GEOLOGICAL SURVEY OF CANADA
ROBERT BELL, M.D., Sc.D., LL.D., F.R.S., ACTING DIRECTOR.

SECTION OF MINES

ANNUAL REPORT

FOR

1901

ELFRIC DREW INGALL, M.E.

Associate of the Royal School of Mines, England, Mining Engineer to the Geological Survey of Canada.

ASSISTANT

J. McLEISH, B.A.

OTTAWA
PRINTED BY S. E. DAWSON, PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1902

14—s No 800

To the Director,
Geological Survey of Canada.

SIR,—Herewith I beg to hand you the detailed annual report of the Section on the mineral industries of Canada for 1901. The preliminary summary statement for that year, which was completed on February 26, is of course replaced by the revised statement herein contained.

The work of the Section, as in the past, has consisted not only in the preparation of the annual report, but in the collection, recording, &c., of technical information, and in making investigations into a great variety of matters pertaining to the economic mineral resources and the mineral industries of the country, as well as in answering the numerous enquiries on these subjects constantly coming to hand.

During the summer my own time was occupied making field studies of the copper ore deposits in the Bruce mines district, and of their geological conditions of occurrence in collaboration with Mr. T. C. Denis, B. Sc. Appreciative acknowledgement is made of the important aid in the whole work of the Section rendered by Mr. J. McLeish and Mrs. W. Sparks.

Thanks are also due to those who, although too numerous to mention individually, by answering our circulars or letters, provided much valuable material. Our acknowledgments are also due to the provincial mining bureaus of Nova Scotia, Quebec, Ontario and British Columbia, as well as to the Dominion Customs and Inland Revenue departments for aid received.

I am, sir,
Your obedient servant,

ELFRIC DREW INGALL,
Mining Engineer to the Geological Survey.

Section of Mines,
November 6, 1902.

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 heading 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.

In view of criticisms of these statistics which have been made recently, and from time to time in the past, it may be well to take this opportunity to explain the working methods adopted, in order to prevent the misunderstandings which underlie such criticisms and suggestions, and to correct the impression which they might convey to the public, that the reports are in any way unreliable.

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 have for some years been checked by comparison with railway shipments, exports, and all other available sources of information. It can be therefore fairly claimed, that they are as accurate as it is possible to make such figures.

After investigation of the subject we have, however, found that in the nature of things, export and railway figures can only be taken as approximately correct in most instances. In the case of the export figures, entries are made, as a rule, by those having no technical knowledge of mineral subtances, 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 reporting their production being included. Producers finding their names omitted are invited to communicate with this office that they may be included in the next issue.

CORRECTIONS—ALTERATIONS.

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

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

INTRODUCTORY.

Comparing the mineral production for 1901 with that for the previous year, we find an increase in the grand total of values of $2,207,571 equivalent to 3·42%. This is a considerable falling off from the ratios for the previous period of four years as shown in the subjoined table, a similar result being shown by the mineral industries of the neighbouring republic to the south of us.

MINERAL PRODUCTION OF CANADA.

YEAR.	CANADA.		UNITED STATES.	
	Increase per cent in Grand Total.	Production per capita.	Increase per cent in Grand Total.	Production per capita.
	p.c.	$ c.	p.c.	$ c.
1901	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 results shown above are to be accounted for mostly on the basis of the large falling off in the output of the gold of the Yukon district. This was inevitable if the history of all other placer districts was to be repeated in this instance. The time invariably comes when the rapid working out of the richer spots is accomplished, and the sensational features characterizing the starting of work in such a district give way to the steadier and more reliable results following on the inauguration of well organized effort; and the further stage resulting from the discovery and development of bodies of gold-bearing quartz, will it is hoped follow shortly.

MINERAL PRODUCTION OF CANADA.

A most gratifying fact is that the above mentioned falling off has been more than offset by the growth in the aggregate value of the remaining mineral products, amounting to over 15 per cent, comparing their total values for this year with similar figures for 1900.

PRODUCTS.	QUANTITY.		VALUE.	
	Increase.	Decrease.	Increase.	Decrease.
	p. c.	p. c.	p. c.	p. c.
Metallic—				
Copper	99·75		98·85	
Gold		13·54		13·54
Pig iron (from Canadian ore only)	134·83		107·85	
Pig iron (from both home and imported ores)	184·11		133·93	
Lead		17·84		18·52
Nickel	29·78		38·07	
Silver	23·97		19·16	
Non-metallic—				
Asbestus and asbestic	38·01		68·32	
Coal	11·04			9·67
Coke	132·62		89·21	
Cement	7·87			·43
Gypsum	16·54		31·33	
Natural gas				18·61
Petroleum	12·40		12·40	

On reference to the figures given above, an idea will be formed of the condition of the various mineral industries, as compared with last year. All but two of the items show increases in quantity, although in some instances a decrease appears in the value columns, owing to lower prices being realized. The lead mining and natural gas industries show a decided falling off, as does also the gold as a whole. In this latter case the proportion of decrease due to the Yukon region is somewhat modified by increases in some of the other districts. In all the remaining metal-mining industries large increases of production are recorded, more or less offset, however, in every instance except nickel, by lower prices. Large proportional increases in the figures are reported for all the non-metallic minerals except natural gas, and gypsum and asbestus brought higher prices. In coal, coke and cement, however, a falling off is shown in the aggregate values. In the coal industry this was mostly due to the lower valuation put upon Nova Scotia coal.

GEOLOGICAL SURVEY OF CANADA.

MINES SECTION.

Mineral Production of Canada, Calendar Years 1886 to 1901.

