GEOLOGICAL SURVEY OF CANADA

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SECTION OF MINES

ANNUAL REPORT

FOR

1904

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To Dr. ROBERT BELL,
Acting Director, Geological Survey.

SIR,—I beg herewith to hand you the annual report of the Mines Section giving the completed and revised information descriptive of the Mineral Industries of Canada for 1904.

This has been preceded by an advance statement of the Mineral Production, dated 21st February, 1905, which, as usual, was only provisional and subject to revision,

Complete data relating to the mineral industries cannot be obtained until well on in the year following that dealt with, so that the issue of the final report is necessarily delayed. With contemplated changes in arrangements it is believed that a much earlier issue will be possible in the future.

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 enquiries 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 of the work performed by the staff of the Section is heartily accorded in respect of all its functions.

I am Sir,

Your obedient servant,

OTTAWA, MINES SECTION.
30th March, 1906.

ELFRIC DREW INGALL.

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 comparaison 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.

CORRECTION—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.

MINERAL PRODUCTION OF CANADA.

The grand total of the Mineral Production of Canada for 1904 is valued in the accompanying general table at $60,073,897. In comparison with that for 1903, these figures show a falling off of $1,666,616 or about 2·7 per cent. In 1886 when the collection of mineral statistics was begun by the Mines Section, the mineral output of the country was valued at a little over ten million dollars, so that in a period of eighteen years, the amount realized annually has increased some six times.

In the following table will be found the amount of increase and decrease in the valuation of the output in the leading industries. The greatest decrease, that of gold production, is over two and a third millions of dollars and is due chiefly to the considerable drop in the output of the precious metals from the Yukon placers ($1,750,000) although supplemented by a falling off in the other districts. This decrease has been enhanced by a smaller output in copper, nickel, petroleum, etc. Against the decrease are to be set considerable increases in pig iron, lead, silver, asbestus, coal, etc. The industries dealt with in the tables represent over 86 per cent of the whole output and are thus illustrative of the more important features of the industry as a whole.

Products.	Increases.	Decreases.
	Value.	Value.
	$	$
Gold		2,381,073
Copper		342,852
Iron (pig iron Canadian ore)	300,026	
Lead	848,659	
Nickel		783,051
Silver	337,453	
Asbestus		296,595
Coal	649,398	
Gypsum		14,985
Natural gas	126,166	
Petroleum		113,079
Salt	24,261	
Cement	112,992	
Total difference in above	2,398,955 1,532,680	3,931,635
	3,931,635	

MINERAL PRODUCTION OF CANADA.

Below is given the proportional increases and decreases in the different leading industries whose contributions to the grand total aggregate nearly 86 per cent of the whole. It will be noted that whilst there were increases both in quantity and value in most of the important branches of the mineral industry, the marked decreases are exhibited in the case of gold, copper, nickel, gypsum and petroleum. As these branches of the industry are responsible for over 46 per cent of the whole output, the lessened production in these instances has had an important effect.

Products.	Quantity.		Value.	
	Increase.	Decrease.	Increase.	Decrease.
Metallic—				
Copper		3·05		6·07
Gold		12·64		12·64
Pig iron (from Canadian ore only)	62·41		42·39	
Pig iron (from both home and imported ores)	1·87			1·46
Lead	106·91		110·42	
Nickel		15·564		15·654
Silver	11·85		19·74	
Non-metallic—				
Asbestus and asbestic	16·29		31 90	
Coal	3·69		4·07	
Gypsum	10·01			3·86
Natural gas			62·39	
Petroleum	3·46			10·78
Salt	11·25		8·15	
Portland cement	45·02		11·94	

The following table gives the percentage contributions of the various industries to the grand total and enables an opinion to be formed, in a general way, of their relative importance.

GEOLOGICAL SURVEY OF CANADA.

MINES SECTION.

Mineral Production of Canada, Calendar Years 1895 to 1904.

PRODUCTS.	1895.		1896.		1897.		1898.		1899.		1900.		1901.		1902.		1903.		1904.		PRODUCTS.
	Quantity.	Value.	Quantity	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	
METALLIC.		$		$		$		$		$		$		$		$		$		$	METALLIC.
Antimony ore ..... Tons.							1,344	20,000													Antimony ore.
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	18,437,138	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	Copper (*c*).
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	Gold (*d*).
Pig Iron (*n*) ..... Tons.											35,387	583,158	83,100	1,212,113	71,664	1,043,007	42,052	707,838	68,297	1,007,864	Pig Iron (*n*).
Iron ore (*a*) ..... "	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*) 87,000	174,000	Iron ore (*a*).
Lead (*e*) ..... Lbs.	16,461,794	531,716	24,199,977	721,159	39,018,219	1,396,853	31,915,319	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	Lead (*e*).
Mercury ..... "	5,431	2,343	4,437	1,940	688	324															Mercury.
Nickel (*f*) ..... "	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	Nickel (*f*).
Platinum ..... Oz.		3,800		750		1,600	100	1,500	55	825				457	2,385	46,502	1,710	33,345	571	10,872	Platinum.
Palladium ..... "															4,411	86,014	3,177	61,952	952	18,564	Palladium.
Cobalt ..... Lbs.																			58,000	36,620	Cobalt.
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	Silver.
Zinc ..... Lbs.							788,000	36,011	814,000	46,805	212,800	9,342			142,200	6,882	900,000	48,600	477,568	24,356	Zinc.
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	Total value, Metallic.
NON-METALLIC.		(*a*)		(*a*)		(*a*)		(*a*)		(*a*)		(*a*)		(*a*)		(*a*)		(*a*)		(*a*)	NON-METALLIC.
Actinolite ..... Tons.					* 205	* 1,845							521	3,126	550	4,400	550	3,108			Actinolite.
Arsenic (white) ..... "									57	4,872	303	22,725	694	41,676	800	48,000	257	15,420	72	903	Arsenic.
Asbestus ..... "	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	Asbestus.
																			12,854	12,850	Asbestic.
Chromite ..... "	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	6,074	67,146	Chromite.
Coal (*g*) ..... "	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	Coal (*g*).
Corundum ..... "											3	300	444	53,115	768	84,465	970	80,180	993	109,545	Corundum.
Feldspar ..... "		(*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	Feldspar.
Fire-clay ..... "	1,329	3,492	842	1,805	2,118	5,759	670	1,680	599	1,295	1,245	4,130	3,979	5,920	2,741	4,283	2,639	3,523	1,997	3,592	Fire-clay.
Graphite ..... "	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	Graphite.
Grindstones ..... "	3,475	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	Grindstones.
Gypsum ..... "	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	Gypsum.
Limestone for flux ..... "	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	Limestone for flux.
Lithographic stone ..... "		2,000																			Lithographic stone.
Manganese ore ..... "	125	8,464	123½	(*k*) 3,975	154	1,166	50	1,600	1,581	20,004	30	1,800	440	4,820	172	4,062	91	2,775	66	2,740	Manganese ore.
Mica ..... Lbs.		65,000		60,000		76,000		118,375		163,000		166,000		160,000		135,904		177,857	439	160,777	Mica.
Mineral pigments—																					*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	Baryta.
Ochres ..... "	1,339	14,600	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	Ochres.
Mineral waters ..... Galls.	739,382	126,048	706,372	111,736	749,691	141,477	555,000	100,000		† 100,000		75,000		100,000		† 100,000		† 100,000		† 100,000	Mineral waters.
Molybdenite ..... Lbs.																					Molybdenite.
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	Moulding sand.
Natural gas		423,032		276,301		325,873		322,123		387,271		417,094		339,476		195,992		202,210		328,376	Natural gas.
Peat ..... Tons.											400	1,200	220	660	475	1,663	1,100	3,300	800	2,400	Peat.
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	1,048,974	503,474	935,895	Petroleum (*h*).
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	Phosphate (Apatite).
Precious stones																					Precious stones.
Pyrites ..... 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	Pyrites.
Quartz ..... "		10	50				284	570	600	1,260											Quartz.
Salt ..... "	52,376	160,455	43,960	169,693	51,348	225,730	57,142	248,639	59,339	254,390	62,055	279,458	59,428	262,328	64,456	292,581	62,452	297,517	69,477	321,778	Salt.
Soapstone ..... "	475	2,138	410	1,230	157	350	405	1,000	450	1,960	420	1,365									Soapstone.
Structural materials and clay products—																					*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		2,8 2,000		2,983,200	Bricks.
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	Building stone.
Cement, natural ..... Brls			70,705	60,500	85,450	65,893	87,125	73,412	141,387	119,308	125,428	99,994	133,328	94,415	127,931	98,932	92,252	74,655	56,814	50,247	Cement natural.
" 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	565,615	594,594	1,028,618	627,741	1,150,592	910,358	1,287,992	" Portland.
Flagstones ..... Sq. ft.	80,005	6,687		6,710		7,190		4,250		7,600		5,250		4,575	87,300	7,760	73,200	6,688	8,400	6,720	Flagstones.
Granite ..... Tons.	19,238	84,838	18,717	106,709	10,345	61,934	23,897	81,073	13,418	90,542		80,000		155,000		210,000		200,000		150,000	Granite.
Lime ..... Bush.	5,225,000	700,000		650,000		† 650,000		†650,000		800,000		†800,000		830,000		892,000		860,000		780,000	Lime.
Marble ..... Tons.	200	2,000	224	2,405																	Marble.
Pottery		151,588		163,427		129,629		214,675		185,000		200,000		†200,000		† 200,000		† 200,000		140,000	Pottery.
Roofing cement ..... Tons.		3,153	86	430																	Roofing cement.
Sands and gravels (*k*) ..... "	277,162	118,359	224,769	80,110	152,963	76,729	165,954	90,498	242,450	101,640	197,558	101,666	197,302	117,465	159,793	119,120	355,792	124,006	399,809	129,803	Sands and gravels (*k*).
Sewer pipe		257,045		153,875		164,250		181,717		161,546		231,525		248,115		301,965		317,970		440,894	Sewer pipe.
Slate ..... Tons.		58,900		53,370		42,800		40,791		33,406		12,100	715	9,980		19,200		22,040	5,277	23,247	Slate.
Terra-cotta		195,123		83,855		155,595		167,902		220,258		259,450		278,671		276,241		405,756			Terra-cotta.
Tiles ..... M.	19,200	210,000		225,000		† 225,000		†225,000		† 225,000		†225,000		250,000		† 250,000		215,000		260,000	Tiles.
Talc ..... Tons.											1,000	5,000	259	842	689	1,804	930	2,739	840	1,875	Talc.
Tripolite ..... "			664	9,960	15	150	1,017	16,660	1,000	15,000	336	1,950			1,052	16,470	835	16,700	320	6,400	Tripolite.
Total structural materials and clay products		4,726,368		4,327,542		4,388,550		5,270,146		6,168,283		6,372,901		6,803,836		7,896,836		8,443,747		8,182,103	Total, structural materials and clay products.
All other non-metallic		9,442,435		9,866,081		10,066,109		11,100,420		13,482,899		17,225,975		16,761,275		19,090,147		19,786,619		20,666,897	All other, non-metallic.
Total value, non-metallic		14,168,803		14,193,623		14,454,659		16,370,566		19,651,182		23,598,876		23,565,111		26,986,983		28,230,366		28,849,000	Total value, non-metallic.
" 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	" metallic.
Estimated value of products unspecified or not reported (*m*)		†250,000		†250,000		† 250,000		300,000		† 300,000		†300,000		†,300,000		† 300,000		† 300,000		† 300,000	Estimated value of products unspecified or not reported (*m*).
Grand total		20,505,917		22,474,256		28,485,023		38,412,431		49,234,005		64,420,983		65,804,611		63,211,634		61,740,513		60,073,897	Grand total.

(*a*) Value at mine, quarry or works.
(*b*) Not reported.
(*c*) Copper contents of ore, matte, &c., at the average market price for the year.
(*d*) Ounces, fine, calculated at value of $20.67 per oz.
(*e*) Lead contents of ore, matte, &c., at average market price for year.
(*f*) Nickel " " "
(*g*) Includes coal used in making coke. For coke production see article on coal and coke.
(*h*) Crude oil calculated from official inspection returns up to end of 1900; figures for 1901, 1902, 1903 and 1904 represent sales of crude oil. Values computed at average yearly price per barrel (of 35 imp. gallons).
(*k*) Exports only.
(*m*) Mostly structural materials.
(*n*) Pig iron from Canadian ore only. Previous to 1900 the production of iron has been entered as ore, the figures for pig iron for these years are given however in the body of the report.
(*o*) Figures for 1900, 1901 and 1902 represent the excess of the total production of iron ore in Canada over the quantity of Canadian ore used in Canadian furnaces. Figures for 1903 and 1904 represent estimated exports. The figures of exports for these five years, as published by the Department of Customs, are believed to be overstated.

NOTE.—The above figures represent the summary statements incorporated in the annually issued reports of the Section, those for the earlier years being corrected and revised to make the method of statement conform with that adopted for recent years.
The differing type shows the increases, decreases, &c., as compared with the previous year, as follows:—Heavy faced type, increase; ordinary type, decrease; ordinary type with †, same as previous year; ordinary type with *, neither increase nor decrease to record, the figures for previous year not being available.

PROPORTIONATE VALUE OF DIFFERENT MINERAL PRODUCTS, 1904.

Products.	Contributing over 10 p.c.	Contributing between 10 and 1 p.c.	Contributing under 1 p.c.	Total.
1 Coal	27·62			
2 Gold	27·40			
3 Copper	.....	8·83		
4 Nickel	.....	7·02		
5 Bricks (estimated)	.....	4·96		
6 Silver	.....	3·41		
7 Building stone (estimated)	.....	3·21		
8 Lead	.....	2·69		
9 Cement	.....	2·22		
10 Asbestus	.....	2·04		
11 Pig iron (from Canadian ores)	.....	1·68		
12 Petroleum	.....	1·56		
13 Lime (estimated)	.....	1·29		
14 Sewer pipe	.....	.....	0·73	
15 Gypsum	.....	.....	0·62	
16 Natural gas	.....	.....	0·54	
17 Salt	.....	.....	0·54	
17 Sundry under 1 per cent.	.....	.....	3·64	
Total	55·02	38·91	6·07	100·00

In the following table are compared the proportional contributions of the several provinces to the total output of the Dominion. As the figures given have been reduced to a uniform basis of valuation, the comparative figures are as nearly accurate as is possible.

PRODUCTION BY PROVINCES, 1904.

Province.	Value of Production.	Per cent.
	$	
Nova Scotia	11,212,746	18·7
New Brunswick	559,913	0·9
Quebec	3,688,482	6·1
Ontario	12,582,843	20·9
Manitoba and N. W. Territories, including Yukon	12,713,613	21·2
British Columbia	19,316,300	32·2
Total	60,073,897	

MINERAL PRODUCTION OF CANADA.

The growth of the mineral industry of Canada as a whole and the comparison of its progress with that of the United States, is illustrated in the following table, the figures speaking for themselves.

YEAR.	CANADA.		UNITED STATES.	
	Increase or decrease per cent in Grand Total.	Production per capita.	Increase or decrease per cent in Grand Total.	Production per capita.
	p.c.	$ cts.	p.c.	$ cts.
1904	decr. 2·70	10·47	decr. 9·18	15·75
1903	" 2·08	11·18	incr. 12·64	17·77
1902	" 3·73	11·67	" 4·16	15·57
1901	incr. 3·42	12·40	" 2·60	14·03
1900	" 30·06	11·99	" 10·10	14·02
1899	" 28·13	9·33	" 39·86	12·84
1898	" 34·89	7·32	" 10·61	9·38
1897	" 26·90	5·52	" 1·33	8·66
1896	" 8·79	4·40	" ·21	8·73
1895		4·09		8·90
1890	64·00	3·50	" 38·97	9·89
1886		2·23		7·76

The figures to be found in the reports of the Department of Trade and Commerce relating to exports of mineral substances have been selected and compiled to form the two following tables.

It will be observed that the metallic products comprise the largest items in the table, gold alone accounting for about 48 per cent, copper nearly 13 per cent, silver about 5·8 per cent, iron and steel some 4 per cent, and nickel about 3·3 per cent. Under the heading of these chief mineral products about 74 per cent of the whole exports are accounted for. If to these we add the coal and coke at 13·4 per cent approximately, 12·6 per cent only is to be credited to the numerous other mineral substances.

Some interesting particulars as to the destination of the exports are given in the second table. The great bulk of the mineral exports go to the United States, the proportion representing 95·25 per cent of the total. Only some 3·5 per cent is credited to points within the

British Empire, leaving but 1·25 per cent for a number of foreign countries. MINERAL PRODUCTION OF CANADA.

EXPORTS.

MINERALS AND MINERAL PRODUCTS OF CANADA DURING CALENDER YEAR 1904.

Products.	Value.	Products.	Value.
Aluminum	$ 298,388	Manufactures of metals, other than iron or steel	$ 478,435
Antimony ore	7,237	Mica	198,482
Arsenic	6,900	Mineral pigments	7,260
Asbestus	1,160,887	" water	2,917
Barytes	5,178	Nickel	1,091,349
Bricks	5,357	Oil, crude	213
Cement	5,494	" refined	470
Clay, manufactures of	2,722	Ores unspecified	222,117
Chromite	60,336	Platinum	140
Coal	4,036,373	Phosphate	5,348
Coke	345,031	Plumbago, crude	9,609
Copper	4,226,214	" mfrs. of	6,958
Feldspar	29,263	Pyrites	49,911
Gold	15,737,477	Salt	4,186
Grindstones	26,895	Sand and gravel	129,803
" rough	8,717	Silver	1,904,394
Gypsum, crude	316,436	Stone unwrought	17,802
" ground	2,333	" wrought	4,760
Iron and steel	1,318,482	Other articles	18,523
Iron ore	401,738		
Lead	559,461	Total	32,790,140
Lime	73,838		
Manganese ore	2,706		

EXPORTS.

DESTINATION OF PRODUCTS OF THE MINE, DURING THE FISCAL YEAR, 1903-1904.

Destination.	Value.	Destination.	Value.
United States	$32,025,193	Holland	$10,806
Great Britain	641,072	Cuba	8,045
Newfoundland	413,574	Hawaii	5,864
Norway and Sweden	143,593	British Africa	5,464
British West Indies	79,480	Spain	1,939
France	63,463	Denmark	1,309
Germany	56,374	Portugal	413
China	40,876	Russia	400
St. Pierre Miquelon	35,029	Australia	293
British Africa	34,807	Argentine	108
Belgium	30,326		
Italy	28,311	Total	$33,626,739

MINERAL PRODUCTION OF CANADA.

From the reports of the Trade and Commerce Department, the various items of imports of mineral and crude manufactured metallic materials have been selected and compiled to form the subjoined table, covering the fiscal year 1903–1904. 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, representing over 38 per cent of the grand total, is that including machinery, hardware and highly manufactured articles which would come in competition with the manufacturer rather than the miner and smelter. Semi-finished products of iron pig, blooms, bars, plates, &c., together with various iron alloys used as raw material by manufacturers of more finished products amount to over ten million dollars, or about 13 per cent. The country imports over $20,000,000 worth of coal, of which about half is anthracite and half bituminous. The items before mentioned, although comprising but five entries out of the seventy-nine in the table, cover 77 per cent of the whole. Other items severally ranging in value between one and two and a half million dollars or from 1 to 3 per cent, include earthenware, copper and manufactures of cement, brass and manufactures of tin, and manufactures of mineral pigments, ores of metals; petroleum and products; precious stones. These constitute yet another 16·6 per cent which added to the 77 per cent, account for about 93 per cent of the total under fourteen heads. The remainder is made up of some sixty-four items covering 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.

IMPORTS.

MINERAL AND MINERAL PRODUCTS FOR FISCAL YEAR 1903-1904.

