	267,163	667,908	2 50
1898.....	340,088	825,220	2 43
1899.....	334,600	811,500	2 43
1900.....	351,950	839,375	2 38
1901.....	391,139	1,008,917	2 58
1902.....	478,129	1,110,521	2 32
1903.....	614,445	1,316,743	2 14
1904.....	786,617	1,691,545	2 02
1905.....	1,046,513	2,167,249	2 07

British Columbia.—In the Crow's Nest field, in British Columbia, the Crow's Nest Pass Coal Company is doing most of its work at Coal Creek and at Michel; there is comparatively little work done at Carbonado, on Morrissey Creek. At the Coal Creek colliery a new steel tippie, 724 feet long, and a screening plant are being erected to handle the coal from all the mines on both sides of the valley. The tippie is designed to handle an output of 4,000 tons in ten hours. At the Michel colliery, 24 miles north of Fernie, a new haulage system by compressed air locomotives is being put in. The tippie of the Michel colliery can handle 2,000 tons in ten hours.

In the Nanaimo district the Western Fuel Company are hoisting from No. 1 shaft at Nanaimo and from the Northfield or Departure shaft. At this last colliery they have just completed a modern tippie and vessel-loading plant. A strike which lasted from May to October, during which time the collieries were closed down, will rather lower the figure of production for the year.

The Wellington Colliery Company worked their extension colliery all the year. Dr. H. S. Poole has been charged by the Geological Survey to study the coal fields of Vancouver Island during the past summer, and in the Summary Report of the director will be found a short account of his investigations, both in the Nanaimo and in the Comox fields.

TABLE 16.

COAL.

BRITISH COLUMBIA :—PRODUCTION.

Calendar Year.	Output Tons, 2,240 lbs.	Home Consumption, Tons, 2,240 lbs.	Sold for Export, Tons, 2,240 lbs. †	PRODUCTION.*		Price per ton, 2,240 lbs	Value.
				Tons, 2,240 lbs.	Tons, 2,000 lbs.		
1836-52..	10,000				11,200	4 00	40,000
1852-59..	25,398				28,446	4 00	101,592
1859 †...	1,989				2,228	4 00	7,956
1860.	14,247				15,957	4 00	56,988
1861.	13,774				15,427	4 00	55,096
1862.	18,118				20,292	4 00	72,472
1863.	21,345				23,906	4 00	85,380
1864.	28,632				32,068	4 00	114,528
1865.	32,819				36,757	4 00	131,276
1866.	25,115				28,129	4 00	100,460
1867. ...	31,239				34,988	4 00	124,956
1868.	44,005				49,286	4 00	176,020
1869.	35,802				40,098	4 00	143,208
1870.	29,843				33,424	4 00	119,372
1871-2-3.	148,459				166,274	4 00	593,836
1874.	81,547	25,023	56,088	81,061	90,788	3 00	243,183
1875.	110,145	31,252	66,392	97,644	109,361	3 00	292,932
1876.	139,192	17,856	†122,329	140,185	157,007	3 00	420,555
1877.	154,052	24,311	115,381	139,692	156,455	3 00	419,076
1878.	170,846	26,166	164,682	190,848	213,750	3 00	572,544
1879.	241,301	40,294	192,096	232,390	260,277	3 00	697,170
1880.	267,595	46,513	225,849	272,362	305,045	3 00	817,086
1881.	228,357	40,191	189,323	229,514	257,056	3 00	688,542
1882.	282,139	56,161	232,411	288,572	323,201	3 00	865,716
1883.	213,299	64,786	149,567	214,353	240,075	3 00	643,059
1884.	394,070	87,388	306,478	393,866	441,130	3 00	1,181,598
1885.	365,596	95,227	237,797	333,024	372,987	3 00	999,072
1886.	326,636	85,987	249,205	335,192	375,415	3 00	1,005,576
1887.	413,360	99,216	334,839	434,055	486,142	3 00	1,302,165
1888.	489,301	115,953	365,714	481,667	539,467	3 00	1,445,001
1889.	579,830	124,574	443,675	568,249	636,439	3 00	1,704,747
1890.	678,140	177,075	508,270	685,345	767,586	3 00	2,056,035
1891.	1,029,097	202,697	806,479	1,009,176	1,130,277	3 00	3,027,528
1892.	826,335	196,223	640,579	836,802	937,218	3 00	2,510,406
1893.	978,294	207,851	768,917	976,768	1,093,980	3 00	2,930,304
1894.	1,012,953	165,776	827,642	993,418	1,112,628	3 00	2,980,254
1895.	939,654	188,349	756,334	944,683	1,058,045	3 00	2,834,049
1896.	894,882	261,984	634,238	896,222	1,003,769	3 00	2,688,666
1897.	892,296	290,310	619,860	910,170	1,019,390	3 00	2,730,510
1898.	1,136,485	375,423	752,863	1,128,286	1,263,630	3 00	3,384,858
1899.	1,306,324	526,068	751,711	1,277,769	1,431,101	3 00	3,833,307
1900.	1,590,178	685,667	914,184	1,599,851	1,791,833	3 00	4,799,553
1901.	1,691,557	799,666	914,163	1,713,829	1,919,488	3 00	5,141,487
1902.	1,641,626	837,871	776,809	1,614,680	1,808,441	3 00	4,844,040
1903.	1,450,663	947,499	549,449	1,496,948	1,676,581	3 00	4,490,844
1904.	1,685,698	1,129,465	533,593	1,663,058	1,862,625	3 00	4,989,174
1905.	1,736,696	1,089,667	647,343	1,737,010	1,945,452	3 00	5,211,030

*This production is obtained by adding 'Home Consumption' and 'Sold for Export,'

†52,935 of this amount was exported as sales without the division into the 'Home Consumption' and 'Sold for Export.'

‡The figures in the 'Sold for Export' column do not agree as they should with those given in Table 5, the only explanation being that the data in the two cases are from different sources, and it has not been possible to find out the cause of the difference.

¶Two months only.

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SALES AND OUTPUT FOR YEAR. Tons of 2240 lbs.	Tons.	Cwt.	Tons.	Cwt.
	Sold for consumption in Canada	513,313	
" export to U.S.A.	647,343	.....	
" " to other countries				
Total sales			1,160,656	
Used in making coke	398,896	.....	
Used under colliery boilers, &c.	177,453	.....	
Total for colliery use			576,354	
			1,737,010	
Stock on hand first of year	3,528	.....	
" " last of year	3,214	.....	
Difference taken from stock during the year ..				314
Output of collieries for year			1,736,696	

NUMBER OF HANDS EMPLOYED, DAILY WAGES PAID, &c.

CHARACTER OF LABOUR.	UNDERGROUND.		ABOVE GROUND.		TOTAL.	
	No. of employees	Average daily wage	No. of employees	Average daily wage	No. of employees	Average daily wage
Supervision and clerical assistance	83	\$ 7 62	57	\$ 4 50	140	\$ 6 06
Whites—						
Miners	1,445	4 70	.....	.....	1,445	4 70
Miners' helpers	507	2 25	.....	.....	507	2 25
Labourers	624	2 75	368	2 60	992	2 67
Mechanics and skilled lab. ...	75	2 87	311	3 60	386	3 23
Boys	140	1 50	53	1 40	193	1 45
Japanese	102	1 37	18	1 22	120	1 24
Chinese	151	1 37	473	1 60	624	1 48
Totals	3,127	.....	1,280	.....	4,407	.....

COKE.

The total production of coke for 1905, to which contributed the three provinces of Nova Scotia, British Columbia and Alberta, shows a marked increase over 1904. From 554,083 tons in 1904 it attained 700,488 tons in 1905. Each of the three provinces have a larger production than in the previous year, but Nova Scotia and Alberta are mainly responsible for the greater tonnage.

TABLE 1.

COKE.

ANNUAL PRODUCTION.

Calendar Year.	Tons.	Value.	Value. per Ton.
1886.....	35,396	\$101,940	\$2.88
1887.....	40,428	135,951	3.36
1888.....	45,373	134,181	2.96
1889.....	54,539	155,043	2.84
1890.....	56,450	166,298	2.95
1891.....	57,084	175,592	3.08
1892.....	56,135	160,249	2.85
1893.....	61,078	161,790	2.65
1894.....	58,044	148,551	2.56
1895.....	53,356	143,047	2.68
1896.....	49,619	110,257	2.22
1897.....	60,686	176,457	2.91
1898.....	87,600	286,000	3.26
1899.....	100,820	350,022	3.47
1900.....	157,134	649,140	4.13
1901.....	365,531	1,228,225	3.36
1902.....	502,043	1,519,185	3.03
1903.....	561,318	1,734,404	3.09
1904.....	554,083	2,032,048	3.66
1905.....	700,488	2,436,211	3.48

The total increase in tonnage is therefore 146,405 over 1904, which is divided up as follows among the contributing provinces: Nova Scotia an increase of 110,439 tons, Alberta 23,882 tons and British Columbia 12,884 tons.

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TABLE 2.
COKE.
PRODUCTION OF COKE BY PROVINCES.

Calendar Year.	Nova Scotia.		British Columbia.		Alberta.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
		\$		\$		\$
1897.....	41,532	90,950	19,154	85,507		
1898.....	48,400	111,000	39,200	175,000		
1899.....	62,459	178,767	38,361	171,255		
1900.....	61,767	223,395	95,367	425,745		
1901.....	222,694	590,560	142,837	637,665		
1902.....	363,330	899,930	138,713	619,255		
1903.....	371,745	888,094	189,573	846,310		
1904.....	275,927	805,022	257,172	1,148,090	20,984	78,936
1905.....	386,366	1,054,712	269,256	1,202,035	44,866	179,464

Nova Scotia.—The coke production of Nova Scotia is practically all used in the manufacture of iron and steel in the province itself. The total production this year shows a marked increase, for which the new coking plant of the Nova Scotia Steel and Coal Company is to be partly credited. Almost 90 per cent of the Nova Scotian coke is manufactured in by-product ovens. The two largest coking plants in the province are the plant of the Dominion Iron and Steel Co., at Sydney, which consists of 10 batteries of 50 ovens each, or 500 ovens, of the Otto-Hoffman by-product type, and the plant of the Nova Scotia Steel and Coal Co., at Sydney Mines, which comprises 120 ovens of the Bernard type, and 30 Bauer ovens.

Alberta.—This province is becoming quite a factor in the production of coke. In 1904 only 20,197 tons were produced, whereas in 1905 this figure had more than doubled, having reached 44,866 tons. This is manufactured altogether from the coal of the Blairmore-Frank field, in the Crow's Nest field, on the Crow's Nest branch of the C.P.R.

The West Canadian Collieries, Limited, have a battery of 50 ovens of the Bernard type, at Lille. These are the only mechanical or by-product ovens in the west. They are of the same pattern as those recently erected (4 batteries of 30 ovens each) for the Nova Scotia Steel and Coal Company at Sydney Mines, Nova Scotia. All the other ovens in operation in the province are of the bee-hive pattern. The production of coke of Alberta is entirely consumed in Canada, mainly in the smelting centres of British Columbia.

British Columbia.—There is only a very small increase, of slightly over 12,000 tons, to record this year in the production of coke in British Columbia. In 1904, the total production amounted to 257,172 tons, whereas in 1905 this was raised to 269,266 tons. Of this quantity about 45 per cent is used locally, in the lead and copper smelters of the province, and the balance of 55 per cent is exported to the United States. All the coke ovens of British Columbia, on the mainland as well as on Vancouver Island, are of bee-hive pattern.

Below are given statistical tables of the imports and exports of coke.

TABLE 3.
COKE.
EXPORTS OF COKE.

Calendar Year.	Tons.	Value.
		\$
1897	2,987	6,078
1898	3,774	8,394
1899	5,557	18,726
1900	41,529	131,278
1901	57,505	176,990
1902	62,568	180,920
1903	32,608	135,957
1904	102,463	345,031
1905	116,071	509,908

TABLE 4.
COKE.
IMPORTS OF OVEN COKE.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
		\$			\$
1880	3,837	19,353	1893	41,821	156,277
1881	5,492	26,123	1894	42,864	176,996
1882	8,157	36,670	1895	43,235	149,434
1883	8,943	38,588	1896	61,612	203,826
1884	11,207	44,518	1897	83,330	267,540
1885	11,564	41,391	1898	135,060	347,040
1886	11,858	39,756	1899	141,234	362,826
1887	15,110	56,222	1900	187,378	506,839
1888	25,487	102,334	1901	308,736	680,138
1889	29,557	91,902	1902	267,142	842,815
1890	36,564	133,344	1903	256,723	1,222,756
1891	38,533	177,605	1904	221,050	765,123
1892	43,499	194,429	1905	Duty free.	371,593
					807,842

The exports are altogether from British Columbia to the United States, and the larger proportion of these exports are to the smelting centres, immediately south of the 49th parallel. The largest item in the imports consists of the fuel supply of the various blast furnaces of Ontario.

CHROMITE.

Good progress has been made in the mining and treatment of chromite ores in the Eastern Townships of the Province of Quebec, the only district in Canada from which these ores are at present obtained. The total shipments in 1905 were approximately 8,575 tons valued at \$93,301 as compared with 6,074 tons in 1904 and 3,509 tons in 1903.

Considerable improvements have been made in the methods of mining and concentrating the ores. The treatment is the same throughout the district. The ore is sorted as it comes from the pit and all running over 40 per cent sesquioxide of chromium is graded crude No. 1 (over 47 per cent.) and No. 2 (between 40 per cent. and 47 per cent.) The waste or ore running less than 40 per cent. Cr_2O_3 is sent to the mills for concentration. Here it is crushed in jaw crushers and under stamps and concentrated in Wilfley tables. Two grades of concentrates are produced and are finding a ready market chiefly in the United States. The high grade concentrates running 50 to 54 per cent. Cr_2O_3 are competing successfully with the high grade ores of New Caledonia.

The largest operating company during the year was the Black Lake Chrome and Asbestos Company. This company remodelled its plant during the year. A mill building containing a 30 stamp mill was erected on the line of the Quebec Central Railway near Black Lake. A tram line operated by cable was built connecting the two shafts at No. 1 pit with the mill and an air compressor installed at the pit. All of this plant is operated by electric power obtained from the St. Francis Hydraulic Company,

Small shipments were also made by the American Chrome Company and the Canadian Chrome Company.

Statistics of production and exports are given in the following tables :—

TABLE 1.

CHROMITE.

ANNUAL PRODUCTION.