PRODUCTS.	1886.		1887.		1888.		1889.		1890.		1891.		1892.		1893.		1894.		1895.		1896.		1897.		1898.		1899.		1900.		1901.		PRODUCTS.
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Qy.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	y.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	
METALLIC.		$		$		$		$		$		$		$		$		$		$		$		$		$		$		$		$	METALLIC.
Antimony ore.....Tons.	665	31,490	584	10,860	345	3,696	55	1,100	26½	625	10	60													344	20,000							Antimony ore.
Copper (c)..... Lbs.	3,505,000	385,550	3,260,424	366,798	5,562,864	927,107	6,809,752	936,341	6,013,671	947,153	821	1,149,598	7,087,275	818,580	8,109,856	871,809	7,708,789	736,960	7,771,639	836,228	9,393,012	1,021,960	13,300,802	1,501,660	136	2,134,980	15,078,475	2,655,319	18,937,138	3,065,922	37,827,019	6,096,581	Copper (c).
Gold (d)..... Oz.	66,061	1,365,496	57,465	1,187,804	53,150	1,098,610	62,658	1,295,159	55,625	1,149,776	22	930,614	43,909	907,601	47,247	976,603	54,605	1,128,688	100,806	2,083,674	133,274	2,754,774	291,582	6,027,016	445	13,775,420	1,028,620	21,261,584	35,387	583,158	83,100	1,212,113	Gold (d).
Pig Iron (n)..... Tons.																													5,527	13,511	306,199	762,284	Pig Iron (n).
Iron ore (o)..... "	69,708	126,982	76,330	146,197	78,587	152,068	84,181	151,640	76,511	155,380	79	142,005	103,248	263,866	125,602	299,368	109,991	226,611	102,797	238,070	91,906	191,557	50,705	130,290	343	152,788	74,617	240,542	63,169,821	2,760,521	51,900,958	2,249,387	Iron ore (o).
Lead (e)..... Lbs.			204,800	9,216	674,500	29,813	165,100	6,488	105,000	4,704	65	3,857	808,420	33,064	2,135,023	79,636	5,703,222	187,636	16,461,794	531,716	24,199,977	721,156	4,437	1,940	319	1,206,399	21,882,436	977,250					Lead (e).
Mercury..... "																				5,343		1,940	688	324									Mercury.
Nickel (f)..... "							(l) 830,477	498,286	1,435,742	933,232	427	2,775,976	2,413,717	1,399,956	3,982,982	2,071,151	4,907,430	1,870,958	3,888,525	1,360,984	3,397,113	1,188,990	3,997,647	1,399,176	390	1,820,838	5,744,000	2,067,840	7,080,227	3,327,707	9,189,047	4,594,523	Nickel (f).
Platinum..... "																									100	1,500	55	825				457	Platinum.
Silver..... Oz.			1,400	5,600	1,500	6,000	1,000	3,300		4,500		10,000		3,500		1,800		950		3,800		750		1,600	100	1,500					5,539,192	3,265,354	Silver.
Zinc..... Lbs.	*210,141	*209,090	355,083	347,271	437,232	410,998	383,318	358,785	400,687	419,118	23	409,549	310,651	272,130	422,158	330,123	847,697	534,049	1,578,275	1,030,299	3,205,343	2,149,503	5,558,446	3,323,395	333	2,593,929	3,411,644	2,032,668	4,468,225	2,740,362			Zinc.
Total value, Metallic.....		*2,118,608		2,073,746		2,628,292		3,251,299		3,614,488		5,421,659		3,698,697		4,630,495		4,685,852		6,087,114		8,030,633		13,780,314	300	286,000	1,940,000	814,000	212,800	9,342			
																										46,805						
																										36,011						
																										21,741,865		29,282,823		40,408,676		42,309,202
NON-METALLIC.		(a)		(a)		(a)		(a)		(a)		(a)		(a)		(a)		(a)		(a)		(a)		(a)		(a)		(a)		(a)		(a)	NON-METALLIC.
Actinolite..... Tons.																	7	420													521	3,126	Actinolite.
Arsenic (white)..... "	120	5,460	30	1,200	120	*1,200			25	1,500	20	1,000					7,630	420,825	8,756	368,175	12,250	429,856	30,442	445,368	785	491,197	25,536	457	4,872	363	32,725	694	41,676	Arsenic.
Asbestus..... "	3,458	206,351	4,619	226,976	4,404	255,007	6,113	426,554	9,860	1,260,240	79	999,878	6,082	390,462	6,331	310,156	1,000	20,000	3,177	41,300	2,342	27,004	2,637	32,474	221	24,252	2,010	21,842	2,355	27,000	40,217	1,259,759	Asbestus.
Chromite..... "	*60	*945	38	570													3	223	220	6,150	139	9,455	436	16,240	582	3,222,878	4,925,051	10,283,497	5,608,666	13,290,429	6,227,352	12,005,565	Chromite.
Coal..... "	*2,116,653	*3,739,840	2,429,330	4,388,206	2,602,552	4,674,140	2,658,303	4,894,287	3,084,682	5,676,247	3,49	7,019,425	3,287,745	6,363,757	3,783,499	7,359,080	3,847,070	7,429,468	3,478,344	6,739,153	3,745,716	7,226,462	3,786,107	7,303,597	300	286,000	100,820	350,022	157,134	649,140	6,627,352	13,290,429	Coal.
Coke (g)..... "	*35,396	*101,940	40,428	135,951	45,373	134,181	54,539	155,043	56,450	166,293	84	175,592	56,135	160,249	61,078	161,790	58,044	148,551	53,356	143,047	49,619	110,257	60,686	176,457					3	300	6,627,352	12,005,565	Coke (g).
Corundum..... "									700	3,500	85	3,425	175	525	575	4,525															53,115	Corundum.
Feldspar..... "		(b)		(b)		(b)	*400	*4,800			50	750	1,991	4,467		700	539	2,167	1,329	(b) 2,545	972	(b) 2,583	1,400	3,290	500	6,250	3,000	6,000	318	1,112	5,350	14,548	Feldspar.
Fire-clay..... "	500	4,000	300	2,400	150	1,200	242	3,160	175	5,200	60	1,960	167	3,763	535	9,750	3	223	220	6,150	139	9,455	436	16,240	370	1,680	599	1,295	1,245	4,130	3,979	5,920	Fire-clay.
Graphite..... "	*4,020	*46,345	5,292	64,008	5,764	51,129	3,404	30,863	4,884	42,340	79	42,587	5,283	51,187	4,600	38,379	3,757	32,717	3,475	31,932	3,713	33,310	4,572	42,340	335	44,775	4,511	43,265	5,539	55,450	2,210	38,760	Graphite.
Grindstones..... "	162,000	178,742	154,008	157,277	175,887	179,393	213,273	205,108	226,509	194,033	05	206,251	241,048	241,127	192,568	196,150	223,631	202,031	226,178	202,608	207,052	178,401	239,691	244,531	356	252,515	244,566	257,329	252,101	259,099	293,799	340,148	Grindstones.
Gypsum..... "		(b)	*17,171	*17,500	16,857	16,533	22,122	21,909	18,478	18,361	76	11,547	22,967	21,492	27,797	27,519	35,101	34,347	34,579	32,916	37,462	36,140	31,273	30,258	913	31,153	51,826	44,286	52,966	39,332	169,399	183,162	Gypsum.
Limestone for flux..... "																	180	30,000		2,000													Limestone for flux.
Lithographic stone..... "																	74	4,180	125	3,464	123½	(k) 3,975	15½	1,166	50	1,800	1,581	20,004	30	1,800	440	4,820	Lithographic stone.
Manganese ore..... Lbs.	1,789	41,499	1,245	43,658	1,801	47,944	1,455	32,737	1,328	32,550	55	6,694	115	10,250	213	14,578		4,180		65,000		60,000		76,000		118,375		163,000		166,006		160,000	Manganese ore.
Mica..... "	*20,361	*29,008	22,083	29,816	29,025	30,207	36,529	28,718	770,959	68,074		71,510		104,745		75,719		45,581															Mica.
Mineral pigments—																																	*Mineral pigments.*
Baryta..... Tons.	3,864	19,270	400	2,400	1,100	3,850			1,842	7,543			315	1,260			1,081	2,830			145	715	571	3,060	125	5,533	720	4,402	1,337	7,605		3,842	Baryta.
Ochres..... "	*350	*2,350	485	3,733	1,397	7,900	794	15,280	275	5,125	00	17,750	390	5,800	1,070	17,710	611	8,690	1,339	14,600	2,362	16,045	3,905	23,560	226	17,450	3,919	20,000	1,996	16,398	2,233	16,735	Ochres.
Mineral waters..... Galls.		(b)		(b)	*124,850	*11,456	424,600	37,360	561,165	66,031	85	54,268	640,380	75,348	725,096	108,347	767,460	110,040	739,382	126,048	706,372	111,736	749,691	141,477	300	100,000		† 100,000		75,000		100,000		100,000	Mineral waters.
Molybdenite..... Lbs.	150	*156																															Molybdenite.
Moulding sand..... Tons.		(b)	*160	*800	169	345	170	850	320	1,410	30	1,000	345	1,380	4,370	9,086	6,214	12,428	6,765	13,530	5,739	11,478	5,485	10,931	372	21,038	13,724	27,430	6,181	12,316	14,705	29,410	Moulding sand.
Natural gas..... "														150,000		376,233		313,754		423,032		276,301		325,873		322,123		387,271		417,094		339,476	Natural gas.