Products.	Value.	Products.	Value.
Alumina	$ 108,956	Lime	$ 39,639
Alum and aluminous cake.	53,796	Litharge	32,633
Aluminium	117,492	Lithographic stone	17,981
Antimony	8,228	Manganese, oxide of	7,051
" salts	8,884	Magnesia	5,754
Arsenic	12,421	Marble and mfrs. of	181,511
Asbestus and mfrs. of	83,827	Mercury	80,658
Asphaltum	139,026	Metallic alloys—	
Bells and gongs	79,073	Babbit metal	51,785
Bismuth	893	Brass and mfrs. of	1,257,477
Blast furnace slags	6,808	Britannia metal	35,466
Borax	84,724	German silver	49,659
Bricks and tiles	295,421	Type metal	6,596
" fire	365,479	Mineral and bituminous substances, N.E.S.	43,137
Buhrstones	35	Mineralogical specimens	1,618
Cement	1,014,713	Mineral and metallic pigments, paints and colours	1,138,945
Chalk, prepared	19,163	Mineral water	721
Clays	144,706	Nickel	14,682
Coal	20,113,554	Ores of metals, N.O.P.	1,112,193
" tar and pitch	122,598	Paraffine wax	18,440
Coke	765,123	" candles	9,078
Copper and mfrs. of	1,461,925	Petroleum and products of	1,906,759
Cryolite	14,513	Phosphate (fertilizer)	8,000
Crucibles, clay or plumbago	28,773	Platinum, mfrs. of	28,112
Chloride of lime	46,863	Precious stones	1,206,437
Earthenware	1,611,356	Pumice	6,537
Electric carbons	88,779	Salt	412,268
Emery	50,899	Saltpetre	86,308
Feldspar, quartz, flint, &c.	19,280	Sand and gravel	107,547
Fullers' earth	5,554	Slate and mfrs. of	86,057
Fossils	949	Stone and mfrs. of	280,982
Gold and silver and mfrs. of	448,259	Sulphate of copper	75,938
Graphite and mfrs. of	40,592	" iron	1,452
Gypsum, plaster of Paris, &c	4,272	Sulphur	204,663
Iron and steel—		Sulphuric acid	2,563
Pigs, scraps, blooms, &c.	1,560,028	Tufa calcareous	11,366
Rolled, bars, plates, &c., including chrome steel	8,485,196	Tin and manufactures of	2,389,557
Ferro-silicon, ferro-manganese, &c	75,554	Whiting	42,507
Manufactures of, machinery, hardware, &c.	30,502,168	Zinc and mfrs. of	322,401
Kainite	5,430	Total	79,512,967
Lead and mfrs. of	233,179		

PRECIOUS METALS.

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.

GOLD.

The total production of gold in Canada during the year 1904 was $16,462,517, a decrease of $2,381,073 as compared with 1903. Every province shows a lower figure, the main decrease being the Yukon's, the output of which was $1,750,000 less in 1904 than in 1903. The increase in the Canadian production of gold was very rapid between 1896 and 1900, in which year it reached its maximum. It is also interesting to note that the Northwest Territories and British Columbia are together responsible for 98 per cent of the total production. Over seventy per cent is gold derived from working of placers; the balance is from lode mining.

Statistics of the total production in Canada and the various provinces are shown in the following table.

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

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

TABLE 2. PRECIOUS METALS.

PRECIOUS METALS.

GOLD—PRODUCTION BY PROVINCES AND DISTRICTS, CALENDAR YEAR 1904.

Provinces.	*Ounces. Fine.	Value.
Nova Scotia	(b) 10,363	$ 214,209
Quebec	140	2,900
Ontario	(b) 1,935	40,000
North-west Territories—		
Yukon District	(a) 507,983	10,500,000
Saskatchewan River	(a) 24	500
British Columbia	(c) 276,000	5,704,908
Total	796,445	16,462,517

* Calculated from the value at the rate of $20.67 per ounce.
(a) Placer gold.
(b) Gold from vein mining.
(c) As follows: Gold from placer mining $1,115,300
" vein " 4,589,608
$5,704,908

NOVA SCOTIA.

The figures for this province show a very large decrease as compared with the output for 1903, but this does not necessarily prove a falling off in the industry. As a matter of fact several mines have done very extensive development work to the detriment of the output; the small individual miner who has been the rule up to now, is fast giving place to companies on a large scale who can work, profitably, much lower grade ores.

According to the report of Mr. Wetherbee of the Nova Scotia Mines Department, "The Government anticipating a special discussion on the question of deep mining, on which they had legislated during the previous session, employed Mr. Faribault of the Geological Survey, to make a special report on the subject which was gone into very fully. One direct result of this discussion was the amendment of the above legislation, so that aid to a deep shaft would be given by the Government to the whole sinking, from the surface to a depth of 2000 feet, instead of requiring the miner to do the first 500 feet of work at his own expense as provided by the first act. This amendment brought forth several bona fide applications for the aid almost immediately. In some of the districts to which these applications applied Mr. Faribault's services were again used in reporting on their suitability. The districts where this aid was asked, include Isaacs Harbour, Malaga, Caribou and Sherbrooke.

It should be particularly mentioned, that the past season has marked a stage in Nova Scotia gold mining not before reached, two mines having attained vertical depths of 1000 feet or over, and at both places (over 100 miles apart) was gold found, presumably in paying quantities".

PRECIOUS METALS.

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		

Table 4 which follows gives the tonnage of ore treated every year since 1862, and the average yearly yield. Table 5 gives the total tonnage per district since the beginnig of the industry.

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	112,226	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			

TABLE 5.

PRECIOUS METALS.

GOLD—NOVA SCOTIA:—PRODUCTION OF THE DIFFERENT DISTRICTS FROM 1862 TO 1904, 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	87,777	39,220	15	18	745,195	8·49
Caribou	168,034	53,924	15	7	1,024,571	6·10
Central Rawdon	13,340	10,121	11	21	192,310	14·42
Fifteen Mile Stream	42,483	18,800	.....	5	357,200	8·41
Lake Catcha	18,565	15,040	10	18	285,770	15·39
Malaga	24,787	17,486	12	4	332,246	13·40
Montague	27,006	40,359	2	20	766,824	28·39
Oldham	51,655	55,174	7	21	1,048,314	20·29
Renfrew	52,211	45,409	14	13	862,785	16·52
Salmon River	104,136	34,100	11	21	647,911	6·32
Sherbrooke	312,776	158,856	16	13	3,018,280	9·65
Stormont	305,304	88,515	8	19	1,681,793	5·51
Tangier	40,457	23,098	5	2	438,867	10·85
Uniacke	64,415	43,632	8	21	829,016	12·87
Waverly	155,908	70,833	12	23	1,345,839	8·63
Wine Harbour	68,165	39,465	17	3	749,851	11·00
Other districts	128.078	80,318	18	17	1,526,060	11·91
Total	1,665,097	834,359	11	6	15,852,832	9·52

PRECIOUS METALS.

Table 6 gives the production by district for the year 1904.

TABLE 6.

PRECIOUS METALS.

GOLD.—NOVA SCOTIA:—DISTRICT DETAILS, CALENDAR YEAR, 1904.

Districts.	Mills.	Tons Crushed.	Total Yield of Gold.			Average Yield of Gold per Ton.		
			Oz.	Dwt	Grs.	Oz.	Dwt.	Grs.
Ardoise	1	7	...	4	0	..	..	14
Brookfield	2	8,247	2,329	5	19	..	5	15
Moose River	2	2,466	137	18	0	..	1	3
Caribou	4	7,518	1,569	7	0	..	4	4
Clam Harbour	1	56	50	4	9	..	17	22
Carleton	1	103	64	8	0	..	12	12
Ecum Secum	2	365	105	0	0	..	5	18
Harrigan Cove	2	276	187	10	0	..	13	14
Kemptville	1	165	44	4	0	..	5	8
Lake Catcha	2	60	88	7	0	1	9	10
Leipsigate	1	4,450	1,329	14	0	..	5	23
McKay Settlement	1	43	7	18	8	..	3	16
Montague	1	841	267	1	9	..	6	5
Oldham	1	527	748	3	0	1	8	9
Renfrew	1	636	151	0	0	..	4	18
Salmon River	1	534	202	5	0	..	7	13
Sherbrooke	4	8,445	1,032	12	12	..	2	10
Stormont	3	4,441	766	7	4	..	3	10
South Uniacke	1	1,066	455	11	12	..	8	13
Mount Uniacke	1	528	245	2	6	..	9	7
Whiteburn	1	162	57	13	0	..	7	3
Wine Harbour	2	4,443	1,376	3	10	..	6	4
Gold River	1	57	53	9	23	..	18	18
Mortared	.....	.....	4	6	11	..	..	..
Total	.....	45,436	11,273	16	3	..	4	22

QUEBEC.

The gold of the province of Quebec, with the exception of a very small amount, is derived from desultory working of the Beauce region placers and from the pyritous ores of the Eastern Townships which are used primarily for the manufacture of sulphuric acid

Precious Metals.

TABLE 7.

PRECIOUS METALS.

GOLD.—QUEBEC :—ANNUAL PRODUCTION.

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

ONTARIO.

This province shows a very heavy decline in the output of gold for the year. In 1904 this only reached $40,000, which is less than twenty-five per cent of the production for 1903. This was derived mainly from several mines in the Lake of the Woods district, one in Eastern Ontario and also from the treatment of the matte made from the Sudbury ores.

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

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

PRECIOUS METALS.

NORTH-WEST TERRITORIES.

Practically the whole output of gold of the North-west Territories is attributable to the Yukon, as only five hundred dollars was produced from the Saskatchewan river. The Yukon production reached its maximum in 1900, and since then it has gradually declined, owing to the exhaustion of the richer ground. In 1904 the figures show a decrease to less than half the production of 1900.

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
Total	5,203,846	107,563,500	14,245	294,446

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

The following statement of gold production of the Yukon, royalty paid, &c., is taken from the report of the Timber and Mines Branch of the Department of the Interior. PRECIOUS METALS.

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	1,699,657	5,882,626	588,262
1900	9,809,464	2,501,744	7,307,720	730,771
1901	9,162,082	1,927,666	8,236,522	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

BRITISH COLUMBIA.

The production of gold of this province for 1904 is $5,704,908 which is a diminution of $168,128 when compared with the output for 1903. Of this total $1,115,300 is derived from placer workings, and $4,589,608 is from lode mining. 'The greater part of the gold obtained from lode mining in British Columbia, is found in connexion with other metals and only separated or collected by smelting, probably not 5% of the product being obtained from stamp mills. The lode gold product for 1904 was $4,589,608 and was $223,008 less than in 1903, due to the diminished output of the Rossland and Nelson districts.'

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		

PRECIOUS METALS.

Table 11 is very interesting as it shows the relative importance of the different producing district.

TABLE 11.

PRECIOUS METALS.

GOLD:—BRITISH COLUMBIA.—PRODUCTION BY DISTRICTS—1904.

Districts.	Gold, Placer.		Gold, Lode.	
	Ounces.	Value.	Ounces.	Value.
		$		$
Cariboo—				
Cariboo Division	15,650	313,000		
Quesnel "	7,500	150,000		
Omineca "	580	11,600		
Cassiar—				
Atlin Lake Division	26,500	530,000		
All other divisions	575	11,500	766	15,833
East Kootenay—				
Fort Steele Division	*1,000	20,000		
Windermere—Golden	50	1,000		
West Kootenay—				
Ainsworth Division			2	41
Nelson "	*150	3,000	14,100	291,447
Slocan and Slocan City			160	3,307
Trail Creek			133,095	2,751,074
All other divisions	*50	1,000	3,615	74,722
Lillooet	1,725	34,500	4	83
Yale—				
Grand Forks, etc	*150	3,000	55,505	1,147,288
Similkameen	125	2,500		
Yale	1,560	31,200	183	3,783
Coast and other districts	*150	3,000	14,612	302,030
Totals	55,765	1,115,300	222,042	4,589,608

* Estimated.

The oldest and largest producing district is that of Rossland or Trail Creek in West Kootenay, and figures concerning its output may prove of interest.

The following tables show the production of the Rossland mines and illustrate the average results attained during the past eleven years.— PRECIOUS METALS.

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	46,702	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	11,667,807	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
Total	1,916,682	1,062,390	2,510,340	53,117,891	30,089,324

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
Average 1,916,682 tons	·554	1·309	1·385	15.70

As has been noticed above, the greater part of British Columbia gold is obtained from the treatment of ores containing other metals, and it is recovered in the process of smelting and refining; only a very small proportion of the lode gold is from free-milling ores.

The different districts producing the auriferous sulphide ores are referred to under the heading of copper and lead.

As to placer mining it may be interesting to quote from the Provincial Mineralogist's report for 1904. "The placer gold mining industry of the province this past year produced $1,115,300 in gold, an increase of about 5 per cent over the preceding year, thanks to a successful season in the Atlin camp.....The output of the

PRECIOUS METALS.

camp was about $530,000, an increase of 20 per cent over the preceding year, a most encouraging showing, especially as the dredge, from which so much was expected, failed mechanically to handle the dirt. The two hydraulic companies which started up last summer made very creditable productions and promise to do better next year..... In the Dease Lake district the output this year was only about one-third of what it was the previous year, as the most important property in the camp did not produce this past season, being engaged exclusively in installing a new and larger plant.

"In the Cariboo District the placer output was almost exactly the same as last year, the Barkerville camp being just the same, while a deficit in the Omineca section was just about balanced by an increased production in the Grand Forks section, where the Consolidated Cariboo Company, although only having water to sluice 88 days, produced $90,000 of gold.

"In the Fraser River section, placer mining is chiefly carried on on the river bars at extreme low water, the results this year have been very disappointing, as the usual very low water did not occur, since the winter's snow starting to go very early, went gradually, with no extremes of high or low water, so these bars could not be worked to the usual extent ....

"Dredging for gold has not, as yet, been a commercial success, despite all attempts to solve this problem. The difficulties are mechanical but, therefore, none the less difficult to surmount. Many of the propositions which have been started have had ground sufficiently rich to pay very handsomely if the conditions were right—that is, freedom from boulders or hard clay cement, a dredgible bedrock, and the gold not in too fine a state of division. The dredge in Atlin attempted to handle dirt that proved too tough for it, and from reports it would appear that the Lillooet dredge was too weakly constructed to stand the work, and the constant stoppages for repairs interfered with what promised to be a very successful run.

"As yet the only attempt made in this province to work a placer gold property with a steam shovel was in Fort Steele Mining Division and described in the report for 1903. The conditions there were scarcely favourable and the shovel was not equipped with an auxiliary elevator to take the gravel from the shovel to the sluice—which appears to be requisite. This was to have been provided for this shovel but is not yet in place, and the machine has not been worked this season."

SILVER.

The total figures of production of silver for 1904, show a marked increase as compared with those of 1903. The contributing provinces

were British Columbia, Ontario, Yukon Territory and Quebec, the relative amount of each being in the order named. The increase in production is largely due to the bounty on lead granted by the Federal Government, which led to the reopening of some mines of argentiferous galena in the East Kootenay district. Another new source of the metal is the district recently opened on the northwest shore of Lake Timiskaming, which is responsible for most of the Ontario production. PRECIOUS METALS.

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	1896....	3,205,343	2,149,503	67·06
1888....	437,232	410,998	94·0	1897....	5,558,446	3,323,395	59·79
1889....	383,318	358,785	93·6	1898....	4,452,333	2,593,929	58·26
1890 ...	400,687	419,118	104·6	1899....	3,411,644	2,032,658	59·58
1891....	414,523	409,549	98·0	1900....	4,468,225	2,740,362	61·33
1892....	310,651	272,130	86·0	1901....	5,539,192	3,265,354	58·95
1893....	.....	330,128	77·0	1902.. .	4,291,317	2,238,351	52·16
1894....	847,697	534,049	63·0	1903....	3,198,581	1,709,642	53·45
1895....	1,578,275	1,030,299	65·28	1904. ..	3,577,526	2,047,095	57·22

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

PRECIOUS METALS.

BRITISH COLUMBIA.

The total production of this province amounted to 3,222,481 ounces, derived mainly from two districts, the Slocan and the Fort Steele. The output is 226,277 ounces greater than in 1903, which may be chiefly attributable to the reopening of the St. Eugene mine, an argentiferous galena vein which could not operate profitably without the Government bounty on lead. The two districts above named are responsible for more than 75 per cent of the production, the balance having been produced in all other parts of the province.

TABLE 14.

PRECIOUS METALS.

SILVER:—BRITISH COLUMBIA.—PRODUCTION BY DISTRICTS.

District.	1901.	1902.	1903.	1904.
	Ounces.	Ounces.	Ounces.	Ounces.
Cariboo	.....	4	.....	.....
Cassiar	82	224	53	185
Kootenay East—				
Fort Steele division	718,451	114,506	28,537	590,186
Other divisions	34,181	27,918	59,006	20,964
Kootenay West—				
Ainsworth division	324,913	320,719	108,678	90,004
Nelson "	377,167	273,870	190,003	198,795
Slocan "	2,276,259	2,223,810	1,466,931	1,540,170
Trail Creek "	970,460	373,101	209,537	181,830
Other divisions	133,774	241,584	392,354	148,201
Lillooet	.....	.....	12	.....
Yale—				
Osoyoos division	241,489	219,798	320,749	245,155
Yale	74	542	15	625
Coast and other districts	74,483	121,841	220,329	206,366
Totals	5,151,333	3,917,917	2,996,204	3,222,481

NET PRODUCTION, PER SMELTER RETURNS, OF THE SLOCAN MINES.

Year.	Ore, Tons, 2,000 lb.	Silver oz.	Lead, lbs.	Gold. oz.	Values.
1895	9,514	1,122,770	9,666,324	6	$1,045,600
1896	16,560	1,954,258	18,175,074	152	1,854,011
1897	33,567	3,641,287	30,707,705	193	3,280,686
1898	30,691	3,068,648	27,063,595	60	2,619,852
1899	21,507	1,891,025	16,660,910	14	1,740,372
1900	25,520	2,121,176	19,365,743	5	2,063,908
1901	25,493	2,276,259	15,025,759	244	1,865,752
1902	21,153	2,223,810	13,651,144	353	1,608,827
1903	12,412	1,466,931	9,880,469	257	1,126,986
1904	70,296	1,540,170	10,611,227	160	1,236,858
Total	266,713	21,306,334	170,807,950	1,444	18,442,852

AVERAGE YIELD PER TON.

PRECIOUS METALS.

Year.	Silver.	Lead.	Values.
1895	118·0 oz.	50·8%	$109.90
1896	118·0 "	54·9%	111.95
1897	108·5 "	45·7%	97.73
1898	100·0 "	44·1%	85.36
1899	87·9 "	38·7%	80.92
1900	83·1 "	37·9%	80.87
1901	89·3 "	29·5%	73.19
1902	105·1 "	32·3%	76.06
1903	118·2 "	39·8%	90.80
1904	21·9 "	7·5%	17.59
	79·8 oz.	32·0%	$ 69.14

ONTARIO.

In this province a new silver district has just been discovered and opened out. It is responsible for practically the total outputof silver of Ontario. This is in the township of Coleman, on the line of the Timiskaming and Northern Ontario Railway, and on the west side of Lake Timiskaming. The deposits of the district contain silver, nickel, cobalt and arsenic. They are connected with rocks of Huronian age. As to the activity now prevailing in the district, the report of the Ontario Bureau of Mines says: "All the silver produced in 1904 came from the mines of Coleman township, save a small quantity extracted from the Sudbury nickel-copper mattes. The output was 206,875 ounces, valued at $111,887. The producing properties were the Larose, owned by Messrs Timmins, Dunlap and McMartin; the Chambers-Ferland properties including Cobalt Hill and the Little Silver Mine now owned by the Nipissing Mining Company, Limited, New York, of which Mr. Ellis P. Earle is the head; the New Ontario owned by Mr. W. G. Trethewey of Toronto; and the McKinley-Darragh, of which Messrs Gorman and Company of Ottawa, otherwise the Cobalt and Silver Mining Company, are proprietors. The ore was all sold to Mr. E. P. Earle and delivered to him at New York. Some of the shipments carried very high values, several 20 ton car lots netting as much as $37,000 or $38,000, the main returns being from the silver, though the other constituents, cobalt, nickel and arsenic each contributed to the result.. .....

"The new camp enjoys first-rate shipping facilities, since the Timiskaming and Northern Ontario Railway runs directly through it and a station called Cobalt has been established on the shore of a lake of the same name within easy distance of the chief producing properties. The freight rate from Cobalt to New York is $7 per ton."

PRECIOUS METALS.

In the Yukon Territory, the silver is recovered from the placer gold, which contains an appreciable proportion of it.

The silver of the province of Quebec is derived mostly from the treatment of the pyritous ores of the Eastern Townships.

The exports of silver ores from the whole of Canada as given in the Customs returns will be found in the subjoined table.

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		

COPPER.

There are but few mines in Canada where ores are worked solely for their copper contents. The production is almost altogether obtained from ores which are worked also on account of their values in nickel, sulphur, the precious metals, etc. In Quebec the copper is derived rom the pyrites deposits near Sherbrooke which are primarily mined or the manufacture of sulphuric acid The production in Ontario is practically represented by the copper contents of the nickel-copper ores of the Sudbury district, whilst in British Columbia the metal is obtained from ores which although low grade for copper are workable on account of carrying values in the precious metals.