Calendar Year.	Tons. (2,000 lbs.)	Average	Value.
		price per ton.	
		\$ cts	\$
1886.....	* 60	15 75	945
1887.....	38	15 00	570
1888 to 1893.....	no output		
1894.....	1,000	20 00	20,000
1895.....	3,177	13 00	41,300
1896.....	2,342	11 53	27,004
1897.....	2,637	12 31	32,474
1898.....	*2,021	12 00	24,252
1899.....	2,010	10 86	21,842
1900.....	2,335	11 56	27,000
1901.....	1,274	13 14	16,744
1902.....	900	14 44	13,000
1903.....	3,509	14 57	51,129
1904.....	6,074	11 05	67,143
1905.....	8,575	10 88	93,301

* Railway shipments.

TABLE 2.

CHROMITE.

EXPORTS.

Calendar Year.	Tons.	Value.
1895.....	2,908	\$ 42,236
1896.....	2,466	31,411
1897.....	2,106	26,254
1898.....	1,683	20,783
1899.....	1,509	19,876
1900.....	368	8,259
1901.....	2,259	25,444
1902.....	740	7,535
1903.....	1,013	20,524
1904.....	3,338	60,336
1905.....	5,042	45,072

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GRAPHITE.

With the exception of a small amount mined near Havelock, N.B. for use in paint-making the graphite production in Canada in 1905 was all obtained from the Black Donald mine, Brougham tp., Renfrew county, and a mine in North Elmsley tp., Lanark county, Ont., operated by the Globe Refining Company of Ottawa. The total quantity of ore mined during the year was 2,138 tons of which 1,694 tons were milled; 444 tons of ore were sold crude, valued at \$8,160 while 97 tons of milled products were disposed of, valued at \$8,575 the total sales being 541 tons valued at \$16,735.

No information was received of any operations in the graphite deposits at Buckingham or at Grenville, Que.

Statistics of production, exports and imports are given in Tables 1, 2, and 3 following.

TABLE 1.
GRAPHITE.
ANNUAL PRODUCTION.

Calendar Year.	Tons.	Value.	Calendar Year.	Tons.	Value.
1886.....	500	\$4,000	1896.....	139	9,455
1887.....	300	2,400	1897.....	436	16,240
1888.....	150	1,200	1898.....		13,698
1889.....	242	3,160	1899.....	1,130	24,179
1890.....	175	5,200	1900.....	1,922	31,040
1891.....	260	1,560	1901.....	2,210	38,780
1892.....	167	3,763	1902.....	1,095	28,300
1893.....	nil.	nil.	1903.....	728	23,745
1894*.....	3	223	1904.....	452	11,760
1895.....	220	\$ 6,150	1905.....	541	16,735

* Exports.

TABLE 2.
GRAPHITE.
EXPORTS.

Calendar Year.	Value.	Calendar Year.	Value.
1886.....	\$ 3,586	1896.....	\$ 9,480
1887.....	3,017	1897.....	4,325
1888.....	1,080	1898.....	13,098
1889.....	538	1899.....	22,490
1890.....	1,529	1900.....	46,197
1891.....	72	1901.....	35,102
1892.....	3,952	1902.....	24,839
1893.....	38	1903.....	43,642
1894.....	223	1904.....	16,567
1895.....	4,833		
1905 { Crude.....		Cwt.	
Manufactures of.....		5,088	\$ 7,596
			518
			\$ 8,114

TABLE 3.

GRAPHITE.

IMPORTS OF RAW AND MANUFACTURED GRAPHITE.

Fiscal Year.	Plumbago.	Manufactures of plumbago.	
		Black-lead.	Other Manufactures.
1880.....	\$1,677	\$18,055	\$2,738
1881.....	2,479	26,544	1,202
1882.....	1,028	25,132	2,181
1883.....	3,147	21,151	2,141
1884.....	2,891	24,002	2,152
1885.....	3,729	24,487	2,805
1886.....	5,522	23,211	1,408
1887.....	4,020	25,766	2,830
1888.....	3,802	7,824	22,604
1889.....	3,546	11,852	21,789
1890.....	3,441	10,276	26,605
1891.....	7,217	8,292	26,201
1892.....	2,988	13,560	23,085
1893.....	3,293	16,595	23,051
1894.....	2,177	17,614	16,686
1895.....	2,586	13,922	21,988
1896.....	2,865	18,434	19,497
1897.....	1,406	17,863	20,674
1898.....	1,862	19,638	32,653
1899.....	4,979	21,334	36,490
1900.....	4,437	22,078	38,440
1901.....	2,357	25,646	49,890
1902.....	3,649	20,467	43,656
1903.....	2,870	22,559	47,117
1904.....	1,802	26,053	41,510
1905 {	Duty.		
	Plumbago, not ground, &c.	10 p.c.	\$2,499
	Black-lead.....	25 "	\$30,743
	Plumbago, ground and manufactures of N.E.S.	25 "	
Crucibles, clay or plumbago.....	Free.		\$13,192
Totals, 1905.....		\$2,499	\$30,743
			\$44,545

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GYPSUM.

The total sales of crude, ground and calcined gypsum in 1905 amounted to 442,158 short tons, valued at \$586,168, compared with 345,961 tons valued at \$373,474; an increase of \$96,197 tons or nearly 28 per cent in quantity and \$211,694 or over 56 per cent in value.

The total quantity of gypsum mined during the year was 443,569 short tons of which 26,855 tons were calcined, making Plaster of Paris, hard wall plaster, etc.

The sales of gypsum products for the year in detail, were as follows:—

	Tons.	Value.
Crude gypsum	412,155	\$,409,146
Ground gypsum	3,255	8,779
Plaster of Paris, wall plaster, etc.....	26,748	168,243
	<u>442,158</u>	<u>\$586,168</u>

Statistics of production, exports and imports are given in the following tables.

TABLE 1.

GYPSUM.

ANNUAL PRODUCTION.

Calendar Year.	Tons.	Value.	Average price per ton.	
1886.....	162,000	\$178,742	\$ 1.10	
1887.....	154,008	157,277	1.02	
1888.....	175,887	179,393	1.01	
1889.....	213,273	205,108	0.96	
1890.....	226,509	194,033	0.86	
1891.....	203,605	206,251	1.01	
1892.....	241,048	241,127	1.00	
1893.....	192,568	196,150	1.02	
1894.....	223,631	202,031	0.90	
1895.....	226,178	202,608	0.89	
1896.....	207,032	178,061	0.86	
1897.....	239,691	244,531	1.02	
1898.....	219,256	232,515	1.06	
1899.....	244,566	257,329	1.05	
1900.....	252,101	259,009	1.02	
1901.....	293,799	340,148	1.16	
1902.....	333,599	379,479	1.14	
1903.....	314,489	388,459	1.24	
1904.....	345,961	373,474	1.08	
1905 {	Crude gypsum.....	412,155	409,146	0.99
	Ground gypsum.....	3,255	8,779	2.70
	Plaster of Paris and wall plaster.....	26,748	168,243	6.29
	Total.....	<u>442,158</u>	<u>586,168</u>	<u>1.32</u>

TABLE 2.
GYPSUM.
ANNUAL PRODUCTION BY PROVINCES.

CALENDAR YEAR.	NOVA SCOTIA.		NEW BRUNSWICK.		ONTARIO.		MANITOBA.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
		\$		\$		\$		\$
1887.. . . .	116,346	116,346	29,102	29,216	8,560	11,715		
1888 . . .	124,818	120,429	44,369	48,764	6,700	10,200		
1889.	165,025	142,850	40,866	49,130	7,382	13,128		
1890.	181,285	154,972	39,024	30,986	6,200	8,075		
1891.	161,934	153,955	36,011	33,996	5,660	18,300		
1892.	197,019	170,021	39,709	65,707	4,320	5,399		
1893.	152,754	144,111	36,916	41,846	2,898	10,193		
1894.	168,300	147,644	52,962	48,200	2,369	6,187		
1895.	156,809	133,929	66,949	63,839	2,420	4,840		
1896	136,590	111,251	67,137	59,024	3,305	7,786		
1897.	155,572	121,754	82,658	118,116	1,461	4,661		
1898.	132,086	106,610	86,083	121,704	1,087	4,201		
1899.	126,754	102,055	116,792	151,296	1,020	3,978		
1900.	138,712	108,828	112,294	145,850	1,095	4,331		
1901.	170,100	136,947	121,595	189,709	1,504	5,692	600	7,800
1902	206,087	181,425	124,041	170,153	1,917	7,699	1,554	20,202
1903.	189,427	173,881	119,182	172,080	2,720	21,988	3,160	20,510
1904.	218,580	153,600	120,991	187,524	2,390	18,350	4,000	14,000
1905.	272,252	298,248	163,553	232,586	1,853	23,834	4,500	31,500

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TABLE 3.

GYPSUM.

EXPORTS OF CRUDE GYPSUM.

Calendar Year.	NOVA SCOTIA.		NEW BRUNSWICK.		ONTARIO.		TOTAL.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
		\$		\$		\$		\$
1874	67,830	68,164					67,830	68,164
1875	86,065	86,193	5,420	5,420			91,485	91,613
1876	87,720	87,590	4,925	6,616	120	180	92,765	94,386
1877	106,950	93,867	5,030	5,030			111,980	98,897
1878	88,631	76,695	16,335	16,435	489	675	105,455	93,805
1879	95,623	71,353	8,791	8,791	579	720	104,993	80,864
1880	125,685	111,833	10,375	10,987	875	1,240	136,935	124,060
1881	110,303	100,284	10,310	15,025	657	1,040	121,270	116,349
1882	133,426	121,070	15,597	24,581	1,249	1,946	150,272	147,597
1883	145,448	132,834	20,242	35,557	462	837	166,152	169,228
1884	107,653	100,446	21,800	32,751	688	1,254	130,141	134,451
1885	81,887	77,898	15,140	27,730	525	787	97,552	106,415
1886	118,985	114,116	23,498	40,559	350	538	142,833	155,213
1887	112,557	106,910	19,942	39,295	225	337	132,724	146,542
1888	124,818	120,429	20	50	670	910	125,508	121,389
1889	146,204	142,850	31,495	50,862	483	692	173,182	194,404
1890	145,452	139,707	30,034	52,291	205	256	175,691	192,254
1891	143,770	140,438	27,536	41,350	5	7	171,311	181,795
1892	162,372	157,463	27,488	43,623			189,860	201,086
1893	132,131	122,556	30,061	36,706			162,192	159,262
1894	119,569	111,586	40,843	46,538			160,412	158,124
1895	133,369	125,651	56,117	67,593			189,486	193,244
1896	116,331	109,054	64,946	77,535			181,277	186,589
1897	122,984	116,665	66,222	80,485			189,206	197,150
1898	99,215	93,474	70,399	81,433			169,614	174,907
1899	104,795	99,984	96,831	108,094	* ₃	12	201,626	208,090
1900							188,262	201,912
1901							236,247	231,594
1902							289,600	295,215
1903							287,496	311,580
1904							298,211	316,436
1905							359,246	388,474

*Exported from British Columbia.

TABLE 4.
GYPSUM.
EXPORTS OF GROUND GYPSUM.

Calendar Year.	Nova Scotia.	New Brunswick.	Ontario.	Total.
	\$	\$	\$	\$
1890.....				105
1891.....				588
1892.....				20,255
1893.....				22,132
1894.....	2,124	17,930		20,054
1895.....	3,364	18,827	42	22,233
1896.....	1,270	19,246	751	21,267
1897.....	1,655	5,024	84	6,763
1898.....	1,548	4,900		6,448
1899.....	205	7,898	20	8,123
1900.....				19,834
1901.....				15,337
1902.....				5,101
1903.....				12,457
1904.....				2,333
1905.....				2,673

TABLE 5.
GYPSUM.
IMPORTS OF GYPSUM, ETC.

Fiscal Year.	Crude Gypsum.		Ground Gypsum.		Plaster of Paris.	
	Tons.	Value.	Pounds.	Value.	Pounds.	Value.
1880.....	1,854	\$3,203	1,606,578	\$ 5,948	667,676	\$ 2,376
1881.....	1,731	3,442	1,544,714	4,676	574,006	2,864
1882.....	2,132	3,761	759,460	2,576	751,147	4,184
1883.....	1,384	3,001	1,017,905	2,579	1,448,650	7,867
1884.....		3,416	687,432	1,936	782,920	5,226
1885.....	1,353	2,354	461,400	1,177	689,521	4,809
1886.....	1,870	2,429	224,119	675	820,273	5,463
1887.....	1,557	2,492	13,266	73	594,146	4,342
1888.....	1,236	2,193	106,068	558	942,338	6,662
1889.....	1,360	2,472	74,390	372	1,173,996	8,513
1890.....	1,050	1,928	434,400	2,136	693,435	6,004
1891.....	376	640	36,500	215	1,035,605	8,412
1892.....	626	1,182	310,250	2,149	1,166,200	5,595
1893.....	496	1,014	140,830	442	552,130	3,143
1894.....		1,660	23,270	198	422,700	2,386
1895.....	603	960	20,700	88	259,200	1,619
1896.....	1,045	848	64,500	198	297,000	2,000
1897.....		772	45,000	123	969,900	4,489
1898.....	1,147	1,742	35,700	293	329,600	2,025
1899.....	325	692	33,900	338	496,300	3,120
1900.....	77	958	6,300	69	849,100	6,492
1901.....	286	1,125	65,400	1,097	502,200	3,978
1902.....	541	1,697	56,700	249	475,300	2,641
1903.....	1,076	2,187	68,700	228	630,800	3,599
1904.....	249	663	106,800	559	623,100	2,885
1905.....	2,344	7,386	*2,255,700	2,681	7,924,100	37,643

*Equivalent to 7,519 barrels.
Crude gypsum, duty free. Ground gypsum, duty 15%. Plaster of Paris, duty 12½c. per 100 lbs.

MANGANESE.

There has been but little manganese mining in Canada during the past few years. During 1905, the dumps on the property of the Tenny Cape Manganese Co., at Tennycape, Nova Scotia, were worked over by tributers. No direct returns of production were received but exports were reported as 22 tons valued at \$1,720 and this figure has been taken as representing the production.

TABLE 1.
MANGANESE.
ANNUAL PRODUCTION.

Calendar Year.	Tons.	Value.	Value per ton.
1886.....	1,789	\$41,499	\$23.20
1887.....	1,245	43,658	35.07
1888.....	1,801	47,944	26.62
1889.....	1,455	32,737	22.50
1890.....	1,328	32,550	24.51
1891.....	255	6,694	26.25
1892.....	115	10,250	89.13
1893.....	213	14,578	68.44
1894.....	74	4,180	56.49
1895.....	125	8,464	67.71
1896*.....	123 $\frac{1}{2}$	3,975	32.19
1897*.....	15 $\frac{1}{2}$	1,166	76.46
1898.....	50	1,600	32.00
1899.....	1,581	20,004	12.65
1900.....	30	1,800	60.00
1901*.....	440	4,820	10.95
1902*.....	172	4,062	23.62
1903.....	91	2,775	30.49
1904.....	66	2,740	41.51
1905*.....	22	1,720	78.18

* Exports.