Peat..... Tons.																													400	1,200	220	660	Peat.
Petroleum (h)..... Brls.	584,061	525,655	713,728	556,708	695,203	713,695	704,690	653,600	795,030	902,734	98	1,010,211	779,753	984,438	798,406	874,255	829,104	835,322	726,138	1,086,738	726,822	1,155,647	709,857	1,011,546	391	1,061,747	808,570	1,202,020	710,498	1,151,007	622,392	1,008,275	Petroleum (h).
Phosphate (Apatite)..... Tons.	20,495	304,338	23,690	319,815	22,485	242,285	30,988	316,662	31,753	361,045	88	241,603			8,198	70,942	6,861	41,166	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	Phosphate (Apatite).
Precious stones.....										700		1,000			+1,000	1,500		+1,500															Precious stones.
Pyrites..... Tons.	42,906	193,077	38,043	171,194	63,479	285,656	72,225	307,292	49,227	123,067	31	203,193	59,770	179,310	58,542	175,626	40,527	121,581	34,198	102,594	33,715	101,155	38,910	116,730	218	128,872	27,687	110,748	40,031	155,164	35,261	130,544	Pyrites.
Quartz..... "									200	1,000					100	500					10	50			294	570	600	1,260					Quartz.
Salt..... "	62,359	227,195	60,173	166,394	59,070	185,460	32,832	129,547	43,754	198,857	21	161,179	45,486	162,041	62,324	195,926	57,199	170,687	52,376	160,455	43,960	169,693	51,348	225,730	142	248,639	59,339	254,390	62,055	279,468	59,428	262,328	Salt.
Soapstone..... "	*50	*400	100	800	140	280	195	1,170	917	1,239			1,574	6,240	717	1,920	916	1,640	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	*139,345	*873,600	181,581	986,689	165,818	1,036,746	200,561	1,273,884	211,727	1,266,982	33	1,061,536	202,147	1,251,934	290,000	1,800,000		+1,800,000	308,836	1,670,000		1,600,000		+ 1,600,000		1,900,000		2,195,000		2,275,000		2,400,000	Bricks.
Building stone..... C. yd.	*165,777	*642,509	262,592	552,267	411,570	641,712	341,337	913,691	382,563	964,783	85	708,736		609,837		1,100,000		1,200,000		1,095,000		1,000,000		+ 1,000,000		1,300,000		1,500,000		1,520,000		1,650,000	Building stone.
Cement, natural..... Brls.	}	(b)	*69,843	*81,909	50,668	35,593	90,474	69,790	102,216	92,405	73	108,561	{ 38,187	94,912	126,673	130,167	} 108,142	144,637	128,294	173,675	{ 70,705	60,500	85,450	65,893	125	73,412	141,387	119,308	125,428	99,994	133,328	94,415	Cement, natural.
" Portland..... "													29,221	52,751	31,924	63,848					78,385	141,151	119,763	209,380	264	324,168	255,366	513,363	292,124	562,916	317,066	565,615	" Portland.
Flagstones..... Sq. ft.	*70,000	*7,875	116,000	11,600	64,800	6,580	14,000	1,400	17,865	1,643	00	2,721	13,700	1,869	40,500	3,487	152,700	5,236	80,005	6,687		6,710		7,190		4,250		7,600				4,575	Flagstones.
Granite..... Tons.	*6,062	*63,309	21,217	142,506	21,352	147,305	10,197	79,624	13,307	65,985	37	70,056	24,302	89,326	22,521	94,393	16,392	109,936	19,238	84,888	18,717	106,709	10,345	61,934	397	81,073	13,418	90,542		80,000		155,000	Granite.
Lime..... Bush.	*1,535,950	*283,755	2,269,087	394,859	2,216,764	339,951	2,948,249	362,848	2,501,079	412,308	1,824	251,215	2,260,640	411,270	6,750,000	900,000		+900,000	5,225,000	700,000		650,000		+ 650,000		+650,000		800,000		- +800,000		330,000	Lime.
Marble..... Tons.	*501	*9,900	242	6,224	191	3,100	83	980	780	10,776	80	3,600	940	3,600	590	5,100			200	2,000	224	2,405											Marble.
Miscellaneous clay products (i).....		*112,910		182,150				239,385		195,242		258,844		265,811		213,186		162,144		151,588	86	163,427		129,629		214,675		185,000		200,000		†200,000	Miscellaneous clay product (i).
Pottery..... "		(j)		(j)		*27,750		(j)		*6,502	20	4,810	800	12,000	951	5,441	815	3,978		3,153		430											Pottery.
Roofing cement..... Tons.		(b)		(b)		(b)		*1,171		(b)	124	59,501	297,878	85,329	329,116	121,795	324,656	86,940	277,162	118,359	224,769	80,110	152,963	76,729	164	90,498	242,450	101,640	197,558	101,666	197,302	117,465	Roofing cement.
Sands and gravels (k)..... "	*124,865	*24,226	180,860	30,307	260,929	38,398	283,044	52,647	342,158	65,518		*348,000		227,300		350,000		250,325		257,045		153,575		164,250		181,717		161,540		231,525		248,115	Sands and gravels (k).
Sewer pipe.....		(j)		(j)		*266,320		387,660		69,070		65,000	5,180	97,239	7,112	90,825		75,596		58,900		53,370		42,800		40,791		33,406		12,100	715	9,980	Sewer pipe.
Slate..... Tons.	*5,345	64,675	7,357	89,000	5,314	90,689	6,935	119,160	6,368	100,250	(l) 0	65,000		55,704		55,704		65,600		195,123		83,855		155,595		167,902		220,258		259,450		278,671	Slate.
Terra-cotta.....		(j)		(j)		*49,800		(j)		*90,000		113,103						†200,000		200,000		225,000		† 225,000		†225,000		† 225,000		†225,000		250,000	Terra-cotta.
Tiles..... M.	*12,416	*142,617	14,658	230,068	7,518	114,057	10,526	134,265	10,521	140,877	19	141,399	15,689	190,857					19,200	210,000		225,000									1,000	259	Tiles.
Talc..... Tons.																															5,000	842	Talc.
Tripolite..... "																																	Tripolite.
Whiting..... Brls.	*400	*600	†400	†600	160	240			500	500							500	750			664	9,960	15	150	417	16,660	1,000	15,000	336	1,950			Whiting.
Total structural materials and clay products.....		*2,225,376		2,707,579		2,798,001		3,247,674		3,761,271		3,074,534		3,603,455		5,133,946		5,004,408		4,726,368		4,327,542		4,388,550		5,270,146		6,168,283		6,372,901		6,803,836	Total, structural materials and clay products.
All other non-metallic.....		*5,627,271		6,290,006		6,842,601		7,264,940		9,137,594		10,230,423		9,076,265		10,020,641		9,990,898		9,585,482		9,976,338		10,242,566		11,385,010		13,832,921		17,423,560		17,299,670	All other, non-metallic.
Total value, non-metallic.....		*7,852,647		8,997,585		9,640,602		10,512,614		12,898,865		13,304,957		12,679,720		15,154,587		14,995,306		14,311,850		14,302,880		14,631,116		16,655,156		20,001,204		23,796,461		24,103,506	Total value, non-metallic.
" metallic.....		*2,118,608		2,073,746		2,628,292		3,251,299		3,614,488		5,421,659		3,698,697		4,630,495		4,685,852		6,087,114		8,030,633		13,780,314		21,741,865		29,282,823		40,408,676		42,309,202	" metallic.
Estimated value of products unspecified or not reported (m).....		*250,000		†250,000		†250,000		†250,000		†250,000		†250,000		†250,000		†250,000		†250,000		†250,000		†250,000		† 250,000		300,000		† 300,000		†300,000		†,300,000	Estimated value of products unspecified or not reported (m).
Grand total.....		*10,221,255		11,321,331		12,518,894		14,013,913		16,763,353		18,976,616		16,628,417		20,035,082		19,931,158		20,648,964		22,584,513		28,661,430		38,697,021		49,584,027		64,505,137		66,712,708	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) Oven
(h) Crud calculated from official inspection returns up to end of 1900; figure for 1901 represents sales of crude oil. Values computed at age yearly price per barrel (of 35 imp. gallons).
(i) Incl for the years given) terra-cotta, pottery, sewer pipe and earthenware.
l of statement conform with that adopted for recent years.
as previous year; ordinary type with *, neither increase nor decrease to record, the figures for previous year not being available.
(j) Included in miscellaneous clay pro
(k) Exports only.
(l) Railway shipments.
(m) Mostly structural materials.
(n) 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) In 1900 and 1901 exports only.