The figures of production for 1904 are to be found in table No. 1, following, from which it will be seen that the steady increase in the general production of the past number of years has received a slight

check, there being a decrease to record of 1,300,732 lbs. in the quantity and of $342,852 in the value. * COPPER.

By references to tables 5, 6, 7 it will be seen that the responsibility for this decrease rests with the Eastern Canadian districts, Quebec and Ontario both showing considerable decreases as against an increase in British Columbia.

The production by Provinces was as follows:—

Quebec	760,000 lbs.
Ontario	4,913,594 "
British Columbia	35,710,128 "
Total	41,383,722 "

The great preponderance of British Columbia as a contributor to the total Canadian production of this metal is very apparent from the above figures. During 1904, the western province has to its credit over 86 per cent of the whole, whereas about ten years since its product was a little over one-tenth of the present figure and about equalled the output of Ontario.

The relationship of the provinces can be seen by reference to the figures in tables 5–6–7.

It is seen that Quebec has been dwindling ever since 1891. Ontario has shown no considerable fluctuations but has averaged distinctly upwards, whilst British Columbia, beginning at almost nothing in 1894, shows a phenomenal increase in the production, and, rapidly increasing, becomes the predominant feature in the industry since 1899.

* In order to state the production in terms of its money value so as to enable comparison to be made, one year with another for a long period of years, the final market values of the metal in the shipments of ore, matte, etc., are still adopted for the general tables. This is the first and only fixed definite datum line to which all the varying metal-bearing products of different years and different districts, can be referred, and this method of valuation is the only one which can be stated in terms of value so as to show the fluctuations in the industry and other features of its history. In different districts and at different times the practice is apt to vary in regard to the point to which are carried the processes of the extraction of the useful constituents of the raw ores, etc. so that spot values are too diverse and changeable locally to be added together getting at grand totals.

TABLE 1.

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

* 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.

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	26,094,498	2,476,516
1903	38,364,676	3,873,827
1904	38,353,282	4,216,214

TABLE 3.

COPPER.

IMPORTS OF PIGS, OLD, SCRAP, ETC.

Fiscal Year.	Lbs.	Value.	Fiscal Year.	Lbs.	Value.
		$			$
1880	31,900	2,130	1892	343,600	14,894
1881	9,800	1,157	1893	168,300	16,331
1882	20,200	1,984	1894	101,200	7,397
1883	124,500	20,273	1895	72,062	6,770
1884	40,200	3,180	1896	86,905	9,226
1885	28,600	2,016	1897	49,000	5,449
1886	82,000	6,969	1898	1,050,000	80,000
1887	40,100	2,507	1899	1,655,000	246,740
1888	32,300	2,322	1900	1,144,000	180,990
1889	32,300	3,288	1901	951,500	152,274
1890	112,200	11,521	1902	1,767,200	225,832
1891	107,800	10,452	1903	2,038,400	252,594
1904 Copper, old and scrap or in blocks ....Duty free				309,300	33,597
1904 Copper in pigs or ingots .... "				1,806,000	236,718
Total, 1904				2,115,300	270,315

COPPER.

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.	Copper in bolts, bars and rods, in coils, or otherwise in lengths not less than 6 feet, unmanufactured	Duty. Free.	Pounds. 5,632,400	$ 749,498
	Copper, in strips, sheets or plates, not planished or coated, &c	"	1,861,000	296,914
	Copper tubing in lengths not less than 6 feet, and not polished, bent or otherwise manufactured	"	195,836	44,909
	Copper rollers, for use in calico printing, imported by calico printers for use in their own factories	"		2,862
	Copper and manufactures of:—			
	Nails, tacks, rivets and burrs or washers	30 p. c.		3,879
	Wire, plain, tinned or plated	15 "	141,490	25,263
	Wire cloth, &c	25 "		1,033
	All other manufactures of, N.O.P	30 "		67,252
	Total			1,191,610

QUEBEC.

Owing to the pyritous ores mined in this province carrying a small percentage of copper, there is a production to report, the figures relating to which will be found in table 5 below. The ore is primarily used in the manufacture of acid chiefly at works in the United States, although some is thus utilized in Canada. The residues

left after burning the pyrites are treated in the United States for the extraction of copper, etc.

COPPER.

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	97,455

ONTARIO.

In Ontario the production is practically that resulting from the working of the nickel-copper deposits of the Sudbury districts. The product of working these pyrrhotite-chalcopyrite deposits is exported in the shape of nickel-copper high grade matte, no metallic products resulting from the smelting process.

COPPER.

Outside of the operations above mentioned, shipments of ore were made from a few smaller mines operating at different points in the province.

TABLE 6.

COPPER.

ONTARIO:—PRODUCTION.

Calendar Year.	Pounds.	Value.
		$
1886	165,000	18,150
1887	322,524	36,284
1888	.....	.....
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	861,278
1903	7,172,533	949.285
1904	4,913,594	630,070

BRITISH COLUMBIA.

The mining of copper-bearing ores in this province has been prosecuted with ever increasing success for the past ten years. In that period the production has enlarged from 324,680 lbs. to 35,710,128 lbs. or considerably over ten times. Examination of table 7 will show that although the rate of increase has been very variable, every year of the period has shown a most encouraging growth in the industry.

The ores are chiefly sulphurets carrying values in the precious metals. The chief contributing districts are Boundary Camp with an average percentage of copper for 1904 of 1.38 per cent, the Rossland Camp with an average percentage of copper of 1·14 per cent and the Coast districts with an average content of copper of 3·68 per cent.

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	4	4,579,110

TABLE 8.

COPPER.

BRITISH COLUMBIA—PRODUCTION BY DISTRICTS.

—	1901.	1902.	1903.	1904.
	Pounds.	Pounds.	Pounds.	Pounds.
Cassiar	.....	6,258	2,249	8,900
East Kootenay	3,272	8,048	2,730	5,472
West Kootenay—				
Ainsworth	.....	9,537	.....	.....
Nelson	1,599,449	491,144	346,218	220,500
Slocan	.....	.....	181	.....
Trail Creek	8,333,446	11,667,807	8,652,127	7,119,876
All other	.....	1,000	3,294	.....
Yale—				
Boundary	14,511,787	14,955,582	18,485,542	22,066,407
Ashcroft, Kamloops	39,920	.....	6,409	328,380
Coast districts	3,115,872	2,496,681	6,861,171	5,960,593
	27,603,746	29,636,057	34,359,921	35,710,128

There are a number of smelters in the province treating the mixed ores of the various districts. At the Trail smelter is produced a matte running from 50 to 55 per cent in copper. This is sent to the Tacoma smelter, where it is further treated, yielding a matte carrying about 98 per cent of the metal. This blister copper is then shipped to eastern refineries.

COPPER. At the Northport smelter high grade matte is produced, which goes to New York for bessemerizing and refining. The blister copper (99 per cent) product of the Granby smelter is also shipped east for refining. At the Greenwood smelter since the recent installation of the bessemerizing plant blister copper nearly 99 per cent is produced in place of 45 per cent matte as formerly.

IRON.

IRON *Iron Ore.*—The Canadian production of iron ore for 1904 totalled 219,046 tons instead of 264,294 tons as compared with 1903. For this decrease of 45,248 tons, Ontario is almost wholly responsible, as Nova Scotia and Quebec show increases. On the other hand no production is recorded for British Columbia, but this last province has always been a small and desultory producer.

NOVA SCOTIA.

The production of iron ore in Nova Scotia is almost entirely due to the operations of the Londonderry Iron and Mining Company who are working several deposits of hematite and of carbonates of iron in Colchester county and one at Torbrook, Annapolis county. This last deposit has been described by Mr. H. Fletcher in our Summary Report for 1904.

QUEBEC.

The main source of iron ore of this province is at present the deposits of bog iron ore which are found in the counties of St. Maurice, Champlain, Joliette, Vaudreuil, and Nicolet. The ore is treated at Radnor Forges and at Drummondville.

ONTARIO.

This province is the most important iron ore producer of the Dominion. The decrease which we have to record this year is due to the temporary cessation in operations of the Sault Ste. Marie industries who were working the Helen Mine in the Michipicoten District. A few other mines working on smaller scales gave returns of production. But prospecting and development work in iron-bearing regions were very active all the year round. The districts which received special attention are the Timiskaming, Temagami, the Hutton, the Atikokan and the Michipicoten regions ; a company is said to be contemplating the erection of a blast furnace at Port Arthur, for smelting the ores of the Atikokan range.

BRITISH COLUMBIA.

IRON.

There are numerous deposits of iron ore in this province but the production has always been irregular and desultory. It has been mined mainly as a flux for lead smelting operations. This province possesses features very favourable to the establishment of an iron industry. Systematic work on the known iron deposits would probably reveal large bodies, and there are several large fields of excellent coal. No production of iron ore is recorded this year.

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	8,372	78,587
1889	54,161	14,533		15,487	84,181
1890	49,206	22,305			76,511
1891	53,649	14,380		950	68,979
1892	78,258	22,690		2,300	103,248
1893	102,201	22,076		1,325	125,602
1894	89,379	19,492		1,120	109,991
1895	83,792	17,783		1,222	102,797
1896	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

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

IRON.

TABLE 3.

IRON.

EXPORTS OF IRON ORE.

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

*The export figures for the last four years are incorrect owing to a duplication of entries.

TABLE 4.

IRON.

EXPORTS OF IRON ORE.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
		$			$
1879	3,562	7,530	1892	7,707	36,935
1880	30,524	76,474	1893	7,811	26,114
1881	44,677	114,850	1894	1,859	9,026
1882	43,835	135,463	1895	2,315	5,743
1883	44,914	138,775	1896	14	35
1884	25,308	66,549	1897	1,320	2,492
1885	54,367	132,074	1898	260	402
1886	7,502	23,039	1899	1,849	4,968
1887	23,345	71,934	1900	4,327	7,689
1888	13,544	39,945	1901*	58,401	150,657
1889	24,752	60,289	1902*	525,983	1,303,901
1890	13,811	31,376	1903*	293,510	733,230
1891	14,648	32,582	1904*	233,850	579,883

*See foot note to table 3, also table 4a, and remarks.

IRON.

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

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

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

In referring to table 3, which is made up from the Customs returns, it will be noticed that the figures of exports of iron ore for the last few years are very large as compared with the figures of production. Practically all the exports of ore are into the United States and a comparison of tables 3-4 and 4a shows wide discrepancies. This has been found to be due to an error in the Canadian returns, resulting from a duplication in export entries. The great bulk of the foreign ore consumed comes from Newfoundland and from the United States lake districts. Small quantities are also imported from Cuba, Spain and Sweden.

Pig Iron.—The total quantity of pig iron shows a slight increase over the 1903 production, although the total value has decreased. Table 5 gives as full a presentment as possible in a tabular form, of the details of the industry, giving separately the proportion of Canadian ore used, the various kinds of fuel employed, &c.

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

CALENDAR YEAR.	IRON ORE CONSUMED.		FUEL CONSUMED.						FLUX CONSUMED.		PIG IRON MADE.		
			Charcoal.		Coke.		Coal.						
	Tons.	Value.	Bushels.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Value per ton.
1887	60,434	$130,808	940,400	$48,593	30,248	$89,123	3,333	$5,877	17,171	$17,500	24,827	$366,192	$14.75
1888	54,956	102,343	804,286	41,800	28,031	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	3,644	6,525	22,122	21,909	25,921	499,872	19.28
1890	57,304	117,880	589,860	29,493	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	250,966	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	34,347	49,967	646,447	12.94
1895	93,208	218,336	789,561	31,582	48,540	139,475	3,089	5,396	31,585	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							
1897	(a) 53,658	131,705	1,031,800	43,230	(a) 35,800	71,600	.....	.....	31,273	30,258	58,007	738,701	12.73
	(b) 55,722	138,504			(b) 27,810	94,553							
1898	(a) 57,881	151,760	836,400	41,820	(a) 31,952	63,904	.....	.....	33,913	31,153	77,015	912,395	11.85
	(b) 77,107	213,165			(b) 50,407	158,783							
1899	(a) 66,384	216,322	1,928,025	87,858	(a) 44,844	134,532	.....	.....	51,826	44,286	102,940	1,377,306	13.38
	(b)120,650	402,860			(b) 64,648	193,944							
1900	(a) 71,341	184,191	1,799,737	82,408	(a) 45,021	180,084	.....	.....	52,966	39,332	96,575	1,501,698	15.55
	(b)113,042	351,382			(b) 59,345	255,892							
1901	(a)156,613	544,144	1,835,736	100,978	(a) 205,796	539,328	2,039	6,117	169,399	183,162	274,376	3,512,923	12.80
	(b)361,010	846,398			(b) 115,367	497,386							
1902	(a)125,664	429,753	2,146,623	118,275	(a) 360,593	898,518	1,615	5,006	293,594	219,295	357,902	4,243,541	11.85
	(b)559,381	964,979			(b) 112,314	494,433							
1903	(a) 82,035	247,229	2,322,030	152,717	(a) 350,190	819,016	.....	.....	277,452	249,251	297,885	3,742,710	12.56
	(b)485,911	823,147			(b) 96,540	556,091							
1904	(a)180,932	489,687	3,477,470	191,404	(a)257,182	729,585	.....	.....	211,278	177,595	303,454	3,687,985	12.15
	(b)454,671	922,594			(b)130,210	551,445							

(a) Canadian. (b) Imported.

IRON.

In the tabulated statement showing the mineral production of Canada, the production of pig iron from Canadian ore only is given. These figures have 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 eight 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
1903	71,664	286,238
1903	42,052	255,833
1904	68,297	235,157

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

Dominion Iron and Steel Company, Sydney, C.B.—Furnace plant at Sydney.

Nova Scotia Steel and Coal Company, New Glasgow, N.S.—Furnace plant at Ferrona, N.S. New blast furnace being erected at Sydney Mines, C.B.

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

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

John McDougall and Co., Montreal, Que.—Furnace plant at Drummondville, Que.

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

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

The Algoma Steel Co. Ltd.,—Sault Ste. Marie, Ont.—Furnace plant at Steelton, Ont., near Sault Ste. Marie.

IRON

The statistics of the production of 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 1904.

"The total production of steel ingots and castings in Canada in 1904 was 148,784 gross tons, against 181,514 tons in 1903, a decrease of 32,730 tons. Bessemer and open-hearth steel ingots and castings were made in each year. Almost all the open-hearth steel reported in 1903 and 1904 was made by the basic process. The direct steel castings made in 1904 amounted to 6,505 tons. Canada has not made crucible steel prior to the present year."

"The following table gives the production of all kinds of steel ingots and castings in Canada from 1894 to 1904, 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
1091	26,084
1902	182,037
1903	181,514
1904	148,784

Production of rolled iron and steel, in Canada.

"The following table gives the production of all kinds of iron and steel rolled into finished forms in Canada from 1895 to 1904.

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	180,038

"The production of Bessemer and open-hearth steel rails in 1904 amounted to 36,216 gross tons, against 1,243 tons in 1903; structural shapes, 447 tons, against 1,983 tons in 1903; cut nails made by rolling mills and steel works having cut-nail factories connected with their plants, 99,000 kegs of 100 lbs. against 118,686 kegs in 1903; plates and sheets 3,102 tons, against 2,450 tons in 1903; all other finished rolled products, excluding muck and scrap bars, blooms, billets, sheet bars and other unfinished forms, 135,243 tons, against 118,541 tons in 1903. IRON.

"The total quantity of all kinds of iron and steel rolled into finished forms in Canada in 1904 amounted to 180,038 tons, against 129,516 tons in 1903, Of the 180,038 tons of finished iron and steel reported for 1904, about 126,850 tons were rolled from steel and 53,188 tons from iron.

"On December 31, 1904, there were eighteen completed rolling mills and steel works in Canada. In addition, three plants were being built and two plants were projected Of the completed plants, two were equipped for the manufacture of steel castings only, five for the manufacture of Bessemer or open-hearth steel ingots and rolled products, and eleven for the manufacture of rolled products only. Of the building plants. one was being equipped for the manufacture of steel castings by a special process, one for the manufacture of open-hearth steel ingots only, and one for the manufacture of merchant bar-iron, railway spikes, &c. One of the projected plants is to be equipped for the manufacture of skelp and bar-iron and the other for the manufacture of wire rods.

"Of the eighteen completed rolling mills and steel works in Canada on December 31, 1904, three were located in Nova Scotia, five in Quebec, nine in Ontario and one in New Brunswick. The building plants are in Nova Scotia, Ontario and Manitoba, and the projected plants are in Ontario."

Bounties.—Bounties on iron and steel made in Canada, were provided for by the Dominion Government in 1897 (Chapter 6 of 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 payment by the Dominion Government on account of iron and steel bounties during the fiscal year ending June 30, 1904, were as

IRON.

follows, the figures having been compiled from the Auditor General's report for 1904 :—

BOUNTIES ON PIG IRON, FISCAL YEAR 1904.

Company.	On Pig Iron from Canadian Ore.		On Pig Iron from Imported Ore.		Total Bounties.
	Tons.	Bounties.	Tons.	Bounties.	
		$ cts.		$ cts.	$ cts.
Canada Iron Furnace Co., Ltd.—					
Midland, Ont.	8,766·66	23,670.06	25,392·22	45,706.01	69,376 07
Radnor Forges, Que.	5,195·95	14,029.07	1,944·26	3,499.62	17,528.69
Deseronto Iron Co.	498·00	1,344·60	9,480·00	17,064.00	18,408.60
Dominion Iron and Steel Co.	.....	.....	129,334·28	232,801·72	232,801·72
Electric Reduction Co., Ltd., Buckingham, Que.	270·38	730.02	.....	.....	730.02
Hamilton Steel & Iron Co.	18,907·45	51,050.10	32,546·82	58,584.25	109,634.35
John McDougall & Co.	1,862·63	5,029.09	.....	.....	5,029.09
Londonderry Iron & Mining Co., Ltd	10,617·25	28,666.58	.....	.....	28,666.58
Nova Scotia Steel & Coal Co., Ltd	326·74	882·16	28,291·59	50,924.87	51,807.03
	46,445·06	125,401.68	226,989·17	408,580.47	533,982.15

BOUNTY ON PUDDLED IRON BARS.

Company.	Tons.	Bounty.
		$ cts.
Hamilton Steel and Iron Co., Ltd	4,321·86	11,668 99

BOUNTY ON STEEL INGOTS.

Company.	Tons.	Bounties.
		$ cts.
Dominion Iron and Steel Co., Ltd.	85,742·37	231,504 38
Hamilton Steel and Iron Co., Ltd.	13,574·46	36,651 04
Nova Scotia Steel and Coal Co.	29,568·44	79,834 75
	128,885·27	347,990 17

BOUNTIES ON ARTICLES MANUFACTURED FROM STEEL. IRON.

Company.	Tons.	Bounties.
		$ cts.
Dominion Iron and Steel Co., Ltd.—		
Rolled round steel wire rods	637 94	3,827 64
Hamilton Steel and Iron Co., Ltd.—		
Rolled angles	2,496 89	7,490 67
Montreal Rolling Mills Co.—		
Rolled round wire rods	257 50	1,545 00
Nova Scotia Steel and Coal Co., Ltd.—		
Rolled angles	794 07	2,457 54
Rolled plates	25 11	
	4,211 51	15,320 85

The following tables 6, 7, 8, 9, 10 and 11 illustrate the Canadian export and import trade of iron and steel products. They all cover the fiscal year ending June 30, 1904.

TABLE 6.

IRON.

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

Calendar Year 1904.	Quantity.	Value.
		$
Stoves No	1,366	17,642
Sewing machines "	1,073	22,763
Typewriters "	4,240	130,115
Machinery, N.E.S $	.....	356,848
Hardware, N.E.S "	.....	120,070
Steel and manufactures of "	.....	332,932
Castings, N.E.S "	.....	61,624
Scrap iron and steel Cwt	157,182	76,125
Pig iron Tons	21,016	200,363
Total	.....	1,318,482

IRON.