TABLE 2.
MANGANESE.
EXPORT OF MANGANESE ORE.

CALENDAR YEAR.	NOVA SCOTIA.		NEW BRUNSWICK.		TOTAL.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
1873.....			1,031	\$20,192	1,031	\$20,192
1874.....	6	\$ 12	776	16,961	782	16,973
1875.....		200	194	5,314	203	5,514
1876.....	21	723	391	7,316	412	8,039
1877.....	106	3,699	785	12,210	891	15,909
1878.....	106	4,889	520	5,971	626	10,860
1879.....	154	7,420	1,732	20,016	1,886	27,436
1880.....	79	3,090	2,100	31,707	2,179	34,797
1881.....	200	18,022	1,504	22,532	1,704	40,554
1882.....	123	11,520	771	14,227	894	25,747
1883.....	313	8,635	1,013	16,708	1,326	25,343
1884.....	134	11,054	469	9,035	603	20,089
1885.....	77	5,064	1,607	29,595	1,684	34,649
1886.....	(a) 441	30,854	1,377	27,484	(a) 1,818	58,338
1887.....	578	14,240	837	20,562	1,415	34,802
1888.....	87	5,759	1,094	16,073	1,181	21,832
1889.....	59	3,024	1,377	26,326	1,436	29,350
1890.....	177	2,583	1,729	34,248	1,906	36,831
1891.....	22	563	283	6,131	255	6,694
1892.....	84	6,180	59	2,025	143	8,205
1893.....	123	12,409	10	112	133	12,521
1894.....	11	720	45	2,400	56	3,120
1895.....	108	6,348	$\frac{8}{10}$	3	108 $\frac{8}{10}$	6,351
1896.....	123 $\frac{1}{2}$	3,975			123 $\frac{1}{2}$	3,975
1897.....	15 $\frac{1}{2}$	1,166			15 $\frac{1}{2}$	1,166
1898.....	11	325			11	325
1899.....	67	2,328	3	82	70	2,410
1900.....					34	1,720
1901.....					440	4,820
1902.....					172	4,062
1903.....					135	1,889
1904.....					123	2,706
1905.....					22	1,720

(a) 250 tons from Cornwallis should more correctly be classed under the heading of mineral pigments.

TABLE 3.
MANGANESE.
IMPORTS: OXIDE OF MANGANESE.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1884.....	3,989	\$ 258	1895.....	64,151	\$2,731
1885.....	36,778	1,794	1896.....	108,590	4,075
1886.....	44,967	1,753	1897.....	70,663	2,741
1887.....	59,655	2,933	1898.....	130,456	5,047
1888.....	65,014	3,022	1899.....	141,356	5,539
1889.....	52,241	2,182	1900.....	126,725	4,155
1890.....	67,452	3,192	1901.....	272,134	8,176
1891.....	92,087	3,743	1902.....	476,331	5,360
1892.....	76,097	3,530	1903.....	279,611	8,051
1893.....	94,116	3,696	1904.....	275,696	7,051
1894.....	101,863	4,522	1905 Duty free...	235,289	6,832

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MICA.

According to returns received, the production of mica in Canada in 1905, was as follows.—

	Value.
Quebec.....	\$ 109,672
Ontario.....	68,563
	\$ 178,235

The demand for mica has considerably improved and higher prices have been realized, while the smaller sizes, or mica cutting 1 x 2 inches, have found a ready market.

The greater part of the Canadian production is exported to the United States as shown in Table 3 though larger shipments are now being made to European markets.

Statistics of production and exports are shown in Tables 1 and 2.

TABLE 1.
MICA.
ANNUAL PRODUCTION.

Calendar Year.	Value.	Calendar Year.	Value.
1886.....	\$ 29,008	1896.....	\$60,000
1887.....	29,816	1897.....	76,000
1888.....	30,207	1898.....	118,375
1889.....	28,718	1899.....	163,000
1890.....	68,074	1900.....	166,000
1891.....	71,510	1901.....	160,000
1892.....	104,745	1902.....	135,904
1893.....	75,719	1903.....	177,857
1894.....	45,581	1904.....	160,777
1895.....	65,000	1905.....	178,235

TABLE 2.
MICA.
EXPORTS.

Calendar Year.	Value.	Calendar Year.	Value.
1887.....	\$ 3,480	1897.....	\$ 69,101
1888.....	23,563	1898.....	110,507
1889.....	30,597	1899.....	153,002
1890.....	22,468	1900.....	146,750
1891.....	37,590	1901.....	152,553
1892.....	86,562	1902.....	(a) 391,812
1893.....	70,081	1903.....	196,020
1894.....	33,971	1904.....	198,482
1895.....	48,525	1905.....	179,049
1896.....	47,756		

(a) Probably includes some material manufactured from mica.

TABLE 3.

MICA.

*IMPORTS OF MICA INTO THE UNITED STATES FROM CANADA, YEARS ENDING
JUNE 30.

Fiscal Year.	Pounds.	Value.
1895.....	546,905	\$ 39,637
1896.....	570,750	53,719
1897.....	404,080	53,399
1898.....	465,779	53,854
1899.....	1,024,098	131,310
1900.....	1,097,067	136,981
1901.....	967,904	161,741
1902.....	854,167	184,287
1903.....	834,035	196,456
1904.....	573,035	137,191
1905.....	506,917	121,560

* The Foreign Commerce and Navigation of the United States.

SESSIONAL PAPER No. 26a

MINERAL PIGMENTS.

The production of ochres and barytes only are included under this heading.

Ochres.—The production of ochres in 1905 was 5,105 tons valued at \$34,675 and was all derived from deposits near Three Rivers, Champlain county, Quebec. This output was not all used in the manufacture of paint, in fact the greater proportion is represented by crude iron oxide which is shipped to many cities in Canada and exported to the United States and used in the purification of gas.

The firms mining ochres are :—

Canada Paint Co., Montreal, Que.
 Champlain Oxide Co., Three Rivers, Que.
 Thos. H. Argall, Three Rivers, Que.
 Ontario Mineral Paint Works, Campbellville, Ont.

TABLE 1.
 MINERAL PIGMENTS.
 ANNUAL PRODUCTION OF OCHRES.

Calendar Year.	Tons.	Value.
1886.....	350	\$ 2,350
1887.....	485	3,733
1888.....	397	7,900
1889.....	794	15,280
1890.....	275	5,125
1891.....	900	17,750
1892.....	390	5,800
1893.....	1,070	17,710
1894.....	611	8,690
1895.....	1,339	14,600
1896.....	2,362	16,045
1897.....	3,905	23,560
1898.....	2,226	17,450
1899.....	3,919	20,000
1900.....	1,966	15,398
1901.....	2,233	16,735
1902.....	4,955	30,495
1903.....	6,266	32,760
1904.....	3,925	24,995
1905.....	5,105	34,675

TABLE 2.
MINERAL PIGMENTS.
IMPORTS OF OCHRES.

Fiscal Year.	Pounds.	Value.	
1880.....	571,454	\$ 6,544	
1881.....	677,115	8,972	
1882.....	731,526	8,202	
1883.....	898,376	10,375	
1884.....	533,416	6,398	
1885.....	1,119,177	12,782	
1886.....	1,100,243	12,267	
1887.....	1,460,128	17,067	
1888.....	1,725,460	17,664	
1889.....	1,342,783	12,994	
1890.....	1,394,811	14,066	
1891.....	1,528,696	20,550	
1892.....	1,708,645	22,908	
1893.....	1,968,645	23,134	
1894.....	1,358,326	18,951	
1895.....	793,258	12,048	
1896.....	1,159,494	16,954	
1897.....	1,504,044	18,504	
1898.....	2,126,592	26,307	
1899.....	2,444,698	31,092	
1900.....	2,474,537	32,017	
1901.....	2,092,067	27,267	
1902.....	2,530,743	33,909	
1903.....	3,215,346	42,243	
1904.....	2,767,590	36,636	
	Duty.		
1905 { Ochres and ochrey earths and raw siennas.....	20 p. c.	1,269,887	\$ 14,097
Oxides, dry fillers, fire-proofs, umbers and burnt siennas N.E.S.....	25 "	1,852,803	21,790
Total, 1905.....		3,122,690	\$35,887

TABLE 3.
MINERAL PIGMENTS.
EXPORTS OF MINERAL PIGMENTS, IRON OXIDES, ETC.

Calendar Year.	Tons.	Value.
1897.....	512	\$7,706
1898.....	283	4,227
1899.....	308	5,408
1900.....	651	7,154
1901.....	401	8,233
1902.....	352	6,182
1903.....	676	12,770
1904.....	416	7,260
1905.....	353	7,704

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Barytes.—The production of barytes in 1905 was 3,360 tons valued at \$7,500 and was all produced at Lake Ainslie in Cape Breton. The product was shipped to New York and to Montreal.

The Ainslie Mining and Railway Company of Halifax with branches in New York and Montreal have begun the exploitation of the barytes deposits at East Lake Ainslie, C.B., on a much larger scale than has hitherto been attempted.

The Company's charter includes the right to build a railway north to Cheticamp and south to the Intercolonial. At present the ore is carried across the lake a distance of about eight miles in a boat especially constructed for the purpose and thence by way of the Inverness Railway & Coal Co's. line to Port Hastings. Considerable expenditure has already been made on necessary connecting railways, tramways, wharves, &c.

TABLE 4.
MINERAL PIGMENTS.
ANNUAL PRODUCTION OF BARYTES.

Calendar Year.	Tons.	Value.
1885.	300	\$ 1,500
1886.	3,864	19,270
1887.	400	2,400
1888.	1,100	3,850
1889.		
1890.	1,842	7,543
1891.		
1892.	315	1,260
1893.		
1894.	1,081	2,830
1895.		
1896.	145	715
1897.	571	3,060
1898.	1,125	5,533
1899.	720	4,402
1900.	1,337	7,605
1901.	653	3,842
1902.	1,096	3,957
1903.	1,163	3,931
1904.	1,382	3,702
1905.	3,360	7,500

TABLE 5.
MINERAL PIGMENTS.
IMPORTS OF BARYTES.

Fiscal Year.	Cwt.	Value.
1880.....	2,230	\$ 1,525
1881.....	3,740	1,011
1882.....	497	303
1883.....		185
1884.....		229
1885.....	7	14
1886.....		62
1887.....	379	676
1888.....	236	214
1889.....	1,332	987
1890.....	1,322	978

TABLE 6.
MINERAL PIGMENTS.
MISCELLANEOUS IMPORTS, FISCAL YEAR, 1904.

	Duty.	Quantity.	Value.
Paint, ground or mixed in, or with either japan, varnish, lacquers, liquid dryers, collodion, oil finish or oil varnish..... Lbs.	25 p. c.		\$
Paints and colours, rough stuff and fillers, anti-corrosive and anti-fouling paints commonly used for ship hulls, N.E.S..... "	25 "	4,498,576	243,928
Paris green, dry..... "	10 "	80,765	13,779
Paints and colours ground in spirits, and all spirit varnishes and lacquers..... Galls.	\$1.12½ per gallon..	902	2,594
Putty..... Lbs.	20 p. c.	293,323	4,471
Total.....			269,772

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MINERAL WATERS.

As has been stated in previous reports the following figures of production of mineral waters must be taken more or less as approximations. At a number of places in Canada where mineral springs occur, the water is being used for drinking or bathing, many are also bottled and sold in considerable quantity. At several points hotels have been erected near springs, the waters of which have curative properties. No data are available of the quantities thus used locally. It is therefore very difficult to obtain returns which would enable accurate statistics of the industry to be compiled.

TABLE 1.
MINERAL WATERS.
ANNUAL PRODUCTION.

Calendar Year.	Gallons.	Value.	Calendar Year.	Gallons.	Value.
1888.....	124,850	\$ 11,456	1897.....	749,691	\$141,477
1889.....	424,600	37,360	1898.....	555,000	100,000
1890.....	561,165	66,031	1899.....		100,000
1891.....	427,485	54,268	1900.....		75,000
1892.....	640,380	75,348	1901.....		100,000
1893.....	725,096	108,347	1902.....		100,000
1894.....	767,460	110,040	1903.....		100,000
1895.....	739,382	126,048	1904.....		100,000
1896.....	706,372	111,736	1905.....		100,000

TABLE 2.
MINERAL WATERS.
IMPORTS.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880.....	\$41,797	1893.....	27,909
1881.....	55,763	1894.....	28,130
1882.....	57,953	1895.....	27,879
1883.....	49,546	1896.....	32,674
1884.....	48,613	1897.....	22,142
1885.....	55,864	1898.....	33,314
1886.....	47,006	1899.....	38,046
1887.....	52,989	1900.....	30,343
1888.....	54,891	1901.....	40,802
1889.....	66,331	1902.....	91,871
1890.....	71,521	1903.....	108,130
1891.....	15,721	1904.....	137,304
1892.....	17,913		
1905 { Mineral waters, natural, not in bottle.....		D. ty free..	\$ 630
{ Mineral and aerated waters		" 20 p.c.	161,160
Total.....			\$161,790

NATURAL GAS.

The total value of the natural gas sold in Canada in 1905 was \$379,561 as compared with \$328,376 in 1904. The greater part of this output is derived from the wells in Ontario, the balance at Medicine Hat, Alta. There were nearly 300 producing wells in Ontario during the year and about 11 in Medicine Hat. The main field in Ontario, Welland county, is still the largest producer, the chief operating company being the Provincial Natural Gas and Fuel Company. The most recently discovered field in the counties of Haldimand and Brant is furnishing an increasing amount of gas, and the largest operator in this district, the Dominion Natural Gas Co., Ltd., has been absorbing some of the smaller operators and looking for new markets in the adjacent towns. The number of new producing wells bored in Ontario during the year was about 53.

The Medicine Hat, Alberta, gas field is yearly increasing in importance, in so far as output is concerned. The municipality is now the owner of six producing wells, supplying gas for street lighting and for sale to householders and manufacturers. The Canadian Pacific Railway owns one well put down in the railway yard, the gas being used for lighting and heating. There are in addition several privately owned wells.