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 r
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 †,

PROPORTIONATE VALUE OF DIFFERENT MINERAL PRODUCTS, 1901.

Products.	Contributing over 10 p. c.	Contributing between 10 and 1 p. c.	Contributing under 1 p. c.	Total.
1. Gold	36·17			
2. Coal	17·99			
3. Copper		9·14		
4. Nickel		6·89		
5. Silver		4·89		
6. Bricks (estimated)		3·59		
7. Lead		3·37		
8. Building stone (estimated)		2·47		
9. Asbestus		1·89		
10. Coke		1·84		
11. Pig Iron (from Canadian ore)		1·82		
12. Petroleum		1·51		
13. Lime (estimated)		1·25		
14. Iron ore (exported)		1·14		
15. Cement			·99	
16. Gypsum			·51	
17. Natural Gas			·51	
18. Sundry under 1 per cent.			4·03	
Total	54·16	39·80	6·04	100·00

The relative importance of the various branches of the mineral industry are illustrated by the figures in the foregoing table. As usual, gold and coal are the two most important by a considerable amount. The group of metallic products is to be credited with over 63 per cent and coal and coke with nearly 20 per cent, and these two important classes together, account for over 83 per cent of the whole.

PRODUCTION BY PROVINCES, 1901.

Province.	Value of Production.	Per cent.
Nova Scotia	$ 8,360,719	12·5
New Brunswick	467,985	·7
Quebec	3,761,639	5·7
Ontario	14,351,585	21·5
Manitoba and Northwest Territories including Yukon	19,297,940	28·9
British Columbia	20,472,840	30·7
Total	66,712,708	100·0

The relative contributions of the different provinces to the grand total are set forth above. It will be seen that the falling off in the Yukon gold now gives British Columbia front rank. Western Canada is to be credited with nearly 60 per cent as against the 40 per cent contributed by the territory lying east of Lake Winnipeg.

MINERAL PRODUCTION OF CANADA.

Of the value of the mineral substances exported by Canada, over one half is represented by gold. This, with the other metallic products—copper, iron, steel, iron ore, lead, nickel—together with coal and abestus constitute the chief exports and aggregate over 90 per cent of the whole.

Exports.

EXPORTS.

MINERALS AND MINERAL PRODUCTS OF CANADA DURING CALENDAR YEAR 1901.

Products.	Value.	Products.	Value.
Antimony ore	$ 1,643	Manufactures of metals other than iron or steel	$ 156,757
Asbestus, first class	363,756	Mica	152,553
" second class	107,471	Mineral pigments	8,233
" third class	598,691	Mineral waters	2,960
Barytes	3,820	Nickel	751,080
Bricks	5,189	Oil crude	691
Cement	1,514	Oil refined	66
Chromite	25,444	Ores unspecified	261,973
Clay, manufactures of	119	Platinum	591
Coal	4,828,811	Phosphate	120
Coke	176,990	Plumbago crude	30,535
Copper	3,404,908	" manufactures of	4,567
Felspar	10,973	Pyrites	57,263
Gold	22,432,885	Salt	6,510
Grindstones	22,441	Sand and gravel	117,465
" rough	6,689	Silver	2,016,727
Gypsum crude	231,385	Slate	10,000
" ground	15,333	Stone unwrought	131,631
Iron and steel	1,837,179	" wrought	32,025
Iron ore	762,283	Other articles	202,224
Lead	1,804,687		
Lime	99,194		
Manganese ore	4,820	Total	$40,690,196

EXPORTS.

DESTINATION OF PRODUCTS OF THE MINE, DURING THE FISCAL YEAR 1900-1901.

Destination.	Value.	Destination.	Value.
United States	$38,355,930	Japan	$ 8,228
Great Britain	877,880	Cuba	7,369
Germany	300,516	Holland	5,580
Newfoundland	245,190	Italy	2,975
Belgium	242,398	Spain	2,870
Chili	107,100	Azores	2,364
British Guiana	38,837	Australasia	987
China	37,886	Russia	442
France	31,877	Egypt	438
St. Pierre	27,844	Dutch West Indies	352
Mexico	27,184	Argentine	198
British West Indies	22,024		
British Africa	12,460	Total	$40,367,683
Hawaii	8,754		

From the foregoing table it will be seen that whilst of our exports, the products of the mine are destined for many different countries, the United States takes 95 per cent and the others comparatively insignificent amounts. MINERAL PRODUCTION OF CANADA.

IMPORTS. Imports.

MINERALS AND MINERAL PRODUCTS, FOR FISCAL YEAR 1900-1901.

Products.	Value.	Products.	Value.
Alum and aluminous cake.	$ 43,693	Lead, and mfrs. of.....	$ 282,587
Aluminium.....	8,916	Lime.....	14,534
Anchors	19,567	Litharge.	51,944
Antimony	24,714	Lithographic stone....	8,084
Arsenic	8,361	Manganese, oxide of.....	8,176
Asbestus and mfrs. of. ...	50,829	Marble, and mfrs. of.....	96,159
Asphaltum	67,587	Mercury.....	94,564
Bells and gongs.....	56,016	Metallic alloys—	
Bismuth.....	828	Brass, and mfrs. of.....	844,716
Blast furnace slag.....	3,107	Britannia metal.....	12,248
Borax	64,720	Metals, N.E.S., and mfrs. of	775,051
Bricks and tiles.....	133,343	Mineral and bituminous	
" fire.....	418,461	substances, N.E.S...	23,449
Buhrstones.....	5,762	Mineral and metallic pig-	
Building stone and granite	112,833	ments, paints and colours	774,922
Cement.....	669,839	Mineral waters.....	71,521
Chalk.....	11,629	Nitrate of soda, &c....	29,408
Clays.....	141,251	Ores of metals, N.E.S.. .	598,016
Coal.....	13,155,534	Paraffine wax.....	9,639
" tar and pitch.....	88,093	" candles.....	3,588
Coke.....	680,138	Petroleum, and products of	982,640
Copper and mfrs. of.....	1,103,319	Phosphate (fertilizer).	19,977
Copperas	14,330	Phosphorus.....	3,438
Cryolite.....	2,158	Platinum.....	20,263
Crucibles, clay or plumbago	38,874	Precious stones.....	740,481
Earthenware.	1,114,677	Pumice	5,516
Emery.....	39,116	Salt..	373,974
Felspar, quartz, flint, &c..	12,555	Saltpetre.....	46,804
Fertilizers.....	74,208	Sand and gravel.	42,891
Fuller's earth	3,147	Slate, and mfrs. of.. .. .	72,187
Gold and silver, and mfrs. of	359,646	Sulphate of copper.....	73,190
Graphite, and mfrs. of....	39,019	Sulphur.....	270,608
Grindstones	45,176	Sulphuric acid....	5,272
Gypsum, plaster of Paris, &c	6,200	Tin, and manufactures of..	2,338,839
Iron and steel—		Whiting	60,878
Pigs, scraps, blooms, &c.	1,055,350	Zinc, and manufactures of.	168,622
Rolled—bars, plates, &c., including chrome steel.	5,633,168	Total.....	$52,192,664
Ferro-silicon, ferro-manganese, &c.....	38,954		
Manufactures of, machinery, hardware, &c...	17,923,320		

The above table illustrates in a rough way the needs of the community in regard to mineral substances and their products, which might possibly be met to a greater or less extent in the future with the further discovery and development of our own resources. The

MINERAL PRODUCTION OF CANADA.

most prominent items are coal, whose imports amount in value to about one-quarter of the total, and manufactures of machinery, accounting for about one-third of the whole, or together adding up to about 58 per cent. The items going to make up the latter will be found *in extenso* in their appropriate connection later in the report. Their bearing is rather on the manufacturing than in connection with the mineral industries. In regard to the coal item, 61·5 per cent represents imports of anthracite of a quality of which we have as yet none in this country.

ABRASIVE MATERIALS.

ABRASIVE MATERIALS.

Grindstones.

Grindstones, woodpulp stones, scythe stones, &c., have for many years been made in the eastern provinces of Canada, from the millstone grit of the Carboniferous formation, which occupies a large portion of the surface of the eastern half of the province of New Brunswick, and the northern and northwestern parts of Nova Scotia.

Owing to the cessation of work at one of the large quarries in Nova Scotia, the production of grindstone in 1901 was less than that of the previous year. The total output amounted to 4,581 tons, valued at $45,960, the decrease being 958 tons. In the province of New Brunswick, from which the greater part of the production was obtained, there was a slight increase; in fact this province has been steadily increasing its output of grindstone, &c., for the past six or seven years.

The grindstones sold are nearly all shipped in a finished condition and are worth about $10 a ton. Woodpulp stones of about 2½ tons, sell for from $40 to $45 each. At many of the quarries there is a considerable production of foundation and building stone, besides rough stone for breakwater and harbour works.