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	(d) 31,637	341,259	2,780	31,171	643	4,347	23,390	244,388
1896	(d) 36,131	394,591	917	11,726	93	741	13,607	157,996
1897	(d) 25,766	291,788	2,936	35,373	238	1,362	7,903	93,541
1898	(d) 37,186	382,103	2,250	23,533	1,559	13,251	(e)48,903	534,577
1899	(d) 44,261	452,911	(f) 1,955	19,123	(f) 2,378	22,594	(e)28,352	301,268
1900	(d) 49,767	811,490	(f) 1,816	38,736	(f)13,747	150,681	(e)38,753	638,505
1901	(d) 35,293	548,033	(f) 490	7,121	(f) 4,499	51,032	(e)24,773	242,189
1902	39,978	585,077	(f) 38	726	(f) 3,048	38,958	(e)36,150	520,909
1903	91,730	1,338,574	882	16,352	(f) 7,137	94,028	(e)43,115	670,402
1904	62,515	894,728	.....	.....	(f)11,385	149,923	(e)21,027	298,806

(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) Includes iron kentledge. 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.

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 (Duty, 5 p.c.)	2,975	75,554

*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

*Iron or steel ingots, cogged 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.

IRON.

TABLE 10*a*.

IRON.

IMPORTS OF IRON AND STEEL GOODS.—1903-1904.

Fiscal Year, 1904.		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.	Cwt.	$7 per ton.	646,439	1,024,256
Castings, iron or steel, in the rough, N.E.S.	$	25 %	.....	223,362
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.	5 "	608,307	1,417,526
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	"	35 "	53,046	147,369
Malleable iron castings and iron or steel castings, N.E.S.	"	25 "	4,685	16,430
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 "	48,096	168,815
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 "	10,600	263,284
Railway fish-plates and tie plates	"	$8 per ton.	7,000	208,246
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 eye-bar blanks not punched or drilled	Cwt.	10 %	730,695	946,728
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.	48,081	82,295
Rolled iron or steel hoop, band, scroll or strip, thinner than No. 18 gauge, N.E.S.	"	5 %	38,125	71,807
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.	241,444	329,895
Rolled iron or steel plates or sheets, sheared or unsheared, and skelp iron or steel, sheared or rolled in grooves, N.E.S.	"	$7 "	197,062	305,670
Rolled iron or steel plates, not less than 30 inches in width and not less than ¼ inch in thickness, N.O.P.	"	10 %	418,838	575,932
Carried forward		.....	.....	5,781,615

TABLE 10*a*—*Continued.* IRON.

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1904.		Duty.	Quantity.	Value.
				$
Brought forward				5,781,615
Rolled iron or steel sheets No. 17 gauge and thinner, N.O.P	Cwt.	5 p. c.	235,637	509,904
Rolls of chilled iron or steel	"	30 "	3,771	11,658
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 "	382,544	557,944
Swedish rolled iron and Swedish rolled steel nail rods under half an inch in diameter for the manufacture of horse-shoe nails	"	15 "	9,234	17,095
Switches, frogs, crossings and intersections for railways	"	30 "	9,367	24,616
Steel—chrome steel	"	15 "	2,106	18,796
Steel plate, universal mill or rolled edge bridge plates imported by manufacturers of bridges	"	10 "	154,960	220,692
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 "	146,287	650,318
Iron or steel beams, sheets, plates, angles, knees and cable chains for wooden, iron, steel, or composite ships or vessels	"	Free.	40,983	66,488
Locomotive and car wheel tires of steel, in the rough	"	"	38,832	95,750
Steel for saws and straw cutters cut to shape, but not further manufactured	"	"	13,345	115,669
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	"	"	8,117	33,504
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	"	"	1,648	5,853
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	"	"	1,661	5,546
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	"	"	2,499	6,377
Carried forward				8,121,825

IRON.

TABLE 10*a*—*Concluded.*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1904.		Duty.	Quantity.	Value.
				$
Brought forward				8,121,825
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.	1,103	4,231
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	"	"	743	1,900
Steel for the manufacture of bicycle chains, imported by the manufacturers of bicycle chain for use in the manufacture thereof in their own factories	"	"	496	2,024
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	"	"	73,953	162,511
Steel springs for the manufacture of surgical trusses imported by the manufacturers for use exclusively in the manufacture thereof in their own factories	"	"	78	805
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	"	"	81,968	132,871
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	"	"	29,423	54,665
Malleable iron or steel castings, in the rough for the manufacture of scissors, and hand shears when imported by manufacturers of scissors and hand shears to be used in making such articles in their own factories, O.C	"	"	69	929
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	"	"	1,013	3,435
Total				8,485,196

TABLE 10*b*. IRON.

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1904.		Duty.	Quantity.	Value.
				$
Agricultural implements, N.E.S., viz:				
Cultivators and weeders	No.	20 %	2,682	12,468
Drills, grain seed	"	20 "	3,036	102,339
Farm, road or field rollers	"	25 "	110	4,897
Forks, pronged	"	25 "	7,788	6,325
Harrows	"	20 "	4,411	82,112
Harvesters, self binding	"	20 "	7,598	746,894
Hay tedders	"	25 "	1,148	27,439
Hoes	"	25 "	5,890	1,278
Horse rakes	"	20 "	9,042	173,044
Knives, hay or straw	"	25 "	499	220
Lawn mowers	"	35 "	4,023	14,682
Manure spreaders	"	20 "	229	16,603
Mowing machines	"	20 "	9,674	331,964
Ploughs	"	20 "	13,755	300,135
Post hole diggers	"	25 "	869	800
Potato diggers	"	25 "	187	1,245
Rakes, N.E.S	"	25 "	6,620	1,278
Reapers	"	20 "	963	48,325
Scythes	Doz.	25 "	3,858	17,126
Sickles or reaping hooks	"	25 "	527	1,127
Spades and shovels and spade and shovel blanks, and iron or steel cut to shape for the same	"	35 "	7,891	33,094
Parts of agricultural implements	$	20 "	.....	673,848
All other agricultural implements, N.E.S.	"	25 "	.....	42,100
Anvils and vises	"	30 "	.....	53,263
Cart or wagon skeins or boxes	Lbs.	30 "	107,413	4,335
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 "	25,412	69,110
Butts and hinges, N.E.S.	$	30 "	.....	58,059
Cast iron pipe of every description	Cwt.	$8 per ton	159,410	217,054
Chains, coil chains, chain links and chain shackles of iron or steel 5-16 of an inch in diameter and over	"	5 %	54,531	162,927
Chain, malleable sprocket or link belting, for binders	$	20 "	.....	30,313
Chains, N.E.S.	"	30 "	.....	88,499
Tacks, shoe	Lbs.	35 "	74,246	5,446
Cut tacks, brad sprigs, or shoe nails, double pointed, and other tacks of iron and steel, N.O.P.	"	35 "	108,476	8,182
Engines, locomotives for railways, N.E.S.	No.	35 "	200	2,431,220
Fire engines	"	35 "	10	8,235
Fire extinguishing machines	"	35 "	.....	49,596
Gasoline engines	"	25 "	563	127,851
Steam engines and boilers	"	25 "	1,129	466,919
Fittings, iron or steel, for iron and steel pipe	Lbs.	30 "	5,593,047	352,699
Carried forward		.....	.....	6,773,051

IRON.

TABLE 10*b*—*Continued.*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1904.		Duty.	Quantity.	Value.
				$
Brought forward				6,773,051
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 %	3,725,334	139,286
Hardware, viz:				
Builders', cabinet-makers', upholsterers', harness-makers', saddlers' and carriage hardware, including currycombs and horse boots, N.E.S	$	30 "		758,741
Horse, mule and ox shoes	"	30 "		6,810
Locks of all kinds	"	30 "		195,744
Automobiles	"	25 "		315,475
Machines and machinery, &c.:				
Fanning mills	No.	25 "	187	2,468
Grain crushers	"	25 "	5	115
Windmills	"	25 "	555	33,914
Ore crushers and rock crushers, stamp mills, cornish and belted rolls, rock drills, air compressors, cranes, derricks and percussion coal cutters	$	25 "		65,259
Portable machines:				
Fodder or feed cutters	No.	25 "	89	2,350
Horse powers	"	25 "	81	5,797
Portable engines	"	25 "	490	485,598
Portable saw mills and planing mills	"	25 "	30	12,522
Threshers and separators	"	25 "	660	291,774
All other portable machines	"	25 "	862	46,278
Parts of above articles	$	25 "		169,602
Sewing machines and parts of	No.	30 "	14,427	336,921
Slot machines	"	25 "	686	12,233
Machines, type-writing	"	25 "	2,734	167,299
All other machinery composed wholly or in part of iron or steel, N.O.P	$	25 "		5,191,194
Nails and spikes, composition and sheathing nails	Lbs.	15 "	34,864	4,254
Nails and spikes, wrought and pressed, trunk, clout, coopers, cigar box, Hungarian horseshoe and other nails, N.E.S.	"	30 "	257,163	16,636
Nails and spikes, cut, and railway spikes	"	3½c. per lb.	5,002,053	97,221
Nails, wire of all kinds, N.O.P	"	2½c. "	1,290,696	31,133
Pumps, N.E.S	$	25 %		202,792
Sad or smoothing, hatters' or tailors' irons, plated wholly or in part or not	"	25 "		9,464
Safes, doors for safes and vaults	"	30 "		92,890
Screws, iron and steel, commonly called 'woodscrews,' N.E.S	Lbs.	35 "	111,999	20,199
Scales, balances, weighing beams and strength testing machines	$	30 "		114,585
Skates of all kinds and parts thereof	Pairs	35 "	32,926	27,191
Stoves of all kinds and parts thereof, N.E.S.	$	25 "		365,997
Sheet iron or steel corrugated, galvanized	Cwt.	25 "	8,295	21,975
Sheet iron or steel corrugated not galvanized	"	30 "	2,267	4,817
Carried forward				16,021,585

TABLE 10*b*—*Continued.* IRON.

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1904.		Duty.	Quantity.	Value.
				$
Brought forward				16,021,585
Tubing:				
Boiler tubes of wrought iron or steel, including flues and corrugated tubes for marine boilers	Lbs.	5 %	3,933,685	375,575
Tubes of rolled steel, seamless, not joined or welded, not more than 1½ inches in diameter	"	10 "	46,281	4,418
Tubes, seamless steel, for bicycles	"	10 "	156,766	12,418
Tubing, wrought iron or steel, plain or galvanized, threaded and coupled or not, over 2 inches in diameter, N.E.S.	"	15 "	2,266,438	495,887
Tubing, wrought iron or steel, plain or galvanized, threaded and coupled or not, 2 inches or less in diameter, N.E.S.	"	35 "	2,667,098	115,991
Other iron or steel tubes or pipes, N.O.P.	"	30 "	216,668	45,461
Ware, galvanized sheet iron or of galvanized sheet steel, manufactures of, N.O.P.	$	25 "	.....	21,101
Ware, agate, granite or enamelled iron or steel hollow ware	"	35 "	.....	62,774
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 "	.....	132,702
Wire bale ties	Bundles of 250 ties	30 "	1,658	2,262
Wire cloth or wove wire and netting of iron or steel	Lbs.	30 "	1,194,526	56,366
Wire screens, doors and windows	$	30 "	.....	14,581
Wire fencing, woven, buckthorn strip and wire fencing of iron or steel, N.E.S.	Lbs.	15 "	683,562	19,169
Wire, single or several, covered with cotton, linen, silk, rubber or other material, &c., N.E.S.	"	30 "	1,135,377	193,940
Wire of all kinds, N.O.P.	"	20 "	8,170,053	202,153
Wire rope, stranded or twisted wire, clothes lines, picture or other twisted wire and wire cables, N.E.S.	"	25 "	2,443,730	173,567
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 %	3,891,056	147,719
Pen-knives, jack-knives and pocket knives of all kinds	$	30 %	.....	186,132
Table cutlery, all kinds, N.O.P.	"	30 "	.....	265,651
All other cutlery, N.E.S.	"	30 "	.....	199,997
Guns, rifles, including air guns and air rifles, (not being toys) muskets, cannons, pistols, revolvers, or other firearms	"	30 "	.....	459,878
Bayonets, swords, fencing foils and masks	"	30 "	.....	1,971
Needles of any material or kind, N.O.P.	"	30 "	.....	81,739
Carried forward				19,293,037

IRON.

TABLE 10*b*—*Continued.*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1904.		Duty.	Quantity.	Value.
				$
Brought forward	...	....	....	19,293,037
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 %	.... ..	54,277
Axes	Doz.	25 "	7,302	38,844
Saws	$	30 "	.....	189,587
Files and rasps, N.E.S.	"	30 "	.....	80,255
Tools, hand or machine, of all kinds, N.O.P	"	30 "	.....	875,080
Knife blades, or blanks, and forks of iron or steel, in the rough not handled, filed, ground or otherwise manufactured..	"	10 "	.....	82
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 "	.....	2,243,020
Anchors	Cwt.	Free	5,002	18,106
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	"	"	846,250	1,134,149
Iron or steel masts, or parts of	"	"	204	1,112
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	"	"	49,100	151,017
Steel bowls for cream separators and cream separators	$	"	.....	450,429
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.	"	"	.....	40,017
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.	"	3,797,678	4,329,363
Steel strip and flat steel wire imported by manufacturers of buckthorn and plain strip fencing, for use in their own factories in the manufacture thereof	"	"	7	27
Carried forward	.....	.....	....	28,898,402

TABLE 10*b*—*Concluded.* IRON.

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1904.		Duty.	Quantity.	Value.
				$
Brought forward				28,898,402
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.	5,710	17,204
Machinery and structural iron for beet root sugar factories	$	"		12,278
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.	"	2,080	14,653
Wire, crucible cast steel	Lbs.	"	1,518,473	74,099
Galvanized iron or steel wire Nos. 9, 12 and 13 gauge	Cwt.	"	298,822	638,513
Barbed fencing wire of iron and steel	"	"	340,396	847,019
Total				30,502,168

TABLE 11.

IRON.

IMPORTS OF PIG IRON, IRON AND STEEL GOODS, &C., FISCAL YEAR, 1903-1904.

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

——	Tons.	Value.
Pig iron	62,515	$894,728
Pig iron, charcoal		
Scrap iron, cast	11,385	149,923
Scrap steel, wrought	21,027	298,806
Ferro-manganese, &c	2,975	75,554
Iron in slabs, blooms, puddled bars, &c	10,014	216,571
Iron and steel goods partially manufactured		8,485,196
Iron and steel goods more highly manufactured*		30,502,168
Total		40,622,946

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

LEAD.

LEAD.

The Canadian production of lead for 1904 shows a large increase over the previous year, being more than double the production of 1903.

The returns show a quantity of 37,531,244 lbs. which, estimated according to our custom at the average monthly market price of the refined metal in New York, represents a value of $1,617,221. This increase is directly traceable, in a great measure, to the bounty on lead mined in Canada, offered by the Dominion Government which caused the reopening of several mines in East Kootenay.

Only two provinces contributed to the total of the production, viz., British Columbia and Ontario, but the last named province comes in only for a very small proportion.

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	165,190	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

Tables 2, 3 and 4 give statistics of the lead trade in Canada. LEAD.

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

LEAD.

TABLE 3.

LEAD.

IMPORTS OF LEAD.

Fiscal Year.	OLD, SCRAP AND PIG.		BARS, BLOCKS, SHEETS.		TOTAL.	
	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.
1880	..	...	...	...	30,298	$124,117
1881	16,236	$ 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	87,038	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, PIG 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	67,821	11,535	35,398	110,065	103,219
1894	(a)94,602	121,165	14,102	39,644	108,704	160,809

* 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.

TABLE 4. LEAD.

LEAD.

IMPORTS OF LEAD MANUFACTURES.

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

		Duty.	
1904	Lead Tea	Free.	$61,269
	" Pipe	35 p. c.	5,968
	" Shot and bullets	35 "	
	" Manufactures, N.E.S.	30 "	61,856
	Total		$129,093

Tables 5 and 6 give figures of imports of litharge, and white lead. In this connection we note that the Carter White Lead Co. who have a large plant in Chicago, U.S., are now establishing a factory in Montreal, where they will use pig lead from the Trail smelter.

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....Duty free	9,894	32,633
1892	10,384	34,343			

LEAD.

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
1887	6,998,820	233,725
1888	6,361,334	216,654
1889	7,066,465	267,236

IMPORTS OF DRY WHITE AND RED LEAD, ORANGE MINERAL AND ZINC WHITE.

Fiscal Year.	Pounds.	Value.
		$
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
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 Duty, 5 p.c.	16,925,585	662,098

As will be seen by consulting table 7 or 8, British Columbia is responsible for very nearly the total Canadian lead production. The figures for 1904 are more than double those of 1903. This is mainly due to the reopening of the St. Eugene mine in the Fort Steel division of the East Kootenay district, whose operation was materially assisted by the bounty offered by the Dominion Government. LEAD.

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	808,420	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

TABLE 8.

LEAD.

BRITISH COLUMBIA: PRODUCTION BY DISTRICTS.

——	1901.	1902.	1903.	1904.
	Pounds.	Pounds.	Pounds.	Pounds.
East Kootenay—				
Fort Steele	29,129,128	3,017,756	717,479	21,071,236
Other districts	775,016	204,652	951,296	401,022
West Kootenay—				
Ainsworth	3,788,412	3,083,039	4,299,727	3,091,648
Nelson	2,470,350	1,680,948	1,072,542	976,570
Slocan	15,025,759	13,651,144	9,880,469	10,611,227
Trail Creek				
Other districts	391,844	885,734	1,144,239	485,520
Yale	2,397	13,108	23,531	9,021
	51,582,906	22,536,381	18,089,283	36,646,244

LEAD. In Ontario the only output of lead ore was from the Hollandia mine, in the county of Hastings. This is worked by the Ontario Mining and Smelting Company who operate a smelter.

NICKEL.

NICKEL. Both in value and quantity, the nickel production shows decreases as compared with 1903. In quantity there was a falling off of 1,957,627 lbs., and in value of $783,051. This is estimating the nickel contents of the matte at the final average market price in New York, which price for 1904 was 40 cents a pound.

The production of ore, matte, etc, in 1904 was as follows:

Ore mined	203,388	tons.
Ore smelted	118,470	"
Matte made	8,924	"
Matte shipped	10,154	"
Matte in stock at end of year	17	"
Copper contents of matte shipped	2,455	"
Nickel	5,274	"
Spot value of matte shipped	$2,193,198.	

All of the nickeliferous matte is exported. According to Customs returns the exports of nickel in matte were as follows in 1904 :—

To Great Britain	2,028,908	lb.
To United States	9,204,961	"
Total	11,233,869	"

Canada is now the world's largest producer of nickel. The whole Canadian production is derived from the deposits of the Sudbury region, Ont., which occurs in eruptive rocks which Dr. Barlow classes as gabbros or norite and diorite associated with rocks of Huronian age and igneous rocks which are of more recent origin. These have been very exhaustively dealt with by Dr. A. E. Barlow in his report entitled 'On the origin and geological relations and composition of the nickel and copper deposits of the Sudbury Mining District,' which was published this year by the Geological Survey. This report is accompanied by five maps.

The chief operators of the Sudbury district are:—The Canadian Copper Company, Copper Cliff, Ont.; The Mond Nickel Company, Victoria Mines, Nipissing, Ont.; The Lake Superior Power Co., Sault Ste Marie, Ont. There are other nickeliferous deposits in Canada, but they are not being exploited. Ores bearing this metal occur in the Timiskaming region in rocks which are probably an extension of the Huronian rocks in which the Sudbury deposits are found. Nickeliferous pyrrhotite deposits have also been known for a long time in intrusive rocks found at St. Stephen, New Brunswick, as well as at

several places in the Eastern Townships of the province of Quebec. Dr. Barlow in the report mentioned above gives a short résumé of all known nickel occurrences in Canada. NICKEL.

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	38⅛c.	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

* Calculated from shipments made by rail.

TABLE 2.

NICKEL.

EXPORTS.*

Calendar Year.	Value.	Calendar Year.	Value.
1890	$ 89,568	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		

*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.

NICKEL.

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
		Duty.	
1904	Nickel anodes	10 p. c.	13,360
	Nickel*	Free.	1,322
			$ 14,682

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

ZINC.

ZINC.

Zinc mining has not yet become an established industry in Canada.

Although some shipments of ore have been made from several mines in British Columbia, no statistics of production are yet available for this province.

The production given in the table represents ore taken out in developing a zinc property in the township of Olden, county of Frontenac, Ontario. The total production of ore during the year was 533 gross tons, valued at $3,700. The owners of this property, James Richardson and Sons of Kingston, have decided to put in a milling plant as it has been found impossible to make it a paying proposition without treating the ore on the ground.

TABLE 1.
ZINC.
ANNUAL PRODUCTION OF ZINC.