It is a somewhat difficult matter to arrive at a satisfactory valuation of the gas used at Medicine Hat. In the case of the municipal plant the receipts from gas sold furnish a basis of value, but the gas from the Canadian Pacific Railway and other wells is neither measured nor sold. An endeavour has therefore been made to find the value of the services displaced, such as coal, &c., and then with a very liberal allowance for increased efficiency given by the gas the total value of the gas utilized in Medicine Hat during 1905 has been placed at \$33,000.

TABLE I.
NATURAL GAS.
ANNUAL PRODUCTION.

Calendar Year.	Value.
1892.....	\$ 150,000
1893.....	376,233
1894.....	313,754
1895.....	423,032
1896.....	276,301
1897.....	325,873
1898.....	322,123
1899.....	387,271
1900.....	417,094
1901.....	339,476
1902.....	195,992
1903.....	202,210
1904.....	328,376
1905.....	379,561

PETROLEUM.

A great deal of exploration and drilling in search of new oil fields has been carried on in 1905 in various parts of Canada, more especially in the provinces of Alberta, of British Columbia, of New Brunswick and on the Island of Manitoulin in Ontario. But apart from a small quantity obtained in New Brunswick in the vicinity of Memramcook the total Canadian production of oil has been derived from the several pools of southern Ontario.

The details of production for the past few years are as follows :—

Crude Oil.	1901.	1902.	1903.	1904.
	Bbls.	Bbls.	Bbls.	Bbls.
Received at refineries	508,677	443,333	410,280	455,074
Direct sales for industrial purposes	113,715	87,291	76,357	48,400
Total sales of crude oil.....	622,392	530,624	486,637	503,474
" in gallons.....	21,783,720	18,571,840	17,032,295	17,621,590

Production calculated on the basis of bounty paid by the Dominion Government of 1½c. per gallon.	1905.
Six months ending June 1905.....	13,519,031 galls.
" " December 1905.....	8,674,305 "
Total, 1905	22,193,336 galls.
	634,095 bbls.

TABLE 1.
PETROLEUM.
CANADIAN OILS AND NAPHTHA INSPECTED AND CORRESPONDING QUANTITIES
OF CRUDE OIL.

Calendar Year.	Refined Oils Inspected.	Crude Equivalent Calculated.	Ratio of Crude to Refined.	Equivalent in Barrels of 35 Gallons	Average Price per Barrel of Crude.	Value of Crude Oil.
	Gallons.	Gallons.				
1881	6,457,270	12,914,540	100:50	368,987	.....	.....
1882	6,135,782	13,635,071	100:45	389,573	.....	.....
1883	7,447,648	16,550,328	100:45	472,866	.....	.....
1884	7,993,995	19,984,987	100:40	571,000	.....	.....
1885	8,225,882	20,564,705	100:40	587,563	.....	.....
1886	7,768,006	20,442,121	100:38	584,061	\$0 90	\$525,655
1887	9,492,588	24,980,494	100:38	713,728	0 78	556,708
1888	9,246,176	24,332,042	100:38	695,203	1 02 ² / ₃	713,695
1889	9,472,476	24,664,144	100:38	704,690	0 92 ² / ₃	653,600
1890	10,174,894	26,776,037	100:38	795,030	1 18	902,734
1891	10,065,463	26,435,430	100:38	755,298	1 33 ² / ₃	1,010,211
1892	10,370,707	27,291,334	100:38	779,753	1 26 ² / ₃	984,438
1893	10,618,804	27,944,221	100:38	798,406	1 09 ² / ₃	874,255
1894	11,027,982	29,018,637	100:38	829,104	1 00 ² / ₃	835,322
1895	10,674,232	25,414,838	100:42	726,138	1 49 ² / ₃	1,036,738
1896	10,684,284	25,438,771	100:42	726,822	1 59	1,155,647
1897	10,434,878	24,844,995	100:42	709,857	1 42 ² / ₃	1,011,546
1898	11,148,348	26,543,685	100:42	758,391	1 40	1,061,747
1899	11,927,981	28,399,955	100:42	808,570	1 48 ² / ₃	1,202,020
1900	13,428,422	24,867,449	100:54	710,498	1 62	1,151,007

During the session of 1904 of the Dominion parliament, an act was introduced and passed providing for the payment of a bounty of one and a half cents per gallon on all crude petroleum produced from wells in Canada. The official figures of the bounty paid serve as excellent basis for calculating the production of crude oil, and they have been so adopted for the year 1905. For the previous years, between 1901 and 1904 the production is based on direct returns as indicated in the first column of the above tabulated statement. For the years previous to 1901 the production of crude oil was obtained from government inspection returns, by assuming a ratio of crude to refined, and the statistics of production on this basis will be found in Table 1. This method was open to objection, however, owing to the possible incorrectness of the ratio assumed.

There is a marked increase in 1905 over the production of 1904, for which the stimulus caused by the granting of the bounty is probably responsible. There has also been a much greater production from the Leamington field, Mersea township, Essex county, Ontario, where a new and very productive pool has been struck.

The following tables illustrate the petroleum industry of Canada, by giving the exports, imports, returns of inspection and other data.

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TABLE 2.

PETROLEUM.

VALUE OF THE PRODUCTION OF CANADIAN OIL REFINERIES.

Calendar Year.	Value.	Calendar Year.	Value.
1887.....	\$1,288,109	1897.....	1,672,429
1888.....	1,401,459	1898.....	1,825,265
1889.....	1,414,184	1899.....	1,490,870
1890.....	1,638,420	1900.....	1,620,705
1891.....	1,534,509	1901.....	1,251,373
1892.....	1,782,365	1902.....	1,222,641
1893.....	1,675,784	1903.....	1,302,104
1894.....	1,567,134	1904.....	975,840
1895.....	1,806,237	1905.....	(a) 1,815,525
1896.....	1,876,913		

(a) Derived from both Canadian and imported crude oils.

TABLE 3.

PETROLEUM.

TOTAL AMOUNT OF OIL INSPECTED, CANADIAN AND IMPORTED.

Fiscal Year	Canadian.	Imported.	Total.	Canadian.	Imported.
	Gallons.	Gallons.	Gallons.	Per cent.	Per cent.
1881.....	6,406,783	476,784	6,883,567	93·1	6·9
1882.....	5,910,747	1,351,412	7,262,159	81·4	18·6
1883.....	6,970,550	1,190,828	8,161,378	85·4	14·6
1884.....	7,656,001	1,142,575	8,798,586	87·0	13·0
1885.....	7,661,617	1,278,115	8,939,732	85·7	14·3
1886.....	8,149,472	1,327,616	9,477,088	86·0	14·0
1887.....	8,243,962	1,665,604	9,909,566	83·2	16·8
1888.....	9,545,895	1,821,342	11,367,237	84·0	16·0
1889.....	9,462,834	1,767,812	11,230,646	84·3	15·7
1890.....	10,121,210	2,020,742	12,141,952	83·4	16·6
1891.....	10,270,107	2,022,002	12,292,109	83·6	16·4
1892.....	10,238,426	2,423,445	12,667,871	80·8	19·2
1893.....	10,683,806	2,641,690	13,325,496	80·2	19·8
1894.....	10,824,270	5,633,222	16,457,492	65·8	34·2
1895.....	10,936,992	5,650,994	16,587,986	65·9	34·1
1896.....	10,533,951	5,807,991	16,341,942	64·5	35·5
1897.....	10,506,526	6,248,743	16,755,269	62·7	37·3
1898.....	10,796,847	6,880,734	17,677,581	61·1	38·9
1899.....	11,005,804	7,232,348	18,238,152	60·3	39·7
1900.....	13,014,713	*8,216,207	21,230,920	61·3	38·7
1901.....	12,674,977	*9,232,165	21,907,142	57·9	42·1
1902.....	10,494,874	*10,916,396	21,411,270	49·0	51·0
1903.....	8,615,892	*14,479,176	23,095,068	37·3	62·7
1904.....	7,292,113	*17,369,930	24,662,043	29·6	70·4
1905.....	17,520,035	*10,284,053	27,804,088	63·0	37·0

* Item (a) Table 5.

TABLE 4.
 PETROLEUM.
 EXPORTS OF CRUDE AND REFINED PETROLEUM.

Calendar Year.	Crude Oil.		Refined Oil.		Total.	
	Gallons.	Value.	Gallons.	Value.	Gallons.	Value.
1881					501	\$ 99
1882					1,119	286
1883					13,283	710
1884					1,098,090	30,168
1885					337,967	10,562
1886					241,716	9,855
1887					473,559	13,831
1888					196,602	74,542
1889					235,855	10,777
1890					420,492	18,154
1891	446,770	\$ 18,471	585	\$104	447,355	18,575
1892	310,387	12,945	1,146	100	311,533	13,045
1893	107,719	3,696	2,196	394	109,915	4,090
1894	53,985	2,773	5,297	513	59,282	3,286
1895	22,831	1,044	10,237	2,023	33,068	3,067
1896	601	101	7,489	999	8,090	1,100
1897			342	49	342	49
1898	96	4	12,735	3,001	12,831	3,005
1899			3,425	359	3,425	859
1900	40	2	8,559	2,394	8,599	2,396
1901	14,168	691	375	66	14,543	757
1902	400	40	626	146	1,026	186
1903	350	15	1,013	190	1,363	205
1904	4,207	213	2,126	470	6,333	683
1905	35	2	7,228	2,078	7,263	2,080

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TABLE 5.

PETROLEUM.

IMPORTS OF PETROLEUM AND PRODUCTS OF.

Fiscal Year.		Gallons.	Value.	
			\$	
1880.		687,641	131,359	
1881.		1,437,475	262,168	
1882.		3,007,702	398,031	
1883.		3,086,316	358,546	
1884.		3,160,282	380,082	
1885.		3,767,441	415,195	
1886.		3,819,146	421,836	
1887.		4,290,003	467,003	
1888.		4,523,056	408,025	
1889.		4,650,274	484,462	
1890.		5,075,650	515,852	
1891.		5,071,386	498,330	
1892.		5,649,145	475,732	
1893.		6,002,141	446,389	
1894.		6,597,108	439,988	
1895.		7,577,674	525,372	
1896.		8,005,891	735,913	
1897.		8,415,302	697,169	
1898.		9,074,311	724,519	
1899.		10,394,208	763,303	
1900.		9,633,647	864,833	
1901.		11,082,822	982,640	
1902.		13,220,005	1,107,207	
1903.		18,799,312	1,643,371	
1904.		24,521,115	2,152,623	
1905	Oils :—	Duty.	Gallons.	Value.
	Mineral :			\$
	(a) Coal and kerosene, distilled, purified or refined, naphtha and petroleum, N.E.S.	2½c. p. gall.	10,284,053	943,207
	(b) Products of petroleum.	2½c. "	879,438	96,629
	(c) Crude petroleum, gas oils (other than benzine and gasoline)	1½c. "	72,533	3,771
	Petroleum crude, fuel and gas oils (8233 specific gravity) free.	Free.	22,440,856	897,642
	(d) Illuminating oils composed wholly or in part of the products of petroleum, coal, shale or lignite, costing more than 30 cents per gallon	20 p. c.	10,232	2,593
(e) Lubricating oils composed wholly or in part of petroleum, costing less than 25 cents per gallon	2½c. p. gall.	1,609,220	207,672	
Total			35,296,332	2,151,514

TABLE 6.*

PETROLEUM.

IMPORTS OF CRUDE AND MANUFACTURED OILS, OTHER THAN ILLUMINATING.

Fiscal Year.	Gallons.	Fiscal Year.	Gallons.
1881.....	960,691	1894.....	1,860,829
1882.....	1,656,290	1895.....	1,106,993
1883.....	1,895,488	1896.....	1,079,965
1884.....	2,017,707	1897.....	802,286
1885.....	2,489,326	1898.....	1,047,026
1886.....	2,491,530	1899.....	1,017,278
1887.....	2,624,399	1900.....	1,406,700
1888.....	2,701,714	1901.....	1,838,966
1889.....	2,882,462	1902.....	2,296,353
1890.....	3,054,908	1903.....	4,316,010
1891.....	3,049,384	1904.....	7,141,109
1892.....	3,047,199	1905.....	25,002,047
1893.....	1,481,749		

* The figures for the years from 1881 to 1894, inclusive, represent the total imports of petroleum and products, less the quantity of imported illuminating oils, inspected by the Inland Revenue Department. For 1895 and subsequent years, the Table is composed of items (b), (c) and (e) of Table 5.

TABLE 7.

PETROLEUM.

IMPORTS OF PARAFFINE WAX.

Fiscal Year.	Pounds.	Value.
1883.....	43,716	\$ 5,166
1884.....	39,010	6,079
1885.....	59,967	8,123
1886.....	62,035	7,953
1887.....	61,132	6,796
1888.....	53,862	4,930
1889.....	63,229	5,250
1890.....	239,229	15,844
1891.....	753,854	50,275
1892.....	733,873	48,776
1893.....	452,916	38,935
1894.....	208,099	15,704
1895.....	163,817	11,579
1896.....	150,287	10,042
1897.....	138,703	7,945
1898.....	103,570	5,987
1899.....	92,242	4,025
1900.....	47,400	3,529
1901.....	118,843	9,639
1902.....	225,885	12,750
1903.....	592,642	28,674
1904.....	418,967	18,440
1905 .. (Duty, 25 p. c.)	81,992	7,795

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TABLE 8.
 PETROLEUM.
 IMPORTS OF PARAFFINE WAX CANDLES.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1880.....	10,445	\$2,269	1894.....	10,818	\$1,685
1881.....	7,494	1,683	1895.....	19,448	2,541
1882.....	5,818	1,428	1896.....	25,787	4,072
1883.....	7,149	1,734	1897.....	25,114	2,929
1884.....	8,755	2,229	1898.....	60,802	4,427
1885.....	9,247	2,449	1899.....	62,331	5,856
1886.....	12,242	2,587	1900.....	27,663	3,671
1887.....	21,364	3,611	1901.....	44,562	3,588
1888.....	22,054	2,829	1902.....	51,120	5,752
1889.....	8,038	1,337	1903.....	83,377	9,025
1890.....	7,233	1,186	1904.....	83,471	9,078
1891.....	10,598	2,116	1905. (Duty, 25 p.c.).....	137,353	15,293
1892.....	9,259	1,952			
1893.....	8,351	1,735			

PHOSPHATE.

The production of Phosphate (Apatite) in 1905 is estimated at about 1,300 tons valued at \$8,425. With the exception of a small quantity from Ontario this is nearly all obtained from the Mica mines north of Ottawa and is all used at Buckingham.

Statistics of production and exports are given in Tables 1 and 2.

TABLE 1.

PHOSPHATE.

ANNUAL PRODUCTION.