Statistics of production by provinces since 1886 are given in Table 1. below.

ABRASIVE MATERIALS.

Grindstones.

TABLE 1.

ABRASIVE MATERIALS.

ANNUAL PRODUCTION OF GRINDSTONES.

Production.

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

The localities where operations are being carried on have been known and worked for many years. The principal quarries are situated in the province of New Brunswick on the Bay of Chaleur at Clifton and Stonehaven; on Miramichi Bay in the vicinity of Newcastle; and along the shore of Shepody Bay in the Bay of Fundy; while in Nova Scotia the points to which attention has been chiefly directed, are at Lower Cove, Cumberland Basin and at Woodbourne, Pictou county. A large proportion of the production is exported, chiefly to the United States. Statistics of exports and imports are given in Tables 2 and 3. Almost $30,000 worth of grindstones, &c., were imported in 1901, principally into the provinces of Ontario and Quebec.

ABRASIVE MATERIALS.

Grindstones.

Exports.

TABLE 2.

ABRASIVE MATERIALS.

EXPORTS OF GRINDSTONES.

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

* Including stone for the manufacture of grindstones.

TABLE 3.

ABRASIVE MATERIALS.

Imports.

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 Grindstones not mounted and not less than 36 inches in diameter	15 p.c.		32,943
1901 Grindstones N.E.S.	25 p.c.		6,125
			39,068

A list of quarry operators is appended herewith, some of whom, however, did not manufacture any grindstones during the year. ABRASIVE MATERIALS. Grindstones.

NOVA SCOTIA—

The Atlantic Grindstone Co., Lower cove, Cumberland county.

J. W. Sutherland, Quarry Island, Woodbourne, Pictou county.

NEW BRUNSWICK—

Henry Tower, Lower Rockport, Westmoreland county.

H. C. Read, Sackville, Westmoreland county.

A. D. Richard, Dorchester, Westmoreland county.

W. B. Deacon, Shediac, Westmoreland county.

C. E. Fish, Newcastle, Northumberland county.

J. B. Read, Stonehaven, Gloucester county.

Messrs. Lombard & Co., Clifton, Gloucester county and Boston, Mass.

R. W. Knowles, Clifton, Gloucester county.

Corundum.—The production of corundum in Ontario in 1900 and 1901, was as follows:— Corundum.

	Quantity.	Value.
1900.....	3 tons.	$ 300
1901.....	444 "	53,115

This is almost all the result of the operations of the pioneer company in the field, the Canada Corundum Company, Ltd., Toronto. Fifty men were employed throughout the year. The company's mine, 'The Craig Mine,' is situated in the township of Raglan, Renfrew county. The present mill was greatly enlarged during 1901. It is operated both by steam and water power, has been built in a very suitable location, and is filled with the latest machinery for the crushing and separating of the mineral. It is now proposed to erect a mill with ten times the present capacity. The product is sold in Canada, the United States and Great Britain, and a large market for it is available in Germany, France, Italy, Holland, Belgium and Sweden. The Imperial Corundum Company and the Crown Corundum and Mica Company, both of Toronto, did a considerable amount of development work, the former on lot 14 and part of lot 15, concession 8, and the latter on lot 14, concession 9, township of Methuen, Peterborough county.

ABRASIVE MATERIALS.

Imports.

Statistics of imports of buhrstones, emery and pumice stones are given hereunder.

TABLE 4.

ABRASIVE MATERIALS.

Buhrstones.

IMPORTS OF BUHRSTONES.

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

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

TABLE 5.

ABRASIVE MATERIALS.

Emery.

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

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.

ABRASIVE MATERIALS.

Imports.

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

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

ASBESTUS.

ASBESTUS.

Production.

The production of asbestus in Canada, for which the mines in the Eastern Townships, province of Quebec have become widely known, has been steadily increasing year by year since the beginning of operations about 1880. The year 1901 has witnessed a particularly large increase, the production (sales and shipments) amounting to 32,892 tons, valued at $1,248,645, an average for all grades of $37.96 per ton. In addition there was a production of the short fibred 'asbestic' of 7,325 tons, valued at $11,114 or an average of $1.52 per ton. The grand total of asbestus and asbestic for the year, therefore, amounted to 40,217 tons, valued at $1,259,759.

Prices of first grade fibre varied from $150 to $200 per ton, and of second grade, from $75 to $125 a ton. 'Thirds' and paper stock which preponderate in quantity, sold from $12 to $60 and asbestic from $1 to $3 a ton.

ASBESTUS.
Production.

Statistics of production, exports and imports, are given in Tables 1, 2, 3 and 4 following.

TABLE 1.

ASBESTUS.

PRODUCTION.—1896 TO 1901.

——	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

TABLE 2.

ASBESTUS.

PRODUCTION, ETC.—1880 TO 1895.

ASBESTUS.

Production.

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.

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	1st class	5,155	$363,756	$70.56
	2nd "	2,210	107,471	48.63
	3rd "	24,904	598,691	24.04
	Total, 1901	32,269	1,069,918	33.16

ASBESTUS

Imports.

TABLE 4.

ASBESTUS.

IMPORTS.

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

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

The asbestus production in Canada is confined almost entirely to the province of Quebec, in the district of Black Lake, Thetford and Danville in the Eastern Townships. The asbestus, (or more properly chrysotile) occurs in serpentine areas, occurring at intervals along a belt of country extending from the Vermont boundary to the Gaspé Peninsula. The economic occurrences of the mineral, however are restricted to the districts mentioned above. The mineral occurs in small veins distributed throughout the rock and mining is conducted in almost every case by open quarrying, some of the workings having now attained considerable depth. The rock mined is submitted to crushing, and the asbestus is separated, sorted and graded according to the length of fibre, by the aid of special machinery.

Asbestus is also found in some serpentines of the Laurentian areas, as for example at Pointe au Chêne, in Argenteuil county, where a mill was formerly erected, but has since been removed and also in Denholm township, and at other points in the counties of Wright and Labelle,

Following is a list of firms engaged in mining asbestus :—

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

King Bros.—
B. Bennett, Mgr..... " " "

Johnson's Company..... " " "

ASBESTUS.

Beaver Asbestus Co.; Ltd.—
C. H. Van Nostrand.....220 Broadway, New York.
Standard Asbestus Co.—
R. T. Hopper.....Montreal, Que.
Manhattan Asbestus Co.—
J. J. Penhale.....Black Lake, Que.
Canadian Asbestus Co.—
R. Stather, Secy..... " " "
Union Asbestos Mine..... ..... " " "
James Reed, M.D.....Reedsdale, Que.
A. H. Murphy.....Black Lake, Que.
Asbestus and Asbestic Co., Ltd...Danville, Que.
Brompton Lake Asbestus Co.—
B. Greenshields.....Montreal, Que.
Ottawa Asbestus Mining Co.....Ottawa, Ont.

CHROMITE.

CHROMITE

Chromite or 'chromic iron ore' was mined as usual in small quantities in the Eastern Townships, Quebec. Shipments were made from Coleraine and Black Lake stations on the Quebec Central Railway and reached a total of 1,274 tons.

In the absence of complete direct returns from producers this is the figure which has been adopted as the production for the year. The proportion of high and low grade ore in these shipments were according to Mr.Obalski* as follows :—

1st class ore, concentrates, etc.,		592 tons	valued at	$9,424
2nd "	"	682	"	7,320
Total.....		1274		16,744

Prices for the year averaged about $18 for high grade ore and from $10 to $12 for second grade.

Statistics of production are given in Table 1. The output practically dates from 1894 although there was a small production in the years 1886 and 1887.

*Mining Operations in the Province of Quebec, 1901. J. Obalski.

CHROMITE.

Production.

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

* Railway shipments.

Statistics of exports since 1885 are given in Table 2 following. Previous to 1900 the ore was all exported, during the past two years however small quantities have been shipped to the Electric Reduction Works Co., at Buckingham and used in the manufacture of ferrochrome of which latter product there was shipped from Buckingham during 1901 about 182 tons.