Calendar Year.	Pounds.	Value.
1898	788,000	$ 36,011
1899	814,000	46,805
1900	212,000	9,342
1901	.....	.....
1902	142,200	6,882
1903	900,000	48,600
1994	477,568	24,356

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	1904Duty free	25,553	138,057
1892	21,881	$127,302			

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	1904Duty free	33,952	164,751
1892	13,909	62,550			

*Spelter in blocks and pigs.

ZINC.

TABLE 4.

ZINC.

IMPORTS OF ZINC, MANUFACTURES OF.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$ 8,327	1892	$ 7,563
1881	20,178	1893	7,464
1882	15,526	1894	6,193
1883	22,599	1895	5,581
1884	11,952	1896	6,290
1885	9,459	1897	5,145
1886	7,345	1898	10,503
1887	6,561	1899	14,661
1888	7,402	1900	11,475
1889	7,233	1901	6,882
1890	6,472	1902	6,683
1891	7,178	1903	9,754

		Duty.	
1904	Zinc seamless drawn tubing	Free.	
	" manufactures of, N.O.P	25 %	$ 12,682
	Total		12,682

The following remarks on the zinc ores of British Columbia are taken from the Report of the Minister of Mines for the province for 1904.

"Zinc ores have been receiving a great deal of attention during this past year, more particularly those of the Slocan district, but, with the exception of the ore from the Ivanhoe mine, Sandon, it could not be learned that any important amount of ore had been sold before the close of the year. In the Slocan district, zinc blende occurs with the galena ores, sometimes in considerable quantity, and usually associated with iron carbonates. Most of the concentrating mills have now been equipped so as to separate out a "zinc concentrate" from the jigs and tables. These concentrates will run from 38 to 48 per cent zinc (as zinc blende) but will carry as impurities, considered from the standpoint of a zinc ore, from 2 to 5 per cent of lead, as galena, from 5 to 15 per cent of iron, as pyrite and carbonate, and from 20 to 45 ounces of silver to the ton, with the balance gangue matter, usually highly silicious.

"Most of the zinc smelting works which are prepared to buy zinc ores are now using the Belgian furnace, in which the ore is mixed with coal or other reducing agent, placed in a clay retort, the reduced zinc being distilled off and caught in a condenser. Iron and lead are highly

objectionable in this process inasmuch as they flux with and destroy the retorts, adding greatly to the cost of the process. For this reason crude Slocan concentrates have not found a ready market and to remove these objectionable impurities two "zinc enrichment" plants are under construction, in addition to the Payne mine magnetic separator. It is believed that these impurities can be so removed, to such an extent at least, as to render them non-injurious, but the question of the silver still remains to be solved, for, as far as could be observed, it is directly included in, and a part of, the zinc blende, and cannot be separated, save by smelting or some other form of disintegration of that mineral. ZINC.

"While this silver cannot be considered as detrimental to the ore as a zinc ore, it is very difficult to separate and save the silver, and but a partial recovery can be made at the best; consequently the price offered by ore buyers seems very low for the silver contents. For this reason it has so far been found advisable by all the producers to throw as much zinc into the lead concentrates as the lead smelter will accept without a penalty, in which case the producer gets no pay for his zinc but gets a price for its silver contents which more than recoups him for his loss of zinc. These conditions apply to zinc smelting as it is usually carried on. There are, however, two or three newer processes not very widely known, which are especially adapted to such ores, but operators of these concerns are naturally only prepared to give enough for the ore to outbid the regular zinc smelter. An electric process is being developed in Vancouver which has considerable promise and which can be utilized in small units, and this may help to solve the problem by the local treatment of the concentrates.

"The ore from the "Lucky Jim" mine of the Slocan is a zinc ore, low in silver, with iron and lead as occasional impurities. About 2,000 tons of this ore were shipped to Kaslo about the end of 1904, but the sales had not been completed by the close of the year.

"There are zinc ore properties on Quatsino Sound and also near Vancouver, but so far no shipments have been made and little development has been done."

MISCELLANEOUS.

MISCELLANEOUS.

ALUMINIUM.

Aluminum.

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 used extensively now 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 alumina. The Northern Aluminium Company use bauxite imported from France and Germany.

ANTIMONY.

Antimony.

The last return of production of antimony which was received in this office was for the year 1898. Since then, however, the reports of the Department of Customs show an annual export of antimony, of which we have no record of production. The greater part of the Canadian production of antimony has been derived from the Rawdon mine, Hants county, Nova Scotia, which is owned by the Dominion Antimony Company of Halifax. This deposit is a vein some six feet wide, of which a width of some twenty inches contains stibnite, kermesite, galena and other minerals.

Other comparatively important deposits of antimony are known to occur in South Ham, Wolfe county, Que., and at Prince William, York county, N.B.

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

TABLE 2.

MISCELLANEOUS.

METALLIC.

EXPORTS OF ANTIMONY ORES.

MISCELLANEOUS.

Antimony.

Calendar Year.	Tons.	Value.	Calendar Year.	Tons.	Value.
1880.....	40	$ 1,948	1890.....	38	$ 1,000
1881.....	34	3,308	1891.....	3⅓	60
1882.....	323	11,673	1892 to 1897..	Nil.	Nil.
1883.....	165	4,200	1898.....	1,232	15,295
1884.....	483	17,875	1899.....	6¾	190
1885.....	758	36,250	1900.....	210	3,441
1886.....	665	31,490	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

TABLE 3.

MISCELLANEOUS.

METALLIC.

IMPORTS OF ANTIMONY.

cal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
880.....	42,247	$ 5,903	1892.....	180,308	17,680
1881.....	.....	7,060	1893.....	181,823	14,771
1882.....	183,597	15,044	1894.....	139,571	12,249
1883.....	105,346	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

		Duty.		
1904	Antimony, or regulus of, not ground, pulverized or otherwise manufactured.	Free.	301,882	18,228
	Antimony salts.....	"	117,061	8,884
	Total.....	.....	418,943	27,112

MISCELLANEOUS,

COBALT.

Cobalt.

According to the figures published by the Ontario Bureau of Mines' the production of cobalt in 1904 was 29 tons valued at $36,620. This was derived from two sources (1) the nickeliferos ores of the Sudbury district, and (2) the silver-cobalt-arsenides lately discovered in Coleman township. As regards the first of these sources, the production is likely to cease for the present, on account of the new processes introduced in the remodelled smelters of the Canadian Copper Company and the Mond Company in which cobalt is not recovered. But as the Ontario report remarks: "The extinction of this source of supply of cobalt, however, by no means implies the disappearance of cobalt from the list of minerals produced in Ontario. Indeed the new resources of this metal now being exploited in Coleman township are of much greater extent and value as a source of cobalt, than the pyrrhotites of Sudbury, in which it is present in small percentages only. The ores of Coleman are no doubt the richest ores of cobalt now being mined anywhere, containing as they do up to 18 per cent of the metal."

MERCURY.

Mercury.

There has been no production of mercury reported since 1897. The small production reported in 1895-1896 and 1897 was derived from the deposits situated at the western end of Kamloops Lake, British Columbia. These deposits consist of quartz veins, containing pockets of cinnabar. These veins are in a zone of decomposed feldspar in a wavy baser country 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. MISCELLANEOUS.

METALLIC.

IMPORTS OF MERCURY. 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 ...Duty free	151,107	80,658

PLATINUM.

In the report on the nickel and copper deposits by Dr. A. E. Barlow it is estimted that the ores of the Sudbury district contain 1·25 oz. of the platinum group metals per ton of nickel contents. On this assumption the value of the platinum contents of the ore extracted from the deposits up to 1904 would be over $800,000. Platinum.

The report of the Ontario Bureau of Mines for 1904 gives the following :—

"The fact that platinum has been recovered from Sudbury ores as part of their commercial treatement has only recently been made public, and the successful extraction of quantities so minute is a tribute to the perfection at which modern metallurgical processes have arrived..... The yield of this rare metal for 1904 is returned at 530 ounces, which at $19.50 had a value of $10,452. In 1902 and 1903 the quantities

* See report on the origin, geological relations and composition of the nickel and copper deposits of the Sudbury mining districts by Barlow. Annual Report Geological Survey of Canada. Vol. XIV, Part H.

MISCELLANEOUS. Platinum.

obtained were considerably larger, being for the former year, 2,375 ounces and for the latter 1710 ounces, of the value at the above price per ounce, of $46,312 and $33,345 respectively.....

The above quantities (for 1902-1903 and 1904) were recovered, not only from the mattes treated during the respective years, but also from the residues or accumulations of several years, so that no data exist for estimating the tonnage of the ore from which they were taken, or how much was obtained from the matte in any one year."

TABLE 6.

MISCELLANEOUS.

METALLIC.

ANNUAL PRODUCTION OF PLATINUM.

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

TABLE 7.

MISCELLANEOUS.

METALLIC.

IMPORTS OF PLATINUM.

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

* 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.

In the above table, the production of the years previous to 1902, has been obtained from placer workings of the Similkameen district of British Columbia. The 1902-3-4 production has been derived, to a large extent, from the Sudbury ores as above mentioned. A small quantity also comes from British Columbia. MISCELLANEOUS.

PALLADIUM.

It has been known for a long time that palladium was present in the nickel ore of the Sudbury district, but 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.) Palladium.

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 last 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 quite frequent. We give in the table below, figures relating to the Canadian tin trade. Tin.

MISCELLANEOUS.

TABLE 8.

MISCELLANEOUS.

METALLIC.

Tin.

IMPORTS OF TIN AND TINWARE.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$ 281,880	1892	$1,594,205
1881	413,924	1893	1,242,994
1882	790,285	1894	1,310,389
1883	1,274,150	1895	973,397
1884	1,018,493	1896	1,237,684
1885	1,060,883	1897	1,274,108
1886	1,117,368	1898	1,550,851
1887	1,187,312	1899	1,372,813
1888	1,164,273	1900	2,418,455
1889	1,243,794	1901	2,339,109
1890	1,289,756	1902	2,293,958
1891	1,206,918	1903	2,712,186

		Duty.	
1904	Tin crystals	Free.	$ 2,168
	Tin in blocks, pigs and bars	"	720,213
	Tin plates and sheets	"	1,461,811
	Tin foil	"	51,890
	Tin strip waste	"	2,497
	Tin and manufactures of:—		
	Tin plate in sheets, decorated	25 %	...
	Tinware, plain, japanned, or lithographed and all manufactures of tin, N.E.S.	25 %	150,978
	Total		$2,389,557

ABRASIVE MATERIALS.

The mineral substances mined under this head in Canada result from the working of the several grindstone quarries of Nova Scotia and New Brunswick and of the products of the corundum mines of Eastern Ontario. In 1904 the total value of all classes of products resulting from these activities aggregated—spot values—$152,327.

Grindstone.—A production of 4,649 tons valued at $42,782, was obtained in 1904, which is somewhat less than that for 1903. There has been comparatively little variation in the output for the past ten years.

Corundum.—The shipments of grain corundum in 1904 reached a total of 993 tons valued at $109,545 or 5½ cents per pound. The output of the corundum mills, however, was much greater than the sales, being about 1,554 tons. The difference was held in stock at the close of the year,

Statistics of production since 1900 are as follows:—

		Quantity.	Value.
1900	grain corundum	3 tons.	$ 300
1901	"	444 "	53,115
1902	"	768 "	84,465
1903	" and corundum ore	970 "	80,180
1904	"	993 "	109,545

The Canada Corundum Company operated the Craig mine in the township of Raglan, Renfrew county, during the whole year, employing about 170 men, They have a large, well equipped mill, operated by both steam and waterpower for concentrating the ore and grading the grain corundum. The mill was operated for about ten months the other two months being spent on construction work. The output of this company for the past three years has been as follows:

—	1901.	1902.	1903.	1904.
Corundum-bearing rock. treated	4,134 tons.	7,996 tons.	8,877 tons.	26,822 tons.
Grain corundum, graded	868,590 lbs	1,611,100 lbs	1,678,833 lbs	3,159,732 lbs
Grain corundum sold in Canada	171,537 lbs	211,887 lbs	169,011 lbs	232,387 lbs
Grain corundum exported to England	20,331 "	176,342 "		121,944 "
Grain corundum exported to United States	576,402 "	784,947 "	1,236,695 "	1,129,601 "
Grain corundum exported to Europe	5,320 "	362,554 "		353,358 "
Total sales	773,590 "	1,535,730 "	1,405,706 "	1,837,290 "

ABRASIVE MATERIALS.

TABLE 1.
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 87
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

TABLE 2.
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

* Including stone for the manufacture of grindstones.

TABLE 3.
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	12,803
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 Grindstones not mounted and not less than 36 inches in diameter	15 p.c.		8,144
1904 Grindstones N.E.S.	25 p.c.		7,895
			46,039

TABLE 4.
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	1604*	35
1892	1,464		

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

ABRASIVE MATERIALS.

TABLE 5.

ABRASIVE MATERIALS.

IMPORTS OF EMERY.

Fiscal Year.	Emery. *a.*	Mfrs. of Emery. *b.*
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

a Emery in bulk, crushed or ground. Duty free.
b Emery wheels and manufactures of emery. Duty 25 p.c.

TABLE 6.

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

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

ASBESTUS.

ASBESTUS.

The Canadian production of asbestus is entirely derived from the province of Quebec. This mineral occurs in this province in connection with rocks of two different ages. In the Eastern Townships it is found in the serpentines which are classed in 'Quebec group' rocks. The centres of production for those deposits are Thetford, Black Lake, East Broughton and Danville. In the district to the north and north-east of Ottawa, asbestus is found in serpentinous and crystalline limestone of Laurentian age. However, only the Eastern Townships deposits are worked at present and they are responsible for the total Canadian output.

The sales of asbestus in 1903 and 1904 were as follows according to returns received by the Department:

	1903		1904	
	Tons.	Value.	Tons.	Value.
Crude mineral	3,134	$361,867	4,410	$534,874
Mill Stock	27,995	554,021	31,201	678,628
Asbestic	10,548	13,869	12,854	12,850
	41,677	929,757	48,465	1,226,352

Mr. Obalski, Inspector of Mines for the province of Quebec, reports the production in 1902, 1903 and 1904 as follows:—

Grade of product.	1902	1903	1904
	Tons.	Tons.	Tons.
1st class crude	1,319	930	1,645
2nd "	3,131	2,354	2,727
Fibre	15,502	9,650	7,771
Paper stock	10,682	16,327	23,336
	30,634	29,261	35,479
Asbestic	9,764	9,906	13,149
	40,398	39,167	48,628

The figures show a marked increase over the 1903 production, both in quantity and in value. The average price per ton has also been higher owing to a greater proportion of the first and second class products, although the tonnage of the mill stock, the value of which is much inferior, is also higher than the previous years. The prices of asbestus cover a wide range, from $18 or $20 a ton for the mill stock to $175 or $200 for the best first-class mineral. It is therefore not to wondered at that the average price per ton shows important variations from year to year, more especially if the production of asbestic which sells for $1 per ton, be taken into account.

ASBESTUS.

The following tables give the condition of the asbestus industry and figures of exports and imports for several years back.

TABLE 1.

ASBESTUS.

PRODUCTION.—1896 TO 1904.

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

ASBESTUS.

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	63.25
1888	4,404	255,007	57.90	70.56
1889	6,113	426,554	69.77	64.44
1890	9,860	1,260,240	127.81	75.52
1891	9,279	999,878	107.75	70.07
1892	6,082	390,462	64.19	69.35
1893	6,331	310,156	49.02	57.24
1894	7,630	420,825	55.15	59.82
1895	8,756	368,175	42.05	56.66

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

ASBESTUS.

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

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

Details of the industry, mines in operation during 1904, description of mills, etc., will be found in the yearly report of the Inspector of Mines for the Province of Quebec. It is stated that during 1904, there were 1775 workmen employed for periods of from 5 to 12 months, receiving $460,000 in wages.

Below is given a list of companies engaged in asbestus mining or in the asbestus trade :—

Bell's Asbestus Company Ltd., Geo. R. Smith, Mgr., Thetford Mines, Que.

King's Asbestus Mines, B. Bennett, Mgr., Thetford Mines, Que.

Johnson's Company, Thetford Mines, Que,

Beaver Asbestus Company, Ltd., C. H. Van Nostrand, Secretary, 220 Broadway, New York.

Standard Asbestus Company, Ltd., R. T. Hopper & Co., Montreal, Que.

Manhattan Asbestus Company, Black Lake, Que.

Glasgow and Montreal Asbestus Company. Black Lake, Que.

Canadian Asbestus Company, B. Marcuse, secretary, Montreal, Que.

Union Asbestus Mines, Black Lake, Que.

Black Lake Chrome and Asbestus Co., 1724 Notre Dame St., Montreal, Que.

James Reed, M.D., Reedsdale, Que.

American Asbestus Company, Ltd., Black Lake, Que.

Asbestus and Asbestic Co., Ltd., Danville, Que.

Quebec Asbestus Co., Sherbrooke, Que.

Broughton Asbestus Co. East Broughton Sta., Que.

Brompton Lake Asbestus Co., B. Greenshield, Montreal, Que.

Ottawa Asbestus Mining Co., Ottawa, Ont.

Syracuse Asbestus Company, Black Lake, Que.

COAL.

Coal. The production of coal for the year 1904 reached a total tonnage of 8,254,595 tons representing a value of $16,592,231. This amount represents 27 per cent of the total mineral production of Canada for the year. For the first time since 1897, coal has regained the first place as contributor to our total mineral production. It was in that year that the discovery of gold in the Yukon began to increase the figure of output of that metal to an extent which made coal take a second place among the minerals which contributed the largest proportional values. However, there has been since, a steady increase of the coal figures from year to year, while on the other hand the Yukon gold production, after having reached a zenith in 1900, has since shown signs of diminution, and this year the total gold stands slightly below coal in the table of proportionate values of different mineral products. (*See* Introduction).

In the tables which follow, 1, 2 and 3, statistics are given which allow comparison of the coal production of 1904 with that of the previous year.

TABLE 1.

COAL.

PRODUCTION BY PROVINCES, 1902, 1903 and 1904.

Province.	1902.		1903.		1904.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
		$		$		$
Nova Scotia.....	5,161,316	9,216,636	5,653,338	10,095,246	5,596,241	9,993,288
British Columbia	1,808,441	4,844,040	1,676,581	4,490,844	1,862,625	4,989,174
North-west Territories including Yukon	478,129	1,110,521	614,445	1,316,743	786,617	1,591,545
New Brunswick.	18,795	39,680	16,000	40,000	9,112	18,224
Total.....	7,466,681	15,210,877	7,960,364	15,942,833	8,254,595	16,592,231

Coal.

Table 2.

Coal.

Production. Comparison of 1903 and 1904.

Province	Increase or Decrease.					
	Tons.	Per cent.	Value. $	Per cent.		
Nova Scotia	*d* 57,097	*d* 1·01	*d* 101,958	*d* 1·01		
British Columbia	*i* 186,044	*i* 11·09	*i* 498,330	*i* 11·09		
North-west Territories including Yukon	*i* 172,72,	*i* 28·02	*i* 274,802	*i* 20·87		
New Brunswick	*d* 6,888	*d* 43·05	*d* 21,776	*d* 54·44		
Dominion	*i* 294,231	*i* 3·7	*i* 692,050	*i* 4·07		

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* 368,726	*d* 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	12,699,243	1 96	*i* 709,006	*i* 12·3
1902	7,466,681	15,210,877	2 04	*i* 980,356	*i* 15·1
1903	7,960,364	15,942,833	2 00	*i* 493,683	*i* 6·6
1904	8,254,595	16,592,231	2 01	*i* 294,231	*i* 3.7

The percentage of production to be credited to the several provinces at various periods since 1874 is shown in the following table :— COAL.

Province.	1874.	1880.	1890.	1898.	1899.	1900.	1901.	1902.	1903.	1904.
	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.
Nova Scotia.	91	79	71	61·4	63·9	62·7	64·1	69·1	71·0	67·8
B. Columbia.	8	20	25	30·3	29·0	31·0	29·6	24·2	21·0	22·5
N. W. Territories .. New Bruns.	.....	.....	4	8·3	7·1	6·3	6·3	6·7	8·0	9·7

A glance at the above tables will give a general idea of the Canadian coal industry, such as the proportion contributed by each province, the increases and decreases for 1904 over 1903 etc.

The total tonnage shows an increase of 294,231, equal to 3·7 per cent, for which British Columbia and the Northwest Territories are wholly responsible. The two eastern provinces, Nova Scotia und New Brunswick, show slight decreases. However, the decreases are unlikely to be permanent, as they are almost wholly due to a decrease in the output of two of the largest operators, who have been actively pushing their development work, to the detriment of the production.