Calendar Year.	Tons.	Average Value per ton.	Value.
1886	20,495	\$14.85	\$304,338
1887	23,690	13.50	319,815
1888	22,485	10.77	242,285
1889	30,988	10.21	316,662
1890	31,753	11.37	361,045
1891	23,588	10.24	241,603
1892	11,932	13.20	157,424
1893	8,198	8.65	70,942
1894	6,861	6.00	41,166
1895	1,822	5.25	9,565
1896	570	6.00	3,420
1897	908	4.39	3,984
1898	733	5.00	3,665
1899	3,000	6.00	18,000
1900	1,315	5.02	7,105
1901	1,073	6.07	6,280
1902	856	5.79	4,953
1903	1,329	6.18	8,214
1904	817	5.62	4,590
1905	1,300	6.48	8,425

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TABLE 2.
PHOSPHATE.
EXPORTS.

Calendar Year.	Ontario.		Quebec.		Totals.	
	Tons.	*Value.	Tons.	*Value.	Tons.	*Value.
1878.	824	\$12,278	9,919	\$195,831	10,743	\$208,109
1879.	1,842	20,565	6,604	101,470	8,446	122,035
1880.	1,387	14,422	11,673	175,664	13,060	190,086
1881.	2,471	36,117	9,497	182,339	11,968	218,456
1882.	568	6,338	16,585	302,019	17,153	308,357
1883.	50	500	19,666	427,168	19,716	427,668
1884.	763	8,890	20,946	415,350	21,709	424,240
1885.	434	5,962	28,535	490,331	28,969	496,293
1886.	644	5,816	19,796	337,191	20,460	343,007
1887.	705	8,277	22,447	424,940	23,152	433,217
1888.	2,643	30,247	16,133	268,362	18,776	298,609
1889.	3,547	38,833	26,440	355,935	29,987	394,768
1890.	1,866	21,329	26,591	478,040	28,457	499,369
1891.	1,551	16,646	15,720	368,015	17,271	384,661
1892.	1,501	12,544	9,981	141,221	11,482	153,765
1893.	1,990	11,550	5,748	56,402	7,738	67,952
1894.	1,980	10,560	3,470	29,610	5,450	40,170
1895.			250	2,500	250	2,500
1896.	1	5	299	2,990	300	2,995
1897.	70	450	165	400	235	850
1898.	21	240	702	8,000	723	8,240
1899.	215	1,850	93	1,725	308	3,575
1900.					Nil	Nil
1901.					6	120
1902.					70	1,880
1903.					1	20
1904.					191	5,348
1905.					40	1,253

*These values do not compare with those in Table 1 above; the spot value is adopted for the production whilst the exports are valued upon quite a different basis.

PYRITES.

The production of pyrites in 1905 reached a total of 33,339 tons, valued at \$125,486, as compared with 37,180 tons, valued at \$134,033 in 1904. Of the total output all but a small percentage was the product of the Eustis Mining Co. and of the Nichols Chemical Company at Eustis and Capelton, near Sherbrooke, in the Eastern Townships, province of Quebec.

In Ontario two companies were mining and shipping pyrites from Madoc and Queensboro', in Hastings county, the American Madoc Mining Company and the British American Development Company, and the total output was valued at \$21,470.

The exports of pyrites during 1905 were, according to Custom Returns, 19,755 tons, valued at \$55,767.

Statistics of the production of pyrites and of the imports of brimstone and sulphur are given in Tables 1 and 2.

TABLE 1.

PYRITES.

ANNUAL PRODUCTION.

Calendar Year.	Tons. 2,000 lbs.	Value.
		\$
1886.....	42,906	193,077
1887.....	38,043	171,194
1888.....	63,479	285,656
1889.....	72,225	307,292
1890.....	49,227	123,067
1891.....	67,731	203,193
1892.....	59,770	179,310
1893.....	58,542	175,626
1894.....	40,527	121,581
1895.....	34,198	102,594
1896.....	33,715	101,155
1897.....	38,910	116,730
1898.....	32,218	128,872
1899.....	27,687	110,748
1900.....	40,031	155,164
1901.....	35,261	130,544
1902.....	35,616	138,939
1903.....	33,982	127,713
1904.....	37,180	134,033
1905.....	33,339	125,486

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TABLE 2.

PYRITES.

IMPORTS :—BRIMSTONE AND CRUDE SULPHUR.

Fiscal Year.	Pounds.	Value.
		\$
1880	1,775,489	27,401
1881	2,118,720	33,956
1882	2,375,821	40,329
1883	2,336,085	36,737
1884	2,195,735	37,463
1885	2,248,986	35,043
1886	2,922,043	43,651
1887	3,103,644	38,750
1888	2,048,812	25,318
1889	2,427,510	34,006
1890	4,440,799	44,276
1891	3,601,748	46,351
1892	4,769,759	67,095
1893	6,381,203	77,216
1894	5,845,463	61,558
1895	4,900,225	56,965
1896	6,934,190	63,973
1897	8,672,751	87,719
1898	38,026,798	373,786
1899	24,517,026	265,799
1900	21,128,656	215,433
1901	23,856,651	270,608
1902	24,640,735	325,307
1903	24,412,737	259,123
1904	19,364,730	204,663
1905*	23,435,140	242,251

*Brimstone, crude, or in roll or flour, and sulphur in roll or flour. Duty free.

SALT.

The production and sales of salt in Canada in 1905 reached a total, according to direct returns from operators, of about 67,340 tons valued at \$320,858 while stock in hand on Dec. 31, 1905 amounted to about 5,206 tons. The value of the packages used was \$113,004. The number of men employed was about 191 and the total wages paid \$83,391. This output is derived altogether from the province of Ontario, from the deposits in the counties of Essex, Lambton, Middlesex, Huron and Bruce. Large quantities of salt exist in the underlying formations of that part of the country at depths varying from 975 feet to 1,400 feet and the industry is practically only limited by the demand.

In 1896 a few tons of salt were produced at the south end of Lake Winnipegosis, Manitoba, but the industry has not been followed up in this district. Small quantities of brine have occasionally been evaporated at Plumweseep, New Brunswick, and sold locally along the line of the Intercolonial Railway and it is reported that preparations are being made to renew production at this place.

The exports of salt, which are of small amount, are shown in Table 2. Tables 3 and 4 show the quantities and values of the salt imported. The value of salt imported on which duty is levied has ranged from \$20,000 to \$80,000 a year, the value in 1905 being \$58,056.

Salt imported from the United Kingdom or any British possession or imported for the use of the sea or gulf fisheries is free of duty, and a large portion of the trade of Eastern Canada is supplied with salt imported under this class. The quantity imported, duty free, in 1905 was 98,453 tons valued at \$340,954.

Following is a list of the chief producers of salt in Ontario :—

The Canadian Salt Co., Ltd., E. G. Henderson, vice-President.....	Windsor.
Saginaw Lumber and Salt Co.....	San twich.
Mooretown Salt Co., Ltd.....	Mooretown.
Carter & Kittermaster	"
Sarnia Salt Co., Ltd.....	Sarnia.
Sarnia Bay Mills Co.....	"
Empire Salt Co.....	"
Elarton Salt Works Co., Ltd., C. V. Morris.....	Warwick.
Parkhill Salt Co., A. K. Hodgins.....	Exeter.
Exeter Salt Works Co., J. B. Carling, Secy.....	"
Hensall Salt Works Co., Geo. McEwen, Secy.....	Hensall.
Lake Huron and Manitoba Milling Co., Ltd., P. A. McGaw, Secy.....	Goderich.
R. & J. Ransford.....	Clinton.
Operating the following plants—	
Coleman Salt Works.....	Seaforth.
Stapleton Salt Works.....	Clinton.
North American Chemical Co.....	Goderich.
Goderich Salt Works.....	"
Brussels Salt Works.....	Brussels.
Clinton Salt Works, John McGarva.....	Clinton.
Maitland Salt Works, John S. Platt.....	Goderich.
The Grey, Young & Sparling Co. of Ont., Ltd., F. G. Sparling.....	Wingham.
The Ontario People's Salt & Soda Co., Ltd., John Tolmie, Secy.....	Kincardine.

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TABLE 1.
SALT.
ANNUAL PRODUCTION.

Calendar Year.	Tons.	Value.
1886.....	62,359	\$227,195
1887.....	60,173	166,394
1888.....	59,070	185,460
1889.....	32,832	129,547
1890.....	43,754	198,857
1891.....	45,021	161,179
1892.....	45,486	162,041
1893.....	62,324	195,926
1894.....	57,199	170,687
1895.....	52,376	160,455
1896.....	43,960	169,693
1897.....	51,348	225,730
1898.....	57,142	248,639
1899.....	59,339	254,390
1900.....	62,055	279,458
1901.....	59,428	262,328
1902.....	64,456	292,581
1903.....	62,452	297,517
1904.....	69,477	321,778
1905.....	67,340	320,858

TABLE 2.
SALT.
EXPORTS.

Calendar Year.	Bushels.	Value.
1880.....	467,641	\$46,211
1881.....	343,208	44,627
1882.....	181,758	18,350
1883.....	199,733	19,492
1884.....	167,029	15,291
1885.....	246,794	18,756
1886.....	224,943	16,886
1887.....	154,045	11,526
1888.....	15,251	3,987
1889.....	8,557	2,390
1890.....	6,605	1,667
1891.....	5,290	1,277
1892.....	2,000	504
1893.....	4,940	1,267
1894.....	4,639	1,120
1895.....	4,865	959
1896.....	3,842	899
1897.....	5,383	1,193
1898.....	5,202	1,252
1899.....	11,205	2,773
1900.....	37,653	8,997
1901.....	39,224	6,510
1902.....	9,331	3,798
	Pounds.	
1903.....	1,915,648	5,927
1904.....	1,006,036	4,186
1905.....	1,447,728	6,112

TABLE 3.

SALT.

IMPORTS :—SALT PAYING DUTY.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1880.	726,640	\$ 3,916	1893.	21,377,339	79,838
1881.	2,588,465	6,355	1894.	15,867,825	53,336
1882.	3,679,415	12,318	1895.	8,498,404	29,881
1883.	12,136,968	36,223	1896.	7,665,257	24,550
1884.	12,770,950	38,949	1897.	11,911,766	33,470
1885.	10,397,761	31,726	1898.	11,068,785	32,792
1886.	12,266,021	39,181	1899.	11,781,453	32,839
1887.	10,413,258	35,670	1900.	11,028,337	30,180
1888.	10,509,799	32,136	1901.	11,625,688	34,087
1889.	11,190,088	33,968	1902.	13,892,849	39,605
1890.	15,135,109	57,549	1903.	14,554,693	41,785
1891.	15,140,827	59,311	1904.	29,779,183	73,826
1892.	18,648,191	65,963			
			Duty.		
1905	Salt, coarse, N.E.S.		5c. per 100 lbs.	12,320,072	\$30,950
	Salt, fine, in bulk.		5c. "	1,743,200	5,328
	Salt, N.E.S., in bags, barrels or other packages.		7½c. "	4,410,596	21,778
Total.				18,473,868	58,056

TABLE 4.

SALT.

IMPORTS :—SALT NOT PAYING DUTY.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1880.	212,714,747	\$400,167	1893.	191,595,530	281,462
1881.	231,640,610	488,278	1894.	196,668,730	328,300
1882.	166,183,962	311,489	1895.	201,691,248	332,711
1883.	246,747,113	386,144	1896.	205,005,100	338,888
1884.	225,390,121	321,243	1897.	215,844,484	312,117
1885.	171,571,209	255,719	1898.	202,634,927	293,410
1886.	180,205,949	255,359	1899.	183,046,365	267,520
1887.	203,042,332	285,455	1900.	193,554,550	295,253
1888.	184,166,986	220,975	1901.	216,271,603	339,887
1889.	180,847,800	253,009	1902.	238,648,737	385,629
1890.	158,490,075	252,291	1903.	232,708,675	361,185
1891.	195,491,410	321,239	1904.	198,634,047	338,082
1892.	201,831,217	314,995	1905*	196,907,500	340,954

*Salt imported from the United Kingdom, or any British possession, or imported for the use of the sea or gulf fisheries.

MISCELLANEOUS NON-METALLIC.

Arsenic.—Up to 1903 the main source of production of arsenic in Canada was the Deloro mine in Hastings county, province of Ontario. The arsenic was recovered in the process of treating auriferous mispickel. In 1902, however, the mine was closed and the mill continued to work on tailings and ore from the dump until 1903 when operations were abandoned. In 1904 and 1905 the arsenic production is represented by arsenical minerals contained in the ore shipped from the Cobalt district, Ontario. It cannot be definitely ascertained whether the arsenic is saved in the process of treating these ores, but it probably is.

TABLE 1.
MISCELLANEOUS—NON-METALLIC.
ANNUAL PRODUCTION OF ARSENIC.

Calendar Year.	Tons.	Value.
1885	440	\$17,600
1886	120	5,460
1887	30	1,200
1888	30	1,200
1889	Nil.	Nil.
1890	25	1,500
1891	20	1,000
1892	Nil.	Nil.
1893	"	"
1894	7	420
1895	Nil.	Nil.
1896	"	"
1897	"	"
1898	"	"
1899	57	4,872
1900	303	22,725
1901	695	41,676
1902	800	48,000
1903	257	15,420
1904	(a) 72	903
1905	(a) 549	2,692

(a) Arsenic in ore, &c.

TABLE 2.
MISCELLANEOUS—NON-METALLIC.
IMPORTS OF ARSENIC.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1880.....	18,197	\$ 576	1893... ..	447,079	\$12,907
1881.....	31,417	1,070	1894.	292,505	10,018
1882.....	138,920	3,962	1895. . . .	1,115,697	31,932
1883.	51,953	1,812	1896.....	664,854	27,523
1884.....	19,337	773	1897.....	152,275	8,378
1885.	49,080	1,566	1898.	291,967	14,270
1886.....	30,181	961	1899.....	582,383	24,203
1887.....	32,436	1,116	1900.....	230,730	11,035
1888.....	27,510	1,016	1901.....	159,263	8,361
1889.....	60,269	2,434	1902.....	106,857	6,004
1890.....	138,509	4,474	1903.....	298,375	11,824
1891.....	115,248	4,027	1904.....	414,065	12,421
1892.....	302,958	9,365	1905... Duty free.	268,274	7,661

TABLE 3.
MISCELLANEOUS—NON-METALLIC.
IMPORTS OF CHALK.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880.....	\$2,117	1893.....	\$ 9,966
1881.....	2,768	1894.....	11,308
1882.....	2,882	1895.....	7,730
1883.	5,067	1896.....	6,467
1884.....	2,589	1897.	7,432
1885.....	8,003	1898.....	9,338
1886.....	6,583	1899.	10,461
1887.....	5,635	1900.	12,212
1888.....	5,865	1901.....	11,629
1889.....	5,336	1902.....	11,337
1890.....	7,221	1903.....	16,497
1891.	8,193	1904.....	19,163
1892.....	9,558	1905*.....	20,896

* Chalk prepared. Duty, 20 p. c.