TABLE 2.

CHROMITE.

Exports.

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

A list of some of the chief producers of chromite in Canada is given hereunder.

Coleraine Mining Co. . . . . Montreal, Que.
Coleraine Chrome Co., W. H. Lambly. . . Inverness, Que.
Messrs Nadeau and Topping . . . . . Black Lake, Que.
Montreal Chrome Iron Co., H. Leonard. D'Israeli, Que.
Messrs Beebe and Sons . . . . . Boston, Mass.

COAL.

Production.

With the exception of a small output of anthracite coal from the mines situated in the Cascade coal basin of the North-west Territories, which in 1901 amounted to only 14,742 tons, the entire product in Canada consists of bituminous coal and lignite.

The chief coal-bearing areas at present worked, are the Nova Scotia coal fields in rocks of Carboniferous age, the Cretaceous coal of Vancouver Island, British Columbia and the more recently opened fields of the Crow's Nest Pass, B.C., also found in the Cretaceous rocks. Lignitic coal of good quality is mined at Lethbridge, Alberta and in the Souris river district, Assiniboia.

The production of coal in Canada is now double what it was in 1890, and over four times the output of 1880. The production in 1901 reached a total of 6,227,352 tons of 2,000 pounds (5,560,135 tons of 2,240 pounds) valued at $12,005,565, being an increase in quantity over the output of 1900 of 618,686 tons or over 11 per cent. The aggregate value of the coal mined in 1901 was somewhat less than during the previous year, owing to the high prices obtained for coal in Nova Scotia in 1900 not being maintained during the past year.

Statistics of production by provinces for 1900 and 1901, are given in Table 1 following, while in Table 2, a comparison between the two years is shown.

TABLE 1.

COAL.

PRODUCTION BY PROVINCES, 1900 AND 1901.

Province.	1900.		1901.	
	Tons.	Value.	Tons.	Value.
Nova Scotia	3,623,536	$8,088,250	4,158,068	$ 6,496,982
British Columbia	1,623,180	4,347,804	1,660,515	4,447,809
North-west Territories including Yukon	351,950	839,375	391,139	1,008,917
New Brunswick	10,000	15,000	17,630	51,857
Total	5,608,666	$13,290,429	6,227,352	$12,005,565

Coal.
Production.

Table 2.
Coal.
Production. Comparison of 1900 and 1901.

Province	Increase or Decrease.			
	Tons.	Per cent.	Value. $	Per cent.
Nova Scotia	*i* 534,532	*i* 14·75	*d* 1,591,268	*d* 19·67
British Columbia	*i* 37,335	*i* 2·30	*i* 100,005	*i* 2·30
North-west Territories including Yukon	*i* 39,819	*i* 11·13	*i* 169,542	*i* 20·20
New Brunswick	*i* 7,630	*i* 76·30	*i* 36,857	*i* 245·71
Dominion	*i* 618,686	*i* 11·04	*d* 1,284,824	*d* 9·67

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	4,172,582	8,222,878	1 97	*i* 386,475	*i* 10·2
1899	4,925,051	10,283,497	2 09	*i* 752,469	*i* 18·0
1900	5,608,666	13,290,429	2 37	*i* 683,615	*i* 13.9
1901	6,227,352	12,005,565	1 93	*i* 618,686	*i* 11·04

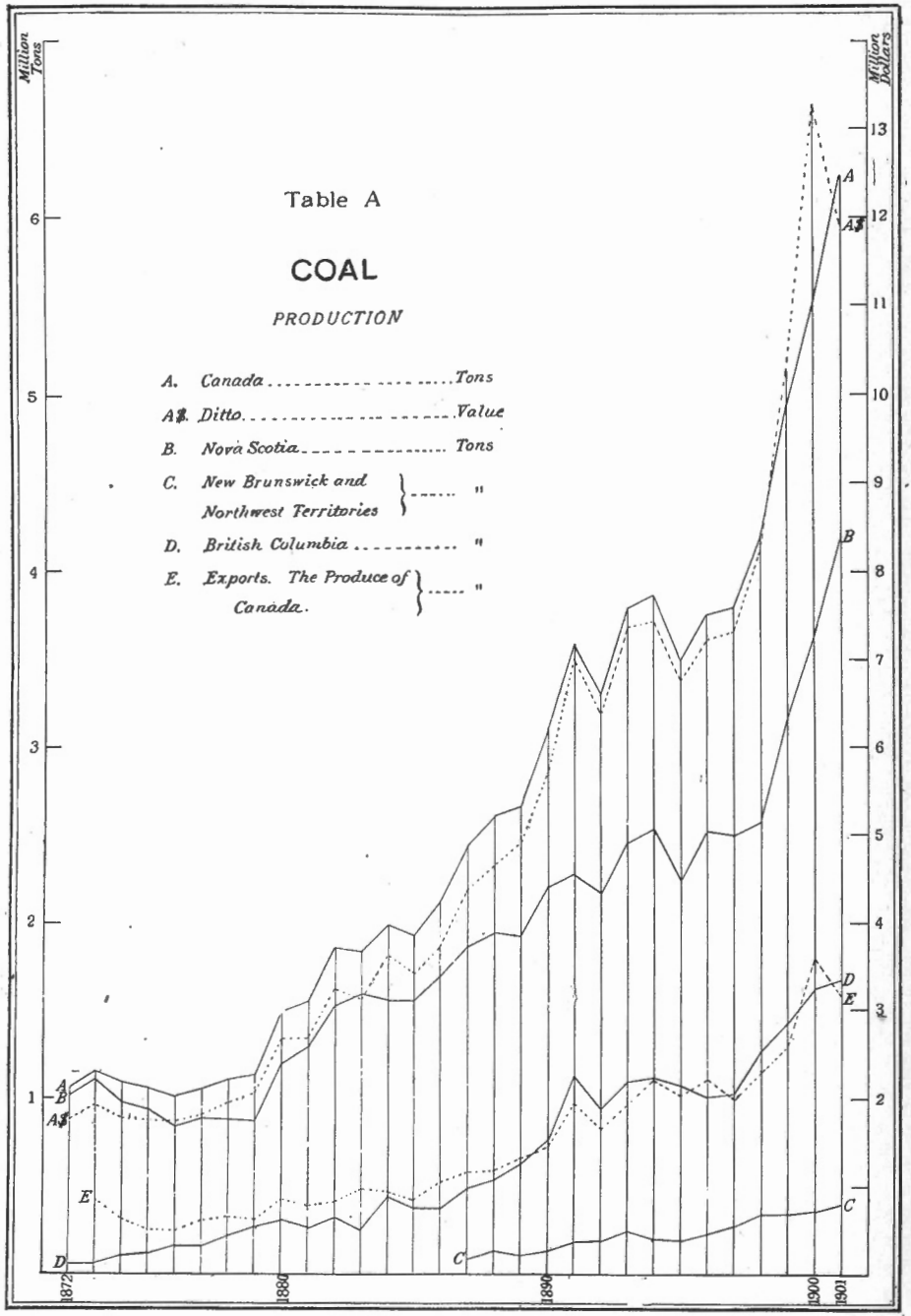


Table A
COAL
PRODUCTION
A. Canada ..... Tons
A$. Ditto ..... Value
B. Nova Scotia ..... Tons
C. New Brunswick and Northwest Territories ..... "
D. British Columbia ..... "
E. Exports. The Produce of Canada. ..... "
Million Tons
Million Dollars
1872
1880
1890
1900
1901

COAL. Production

In spite of the opening up of new mines in the western provinces, the coal fields of Nova Scotia not only continue to supply the greater part of the Canadian product, nearly 67 per cent in 1901, but they have also during the past three or four years been increasing their proportion of the total output, as evidenced by the following table which shows the percentage of production to be credited to the several provinces at various periods since 1874.