In the Northwest Territories the increase has been due to a growing activity evenly distributed over the different fields. A great part of the production is used for domestic purposes, and this market of course is growing from year to year as the country becomes more and more settled. The produce of the mines is practically the only fuel available over immense tracts of agricultural and ranching country,

In British Columbia the increase is proportionately distributed among the two producing fields of Vancouver Island and Crows Nest Pass. In the former field, the increase is due to a larger Canadian consumption of coal and somewhat greater exports, whereas in the Crows Nest, an increase in the manufacture of coke is responsible for the higher figure.

COAL.

The following tables give the statistics of exports and imports 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	1889	665,315	89,294
1874	310,988	12,859	1890	724,486	82,534
1875	250,348	14,026	1891	971,259	77,827
1876	248,638	4,995	1892	823,733	93,988
1877	301,317	4,829	1893	960,312	102,827
1878	327,959	5,468	1894	1,103,694	89,786
1879	306,648	8,468	1895	1,011,235	96,836
1880	432,188	14,217	1896	1,106,661	116,774
1881	395,382	14,245	1897	986,130	101,848
1882	412,682	37,576	1898	1,150,029	99,189
1883	486,811	44,388	1899	1,293,169	101,004
1884	474,405	62,665	1900	1,787,777	62,776
1885	427,937	71,003	1901	1,573,661	53,894
1886	520,703	78,443	1902	2,090,268	23,453
1887	580,965	89,098	1903	1,954,629	27,138
1888	588,627	84,316	1904	1,557,412	27,308

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	309,158	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.

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	3,197,539	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			

*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	1,933,283	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			

*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 Tsade and Navigation Report, no explanation is available.

COAL.

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			

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

Ontario is of course largely dependent on imports from the United States for its supply of bituminous coal. Western Quebec aud Manitoba also import large quantities. This is mainly used in local industries. For domestic use the eastern provinces are altogether dependent on the anthracite from the United States, whereas the western provinces derive part of their domestic supply from the Cascades coal fields on the eastern slope of the Rocky Mountains through which runs the Canadian Pacific Railway, where a very good quality of anthracite is produced, and from some parts of the coal fields along the Crows Nest Pass Railway branch ; which last source yields a bituminous coal, high in fixed carbon, greatly prized for household purposes.

To offset the imports from the United States, both Nova Scotia and British Columbia shew a substantial coal export trade the main market for which, are the seaboard ports of the Atlantic and of the Pacific coasts, although quite an appreciable quantity is also shipped to Montana by rail, from the Crows Nest field.

To sum up, however, while only about half the quantity of coal consumed in Canada is derived from Canadian mines, such quantities are exported that we actually produce about 60 per cent of our requirements. The following statement will show at a glance the comparison between the Canadian imports, exports, and consumption of coal during the year 1904. It is of course to be regretted that so much coal has to be imported, when we have unlimited supplies of it, but the middle provinces of Canada are so distant from the producing Canadian coal fields, that they will always have to draw their supply chiefly from the less remote United States coal districts.

Production, Table 3	8,254,595	
Exports of coal the produce of Canada, Table 4	1,557,412	
Home consumption of Canadian coal		6,697,183
Imports of bituminous, anthracite and coal dust, Tables 6, 7 and 8	6,936,959	
Exports of coal not the produce of Canada	27,308	
Home consumption of imported coal		6,909,651
Total consumption of coal in Canada		13,606,834

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

If the consumption of coal is to be regarded as one of the indices of prosperity of a country, the tab'e above will show gratifying results. Not only has the total tonnage used, greatly increased, but the per capita consumption shows from year to year a steady growth, which for the last decade does not once show retrogression.

NOVA SCOTIA.—The total production of Nova Scotia, shows a slight decrease over that for the previous year. This, however,is not to be taken as a sign of decreasing activity in the coal industry of the province. The companies which are mainly responsible for the lower figure, are two of the very important producers, viz., the Dominion Coal Company in Cape Breton county, and the Acadia Coal Company in Pictou county. With great foresight, these two companies have been pushing the development work of their collieries, and next year it is expected that the output will more than make up the slight falling off of this year.

Table 10.

Coal.

Nova Scotia:—Output, Sales, Colliery Consumption, and Production.

Calendar Year.	Output, Tons, 2,240 lbs.	Sales, Tons, 2,240 lbs.	Colliery Consumption, Tons, 2,240 lbs.	Production* Tons 2,240 lbs.	Output, Tons, 2,000 lbs.	Sales, Tons, 2,000 lbs.	Colliery Consumption, 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	$1,568,446
1873	1,051,467	881,106	108,398	989,504	1,177,643	986,839	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	830,905	874,905	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	98,841	785,906	848,396	769,513	110,702	880,215	1 75	1,375,339
1878	770,603	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	1,353,469
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	1,529,708	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	1,389,295	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	159,512	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	1,963,286	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	196,206	2,257,126	2,520,707	2,308,231	219,751	2,527,982	1 75	3,949,970
1895	1,999,756	1,793,098	193,639	1,986,737	2,239,727	2,008,270	216,875	2,225,145	1 75	3,476,790
1896	2,292,675	2,046,828	192,975	2,239,803	2,567,796	2,292,447	216,132	2,508,579	1 75	3,919,655
1897	2,340,031	2,044,672	181,716	2,226,388	2,620,835	2,290,032	203,522	2,493,554	1 75	3,896,179
1898	2,262,656	2,121,126	167,428	2,288,554	2,534,175	2,375,661	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	2,950,067	198,755	3,148,822	2 00	5,622,898
1900	3,298,791	2,998,737	236,563	3,235,300	3,694,646	3,358,585	264,951	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	4,158,068	1 75	6,496,982
1902	4,725,480	4,229,120	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	10,095,246
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

* 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.

TABLE 11.

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.....	154,643	122,989	179,234	151,502	813,719	526,038	44,706	25,334
2nd "	198,426	173,046	179,004	157,538	1,116,540	1,029,237	90,231	64,936
3rd "	177,815	156,461	171,563	157,501	1,092,956	1,153,323	111,657	89,858
4th "	200,432	168,673	181,127	155,817	950,218	904,571	85,552	61,125
Total, 1904.....	731,316	621,169	710,928	622,358	3,973,433	3,613,169	332,146	241,253
" 1903.....	679,332	590,171	792,164	695,120	4,073,824	3,590,565	296,110	237,750

Coal.

Table 12.

Coal.

Nova Scotia:—Output by Collieries during the Calendar Year 1904.

Colliery.	Tons, 2,000 lbs.	Colliery.	Tons, 2,000 lbs.
Cumberland County.		*Inverness County.*	
Maritime Coal Co.....	54,053	Port Hood Coal Co.....	84,825
Fundy Coal Co.....	11,326	Mabou Coal Mining Co...	6,792
Canada Coal & Railway Co.	44,717	Inverness Ry. and Coal Co.	233,502
Minudie Coal Co.....	43,174	*Victoria County.*	
Ripley & Blenkkorn	2,032	Cape Breton Coal Co.....	7,027
Cumberland Ry. & Coal Co.	566,708	*Cape Breton County.*	
Strathcona Coal Co.	9,306	Sydney Coal Co..... ...	8,138
Pictou County.		Dominion Coal Co.....	3,386,345
		N. Scotia Steel & Coal Co.	533,703
Acadia Coal Co.....	344,417	Gowrie and Blockhouse collieries.....	45,247
Intercolonial Coal Co.	297,427		
Nova Scotia Steel and Coal Co	69,084	Total.....	5,747,823

The Dominion Coal Company has made a start towards developing the large submarine areas which they hold along the eastern coast of Cape Breton. After a series of conferences between the government mining inspector and the company's officials an agreement was reached as to size of pillars and rooms, main ways, barriers, thickness of corners, etc., both the safety of the workmen and the interests of the company having been considered.

The Dominion Coal Company is also opening up a new vein called Dominion No. 6 on the tongue of land between Big Glace Bay and Schooner Pond. This will be worked by slopes on the Phelan Seam. It is expected to be in shipping order in the spring of 1905. All the other collieries of the company worked steadily during the year.

The Cape Breton Coal, Iron and Railway Company have been going on with their development work at Cochrane Lake. The intention is to establish a large modern colliery; a town site (Broughton) has been laid out and a spur of railroad is being built to connect the mine with the Sydney and Louisburg Railway.

All the other mines of the Island of Cape Breton, produced steadily.

In Pictou county, the Acadia Coal Company did a great deal of development work, somewhat to the detriment of the output. This company is now sinking a pair of shafts to tap the different seams of the basin, and the intention is to ultimately concentrate all

the hoisting operations on this point. The other companies of this district, produced steadily. COAL.

In Cumberland county, the heaviest producer is the Cumberland Railway and Coal Company, who operate the Spring Hill mines. Their production shows an increase over last year.

The Canada Coal and Railway Company, Joggins Mines, experienced a great deal of trouble on account of a fire and a strike. The output was materially affected by these causes, and is much lower than that of last year. The Chignecto colliery has been taken over by the Maritime Coal and Railway Company, Ltd., who have doubled last year's production and who pushed development work very actively.

The following table shows the markets to which the Nova Scotia coal finds its way. It will be observed that 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	468,658	9·9	727,122	14·2	918,822	18·0
Nova Scotia, transported by sea	1,175,644	24·8	977,756	19·1	724,289	14·2
Total, Nova Scotia	1,644,302	34·7	1,704,878	33·3	1,643,111	32·2
New Brunswick	358,664	7·6	435,537	8·5	474,053	9·3
Prince Edward Island	70,316	1·5	88,649	1·7	95,177	1·9
Quebec	1,492,902	31·5	1,609,205	31·5	1,916,384	37·6
Newfoundland	118,041	2·5	155,751	3·1	155,794	3·1
United States	1,004,650	21·2	1,009,420	19·7	730,658	14·3
West Indies	6,700	·1	.....	.....	.....	.....
Other countries	41,039	·9	110,167	2·2	82,772	1·6
Total	4,736,614	100·0	5,113,607	100·0	5,097,949	100·0

NEW BRUNSWICK.—The greater proportion of the New Brunswick production is derived from the Grand Lake district, which has now greatly increased shipping facilities, owing to the completion of the

Coal.

railroad which connects Newcastle and Minto to Norton on the Intercolonial Railroad. Besides this, a great deal of coal is shipped during the summer by barges to St. John and Fredericton. The coal operations in the district are on a small scale, the seams are thin, and a great deal of dead work has to be done to allow sufficient height to work.

Some work has also been done in Kent county, the Coal Branch district, and a spur of railroad has been built, which should be a great help to the industry.

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

TABLE 15. COAL.

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	1,591,545	2 02

NORTH-WEST TERRITORIES.—The production, as may be seen by glancing at table 15, is yearly increasing at a rapid rate, following in this the development of this part of Canada. In the North-west Territories, coal mining is mainly carried on in the Estevan district, which is in the south-eastern corner of Assiniboia; on the Crows Nest Branch of the Canadian Pacific Railway, between Lethbridge and the Rocky Mountains; in the Cascade Basin on the main line of the C.P.R., and around Edmonton. In each of these districts, great developments have taken place during 1904, and the production next year will be considerably increased. In the Estevan field the heaviest producers are the Souris Coal Company. But the C.P.R. Mining and Metallurgical Department are doing a great deal of development and constructing an important surface plant at Bienfait.

Along the Crows Nest Pass Railway, several new collieries are being added to the old producers. The International Coal and Coke Company are working very actively at their Coleman colliery, where they are putting up a very modern and complete plant. The Breckenridge Lund Coal Company intend to establish at Lundbreck a complete and up-to-date colliery. Among the older producers, the Lethbridge colliery has worked very steadily. The Frank colliery, of the Canadian American Coal and Coke Company, which had been so seriously

COAL.

affected by the great landslide of April, 1903, has again started to ship, and is now in good working order. The West Canadian Colliery Company has worked two collieries, at Lille and Bellevue, near Frank. At the Bellevue colliery, the work has been mainly of a development nature. In the Cascade Basin, the mine at Canmore continued to produce steadily. One of the features of the year, has been the abandonment of the mine at Anthracite, which had been a good producer for a great many years. The product of the mine was an anthracite mainly used for domestic purposes. This kind of coal will in the future be mined by the Pacific Coal Company, who are establishing a large colliery at Bankhead, three miles north of Banff.

The mines in the vicinity of Edmonton do not show any special features. They worked more or less steadily throughout the year. There is little doubt, however, that a large and steady increase of the coal production of the North-west Territories may be looked forward to, following the growth and development of that part of Canada.

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.* Tons. 2,240 lbs.	PRODUCTION.* Tons, 2,000 lbs.	Price per ton, 2,240 lbs.	Value.
						$	$
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	From 1836 to 1873 inclusive, the output is taken as production.			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	56,038	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.....	1,029,077	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	1,263,680	3 00	3,384,858
1899.....	1,306,324	526,058	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

*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.

COAL.

For British Columbia the total figures of production for 1904 show a substantial increase over 1903. The increase is mainly due to the larger amount of coal used in making coke. Exports of coal to the United States have slightly fallen off while on the other hand the exports of coke to that country shows a very large increase.

Statistics of coal production for 1904 are given in the annual report of the Minister of Mines as follows :—

SALES AND OUTPUT FOR YEAR. Tons of 2240 lbs.	Tons.	Cwt.	Tons.	Cwt.
Sold for consumption in Canada	537,744			
" export to U.S.A.	532,436			
" " to other countries	1,157			
Total sales			1,071,337	
Used under colliery boilers, &c.	159,651			
Used in making coke	432,070			
Total for colliery use			591,721	
Stock on hand first of year	8,130			
" " last of year	30,770			
Difference added to stock during the year			22,640	
Output of collieries for year			1,685,698	

Statistics of labour and wages are given in the same report as follows :—

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	89	$ 6 87	51	$ 4 50	140	$ 5 68
Whites—						
Miners	1,614	3 75			1,614	3 75
Miners' helpers		2 75				2 75
Labourers		2 87		2 50		2 68
	1,378		547		1,925	
Mechanics and skilled lab.		2 62		3 62		3 02
Boys		2 87		1 33		1 60
Japanese	17	1 37	28	1 25	45	1 31
Chinese	181	1 37	549	1 25	729	1 31
Totals	3,278		1,175		4,443	

COAL.

Only three fields in British Columbia are yet producing, viz., the Nanaimo field and the Comox or Cumberland field, both of which are situated on the east coast of Vancouver Island, and the Crows Nest Pass field in the East Kootenay district. On Vancouver Island the two larger companies operating are, the Western Fuel Company and the Wellington Colliery Company, who ship almost entirely by water, the market being nearly equally divided between American and Canadian ports. In the Crows Nest Pass only one company is producing at present, the Crows Nest Pass Coal Company, which has three collieries, viz. at Coal Creek, Michel and Carbonado. About two-fifths of their output is used for making coke and one-quarter exported to the United States by rail, the balance being consumed in Canada.

There exist other coal fields in British Columbia, some of which could easily be developed, should the demand arise. Even now, in the Nicola Valley, extensive boring and development work is going on. In 1904 there were at least five companies who had started operations in this district. Dr. R. W. Ells has reported at length on these coal fields, in the Summary report of the Geological Survey for 1904 (pages 42 to 69).

Exploration work has been pursued in the Skeena district and extensive seams are reported to have been discovered. These fields, however, will necessarily remain dormant until the construction of the Grand Trunk Pacific line and spurs.

The following figures are interesting as showing the sources of the coal which supplies the Californian market. The very important falling off in the imports, is due to the introduction of crude oil as fuel for a great many purposes.

Whence derived.	1901.	1902.	1903.
	Tons, 2,240 lbs.	Tons, 2,240 lbs.	Tons, 2,240 lbs.
British Columbia	710,330	591,732	289,890
Australia	175,959	197,328	276,186
England and Wales	52,270	95,621	61,580
Scotland		3,600	3,495
Eastern (Cumberland and Anthracite)	27,370	24 133	13,262
Seattle (Washington)	240,574	165,237	127,819
Tacoma "	433,817	209,358	256,826
Mount Diable, Coos Bay and Tesla	143,318	111,209	84,277
Japan and Rocky Mountains	51,147	47,380	102,219
Totals	1,834,785	1,445,598	1,215,554

COAL.

We give below a list of the principal coal producers in Canada.

NOVA SCOTIA—

Dominion Coal Company	Glace Bay, C.B.
Nova Scotia Steel and Coal Company	Sydney Mines, C.B.
Cape Breton Coal, Iron and Railway Co'y	Broughton, C.B.
Gowrie and Blockhouse Collieries	Port Morien, C.B.
Sydney Coal Company, Ltd	Sydney Mines, C.B.
Cape Breton Coal Mining Co	Newcampellton, C.B.
Inverness Railway and Coal Co	Inverness, C.B.
Port Hood Coal Company	Port Hood, C.B.
Mabou Coal Mining Co	Mabou, C.B.
Nova Scotia Collieries, Ltd	Chimney Corner, C.B.
Intercolonial Coal Mining Company	Westville, N.S.
Acadia Coal Company, Ltd	Stellarton, N.S.
Cumberland Railway and Coal Co. Ltd	Springhill, N.S.
Canada Coals and Railway Co. Ltd	Joggins Mines, N.S.
Minudie Coal Company, Ltd	River Hebert, N.S.
Strathcona Coal Company	" "
Maritime Coal Company	Chignecto, N.S.
Ripley and Blenkhorn	" "
Fundy Coal Company	Lower Cove, N.S.

NEW BRUNSWICK :—

New Brunswick Coal and Railway Company	Norton, N.B.

NORTH-WEST TERRITORIES :—

Alberta Railway and Irrigation Company	Lethbridge, Alta.
The Canadian American, Coal and Coke Co.	Frank, Alta.
West Canadian Collieries	Blairmore, Alta.
International Coal and Coke Company	Coleman, Alta.
H. W. McNeil Company	Canmore, Alta.
Breckenridge and Lund Coal Co	Lundbreck, Alta.
Pacific Coal Company	Bankhead, Alta.
C.P.R. Mining and Metallurgical Dept	Bienfait, Assa.
Souris Coal Company	Coalfields, Assa.
Roche Percee Coal Mining Company	Roche Percee, Assa
Eureka Brick and Coal Co	Estevan, Alta.
Edmonton Coal Co	Edmonton, Alta.
Mays Coal Mining Co	" "
James R. Stewart Mining Co	" "
The Knee Hill Coal Co	Knee Hill "

Coal.

British Columbia :—

The Crows Nest Coal Co.....Fernie, B.C.
The Western Fuel Co.....Nanaimo, V.I., B.C.
Wellington Colliery Co.....Ladysmith, B.C.
The Nicola Valley Coal Co.....Spokane, Wash., U.S.A.
The Coutlee Coal and Iron Co.....Colfax, Was. U.S.A.
The Nicola Coal and Iron Co.....Vancouver, B.C.
The Nicola, Kamloops and Similkameen Coal and Railway Co.....Ottawa, Ont.
The Diamond Vale Coal and Iron Mines, Ltd..Vancouver, B.C.

Yukon District :—

Coal Creek Coal Co., Ltd.....Dawson, Yukon.
North American Transportation and Trading Co.
Cliff Creek Mines..... " "
Alaska Exploration Co. Rock Creek Mine..... " "
R. S. Ames and Geo. Miller, Five Fingers Mine. " "
White Horse Coal Co.....White Horse, "

COKE.

The total production of coke for the year 1904 shows a tonnage inferior to that of 1903, but nevertheless the total value has materially increased. This is due to the fact that the British Columbia production has grown very much, and the value per ton is greater in the west than on the Atlantic coast,

Table 1.

Coke.

Annual Production.

Coke.

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

COKE.

The figures show a diminution in quantity of 7,235 tons. Taking the production by provinces, we find that Nova Scotia comes in for a rather heavy decrease of 95,818 tons. This is due to several causes, the main one being the decrease in the activity of the operations of the Dominion Iron and Steel Company, due to the strike of their workingmen, during which, all work was practically suspended. A renewed activity is looked forward to for the next year.

TABLE 2.

COKE.

PRODUCTION OF COKE BY PROVINCES.

Calendar Year.	Nova Scotia.		British Columbia.		N. W. Territories.	
	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

The coke production of the North-west Territories, which has been insignificant until this year. is now becoming quite important. The largest contributor is the International Coal and Coke Company of Coleman, who have a battery of 86 beehive coke ovens.

The West Canadian Colliery Company have 28 coke ovens in operation; these are of the Bernard type and the gas is used under the boilers. They are the only ovens of the by-product type worked in the West.