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TABLE 4.
MISCELLANEOUS—NON-METALLIC.
IMPORTS OF WHITING.

Fiscal Year.	Cwt.	Value.	Fiscal Year.	Cwt.	Value.
1880.....	84,115	\$26,092	1893.....	88,835	\$25,563
1881.....	47,480	16,637	1894.....	103,633	26,649
1882.....	36,270	16,318	1895.....	102,751	25,441
1883.....	76,012	29,334	1896.....	113,791	27,322
1884.....	76,268	28,230	1897.....	102,453	22,541
1885.....	67,441	23,492	1898.....	166,293	25,761
1886.....	65,124	25,533	1899.....	134,884	34,310
1887.....	47,246	15,191	1900.....	127,455	34,575
1888.....	76,619	20,508	1901.....	209,868	60,878
1889.....	84,658	22,735	1902.....	153,982	42,136
1890.....	96,243	27,471	1903.....	139,804	39,867
1891.....	84,679	27,504	1904.....	186,919	42,507
1892.....	102,985	26,867	1905*.....	198,485	51,215

*Whiting or whitening, gilder's whiting, and Paris white. Duty free

Feldspar.—The entire production of feldspar, in 1905, was derived from the province of Ontario and shipped to the United States. None of the operators in Quebec province reported any production.

The principal operators this year, were the Kingston Feldspar Mining Co., operating the Richardson Mine in Bedford township, Frontenac county, Ont., and Mr. Chas. Jenkins, of Petrolia, Ont., who is working another deposit on the south half of lot 3, con. III, of the same township.

TABLE 5.
MISCELLANEOUS—NON-METALLIC.
PRODUCTION OF FELDSPAR.

Calendar Year.	Tons.	Value.
1890.....	700	\$3,500
1891.....	685	3,425
1892.....	175	525
1893.....	575	4,525
1894.....	Nil.	Nil.
1895.....	.....	*2,545
1896.....	972	*2,583
1897.....	1,400	3,290
1898.....	2,500	6,250
1899.....	3,000	6,000
1900.....	318	1,112
1901.....	5,350	10,700
1902.....	7,576	15,152
1903.....	13,928	18,966
1904.....	11,083	22,166
1905.....	11,700	23,400

* Exports.

Fire-clay.—The returns of fire-clay production are given in the following table. The output shown is practically all from Nova Scotia and British Columbia, and the greater proportion of this production during the past two years is to be credited to the Intercolonial Coal Co., of Westville, N.S., and the Wellington Colliery Company at Comox, Vancouver Island, B.C. In both provinces the fire-clay is mined in connexion with coal mining operations. There is a good demand for fire-clay throughout the western part of Canada and should a good deposit of this material be discovered within a reasonable distance of the railway, there would be a fair market for it.

TABLE 6.
MISCELLANEOUS—NON-METALLIC.
PRODUCTION OF FIRE-CLAY.

Calendar Year.	Tons.	Value.
1889	400	\$4,800
1890	Nil.	Nil.
1891	250	750
1892	1,991	4,467
1893	540	700
1894	539	2,167
1895	1,329	3,492
1896	842	1,805
1897	2,118	5,759
1898	670	1,680
1899	599	1,295
1900	1,245	4,130
1901	3,979	5,920
1902	2,741	4,283
1093	2,639	3,523
1904	5,972	17,466
1905	5,088	13,917

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TABLE 7.
MISCELLANEOUS—NON-METALLIC.
PRODUCTION OF MOULDING SAND.

Calendar Year.	Tons.	Value.
1887	160	\$ 800
1888	169	845
1889	170	850
1890	320	1,410
1891	230	1,000
1892	345	1,380
1893	4,370	9,086
1894	6,214	12,428
1895	6,765	13,530
1896	5,739	11,478
1897	5,485	10,931
1898	10,572	21,038
1899	13,724	27,430
1900	6,181	12,316
1901	14,705	29,410
1902*	13,352	27,651
1903	3,658	7,256
1904	3,423	6,790
1905	*	*

* Returns incomplete.

TABLE 8.
MISCELLANEOUS—NON-METALLIC.
ANNUAL PRODUCTION OF QUARTZ.

Calendar Year.	Tons.	Value.
1890	200	\$ 1,000
1891 .....	.....	.....
1892 .....	.....	.....
1893	100	500
1894 .....	.....	.....
1895 .....	.....	.....
1896	10	50
1897 .....	.....	.....
1898	284	570
1899	600	1,260
1900-1905 .....	.....	.....

TABLE 9
MISCELLANEOUS—NON-METALLIC.
IMPORTS OF "SILEX"—CRYSTALLIZED QUARTZ.

Fiscal Year.	Cwt.	Value.
1880.....	5,252	\$ 2,290
1881.....	3,251	1,659
1882.....	3,283	1,678
1883.....	3,543	2,058
1884.....	3,259	1,709
1885.....	3,527	1,443
1886.....	2,520	1,313
1887.....	14,533	5,073
1888.....	4,808	2,385
1889.....	5,130	1,211
1890.....	1,768	2,617
1891.....	3,674	1,929
1892.....	1,420	1,244
1893.....	2,447	1,301
1894.....	2,451	1,521
1895.....	2,882	1,881
1896.....	3,289	2,174
1897.....	2,564	3,415
1898.....	3,104	2,773
1899.....	3,951	2,595
1900.....	4,021	2,876
1901.....	3,562	2,106
1902.....	4,388	3,858
1903.....	3,514	2,762
1904.....	5,547	4,409
1905..... Duty free.	8,931	4,475

TABLE 10.
MISCELLANEOUS—NON-METALLIC.
ANNUAL PRODUCTION OF SOAPSTONE AND TALC.

Calendar Year.	Tons.	Value.	Calendar Year.	Tons.	Value.
1886.....	50	\$ 400	1896.....	410	1,230
1887.....	100	800	1897.....	157	350
1888.....	140	280	1898.....	405	1,000
1889.....	195	1,170	1899.....	450	1,960
1890.....	917	1,239	1900.....	1,420	6,365
1891.....	Nil	Nil	1901.....	259	842
1892.....	1,374	6,240	1902.....	689	1,804
1893.....	717	1,920	1903.....	990	2,739
1894.....	916	1,640	1904.....	840	1,875
1895.....	475	2,138	1905.....	500	1,800

STRUCTURAL MATERIALS.

These comprise building stone, granite, marbles, slate, flagstone, cements, lime, etc., as well as the manufactures of clay, such as bricks, tiles, drain pipe, earthenware and coarse pottery.

In the past it has been found difficult to obtain complete statistics of production. Many of these industries such as quarrying, brick-making, etc., are intermittent and are scattered over such a large area as Canada, that it has not been possible to obtain anything like full returns, so that a large proportion had to be estimated. The cement industry has been an important exception as very complete statistics of the manufacture of this product, have always been available. For 1905 an effort was made to obtain more complete statistics of brick production especially in districts where regular returns of output had not yet been obtained as in Manitoba, Saskatchewan, Alberta, British Columbia and the eastern maritime provinces. For the province of Ontario, it should be here explained, the Ontario Bureau of Mines has for a number of years obtained very complete statistics of production of clay products as well as of the other mineral output of the province and these figures as well as those for Quebec, published by the Dept. of Colonization, Mines and Fisheries, in the province of Quebec, have been utilized by the Mines Section of the Geol. Survey Dept. in estimating the total output of the Dominion. It is felt, however, that the time has arrived for the collection of more complete and uniform statistics of clay and stone products, for the whole of Canada and efforts in this direction will be continued.

Tables 1 to 12 following, show the annual production of stone, marble, granite, slate and flagstone, and the imports and exports of stone products.

The total aggregate value of the stone produced was over \$2,000,000. The value of the stone exported was but \$16,634, while the imports reached a total of \$491,671.

TABLE 1.
STRUCTURAL MATERIALS.
ANNUAL PRODUCTION OF BUILDING STONE.

Calendar Year.	Value.
1886.....	\$ 642,509
1887.....	552,267
1888.....	641,712
1889.....	913,691
1890.....	964,783
1891.....	708,736
1892.....	609,827
1893.....	1,100,000
1894.....	1,200,000
1895.....	1,095,000
1896.....	1,000,000
1897.....	1,000,000
1898.....	1,300,000
1899.....	1,500,000
1900.....	1,520,000
1901.....	1,650,000
1902.....	1,900,000
1903.....	1,975,000
1904.....	1,930,000
1905.....	1,830,000

TABLE 2.
STRUCTURAL MATERIALS.
EXPORTS OF STONE AND MARBLE, WROUGHT AND UNWROUGHT.

Calendar Year.	Wrought.	Unwrought.
1890.....	\$21,725	\$43,611
1891.....	13,398	46,162
1892.....	7,698	47,424
1893.....	9,102	12,532
1894.....	22,576	34,130
1895.....	8,587	51,616
1896.....	4,934	32,897
1897.....	9,415	42,034
1898.....	2,526	65,370
1899.....	5,092	101,931
1900.....	5,933	115,711
1901.....	5,917	157,739
1902.....	8,632	124,829
1903.....	7,684	46,295
1904.....	4,760	17,802
1905.....	3,545	13,089

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TABLE 3.
STRUCTURAL MATERIALS.
IMPORTS OF BUILDING STONE.

Calendar Year	Value.	Calendar Year.	Value.
1880.....	\$ 35,970	1893.....	\$56,510
1881.....	58,149	1894.....	52,908
1882.....	33,623	1895.....	44,282
1883.....	35,061	1896.....	54,130
1884.....	51,088	1897.....	38,714
1885.....	30,491	1898.....	28,495
1886.....	41,675	1899.....	48,040
1887.....	54,368	1900.....	64,533
1888.....	86,373	1901.....	46,078
1889.....	100,314	1902.....	99,074
1890.....	132,155	1903.....	87,866
1891.....	170,890	1904.....	93,778
1892.....	95,550		
1905 {	Flagstones, granite and rough freestone, sandstone, and all building stone, not hammered or chiselled. Duty 15 p.c....		\$49,004
	Granite and freestones, dressed; all other building stone dressed, except marble. Duty 20 p.c.....		53,813
			\$102,817

TABLE 4.
STRUCTURAL MATERIALS.
IMPORTS OF MANUFACTURES OF STONE OR GRANITE, N.E.S.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880.....	\$29,408	1893.....	\$49,323
1881.....	36,877	1894.....	49,510
1882.....	37,267	1895.....	51,050
1883.....	45,636	1896.....	51,499
1884.....	45,290	1897.....	34,026
1885.....	39,867	1898.....	41,240
1886.....	41,984	1899.....	60,148
1887.....	41,829	1900.....	57,039
1888.....	47,487	1901.....	66,639
1889.....	61,341	1902.....	72,397
1890.....	84,396	1903.....	78,629
1891.....	61,051	1904.....	141,165
1892.....	39,479		
1905 {	Granite—Sawn only.....	Duty, 20 p.c.	\$14,015
	" Finished and polished.....	" 35 p.c.	81,154
	" Manufactures of N.O.P.....	" 35 p.c.	32,319
	Paving blocks.....	" 20 p.c.	22,672
	Manufactures of stone, N.O.P.....	" 30 p.c.	
			\$150,160

TABLE 5.
STRUCTURAL MATERIALS.
ANNUAL PRODUCTION OF MARBLE.

Calendar Year.	Tons.	Value.
1886	501	\$9,900
1887	242	6,224
1888	191	3,100
1889	83	980
1890	780	10,776
1891	240	1,752
1892	340	3,600
1893	590	5,100
1894	Nil.	Nil.
1895	200	2,000
1896	224	2,405
1897 to 1905 inclusive.	Nil.	Nil.

TABLE 6.
STRUCTURAL MATERIALS.
IMPORTS OF MARBLE.

Fiscal Year.	Value.
1880	\$ 63,015
1881	85,977
1882	109,505
1883	128,520
1884	108,771
1885	102,835
1886	117,752
1887	104,250
1888	94,681
1889	118,421
1890	99,353
1891	107,661
1892	106,268
1893	96,177
1894	94,657
1895	83,422
1896	90,065
1897	77,150
1898	95,894
1899	101,879
1900	94,017
1901	96,159
1902	130,424
1903	153,481
1904	181,511
1905 {	
Marble and manufactures of :—	Duty.
Marble sawn only	20 %
Finished and polished	35 %
Rough, not hammered or chiselled	15 %
Manufactures of, N.O.P.	35 %
	\$89,306
	4,141
	52,019
Total, marble and manufactures of.	\$145,466

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GRANITE.

Granite both for monumental and building purposes has been quarried in Nova Scotia, New Brunswick, Quebec and British Columbia during 1905. Fairly complete returns of output were received, the total value approximating \$226,305.

In Nova Scotia the granite industry was confined during the year to the vicinities of Halifax and Middleton. Mr. John Kline, of Halifax, owns and operates the quarries at Witherod Lake, about $3\frac{1}{2}$ miles southwest of Halifax. This stone, a light grey granite, has been quarried for over twenty years and used extensively throughout Halifax in building operations including foundations, ornamental work, fences, pedestals for monuments, paving blocks, etc. The Nictaux granite at Middleton in Annapolis county is quarried by the same operator and used almost exclusively in monumental work. This stone is taken out intermittently as required and shipped in the rough to the cutting and polishing works at Witherod lake where all kinds of monumental work is undertaken. This granite has been shipped in the rough to Aberdeen, Scotland, and also to the polishing works at St. George, New Brunswick.

Quarries have also been opened at Shelbourne harbour in the southwestern part of Nova Scotia and the stone, light grey in color, has been used for paving blocks. The quarries are admirably situated for shipment.

At Whitehead in Guysborough county about 200 miles to the east of Halifax is found an area of pink granite. Though not yet worked, it is said that stone could be quarried and loaded directly to schooners at the water's edge. It has been proposed to quarry and ship this granite to London, England.

In New Brunswick granite quarrying has been an established industry for many years. The quarries are located at Hampstead, Queens county, (the Spoon island quarries), and at St. George, Charlotte county. Both these occurrences of granite have been described by Prof. Bailey in Part M., Vol. X of the Geological Reports.