Province.	1874.	1880.	1890.	1898.	1899.	1900.	1901.
	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.
Nova Scotia	91	79	71	61·4	63·9	64·6	66·8
British Columbia	8	20	25	30·3	29·0	28·9	26·7
Northwest Territories } New Brunswick.	.....	.....	4	8·3	7·1	6·5	6·5

The statistics of production since 1886, showing the increase each year and the yearly average value per ton, are given in Table 3, while statistics of exports and imports are given in Tables 4, 5, 6, 7 and 8 following. Changes in the Dominion's foreign coal trade were comparatively unimportant; exports were somewhat less than during 1900 but still larger than any other previous year. Imports of both anthracite and bituminous coal were greater than in 1900.

TABLE 4.

COAL.

EXPORTS. Exports.

CALENDAR YEAR.	PRODUCE OF CANADA.	NOT PRODUCE.	CALENDAR YEAR.	PRODUCE OF CANADA.	NOT PRODUCE.
	Tons.	Tons.		Tons.	Tons.
1873	420,683	5,403	1888	588,627	84,316
1874	310,988	12,859	1889	665,315	89,294
1875	250,348	14,026	1890	724,486	82,534
1876	248,638	4,995	1891	971,259	77,827
1877	301,317	4,829	1892	823,733	93,988
1878	327,959	5,468	1893	960,312	102,827
1879	306,648	8,468	1894	1,103,694	89,786
1880	432,188	14,217	1895	1,011,235	96,836
1881	395,382	14,245	1896	1,106,661	116,774
1882	412,682	37,576	1897	986,130	101,848
1883	486,811	44,388	1898	1,150,029	99,189
1884	474,405	62,665	1899	1,293,169	101,004
1885	427,937	71,003	1900	1,787,777	62,776
1886	520,703	78,443	1901	1,573,661	53,894
1887	580,965	89,098			

COAL.

Exports.

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.

Imports.

IMPORTS OF BITUMINOUS COAL.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
1880	457,049	$1,220,761	1891	1,598,855	$4,060,896
1881	587,024	1,741,568	1892	1,615,220	4,099,221
1882	636,374	1,992,081	1893	1,603,154	3,967,764
1883	911,629	2,996,198	1894	1,359,509	3,315,094
1884	1,118,615	3,613,470	1895	1,444,928	3,321,387
1885	1,011,875	3,197,539	1896	1,538,489	3,299,025
1886	930,949	2,591,554	1897	1,543,476	3,254,217
1887	1,149,792	3,126,225	1898	1,684,024	3,179,595
1888	1,231,234	3,451,661	1899	2,171,358	3,691,946
1889	1,248,540	3,255,171	1900	2,439,764	4,310,964
1890	1,409,282	3,528,959	1901*	2,516,392	4,956,025

*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	1891.....	1,399,067	$5,224,452
1881.....	572,092	2,325,937	1892.....	1,479,106	5,640,346
1882.....	638,273	2,666,356	1893.....	1,500,550	6,355,285
1883.....	754,891	3,344,936	1894.....	1,530,522	6,354,040
1884.....	868,000	3,831,283	1895.....	1,404,342	5,350,627
1885.....	910,324	3,909,844	1896.....	1,574,355	5,667,096
1886.....	995,425	4,028,050	1897.....	1,457,295	5,695,168
1887.....	1,100,165	4,423,062	1898.....	1,460,701	5,874,685
1888.....	†2,138,627	5,291,875	1899.....	1,745,460	6,490,509
1889.....	1,291,705	5,199,481	1900.....	1,654,401	6,602,912
1890.....	1,201,335	4,595,727	1901*.....	1,933,283	7,923,950

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

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

TABLE 8.

COAL.

IMPORTS OF COAL DUST.

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

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

An approximation to the consumption of coal in Canada, sufficiently accurate for purposes of comparison, may be made as follows, if we assume the figures of imports for the fiscal year to represent closely enough the importation during the calendar year.

COAL.

Consumption in Canada.

	Tons.	Tons.
Production Table 3.....	6,227,352	
Exports of coal, the production of Canada, Table 4.....	1,573,661	
Home consumption of Canadian coal.....		4,653,691
Imports of bituminous anthracite and coal dust, Tables 6, 7 and 8	4,864,107	
Exports of coal not the production of Canada, Table 4.....	53,894	
Home consumption of imported coal..		4,810,213
Total consumption of coal in Canada, home and imported.....		9,463,904

Table 9 embodies similar calculations for each year since 1886. Therein is shown the consumption of Canadian and imported coal and the percentage of each, as well as the total consumption per capita. It will be seen that not only the total consumption, but the consumption per capita also has been steadily increasing. The total consumption in 1901 was greater than in 1900 by 1,281,452 tons or 15·6 per cent.

An interesting feature to be deduced from the above figures is the relation between the total production as given in Table 3 and the total consumption. Thus in 1901 the production amounted to 65·8 per cent of the consumption as compared with 68·5 per cent in 1900, 63·7 per cent in 1899, 66·1 per cent in 1898 and 63·9 per cent in 1897. In 1890 the proportion was 62·4 per cent and in 1886, 60·8 per cent.

TABLE 9.

COAL.

CONSUMPTION OF COAL IN CANADA.

COAL.

Consumption 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.....	3,022,553	3,274,981	6,297,534	48·0	52·0	1·200
1899.....	3,631,882	4,092,361	7,724,243	47·0	53·0	1·454
1900.....	3,820,889	4,361,563	8,182,452	46·7	53·3	1·521
1901.....	4,653,691	4,810,213	9,463,904	49·1	50·9	1·761

NOVA SCOTIA.

Nova Scotia.

Detailed statistics of production of coal in this province are given in Tables 10, 11, 12, and 13. In Table 10, the output, sales and colliery consumption, are shown both in tons of 2,240 pounds and in tons of 2,000 pounds. The production shows a considerable increase over the previous year and is the largest in the history of coal mining in this province. It reached a total of 4,158,068 tons (2,000 pounds) being an increase over 1900 of 534,532 tons or nearly 15 per cent. The price of coal at shipping point, which rose to an average of $2.50 per long ton in 1900, fell off again during 1901 and averaged about $1.75 for the year. The various tables require but little comment. It will be noted that the Dominion Coal Company supplies by far the greater part of the output, over 67 per cent, being more than all the other mines of the province combined. In the table of distribution of coal sold, increased shipments to all markets are shown with the exception of New Brunswick and the United States. The consumption of coal in Nova Scotia has been increased by the operations of the Dominion Iron and Steel Company. While some small shipments have been made to Europe, these had not attained much importance before the close of the year. The future, however, would appear to hold bright prospects for an increased demand in this direction.

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

* 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.....	141,590	119,863	133,771	105,095	631,979	451,677	972	317
2nd "	142,557	119,224	147,954	132,863	854,195	778,440	20,352	5,312
3rd "	102,687	89,668	117,948	109,321	894,880	943,509	14,756	14,931
4th "	151,939	118,861	134,167	113,070	785,587	714,984	4,223	3,327
Total, 1901.....	538,773	447,616	533,840	460,349	3,166,641	2,888 610	40,303	23,887
" 1900.....	560,670	512,032	590,639	525,818	2,531,922	2,312,035	11 415	8,700

Coal.

Nova Scotia.

TABLE 12.

Coal.

NOVA SCOTIA:—OUTPUT BY COLLIERIES DURING THE CALENDAR YEAR, 1901.

Colliery.	Tons, 2,000 lbs.	Colliery.	Tons, 2,000 lbs.
Cumberland County.		*Victoria County.*	
Joggins	76,220	NewCampbelton	15,181
Jubilee	1,221		
Scotia	776		
Springhill	460,555		
Pictou County.		*Cape Breton County.*	
Acadia	302,683	Dominion Coal Co.	2,869,197
Marsh	2,227	Nova Scotia Steel and Coal Co.	264,516
Intercolonial	228,930	Gowrie and Blockhouse	22,905
Inverness County.		Sydney	10,023
Mabou	1.020		
Pt. Hood	24,103	Total	4,279,557

TABLE 13.

COAL.

NOVA SCOTIA:—DISTRIBUTION OF COAL SOLD.