In British Columbia, we note a very large increase in the coke production, for which the Crows Nest Pass Coal Co is mainly responsible.

As remarked by the Provincial Mineralogist in his report for 1904, the consumption of coke by the British Columbia smelters has remained

about the same as in 1903, but the export has increased chiefly owing to the opening up of markets in Montana through the completion of the branch of the Great Northern Railway. The ovens of the Crows Nest Pass Coal Company have not been run at their full capacity, so that the limit of the present market seems to have been reached, but there is every indication that it will be held during the coming year. 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

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	141,284	362,826
1887	15,110	56,222	1900	187,878	506,839
1888	25,487	102,334	1901	308,786	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 Duty free.	221,050	765,123
1892	43,499	194,429			

CHROMITE.

CHROMITE.

There was a considerable increase in the production of chromite in comparison with 1903. The returns for 1904 total up to more than $67,000, which is the largest production yet recorded and is an increase of $16,000 over 1903, and of more than $54,000 over 1902.

This mineral is mined in the Eastern Townships of Quebec, with Coleraine township as centre, the points of shipment being Black Lake, D'Israeli and Broughton on the Quebec Central Railway, The ore is graded according to its contents of sesquioxide of chromium; the first class averaging 52%. As mined it contains about 40% and has to be concentrated.

The chief market is in the United States, where it is used for the manufacture of ferro-chrome and bi-chromates, while the low grades are employed as furnace lining. The exports to this country amount to about 80 per cent of the Canadian production. The balance is mainly used by the Electric Reduction Company of Buckingham, Canada, and small quantities are also shipped to France and Holland.

TABLE 1.

CHROMITE.

ANNUAL PRODUCTION.

Calendar Year.	Tons. (2,000 lbs.)	Average price per ton.	Value.
		$ 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	67,145

* Railway shipments.

TABLE 2. CHROMITE

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

GRAPHITE.

GRAPHITE.

Returns from graphite producers show that this mineral was worked in Ontario, Quebec and New Brunswick, the relative importance of each province being in the order named.

The greater proportion of the Canadian graphite production comes from the Black Donald mine in the county of Renfrew, Ontario.

Returns of output have been received from the Anglo-Canadian Graphite Company, Ltd., of Birmingham, England. This company acquired the mine and mills of the North American Graphite Company in Buckingham township.

The total Canadian production, however, only reached $11,760, which is a considerable decrease compared with the previous year.

Table 1 shows the annual production since 1886, tables 2 and 3 give the exports and imports of graphite.

GRAPHITE.

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			

* Exports.

TABLE 2.

GRAPHITE.

EXPORTS.

Calendar Year.	Value.	Calendar Year.	Value.
1886	$ 3,586	1895	$ 4,833
1887	3,017	1896	9,480
1888	1,080	1897	4,325
1889	538	1898	13,098
1890	1,529	1899	22,490
1891	72	1900	46,197
1892	3,952	1901	35,102
1893	38	1902	24,839
1894	223	1903	43,642

		Cwt.	
1904	Crude	3,542	$ 9,609
	Manufactures of		6,958
			$16,567

TABLE 3. GRAPHITE.

GRAPHITE.

IMPORTS OF RAW AND MANUFACTURED GRAPHITE.

Fiscal Year.		Duty.	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	Plumbago, not ground, &c.	10 p.c.	$1,802		
	Black-lead	25 "	.....	$26,053	
	Plumbago, ground and manufactures of N.E.S.	25 "	.....	.....	$12,737
	Crucibles, clay or plumbago		.....	.....	28,773
	Total, 1904		$1,802	$26,053	$41,510

GYPSUM.

GYPSUM. For the last few years the production of gypsum has been very steady, showing little fluctuation. In 1904 it amounted to 345,961 tons, representing a value of $373,474. This is an increase in quantity but a decrease in the total value as compared with the previous year. The average value per ton for 1904 is $1.08.

GYPSUM.

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 Crude gypsum	322,450	245,686	·76
1904 Ground gypsum	5,068	13,155	2·60
1904 Plaster of Paris and wall plaster	18,443	114,633	6·21
Total	345,961	373,474	1·08

As usual the largest production, as to tonnage, is assigned to Nova-Scotia; this amounted to 218,580 tons, of a value of $153,600. In quantity New Brunswick follows with a tonnage of 120,991, but as a greater proportion of this is calcined to plaster of Paris the value is greater than that of the Nova Scotia production; it is valued at $187,524. Both of these provinces possess practically inexhaustible quantities of gypsum in the immense deposits of lower carboniferous age, and the supply is only limited by the demand. In Ontario small quantities of gypsum are obtained from the deposits along the Grand river, which belong to the Onondaga formation. In 1904 the tonnage was 2,390, valued at $18,350. It is utilized for the most part in the manufacture of wall-plaster and other materials such as kalsomine, etc., hence its comparatively high value per ton. The same remark applies to Manitoba where gypsum has been quarried for a few years past.

TABLE 2. GYPSUM.

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	190,991	187,524	2,390	18,350	4,000	14,000

The greater part of the Canadian production of gypsum is exported to the United States in the crude state. In 1904 out of a production of 345,961 tons the exports of crude amounted to 298,211 tons, practically all from Nova Scotia and New Brunswick.

GYPSUM.

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	36,557	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	178,182	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	*½	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

*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

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	625,100	2,885

*Equivalent to 356 barrels.

Crude gypsum, duty free. Ground gypsum, duty 15%. Plaster of Paris, duty 12½c. per 100 lbs.

MANGANESE.

MANGANESE. The Canadian manganese industry has not assumed any important proportions this year. As a whole the production is very irregular. The returns for 1904 show that the output did not exceed 66 tons, having a value of $2,740, which gives an average of $41.51 per ton The total production was obtained from Nova Scotia.

TABLE I.

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*	123½	3,975	32.19
1897*	15¼	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

*Exports.

Tables 2 and 3 which follow, give figures relating to the Canadian manganese trade, table 2 gives figures of exports, and table 3, the figures of imports.

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	5,054	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	233	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	3/10	3	108 3/10	6,351
1896	123½	3,975			123½	3,975
1897	15¼	1,166			15¼	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

(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	$2,781
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 Duty free	275,696	7,051
1894	101,863	4,522			

MICA.

MICA.

The figures of production of mica for the year 1904 are below those of the previous year as to the value. This is probably due to the greater use of micanite, which seems to be employed in place of the whole mica sheets in many cases. This micanite consists of thin leaves of mica cemented together and pressed. Small pieces of mica are used in the manufacture of large sheets of micanite, which of course makes a much cheaper product than large sheets of split mica.

Both provinces, Quebec and Ontario, contributed to the production, the former being responsible for about two-thirds of the total.

The greater part of the Canadian production is exported to the United States, as will be seen by glancing at the following tables which give the status of the mica industry for several years back.

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		

TABLE 2.

MICA.

EXPORTS.

Calendar Year.	Value.	Calendar Year.	Value.
1887	$ 3,480	1896	$47,756
1888	23,563	1897	69,101
1889	30,597	1898	110,507
1890	22,468	1899	153,002
1891	37,590	1900	146,750
1892	86,562	1901	152,553
1893	70,081	1902	(a) 391,812
1894	38,971	1903	196,020
1895	48,525	1904	198,482

(a) Probably includes some material manufactured from mica.

TABLE 3. MICA.

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

* The Foreign Commerce and Navigation of the United States.

MINERAL WATERS.

MINERAL WATERS.

As has been stated in our 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, and often bottled and sold more or less regularly. Moreover at several points hotels have been erected near springs the waters of which have curative properties. It is therefore very difficult to obtain returns which would enable us to present accurate statistics of the industry.

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			

MINERAL WATERS.

TABLE 2.

MINERAL WATERS.

IMPORTS.

Fiscal Year.	Value.
1880	$41,797
1881	55,763
1882	57,953
1883	49,546
1884	48,613
1885	55,864
1886	47,006
1887	52,989
1888	54,891
1889	66,331
1890	71,521
1891	15,721
1892	17,913
1893	27,909
1894	28,130
1895	27,879
1896	32,674
1897	22,142
1898	33,314
1899	38,046
1900	30,343
1901	40,802
1902	91,871
1903	108,130
1904 Mineral waters, natural, not in bottle.....D. ty free..	$ 721
1904 Mineral and aerated waters..... " 20 p.c.	136,583
Total	$137,304

NATURAL GAS.

NATURAL GAS.

The total value of the natural gas production in Canada in 1904 shows a very large increase over the previous years. From $202,210 in 1903, it rose to $328,376 in 1904 and Ontario is almost wholly responsible for the difference. The main field in Ontario is that of Welland county, and the largest producers are the Provincial Natural Gas and Fuel Company. This company has, this year, extended their distributing pipe line to the town of Niagara Falls, Ont., and to Chippawa, an adjoining village.

A new field has been opened in the county of Haldimand. The company operating in it intend to eventually supply natural gas to Hamilton.

NATURAL GAS.

According to the report of the Ontario Bureau of Mines there were 176 gas wells producing at the close of the year of which, 36 had been bored in 1904, the gas production being distributed through 231 miles of pipe.

Outside of Ontario the only returns of natural gas which were received were from Medicine Hat, in Assiniboia, where the town is operating a municipal natural gas plant.

The Canadian Pacific Railway are at present putting down some wells at the same place, but they are not producing yet.

TABLE 1.

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

MINERAL PIGMENTS.

MINERAL PIGMENTS.

Under this heading are included ochres and barytes only. Other Canadian minerals are probably used in the manufacture of paints, but they are not recorded.

Mr. C. W. Willimott of this department has just concluded a long series of experiments on the Canadian minerals which can be used as mineral pigments, and the result will be published shortly in the form of a bulletin.

Ochres.—The output of ochre has been mainly derived from the deposits which are near Three Rivers, Champlain county, Quebec. The returns received show a production of 3,925 tons, valued at $24,995. This is a decrease as compared with the output for 1903.

MINERAL PIGMENTS.

We give below a list of the firms engaged in this production :—

Canada Paint Company, 572 William St., Montreal, Que.

Champlain Oxide Company, 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

MINERAL PIGMENTS.

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
	Duty.		
1904 Ochres and ochrey earths and raw siennas	20 p. c.	1,163,939	$ 13,303
1904 Oxides, dry fillers, fire-proofs umbers and burnt siennas N.E.S.	25 "	1,603,641	23,333
Total, 1904		2,767,580	$36,636

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

MINERAL PIGMENTS.

Barytes.—The output of barytes amounted to 1,382 tons, valued at $3,702. Nova Scotia and Quebec are the only provinces from which returns are made. In the first named province deposits are worked at Cape Rouge, Inverness county, while in Quebec, the main deposits are in Hull township, Wright county. The output is practically all used in the manufacture of paint.

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

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.

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.	51,379	3,623
Paints and colours, rough stuff and fillers, anti-corrosive and anti-fouling paints commonly used for ship hulls, N.E.S..... "	25 "	981,714	40,397
Paris green, dry..... "	10 "	279,770	36,524
Paints and colours ground in spirits, and all spirit varnishes and lacquers ..... Galls.	$1.12½ per gallon..	796	2,683
Putty..... Lbs.	20 p. c.	265,871	3,942
Total	.....	.....	87,169

PETROLEUM.

PETROLEUM.

Ontario is as yet the only Province in Canada to be credited with an output of petroleum. The Canadian production is altogether derived from the oil pools of the south-western part of the Ontario peninsula, of which the Petrolia oil field is the most important.

In Manitoulin Island several holes were drilled during the year, and in the West a great deal of work has been done in south-west Alberta, but authentic reports of the operations are not yet available.

The details of production for the past four 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

PETROLEUM.

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 02⅜	713,695
1889	9,472,476	24,664,144	100:38	704,690	0 92¾	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 33¾	1,010,211
1892	10,370,707	27,291,334	100:38	779,753	1 26¼	984,438
1893	10,618,804	27,944,221	100:38	798,406	1 09½	874,255
1894	11,027,082	29,018,637	100:38	829,104	1 00¾	835,322
1895	10,674,232	25,414,838	100:42	726,138	1 49⅜	1,086,738
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 42½	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 48⅜	1,202,020
1900	13,428,422	24,867,449	100:54	710,498	1 62	1,151,007

TABLE 2.

PETROLEUM.

VALUE OF THE PRODUCTION OF CANADIAN OIL REFINERIES.

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

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	2,429,445	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

* 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

PETROLEUM.

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	Oils :— Mineral :	Duty.	Gallons.	Value.
				$
	(*a*) Coal and kerosene, distilled, purified or refined, naphtha and petroleum, N.E.S.	2½c. p. gall.	17,369,930	1,526,989
	(*b*) Products of petroleum	2½c. "	855,383	100,609
	(*c*) Crude petroleum, fuel and gas oils (other than naphtha, benzine or gasoline) when imported by manufacturers (other than oil refiners) for use in their own factories, for fuel purposes or for the manufacture of gas	1½c. "	4,318,569	275,515
	(*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.	10,076	3,646
	(*e*) Lubricating oils composed wholly or in part of petroleum, costing less than 25 cents per gallon	2½c. p. gall.	1,967,157	245,864
	Total		24,521,115	2,152,623

TABLE 6.*

PETROLEUM.

IMPORTS OF CRUDE AND MANUFACTURED OILS, OTHER THAN ILLUMINATING.

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

* 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	118,845	9,639
1902	225,885	12,750
1903	592,642	28,674
1904...(Duty, 30 p. c.)	418,967	18,440

PETROLEUM.

TABLE 8.

PETROLEUM.

IMPORTS OF PARAFFINE WAX CANDLES.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1880.....	10,445	$2,269	1893.....	8,351	$1,735
1881.....	7,494	1,683	1894.....	10,818	1,685
1882.....	5,818	1,428	1895.....	19,448	2,541
1883.....	7,149	1,734	1896.	25,787	4,072
1884.	8,755	2,229	1897.....	25,114	2,929
1885.....	9,247	2,449	1898.....	60,802	4,427
1886.....	12,242	2,587	1899.....	62,331	5,856
1887.....	21,364	3,611	1900..... ..	27,663	3,671
1888.....	22,054	2,829	1901.....	44,562	3,588
1889.....	8,038	1,337	1902.....	51,120	5,752
1890..	7,233	1,186	1903..	83,377	9,025
1891.....	10,598	2,116	1904. . (Duty,		
1892.....	9,259	1,952	30 p.c.)	83,471	9,078

In August 1904, the Dominion parliament passed an Act providing for the payment of a bounty on crude petroleum produced in Canada. The full text of the Act and the regulations respecting it are reproduced below. This bounty stimulated the work of prospecting and boring in various parts of the Dominion, but, so far, no production has been reported from any new districts outside the Ontario area.

" An Act to provide for the payment of bounties on crude petroleum from Canadian wells.

(Assented to 10th August 1904.)

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

1. This Act may be cited as The Petroleum Bounty Act, 1904.

2. The Governor in Council may authorize the payment out of the Consolidated Revenue Fund of a bounty of one and one-half cent per imperial gallon on all crude petroleum produced from wells in Canada on and after the eighth day of June, one thousand nine hundred and four, the said bounty to be paid to the producer of the petroleum.

3. The Governor in Council may authorize the payment out of the Consolidated Revenue Fund of a bounty of one and one-half cent per imperial gallon on all crude petroleum produced from wells in Canada and held in storage tanks or other storage receptacles on the eighth day of June, one thousand nine hundred and four, the said bounty to be paid to the actual owner of the petroleum on that day.

4. The Minister of Trade and Commerce shall be charged with the administration of this Act, and may, subject to the approval of the Governor in Council, make such regulations as he deems necessary respecting the payment of the said bounties,

5. This Act shall be deemed to have come into force on the eighth day of June, one thousand nine hundred and four."

Regulations under the provisions of the Petroleum Bounty Act, 1904, intituled—

"An Act to provide for the payment of a Bounty on Crude Petroleum from Canadian Wells."

1. The Minister of Trade and Commerce having been charged with the administration of the Act has, with the approval of the Governor in Council, made the following regulations respecting the payment of Bounties.

2. All producers of crude petroleum from wells in Canada who desire to avail themselves of the provisions of the Act above quoted, and to be paid a bounty, before making claim for such bounty, shall notify the Minister of their intentions to claim under the provision of the Act and shall for registration purposes, declare where or approximately where their wells are situated, the number thereof, their estimated monthly production, the place and names of the purchasers of the crude product, and in the case of a co-partnership the names of the individual partners, and in the case of an incorporated company, the names of the President, Secretary and Manager, as well as the name and address of the official authorized to make the claim.

3. The books of the claimants and those of the refineries, tanking companies, gas companies, fuel oil companies and sundry purchasers, shall be at all times open to the examination of the supervising officer, and of any officer of the Department of Trade and Commerce who may be detailed by the Minister for such purpose.

4. All claims shall be substantiated by the certificate of the receiving stations, tanking companies, refineries, gas companies, fuel oil companies, manufacturers of lubricating oils, or other purchasers as well as that of the supervising officer.

5. Samples must be taken at time of delivery of all crude oil sold by claimants and a record of same kept by the receivers and buyers.

6. The supervising officer may, at any time, make examination of samples or take samples at any of the receiving stations, fuel oil companies, tanking companies, refineries, gas companies, or at any purchasers or receivers of crude oil.

7. Claims for bounty may be made monthly when amounting to $25 or more per month, and quarterly, when for a less sum.

8. Claims when made and certified as above, shall be forwarded by the supervising officer to the Department of Trade and Commerce for payment.

9. No claim will be recognized or paid unless the claimant has conformed to the requirements of regulation 2, and unless claim is made and substantiated as per regulation 4 and in form hereto attached.

10. All claims to be made in duplicate.

PHOSPHATE.

PHOSPHATE.

In 1904 the production of phosphate only reached 817 tons, valued at $4,590. This is a large decrease as compared with 1903, but the phosphate output is necessarily very irregular, for the mineral is chiefly obtained as a by-product in the working of the mica mines of Labelle and Wright counties, Quebec, The larger proportion of the production is used in the manufacture of phosphorus, and the balance is made into fertilizer.

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	1,415	5.02	7,105
1901	1,033	6.07	6,280
1902	856	5.79	4,953
1903	1,329	6.18	8,214
1904	817	5.62	4,590

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

*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.

Ontario and Quebec are the only provinces from which returns of production of pyrites have been received. In Quebec the principal producers are the Eustis Mining Company, Eustis, Que., and the Nichols Chemical Company, Capelton. In Ontario the American Madoc Mining Company operates two deposits, while the British American Mining Company is also doing some work. The Ontario production is used in the manufacture of sulphuric acid, as is also the ore from the Quebec deposits, which however is also treated for the recovering of the copper contents.

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

Table 1 shows the figures of production since 1886. The output for 1904 shows an increase over 1903, and according to all appearances the figures will continue to grow, as the Eustis Mining Company has just completed some installations which will enable them to greatly increase their production.

TABLE 2. PYRITES.

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

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

SALT

As in former years, the salt production was limited to the western part of the Ontario peninsula.

This industry is only limited by the demand, for immense quantities of salt exist in the underlying formations of that part of the ccuntry at depths varying from 975 ft. to 1,400 ft.

In 1904, the production slightly exceeded that of 1903, the total value having reached $321,778.

As will be seen by glancing at the tables, the output of salt does not vary very much from year to year, but on the whole there is a steady increase which follows the growth of the market caused by the increase of population.

SALT.

The imports of salt are divided into two classes, which are given in tables 3 and 4 respectively. Table 3 gives the imports of salt paying a duty of 5 cts. to 7½ cts. per 100 lbs. comprising salt not for use of fisheries, imported from other countries than the United Kingdom. Table 4 gives the more important item of salt imported free of duty from the United Kingdom, or imported for the use of the sea or gulf fisheries. This for the year 1904 amounted to $338,082; of which over $300,000 came from some part of the British Empire.

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

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	1,006,026	4,186

TABLE 3.
SALT.
IMPORTS :—SALT PAYING DUTY.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1880	726,640	$ 3,916	1892	18,648,191	$ 65,963
1881	2,588,465	6,355	1893	21,377,339	79,838
1882	3,679,415	12,318	1894	15,867,825	53,336
1883	12,136,968	36,223	1895	8,498,404	29,881
1884	12,770,950	38,949	1896	7,665,257	24,550
1885	10,397,761	31,726	1897	11,911,766	33,470
1886	12,266,021	39,181	1898	11,068,785	32,792
1887	10,413,258	35,670	1899	11,781,453	32,839
1888	10,509,799	32,136	1900	11,028,337	30,180
1889	11,190,088	38,968	1901	11,625,688	34,087
1890	15,135,109	57,549	1902	13,892,849	39,605
1891	15,140,827	59,311	1903	14,554,693	41,785

		Duty.		
1904	Salt, coarse, N.E.S	5c. per 100 lbs.	10,094,505	$23,594
	Salt, fine, in bulk	5c. "	2,361,200	5,468
	Salt, N.E.S., in bags, barrels or other packages	7½c. "	17,323,478	44,764
	Total		29,779,183	73,826

SALT.