The Spoon island quarries were worked during the year by Allan Appleby and Messrs. B. Mooney & Sons of St. John, N. B. The stone both light and dark gray is used extensively for monumental purposes and for this purpose is worth about \$9 per ton f. o. b., at St. John. Much of it is now shipped to the polishing works at St. George. It is also employed in building construction and has been used in foundations, bridge piers and in buildings both public and private, in Fredericton and St. John.

The granites at St. George have been worked for many years and have attained considerable fame. They are especially distinguished on

account of their bright red colour and are employed principally for monumental and ornamental purposes. The rock is quarried in the valley of the Magaguadavic river a few miles above the town of St. George and is hauled by waggon to the polishing works in the village, of which there were six in operation in 1905. The operators of polishing works all quarry their own red stone and in addition purchase rough granite of other colours, gray, black, etc., from quarries at Hampstead, N. B., and from Nova Scotia, Quebec and Maine. The total value of finished granite shipped from St. George during 1905 was a little over \$75,000. The industry is not now carried on quite so extensively as in former years, the falling off being ascribed in the first place to a public demand for other classes of granite and in the second place to the successful competition of Scotch granites due to low freight rates and the comparatively low wages paid to granite workers in Aberdeen, Scotland. The high duties on manufactured granite sent to the United States practically cut off that market.

The firms quarrying and manufacturing granite at St. George are:

Tayte Meating & Company.

Milne, Coutts & Company (Bay of Fundy Red Granite Works.)

Epps, Dodds & Company.

O'Brien & Baldwin.

McGrattan & Sons.

Messrs. Gilmour Bros. have also been quarrying a black granite about 12 miles from St. George for which there has been some considerable demand recently. The values of the red and gray granites in the rough at St. George are about \$1 per cubic foot and the black granite from \$1 to \$2 per foot. About 3,500 tons were shipped from New Brunswick quarries during the year.

Granite is of wide occurrence and is quarried at a number of places in the province of Quebec. In the county of Argenteuil, township of Chatham, a rose pink granite is obtained at the Laurentian Granite Quarries owned by J. Brunet of Montreal. The quarry is provided with steam power, steam drills, etc., and five miles of railway are being built to connect with the Canadian Pacific Railway.

In the county of Iberville, Que., a dark grey granite in three grades of fine, medium and coarse is being quarried by the Mt. Johnson Quarries Co., at Mount Johnson.

Large quantities of granite have been quarried in the township of Stanstead, Stanstead county. A number of quarries have been opened in this township and a grey or greyish white granite of fine quality is shipped. This granite is said to be close in grain, easily cut, and very strong in resisting power. During 1905 quarries were operated by James Brodie, Graniteville, Samuel B. Norton, Stanstead Junction,

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and the Stanstead Granite Quarries Co., L^{d.}, the latter company also operating polishing works at Beebe Plain.

In the county of Compton, Whitton township, a grey granite has been quarried at St. Cecile de Whitton and St. Samuel and shipments were made in 1905 by the Whitton Granite Company at St. Victor de Tring.

Important quarries have been worked in Portneuf county at Riviere a Pierre on the Lake St. John Railway. At this point a quarry was opened up to a considerable extent and a large quantity of stone taken out for the piers of the Quebec bridge. The Riviere a Pierre granite is very compact with coarse crystals, of a greyish colour easily cut and possesses all the necessary qualities for heavy building work. It also takes a fine polish as may be seen in that which has been used for ornamental stone in buildings at Quebec. Quarries were operated at this locality in 1905 by Jean Voyer and Jos. Perron of Rivière à Pierre.

No statistics of granite production in Ontario in 1905 have been received. In former years, however, quarries have been worked extensively near Gananoque on islands in the St. Lawrence river. These are known as the Forsythe Quarries and furnish a stone ranging in texture from coarse to fine and of varying shades of red. The product has been largely used for building and paving. Another quarry was opened at Willetsholm, six miles west of Gananoque, the stone being a blue granite obtaining its unusual colour from the dark blue felspar crystals.

Stone is frequently taken out by railway companies at convenient points along their lines for bridge building and other purposes. A granite quarry has thus been operated by the Canadian Pacific Railway at Peninsula Harbour, and the Algoma Central Railway has also opened a quarry of fine red granite on the northeast quarter section 9, Tarentorus township, within 8 miles of Sault Ste. Marie.

In the eastern and northern parts of the province granite areas are of extensive occurrence which as the demand arises and transportation becomes available will no doubt yield stone suitable for all purposes.

In British Columbia granite has been quarried on the north arm of Burrard inlet, a few miles north of Vancouver, and on Nelson and Granite islands at the mouth of Jarvis inlet about 60 miles north of Vancouver. The stone is light grey in colour and can be obtained in large blocks. The quarries are operated by the Vancouver Granite Company.

TABLE 7.
STRUCTURAL MATERIALS.
ANNUAL PRODUCTION OF GRANITE.

Calendar Year.	Tons.	Value.	Calendar Year.	Tons.	Value.
1886.....	6,062	\$63,309	1896.....	18,717	106,709
1887.....	21,217	142,506	1897.....	10,345	61,934
1888.....	21,352	147,305	1898.....	23,897	81,073
1889.....	10,197	79,624	1899.....	13,418	90,542
1890.....	13,307	65,985	1900.....		80,000
1891.....	13,637	70,056	1901.....		155,000
1892.....	24,302	89,326	1902.....		210,000
1893.....	22,521	94,393	1903.....		200,000
1894.....	16,392	109,936	1904.....		150,000
1895.....	19,238	84,838	1905.....		226,305

SLATE AND FLAGSTONES.

The only slate quarries operated in Canada in recent years are those at New Rockland, Melbourne township, Richmond county, Quebec.

The production in 1905 was 4,975 squares valued at \$21,568. The output has remained about the same for the past four years.

TABLE 8.
STRUCTURAL MATERIALS.
ANNUAL PRODUCTION OF SLATE.

Calendar Year.	Tons.	Value.
1886.....	5,345	\$64,675
1887.....	7,357	89,000
1888.....	5,314	90,689
1889.....	6,935	119,160
1890.....	6,368	100,250
1891.....	5,000	65,000
1892.....	5,180	69,070
1893.....	7,112	90,825
1894.....		75,550
1895.....		58,900
1896.....		53,370
1897.....		42,800
1898.....		40,791
1899.....		33,406
1900.....		12,100
1901.....	715	9,980
1902.....		19,200
1903.....		22,040
1904.....		23,247
1905.....		21,568

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TABLE 9.
STRUCTURAL MATERIALS.
EXPORTS OF SLATE.

Calendar Year.	Tons.	Value.
1884	539	\$6,845
1885	346	5,274
1886	34	495
1887	27	373
1888	22	475
1889	26	3,303
1890	12	153
1891	15	195
1892	87	2,038
1893	178	3,168
1894	187	3,610
1895	36	574
1896	301	8,913
1897	Nil.	Nil.
1898	Nil.	Nil.
1899	Nil.	Nil.
1900	Nil.	Nil.
1901	16,750	10,000
1902 to 1905	Nil.	Nil.

TABLE 10.
STRUCTURAL MATERIALS.
IMPORTS OF SLATE.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	\$21,431	1893	\$51,179
1881	22,184	1894	29,267
1882	24,543	1895	19,471
1883	24,968	1896	24,176
1884	28,816	1897	21,615
1885	28,169	1898	24,907
1886	27,852	1899	33,100
1887	27,845	1900	53,707
1888	23,151	1901	72,187
1889	41,370	1902	72,601
1890	22,871	1903	84,437
1891	46,104	1904	86,057
1892	50,441		
		Duty.	
1905	{	Slate and manufactures of—	
		Roofing slate	25% not over 75c per square \$45,345
		School writing slates	25% 19,811
		Slate pencils	25% 7,567
		Slate of all kinds and manufactures of, N.E.S.	30% 20,505
Total			\$93,228

Flagstone—A small quantity of flagstone is quarried each year at Bishop's crossing, township of Dudsville, Wolfe county, Quebec. Statistics of production are given below.

TABLE 11.
STRUCTURAL MATERIALS.
ANNUAL PRODUCTION OF FLAGSTONE.

Calendar Year.	Quantity, Sq. ft.	Value.
1886.....	70,000	\$ 7,875
1887.....	116,000	11,600
1888.....	64,800	6,580
1889.....	14,000	1,400
1890.....	17,865	1,643
1891.....	27,300	2,721
1892.....	13,700	1,869
1893.....	40,500	3,487
1894.....	152,700	5,298
1895.....	80,005	6,687
1896.....	.....	6,710
1897.....	.....	7,190
1898.....	.....	4,250
1899.....	.....	7,600
1900.....	.....	5,250
1901.....	.....	4,575
1902.....	87,300	7,760
1903.....	79,200	6,688
1904.....	75,600	6,720
1905.....	81,000	7,650

TABLE 12.
STRUCTURAL MATERIALS.
IMPORTS OF FLAGSTONE.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
1881.....	23	\$ 241	1893.....	884	8,500
1882.....	90	848	1894.....	218	2,429
1883.....	10	99	1895.....	15	84
1884.....	137	1,158	1896.....	Nil.	Nil.
1885.....	205	1,756	1897.....	13	227
1886.....	1,602	9,443	1898.....	587	1,540
1887.....	1,316	10,966	1899.....	Nil.	Nil.
1888.....	2,642	21,077	1900.....	9	63
1889.....	1,669	15,451	1901.....	14	116
1890.....	5,665	48,995	1902.....	232	1,231
1891.....	3,770	36,348	1903 to 1905*.....	Nil.
1892.....	1,571	15,048			

* Flagstones dressed. Duty, 20%. (See table 3).

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CEMENT AND LIME.

The total sales of cement in 1903, both natural and Portland, amounted to 1,360,732 barrels, valued at \$1,924,014, as compared with 967,172 barrels valued at \$1,338,239 in 1904. The production of Portland cement has been increasing rapidly, while the output of natural rock cement has been as rapidly decreasing, and now forms but a small proportion of the whole.

Statistics of production since 1887 are given in Table 13 below.

TABLE 13.
STRUCTURAL MATERIALS.
ANNUAL PRODUCTION OF CEMENT.

Calendar Year.	Natural Rock Cement.		Portland Cement.		Total.	
	Barrels.	Value.	Barrels.	Value.	Barrels.	Value.
		\$		\$		\$
1887.					69,843	81,909
1888.					50,668	35,593
1889.					90,474	69,790
1890.					102,216	92,405
1891.					93,473	108,561
1892.					117,408	147,663
1893.					158,597	194,015
1894.					108,142	144,637
1895.					128,294	173,675
1896.					149,090	201,651
1897.	85,450	65,893	119,763	209,380	205,213	275,273
1898.	87,125	73,412	163,084	324,168	250,209	397,580
1899.	147,357	119,308	255,366	513,983	396,753	633,291
1900.	125,428	99,994	292,124	562,916	417,552	662,910
1901.	133,328	94,415	317,066	565,615	450,394	660,030
1902.	127,931	98,932	594,594	1,028,618	722,525	1,127,550
1903.	92,252	74,655	627,741	1,150,592	719,993	1,225,247
1904.	56,814	50,247	910,358	1,287,992	967,172	1,338,239
1905.	14,184	10,274	1,346,548	1,913,740	1,360,732	1,924,014

Natural rock cement was made by three firms in Ontario only, the plant formerly operated in Manitoba being idle during the year.

The quantity manufactured during the year was 14,184 barrels, and the same quantity was sold, valued at \$10,274. Wages paid were \$4,423 and 33 men were employed.

The prices realized at the works were 70 to 80c. per barrel of 240 lbs. net. Following is a list of firms owning plants:—

Hamilton Cement Works Hamilton, Ont.

Queenston Cement Works Queenston, Ont.

Battle's Thorold Cement Works Thorold, Ont.

The Toronto Lime Co. Toronto, Ont.

The Manitoba Union Mining Co.,

Ltd Winnipeg, Man.

Portland cement was made by twelve companies, two in Quebec and one in Ontario, and one in British Columbia, and slag cement was made by one company in Nova Scotia. The increase in the sales of Portland cement in 1905 as compared with 1904 was 436,190 barrels and \$625,748 in value, or about 48 per cent.

The total capacity of the thirteen plants in operation was about 8,000 barrels per day. A number of plants were operated for a portion of the year only while one plant in Ontario was idle during the whole year undergoing reconstruction.

Detailed statistics of production in 1904 and 1905 are as follows :

	1904.	1905.
Portland Cement sold . . . brls.	910,358	\$1,346,548
" " manufact- ured "	908,990	1,541,568
Stock on hand, Jan. 1 . . . "	113,419	111,446
" " Dec. 31 . . . "	112,051	306,466
Value of Cement sold . . . \$	1,287,992	\$1,913,740

The average price per barrel at the works in 1905 was \$1.42, being only a fraction of a cent higher than the average price in 1904.

The imports of Portland cement into Canada in 1905 were :

	Quantity.	Value.
Six months ending June . . cwt.	1,308,058	\$493,730
" " Dec. "	1,903,395	644,818
Total	3,211,453	1,138,548

This is the equivalent to 917,558 barrels of 350 pounds each at an average price per barrel of \$1.24. The duty is twelve and a half cents per hundred pounds.

The imports in 1904 were equivalent to 784,630 barrels of 350 pounds each valued at \$1,061,056, or an average price per barrel of \$1.35.

As there is very little cement exported from Canada, the consumption of this product in the country in 1905, would be approximately 1,346,548 barrels of home product and 917,558 barrels of imported, or a total of 2,264,106 barrels.

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Following is an estimate of the consumption of Portland cement in Canada for the past eight years expressed in barrels of 350 lbs. net.

	Canadian	Imported	Total
	barrels.	barrels.	barrels.
1898.....	163,084	+306,538	469,622
1899.....	225,366	+371,550	626,916
1900.....	292,124	+371,817	663,941
1901.....	317,066	*555,900	872,966
1902.....	594,594	*544,954	1,139,548
1903.....	627,741	*773,678	1,401,419
1904.....	910,358	*784,630	1,694,988
1905.....	1,346,548	*917,558	2,264,106

†Fiscal year ending June 30th.

*Calendar year.

The exports and imports of Cement are shown in the following tables. In 1903 and previous years there was more imported cement used than Canadian product. In 1904 and 1905, however, the situation was changed and more Canadian cement was used than imported, the proportion of imported Portland cement used in 1905 being about 40 per cent of the total consumption.

TABLE 14.
STRUCTURAL MATERIALS.
EXPORTS OF CEMENT.

Calendar Year.	Value.
1891.....	\$ 2,881
1892.....	938
1893.....	1,172
1894.....	482
1895.....	937
1896.....	1,328
1897.....	644
1898.....	2,117
1899.....	2,733
1900.....	3,296
1901.....	1,514
1902.....	2,267
1903.....	2,851
1904.....	5,494
1905.....	3,143

TABLE 15.
STRUCTURAL MATERIALS.
IMPORTS OF CEMENT IN BULK OR BAGS.