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			

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

We give a list of the chief salt works in Ontario, most of which were in operation in 1904 :

The Canadian Salt Co., Ltd., E. G. Henderson, Vice-Pres., Windsor, Ont.
Saginaw Lumber and Salt Co., Sandwich, Ont.
Mooretown Salt Co., Ltd., Mooretown. Ont.
Carter and Kittermaster, Mooretown, Ont.
Sarnia Salt Co., Ltd., Sarnia, Ont.
Sarnia Bay Mills Co., Sarnia, Ont.
Cleveland Lumber and Salt Co., Sarnia, Ont.
Elarton Salt Works Co , Ltd., C. V. Morris, Warwick, Ont.
Parkhill Salt Co., A. K. Hodgins, Parkhill, Ont.
Exeter Salt Works Co., J. B. Carling, Sec'y., Exeter, Ont.
Hensall Salt Works, Geo. McEwan, Hensall, Ont.
Lake Huron and Manitoba Milling Co., Ltd., P. A. McGaw, Sec'y., Goderich, Ont.
R. and J. Ransford, Clinton, Ont.
Operating the following plants :—
Coleman Salt Works, Seaforth, Ont.
Stapleton Salt Works, Clinton, Ont.
North American Chemical Co., Goderich, Ont.
Goderich Salt Works, Goderich, Ont.
Brussels Salt Works, Brussels, Ont.
Clinton Salt Works, John McGarva, Clinton, Ont.

Maitland Salt Works, John S. Platt, Goderich, Ont. SALT.
The Grey, Young and Sparling Co. of Ont., Ltd., F. G. Sparling, Wingham, Ont.
The Ontario People's Salt and Soda Co., Ltd., Jno. Tolmie, Sec'y., Kincardine, Ont.
Western Salt Co., Mooretown, Ont.
Empire Salt Co., Sarnia, Ont.

STRUCTURAL MATERIALS.

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

It is impossible to obtain accurate figures 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 is not possible to obtain anything like full returns, so that a large proportion has to be estimated. These remarks, however, do not apply to the manufacture of cement, for which if has been found possible to obtain as accurate records as of any other well established and continuous industry.

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

STRUCTURAL MATERIALS.

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

TABLE 3.

STRUCTURAL MATERIALS.

IMPORTS OF BUILDING STONE.

Calendar Year	Value.	Calendar Year.	Value.
1880	$ 35,970	1892	$95,550
1881	58,149	1893	56,510
1882	33,623	1894	52,908
1883	35,061	1895	44,282
1884	51,088	1896	54,130
1885	30,491	1897	38,714
1886	41,675	1898	28,495
1887	54,368	1899	48,040
1888	86,373	1900	64,533
1889	100,314	1901	46,078
1890	132,155	1902	99,074
1891	170,890	1903	87,866
1904 — Flagstones, granite and rough freestone, sandstone, and all building stone, not hammered or chiselled. Duty 15 p.c.			$59,864
1904 — Granite and freestones, dressed; all other building stone dressed, except marble. Duty 20 p.c.			33,914
			$93,778

TABLE 4. STRUCTURAL MATERIALS.

STRUCTURAL MATERIALS.

IMPORTS OF MANUFACTURES OF STONE OR GRANITE, N.E.S.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$29,408	1892	$39,479
1881	36,877	1893	49,323
1882	37,267	1894	49,510
1883	45,636	1895	51,050
1884	45,290	1896	51,499
1885	39,867	1897	34,026
1886	41,984	1898	41,240
1887	41,829	1899	60,148
1888	47,487	1900	57,039
1889	61,341	1901	66,639
1890	84,396	1902	72,397
1891	61,051	1903	78,629
1904 — Granite—Sawn only	Duty, 20 p.c.		$ 7,930
1904 — " Finished and polished	" 35 p.c.		
1904 — " Manufactures of N.O.P	" 35 p.c.		75,428
1904 — Paving blocks	" 20 p.c.		38,336
1904 — Manufactures of stone, N.O.P	" 30 p.c.		19,471
			$141,165

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 1904 inclusive	Nil.	Nil.

STRUCTURAL MATERIALS.

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
		Duty.	
1904	Marble and manufactures of :—		
	Marble sawn only	20 %	$117,186
	Finished and polished	35 %	.....
	Rough, not hammered or chiselled	15 %	11,922
	Manufactures of, N.O.P.	35 %	52,403
	Total, marble and manufactures of		$181,511

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			

STRUCTURAL MATERIALS.

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

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	.....	.....
1903	.....	.....
1904	.....	.....

STRUCTURAL MATERIALS.

TABLE 10.

STRUCTURAL MATERIALS.

IMPORTS OF SLATE.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$21,431	1892	$50,441
1881	22,184	1893	51,179
1882	24,543	1894	29,267
1883	24,968	1895	19,471
1884	28,816	1896	24,176
1885	28,169	1897	21,615
1886	27,852	1898	24,907
1887	27,845	1899	33,100
1888	23,151	1900	53,707
1889	41,370	1901	72,187
1890	22,871	1902	72,601
1891	46,104	1903	84,437

		Duty.	
1904	Slate and manufactures of—		
	Mantels	30 %	
	Roofing slate	25% not over 75c per square	$38,245
	School writing slates	25 %	28,091
	Slate pencils	25 %	2,357
	Slate of all kinds and manufactures of, N.E.S.	30 %	17,364
	Total		$86,057

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

STRUCTURAL MATERIALS.

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	Nil.	Nil.
1892	1,571	15,048	*1904	Nil.	Nil.

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

Cement.—There is a notable increase this year in the Canadian production of cement, and also in the imports, which added together give the largest consumption yet attained in Canada. The actual sales and shipments in 1904 of cement manufactured in Canada reached 967,-172 barrels, valued at $1,338,239, an increase over 1903, of 247,179 barrels, representing an increase in value of $112,992. These figures include both natural and Portland cement. The production of the natural rock cement is, however, fast decreasing, having been this year only 56,814 barrels, whereas, five years ago, it was nearly 150,-000 barrels.

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	114,637
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	147,387	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

STRUCTURAL MATERIALS.

The imports of Portland cement for this year were 2,476,388 cwt. representing 619,097 barrels of 400 lbs. This added to the production, gives a total consumption of 1,586,269 barrels.

Following is an estimate of the consumption of cement in Canada for the past eight years.

	Canadian	Imported	Total
	barrels.	barrels.	barrels.
1897	119,763	210,871	330,634
1898	163,084	268,264	431,348
1899	225,366	325,106	550,472
1900	292,124	325,340	617,464
1901	317,066	403,108	720,174
1902	594,594	492,904	1,087,498
1903	627,741	579,213	1,206,954
1904	967,172	619,097	1,586,269

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

STRUCTURAL MATERIALS.

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	1,236	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			

*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 (Cement hydraulic or waterlime)*	12,088	5,391

*Duty, 12½c. per 100 lbs.

STRUCTURAL MATERIALS.

TABLE 17.

STRUCTURAL MATERIALS.

IMPORTS OF PORTLAND CEMENT.

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

* Duty, 12½c. per 100 lbs.

Natural rock cement was made by four firms in Ontario and one in Manitoba, and the total sales during the year amounted to 56,814 barrels, valued at $50,247. This is a decrease of 35,438 barrels in quantity and $24,408 in value.

The firms engaged in the manufacture of natural rock cement in 1904, were the following:

Hamilton Cement Works	Hamilton, Ont.
Queenston Cement Works	Hamilton, Ont.
Battle's Thorold Cement Works	Thorald, Ont.
The Toronto Lime Company	Toronto, Ont.
The Manitoba Union Mining Company Ltd	Winnipeg, Man.

Portland Cement.—That the use of Portland cement is increasing rapidly, is shown by the returns received at this office. The sales for the year amounted to 910,358 barrels representing a value of $1,287,992, while the stock on hand at the end of the year was 112,051 barrels. The total quantity of Portland cement manufactured during the year was 908,990 barrels and the stock on hand at the beginning of the year was 113,419 barrels.

It is only since the last three years that the quantity of cement manufactured in Canada, exceeded that of the imported product. In 1897, the imported cement represented more than 63 per cent of the Canadian consumption, while in 1904 the proportion had fallen to

38 per cent. Foreign cement is mainly imported from the United States, Belgium, Great Britain and Germany, the relative quantity from each country being in the order given, with small amounts from other countries. STRUCTURAL MATERIALS.

We give below a list of the companies engaged in the manufacture of Portland cement during 1904 :—

Crescent Cement Works, Longue Point, Que.

Canadian Portland Cement Co., Deseronto, Ont.

Lakefield Portland Cement Co., Lakefield, Ont.

Imperial Cement Co., Ltd., Owen Sound, Ont.

Owen Sound Portland Cement Co., Ltd., Owen Sonnd, Ont.

Grey and Bruce Portland Cement Co., Ltd., Owen Sound, Ont.

Sun Portland Cement Co., Ltd., Owen Sound, Ont.

Hanover Portland Cement Co., Ltd., Hanover, Ont.

National Portland Cement Co., Toronto and Durham, Ont.

Ontario Portland Cement Co., Brantford, Ont.

Companies with works completed or in process of erection, and companies proposing to erects plants :—

International Portland Cement Co., Toronto, Ont. and Hull, Que.

Colonial Portland Cement Co., Wiarton, Ont.

Belleville Portland Cement Co., Belleville, Ontario

Raven Lake Portland Cement Co., Toronto and Victoria Rd., Ont.

Superior Portland Cement Co., Orangeville, Ont.

St Mary's Portland Cement Co., Orangeville, Ont.

Standard Portland Cement Co., Toronto, Ont.

Royal Cement Co., Montreal, Que.

Manitoba Portland Cement Co., Winnipeg, Man.

Vancouver Portland Cement Co., Vancouver, B.C.

Sydney Cement Co., Sydney, C.B.

Statistics of the other items classed under the heading of structural material are given in the following tables.

STRUCTURAL MATERIALS.

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 1904 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		

TABLE 20.

STRUCTURAL MATERIALS.

EXPORTS OF LIME.

Calendar Year.	Value.
1891	$119,853
1892	121,535
1893	86,623
1894	83,670
1895	71,697
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

STRUCTURAL MATERIALS.

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 Duty, 20 p.c.	54,359	39,639

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

STRUCTURAL MATERIALS.

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

TABLE 24.

STRUCTURAL MATERIALS.

IMPORTS OF BUILDING BRICK.

Fiscal Year.	Value.
1880	$ 2,067
1881	4,281
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 Duty, 20 p.c.	117,468

TABLE 25. STRUCTURAL MATERIALS.

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	405,796
1895	195,123	1904	(a)
1896	83,855		

(a) Included in Table 22.

TABLE 26.

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

STRUCTURAL MATERIALS.

TABLE 27.

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			101,257
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			33,398
1900			39,149
1901			56,083
1902			55,530
1903			57,352
		Duty.	
1904	Drain tile, not glazed	20 %	$ 1,637
	Drain pipes, sewer pipes, chimney linings or vents, chimney tops and inverted blocks, glazed or unglazed	35 %	53,958
	Total		$55,595

TABLE 28.

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		

TABLE 29.

STRUCTURAL MATERIALS.

IMPORTS OF EARTHENWARE.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$322,333	1892	$748,810
1881	439,029	1893	709,737
1882	646,734	1894	695,514
1883	657,886	1895	547,935
1884	544,586	1896	575,493
1885	511,853	1897	595,822
1886	599,269	1898	675,874
1887	750,691	1899	916,727
1888	697,082	1900	959,526
1889	697,949	1901	1,114,677
1890	695,206	1902	1,275,093
1891	634,907	1903	1,406,610

		Duty.	
1904	Earthenware and china :—		
	Baths, tubs and washstands, of earthenware, stone cement or clay, or of other material, N.O.P.	30 %	$ 70,927
	Brown or coloured earthen and stoneware, and Rockingham ware	30 %	35,445
	Decorated, printed or sponged, and all earthenware, N.E.S.	30 %	714,061
	Demijohns, churns and crocks	30 %	8,265
	White granite or ironstone ware, C.C. or cream coloured ware	30 %	250,100
	China and porcelain ware	30 %	420,851
	Earthenware tiles	35 %	55,319
	Manufactures of earthenware, N.E.S.	30 %	56,388
	Total		1,611,356

TABLE 30.

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

MISCELLANEOUS,

NON-METALLIC.

MISCELLANEOUS.

Arsenic.—The Deloro mine in Hastings county, province of Ontario, was closed down in 1903, and remained idle in 1904. This had hitherto been the source of the Canadian production of arsenic, which was recovered in the process of treating auriferous mispickel.

However, there was a small production of arsenic in 1904 derived from a new source. This was obtained from the cobalt and nickel arsenides, which are responsible for the total output this year; it amounted to 72 tons valued at $903, according to returns made to the Ontario Bureau of Mines.

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

(a.) Arsenic in ore, &c.

MISCELLANEOUS.

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	69,269	2,434	1902	106,857	6,004
1890	138,509	4,474	1903	298,375	11,824
1891	115,248	4,027	1904...Duty free.	414,065	12,421
1892	302,958	9,365			

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		

* Chalk prepared. Duty, 20 p. c.

MISCELLANEOUS.

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			

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

Feldspar.—Ontario is responsible for the total production of feldspar in 1904. Two producers made returns, viz., The Kingston Feldspar Mining Company and Mr. Charles Jenkins. No output of feldspar is reported from the province of Quebec this year.

The following are interested in the feldspar industry :—

W. A. Allan, Victoria Chambers, Ottawa, Ont.

Kingston Feldspar Mining Company, Kingston, Ont.

Pennsylvania Feldspar Company, Gerard Inst. Bldg., Philadelphia, Pa., U.S.A.

Charles Jenkins, Petrolia, Ont.

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

* Exports.

Fire-clay.—The production of fireclay in 1904 according to the returns received amounted to 1,997 tons valued at $8,592. This yield was altogether derived from Nova Scotia and New Brunswick. No production can be reported from British Columbia because no returns were received from that province although in previous years the output of fireclay in this province has amounted to more than half the total production. The material is usually obtained in connection with coal mining from the beds underlying the coal seams, it is mostly used locally in the construction and repairs of coke ovens and in connection with metallurgical operations. MISCELLANEOUS.

TABLE C.

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	1,997	8,592

Moulding Sand.—The figures given in Table 7, are derived chiefly from the returns of railway shipments and do not, therefore, nearly represent the total production. Deposits of sand answering the requirements of moulding sand are known to occur in almost every province and in many cases are worked for the local wants. Of those it is almost impossible to obtain returns of output from the producers. The greater proportion of the above railway shipments is derived from deposits in the Ontario Peninsuala, and is exported to the United States.

MISCELLANEOUS.

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

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
1900-1904	.....	.....

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	1,429	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 Duty free.	5,547	4,409

Magnesite.—A production of 200 tons of magnesite is reported from British Columbia. This is a new addition to the list of Canadian mineral products, and as such it is interesting to note. However, there seems to be more than mineralogical interest regarding this, and we feel justified in quoting the Provincial Mineralogist of British Columbia concerning this occurrence and its possibilities:—

"A very curious and unusual occurrence of magnesite is found actually within the townsite of Atlin and less than a hundred yards from the Government office. The formation in the vicinity of the town is composed of the magnesian rocks. On these rocks overlain with wash, is the townsite, rising from the lake to a height of about 200 feet. Skirting the townsite on the rear—that is, the east—is a low depression or flat 'draw,' swampy in character, devoid of trees, and in places showing 'hummocks' of white magnesite which seems to be growing up from the swamp level; for certainly these deposits are constantly rising higher and higher, and now form mounds 5 to 8 feet above the swamp level. The deposit is exposed on the surface over several acres and is, when dry, perfectly white. It

MISCELLANEOUS.

has been dug into for a depth of about 10 feet, and continues equally pure and clean from all foreign matter such as clay or gravel, as on the surface. This deposit was at first considered to be simply an accumulation of magnesite formed from the decomposition of the surrounding rocks and deposited by surface waters in this swamp. If such was its origin, it seems incredible that the deposit should be so free from clay and other materials, equally portable by water, and that it should be deposited in mounds above the water level. It seems probable, therefore, that the deposit is not from water, but that underlying this draw some particular stratum in the magnesian rock occurred, which, being softer, was more easily worn away, so forming the draw, and being more susceptible to the action of swamp waters carrying carbonic acid, was altered from an oxide of magnesia into the carbonate of magnesia or 'magnesite' in which operation it would be greatly increased in bulk, and so rise in mounds, seeming to 'grow up' from below. In this connexion attention is drawn to the analysis, given further on, of a mineral spring in the vicinity.

"The magnesite deposit has been staked as a mineral claim by A. C. Hirschfeld, of Atlin, who, during the season of 1904, dug from the surface exposures some 200 tons of the material which was sacked and shipped to San Francisco, Cal., as an experimental lot. The transportation companies are understood to have given a rate of $8 per ton from Atlin to California, which apparently still leaves a margin of profit for the producers. It is understood that this shipment was intended to be used in the manufacture of 'magnesia brick' for furnace linings. The remarkable purity of the deposit would seem, however, to render it applicable for other uses, and this would justify a higher price being paid for it than is at present realized."

"The writer saw the magnesite being mined and no selection of the material was necessary; it was simply shovelled into sacks. A sample from the shipment brought by the writer to Victoria, and analysed in the Government laboratory, gave the following:—

Iron	Trace	Silica	1.12%
Alumina	"	Carbonate Magnesia ($MgCO_3$)	88.62%
Sulphates	None	Oxide (Mg. O.)	9.44%
Chlorides	"	Moisture	0.80%

"Near the north end of the townsite of Atlin and flowing out underground from the swamp in which the magnesite deposit occurs, is a mineral-bearing spring. In 1900 Mr. J. C. Gwillim, then of the Geological Survey, took some of this water to Ottawa for analysis, upon which Dr. Hoffmann, chemist of the Survey, reports as follows:—

'This water was found to contain: Potassa, traces; soda, very small quantity; lime, very small quantity; magnesia, somewhat large quantity; ferrous oxide, trace; sulphuric acid, very small quantity; carbonic acid, large quantity; chlorine, very small quantity; silica, trace; organic matter, faint traces. MISCELLANEOUS.

'The magnesia amounted approximately to 1·834 parts in 1,000, an amount which would correspond to 3·851 of magnesium carbonate, or 5·869 of magnesium bicarbonate. It is more than probable that it is to the water of this and similar springs in the vicinity that the deposits of hydro-magnesite occurring back of Atlin owe their origin.'"

In the Province of Quebec, in the township of Grenville, Argenteuil county, magnesite has been found both in situ and in boulders. Mr. W. B. McAllister in 1904, shipped two tons of the mineral as an experiment. A series of analyses of specimens from the deposit gave contents of magnesium carbonate of 76 to 83 per cent, while picked specimens contained as much as 95·50 per cent. A full description of the deposit with analyses, etc., will be found in the report of the Section of Chemistry and Mineralogy of the Geological Survey, Vol. XIII, Part R.

Molybdenite.—Some molybdenite ore was mined in 1903, in the township of Sheffield, county of Addington. Many occurrences of this mineral have been reported and there is good demand for it, but the deposits so far located do not seem to be large enough to be worked profitably. The molybdenite is usually found disseminated in quartz veins, and great difficulty has been experienced in concentrating it sufficiently for the market. At the request of the Geological Survey, some experiments in mechanical concentration of molybdenite were conducted in the laboratories of McGill University a few years ago, and the result seemed to show that, for the samples dealt with, after ordinary cobbing and hand picking it was not economical to submit the ore to any further process of extraction.

MISCELLANEOUS.

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			

Tripolite.—Only a very limited quantity of tripolite was produced in 1904. The only deposits worked are in Nova Scotia, and as a rule a sufficient quantity of the material is produced in one season to last two years. This accounts for the apparent spasmodic and irregular production.

TABLE 11.

MISCELLANEOUS.

NON-METALLIC.

PRODUCTION OF TRIPOLITE.

Calendar Year.	Tons.	Value.
1896	644	$ 9,960
1897	15	150
1898	1,017	16,660
1898	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

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