Fiscal Year.	Bushels.	Value.	Fiscal Year.	Bushels.	Value.
1880.....	65	\$ 28	1893.....	12,534	\$ 2,909
1881.....	579	298	1894.....	9,027	2,618
1882.....	386	86	1895.....		2,112
1883.....	1,759	548	1896.....		3,672
1884.....	4,626	1,296	1897.....		4,318
1885.....	4,598	1,315	1898.....		3,263
1886.....	6,808	1,851	1899.....		8,929
1887.....	5,421	1,419	1900.....		10,452
1888.....	23,919	5,787	1901.....		4,890
1889.....	32,818	10,668	1902.....		12,234
1890.....	21,055	5,443	1903.....		16,281
1891.....	11,281	2,890	1904.....		14,305
1892.....	14,351	3,394	1905*		18,489

*Cement, N.E.S., and manufactures of cement, Duty 20 per cent.

TABLE 16.
STRUCTURAL MATERIALS.
IMPORTS OF HYDRAULIC CEMENT.

Fiscal Year.	Barrels.	Value.
1880.....	10,034	\$ 10,306
1881.....	7,812	7,821
1882.....	11,945	13,410
1883.....	11,659	13,755
1884.....	8,606	9,514
1885.....	5,613	5,396
1886.....	6,164	6,028
1887.....	6,160	8,784
1888.....	5,636	7,522
1889.....	5,835	7,467
1890.....	5,440	9,048
1891.....	3,515	6,152
1892.....	2,214	2,782
1893.....	4,896	8,060
1894.....	1,054	985
1895.....	5,333	7,001
1896.....	5,688	8,948
1897.....	2,494	3,937
	Cwt.	
1898.....	16,033	7,097
1899.....	1,678	694
1900.....	10,418	4,711
1901.....	17,784	6,865
1902.....	29,585	17,755
1903.....	13,690	6,333
1904.....	12,088	5,391
1905 (Cement hydraulic or waterlime)*.....	16,961	10,690

*Duty, 12½c. per 100 lbs.

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TABLE 17.
STRUCTURAL MATERIALS.
IMPORTS OF PORTLAND CEMENT.

Fiscal Year.	Barrels.	Value.	Fiscal Year.	Barrels.	Value.
1880.....		\$ 55,774	1894.....	224,150	\$280,841
1881.....		45,646	1895.....	196,281	242,813
1882.....		66,579	1896.....	204,407	242,409
1883.....		102,537	1897.....	210,871	252,587
1884.....		102,857		Cwt.	
1885.....		111,521	1898.....	1,073,058	355,264
1886.....		120,398	1899.....	1,300,424	467,994
1887.....	102,750	148,054	1900.....	1,301,361	498,607
1888.....	122,402	177,158	1901.....	1,612,432	654,595
1889.....	122,273	179,406	1902.....	1,971,616	833,657
1890.....	192,322	313,572	1903.....	2,316,853	868,131
1891.....	183,728	304,648	1904.....	2,476,388	995,017
1892.....	187,233	281,553	1905 (Portland)*.	3,228,394	1,234,649
1893.....	229,492	316,179			

* Duty, 12½c. per 100 lbs.

We give below a list of the companies engaged in the manufacture of Portland cement during 1905.

Sydney Cement Co., Sydney, C.B.
Crescent Cement Works, Longue Point, Que.
International Portland Cement Co, Toronto, Ont., and Hull, Que.
Canadian Portland Cement Co., Deseronto, Ont.
Lakefield Portland Cement Co., Lakefield, Ont.
Imperial Portland Cement Co., Owen Sound, Ont.
Owen Sound Portland Cement Co., Ltd., Owen Sound, Ont.
Grey and Bruce Portland Cement Co., Ltd., Owen Sound, Ont.
Sun Portland Cement Co., Ltd., Owen Sound, Ont.
Hanover Portland Cement Co., Hanover, Ont.
National Portland Cement Co., Toronto and Durham, Ont.
Belleville Portland Cement Co., Belleville, Ont.
Ontario Portland Cement Co., Brantford, Ont.
Vancouver Portland Cement Co., Victoria, B.C.

Companies with works in process of erection, and companies proposing to erect plants :—

Colonial Portland Cement Co., Warton, Ont.
Raven Lake Portland Cement Co., Toronto and Victoria Road, O.
Superior Portland Cement Co., Orangeville, Ont.
Standard Portland Cement Co., Toronto, Ont.
Lehigh Portland Cement Co., Belleville, Ont.
Manitoba Portland Cement Co., Winnipeg, Man.
Alberta Portland Cement Co., Calgary, Alta.
Western Canada Coal and Cement Co., Exshaw, Alta.

In Nova Scotia a plant has been established by the Sydney Cement Co., at Sydney, for the manufacture of cement from blast furnace slag. This is the first plant of its kind to be established in Canada, although slag cement or Puzzolan cement (the latter name having been adopted in the United States) have been manufactured for some years both in the United States and in Europe.

TABLE 18.
STRUCTURAL MATERIALS.
PRODUCTION OF ROOFING CEMENT.

Calendar Year.	Tons.	Value.
1890.....	1,171	\$ 6,502
1891.....	1,020	4,810
1892.....	800	12,000
1893.....	951	5,441
1894.....	815	3,978
1895.....	.....	3,153
1896.....	86	430
1897 to 1905 inclusive.....	Nil.	Nil.

TABLE 19.
STRUCTURAL MATERIALS.
ANNUAL PRODUCTION OF LIME.

Calendar Year.	Value.	Calendar Year.	Value.
1886.....	\$283,755	1896 estimated.....	650,000
1887.....	394,859	1897 ".....	650,000
1888.....	339,951	1898 ".....	650,000
1889.....	362,848	1899 ".....	800,000
1890.....	412,308	1900 ".....	800,000
1891.....	251,215	1901 ".....	830,000
1892.....	411,270	1902 ".....	892,000
1893 estimated.....	900,000	1903 ".....	900,000
1894 ".....	900,000	1904 ".....	780,000
1895 ".....	700,000	1905 ".....	750,000

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TABLE 20.
STRUCTURAL MATERIALS.
EXPORTS OF LIME.

Calendar Year.	Value.
1891.....	\$119,853
1892.....	121,535
1893.....	86,623
1894.....	83,670
1895.....	71,597
1896.....	70,820
1897.....	53,177
1898.....	49,594
1899.....	73,565
1900.....	80,852
1901.....	99,194
1902.....	116,009
1903.....	131,412
1904.....	73,838
1905.....	85,723

TABLE 21.
STRUCTURAL MATERIALS.
IMPORTS OF LIME.

Fiscal Year.	Barrels.	Value.
1880.....	6,100	\$ 6,013
1881.....	5,796	4,177
1882.....	5,064	5,365
1883.....	7,623	9,224
1884.....	10,804	11,200
1885.....	12,072	11,503
1886.....	11,021	9,347
1887.....	10,835	8,524
1888.....	10,142	7,537
1889.....	13,079	9,363
1890.....	8,149	5,360
1891.....	6,259	4,273
1892.....	6,132	4,241
1893.....	6,879	4,917
1894.....	6,766	4,907
1895.....	12,008	5,743
1896.....	10,239	7,331
1897.....	16,108	10,529
1898.....	12,850	9,002
1899.....	15,720	11,124
1900.....	12,865	11,211
1901.....	19,657	14,534
1902.....	24,602	17,584
1903.....	31,108	22,470
1904.....	54,359	39,639
1905.....Duty, 20 p.c.	98,676	71,588

BRICK AND CLAY PRODUCTS.

Statistics of the production of brick in Canada are given in Table 22. As already explained these have in the past been largely estimated, the figures for 1903, however, represent for the eastern and western provinces, direct returns and for Ontario and Quebec include the figures of brick production as published by the Mining Bureaus of these provinces. The figures of production for 1905, therefore, can safely be taken as underestimated although they are nearly a million dollars higher than the output published for 1904.

TABLE 22.

STRUCTURAL MATERIALS.

ANNUAL PRODUCTION OF BUILDING BRICKS.

Calendar Year.	Value.
1886.....	\$ 873,600
1887.....	986,689
1888.....	1,036,746
1889.....	1,273,884
1890.....	1,266,982
1891.....	1,061,536
1892.....	1,251,934
1893.....	1,800,000
1894.....	1,800,000
1895.....	1,670,000
1896.....	1,600,000
1897.....	1,600,000
1898.....	1,900,000
1899.....	2,195,000
1900.....	2,275,000
1901.....	2,400,000
1902.....	2,593,000
1903.....	2,832,000
1904.....	2,983,000
1905.....	3,933,925

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TABLE 23.
STRUCTURAL MATERIALS.
EXPORTS OF BRICKS.

Calendar Year.	M.	Value.
1891.....	246	\$ 1,163
1892.....	1,963	12,192
1893.....	6,073	44,110
1894.....	1,095	7,405
1895.....	1,655	8,665
1896.....	983	5,678
1897.....	573	2,679
1898.....	65	442
1899.....	172	1,351
1900.....	546	4,528
1901.....	646	5,189
1902.....	2,110	12,786
1903.....	891	5,699
1904.....	696	5,357
1905.....	754	5,888

TABLE 24.
STRUCTURAL MATERIALS.
IMPORTS OF BUILDING BRICK.

Fiscal Year.	Value.
1880.....	\$ 2,067
1881.....	4,251
1882.....	24,572
1883.....	14,234
1884.....	20,258
1885.....	14,632
1886.....	5,929
1887.....	2,440
1888.....	20,720
1889.....	24,585
1890.....	12,500
1891.....	9,744
1892.....	5,075
1893.....	14,108
1894.....	18,320
1895.....	4,705
1896.....	23,189
1897.....	10,336
1898.....	6,652
1899.....	21,306
1900.....	19,305
1901.....	20,677
1902.....	33,802
1903.....	28,493
1904.....	117,468
1905.....Duty, 20 p.c.	168,122

TABLE 25.
STRUCTURAL MATERIALS,
IMPORTS OF PAVING BRICK.*

Fiscal Year.	Value.
1898	\$ 2,337
1899	23,648
1900	35,644
1901	10,414
1902	16,788
1903	18,811
1904	29,753
1905	32,578

*Duty 20 p.c.

TABLE 26.
STRUCTURAL MATERIALS.
PRODUCTION OF TERRA COTTA, &C.

Calendar Year.	Value.	Calendar Year.	Value.
1888	\$ 49,800	1897	155,595
1889	Not available.	1898	167,902
1890	90,000	1899	220,258
1891	113,103	1900	259,450
1892	97,239	1901	278,671
1893	55,704	1902	276,241
1894	65,600	1903	406,796
1895	195,123	1904	(a)
1896	83,855	1905	(a)

(a) Included in Table 22.

TABLE 27.
STRUCTURAL MATERIALS.
PRODUCTION OF SEWER PIPES, &C.

Calendar Year.	Value.
1888	\$266,320
1889	Not available.
1890	348,000
1891	227,300
1892	367,660
1893	350,000
1894	250,325
1895	257,045
1896	153,875
1897	164,250
1898	181,717
1899	161,546
1900	231,525
1901	248,115
1902	301,965
1903	317,970
1904	440,894
1905	382,000

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TABLE 28.
STRUCTURAL MATERIALS.
IMPORTS OF DRAIN TILES AND SEWER PIPES.

Fiscal Year.		Value.
1880		\$ 33,796
1881		37,368
1882		70,065
1883		70,699
1884		71,755
1885		69,589
1886		57,953
1887		71,203
1888		101,267
1889		83,215
1890		77,434
1891		87,195
1892		59,537
1893		39,001
1894		24,625
1895		21,053
1896		19,296
1897		34,286
1898		29,611
1899		33,898
1900		39,149
1901		56,083
1902		55,530
1903		57,352
1904		55,595
1905	Drain tile, not glazed..... Drain pipes, sewer pipes, chimney linings or vents, chimney tops and inverted blocks, glazed or unglazed.....	Duty.
		20 %
		35 %
Total.....		\$102,395

TABLE 29.
STRUCTURAL MATERIALS.
ANNUAL PRODUCTION OF POTTERY.

Calendar Year.	Value.	Calendar Year.	Value.
1888	\$ 27,750	1897	129,629
1889	Not available	1898	214,675
1890	195,242	1899	185,000
1891	258,844	1900	200,000
1892	265,811	1901	200,000
1893	213,186	1902	200,000
1894	162,144	1903	200,000
1895	151,588	1904	140,000
1896	163,427	1905	120,000

TABLE 30.
STRUCTURAL MATERIALS.
IMPORTS OF EARTHENWARE.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880.....	\$322,333	1893.....	\$709,737
1881.....	439,029	1894.....	695,514
1882.....	646,734	1895.....	547,935
1883.....	657,886	1896.....	575,493
1884.....	544,586	1897.....	595,822
1885.....	511,853	1898.....	675,874
1886.....	599,269	1899.....	916,727
1887.....	750,691	1900.....	959,526
1888.....	697,082	1901.....	1,114,677
1889.....	697,949	1902.....	1,275,093
1890.....	695,206	1903.....	1,406,610
1891.....	634,907	1904.....	1,611,356
1892.....	748,810		
1905 { Earthenware and china :—			Duty.
Baths, tubs and washstands, of earthenware, stone cement or clay, or of other material, N.O.P.....			30 % \$ 73,569
Brown or coloured earthen and stoneware, and Rockingham ware.....			30 % 15,464
Decorated, printed or sponged, and all earthenware, N. E.S.....			30 % 169,102
Demijohns, churns and crocks.....			30 % 8,158
White granite or ironstone ware, C.C. or cream coloured ware.....			30 % 37,706
Tableware of China, porcelain or other clay.....			30 % 995,465
China and porcelain ware.....			30 % 199,960
Earthenware tiles.....			35 % 65,181
Manufactures of earthenware, N.E.S.			30 % 71,609
Total.....			1,636,214

TABLE 31.
STRUCTURAL MATERIALS.
EXPORTS OF SAND AND GRAVEL.

Calendar Year.	Tons.	Value.
		\$
1893.....	329,116	121,795
1894.....	324,656	86,940
1895.....	277,162	118,359
1896.....	224,769	80,110
1897.....	152,963	76,729
1898.....	165,954	90,498
1899.....	242,450	101,640
1900.....	197,558	101,666
1901.....	197,302	117,465
1902.....	159,793	119,120
1903.....	355,792	124,006
1904.....	399,809	129,803
1905.....	306,935	152,805

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