Markets.	Calendar Years.			
	1900.		1901.	
	Tons, 2,000 lbs.	Per cent.	Tons, 2,000 lbs.	Per cent.
Nova Scotia, transported by land	576,807	17·2	757,975	19·8
" " sea	428,581	12 7	533,569	14·0
Total, Nova Scotia	1,005,388	29·9	1,291,544	33·8
New Brunswick	438,834	13·1	366,976	9·6
Prince Edward Island	69,046	2·1	78,324	2·1
Quebec	1,031,495	30·7	1,315,935	34·4
Newfoundland	107,605	3·2	124,265	3·3
United States	706,217	21·0	623,390	16·3
Other countries	....	.....	20,028	·5
Total	3,358,585	100·0	3,820,462	100·0

New Brunswick.

NEW BRUNSWICK.

There has been a considerable renewal of activity in coal mining in this province. Old operators have increased their output, while several new companies are in the field. The sales and shipments for 1901 have been returned as 17,630 short tons, valued at $51,857, which is a substantial increase over the operations of previous years.

The early completion of the New Brunswick Coal and Railway Company line between Newcastle and Fredericton, at present in course of construction, it is expected will result in an extensive development of the coal areas between Little river and Newcastle river in the Grand Lake district. COAL. New Brunswick.

At Dunsinane on the Intercolonial Railway in King's county some work of an exploratory character was undertaken, while at Coal Branch in Kent county a shaft was commenced on coal seams in that vicinity.

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

NORTH-WEST TERRITORIES : North-west Territories.

At Estevan and Coal Fields in Assiniboia, and Lethbridge, Anthracite and Canmore in Alberta, mining operations were carried on with increased vigour and enlarged output. Important developments have taken place at Frank and Blairmore to the east of the Crow's Nest Pass coal areas, and a considerable output from this district in the immediate future is probable. The product of a number of coal deposits of

COAL.

North-west Territories.

the Yukon district has also been utilized to a small extent during the past year, being sold in Dawson and vicinity.

The total product of the Territories, excluding the Yukon, for the year has been estimated at 385,275 tons, valued at $922,687 and made up as follows:

Estevan and Coal Fields	45,000 tons.
Lethbridge	217,034 "
Miscellaneous small mines	4,000 "
Anthracite and Canmore	103,241 "
Blairmore	16,000 "
Total	385,275 "

Of this amount 14,742 tons is anthracite coal, the balance bituminous and lignite.

The total sales in the Yukon are reported as 5,864 tons, valued at Dawson at $86,230.

Table 15 following, gives statistics of production in the North-west Territories, not including the Yukon :—

TABLE 15.

COAL.

NORTH-WEST TERRITORIES :—PRODUCTION.

Calendar Year.	Tons.	Value.	Value per ton.
1887	74,152	$ 157,577	$ 2 13
1888	115,124	183,354	1 59
1889	97,364	179,640	1 85
1890	128,953	198,498	1 54
1891	174,131	437,243	2 51
1892	184,370	469,930	2 55
1893	238,395	598,745	2 51
1894	199,991	488,980	2 45
1895	185,654	414,064	2 23
1896	225,868	606,891	2 69
1897	267,163	667,908	2 50
1898	340,088	825,220	2 43
1899	334,600	811,500	2 43
1900	351,950	839,375	2 38
1901	385,275	922,687	2 39

The various mines at Coal Fields and Roche Percée have been consolidated under the general management and direction of the Souris Coal Mining Co., Ltd.

At Frank, Alberta, a mine has been opened up and operated by the Canadian American Coal and Coke Co. According to Mr. Frank

B. Smith, inspector of coal mines for the North-west Territories, the seam has an average thickness of 12 feet, and the mine is capable of producing an average of 200 tons per day which within a few months was to be increased to 500 tons per day. The coal is bituminous, and is reported equal in steaming qualities to the Crow's Nest coal. The coaking quality has also been tested by the erection of six bee-hive ovens at the mine. COAL. North-west Territories.

In the Yukon district, coal has so far been found and developed at three points, Cliff creek, Rock creek and Five Fingers.

The Cliff creek mine is located on the east side of the Yukon river, about 60 miles below Dawson, and 1½ miles back from the river. The property from which several thousand tons have been mined and shipped to Dawson and vicinity is owned by the North American Transportation and Trading Co. The deposit occurs in sandstones and shales, apparently of Laramie age, and the seam is stated to be about 15 feet thick.

The Rock creek coal mines are located on the river of the same name, about 7 or 8 miles from the Klondike river, and 18 miles from Dawson. The Alaska Exploration Company has been operating here during the winter of 1900-1901, the coal being brought out during the sleighing season. Lack of transportation facilities however, interfered and work ceased in April 1901. A number of private individuals are also said to have coal claims in this vicinity, but little has been done beyond prospecting.

Seams of coal above Five Fingers, on the Yukon river and nearly 200 miles above Dawson, were discovered by Wm. Ogilvie in 1887, and their exploitation was mentioned by him in the Annual Report of the Department of the Interior for 1900. A mine is reported to have been in operation at this point during 1901, but no records of production have been obtained.

BRITISH COLUMBIA: British Columbia.

The coal production of this province is derived from two distinct fields viz; from the collieries on Vancouver Island and from those near the Crow's Nest Pass.

The total sales and shipments, &c., for the year 1901, were 1,660,515 tons, an increase of 2·3 per cent over the year 1900. This figure does not include the coal used in coke ovens which amounted in 1901 to 221,226 tons of 2240 lbs. or 247,773 short tons.

COAL.

British Columbia.

Statistics of output, home consumption, quantity sold for export &c., are shown in Table 16.

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	From 1836 to 1873 inclusive, the output is taken as production.			11,200	4 00	40,000
1852-59..	25,398				28,446	4 00	101,592
1859¶...	1,989				2,228	4 00	7,956
1860.....	14,247				15,957	4 00	56,988
1861.....	13,774				15,427	4 00	55,096
1862.....	18,118				20,292	4 00	72,472
1863.....	21,345				23,906	4 00	85,360
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.....	1,029,097	202,697	806,479	1,009,176	1,130,277	3 00	3,027,528
1892	826,335	196,223	640,579	836,802	937,218	3 00	2,510,406
1893.....	978,294	207,851	768,917	976,768	1,093,980	3 00	2,930,304
1894.....	1,012,953	165,776	827,642	993,418	1,112,628	3 00	2,980,254
1895.....	939,654	188,349	756,334	944,683	1,058,045	3 00	2,834,049
1896.....	894,882	261,984	634,238	896,222	1,003,769	3 00	2,688,666
1897.....	892,296	290,310	619,860	910,170	1,019,390	3 00	2,730,510
1898....	1,136,015	374,953	752,863	1,127,816	1,263,154	3 00	3,383,448
1899.....	1,306,324	526,058	751,711	1,277,769	1,431,101	3 00	3,833,307
1900.....	1,590,178	535,084	914,184	1,449,268	1,623,180	3 00	4,347,804
1901.....	1,691,557	568,440	914,163	1,482,603	1,660,515	3 00	4,447,809

*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.

Statistics of coal production in 1901 are given in the Annual Report of the Minister of Mines for the province as follows : COAL. British Columbia.

SALES AND OUTPUT FOR YEAR. Tons of 2240 lbs.	Tons.	Cwt.	Tons.	Cwt.
Sold for consumption in Canada	413,704	18		
" export to U.S.A.	895,197	10		
" " to other countries	18,965	15		
Total sales	1,327,868	03		
Used under colliery boilers &c	154,735	01		
Total sales and colliery consumption			1,482,603	04
Used in making coke			231,226	
			1,713,829	04
Stock on hand first of year	27,977	01		
" " last of year	5,704	17		
Difference taken from stock during the year			22,272	04
Output of collieries for year			1,691,557	

Statistics of labour and wages are given in the same report as follows. Number of hands employed, daily wages paid etc.

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 & clerical assistance	47	$ 4 65	40	$ 4 00	87	$ 4 32
Whites—						
Miners	1,739	4 00	.....	.....	1,739	4 00
Miners helpers	327	2 40	.....	.....	327	2 40
Labourers	602	2 65	213	2 50	815	2 60
Mechanics & skilled labour	64	2 85	215	3 15	279	3 00
Boys	132	1 50	22	1 15	154	1 30
Japanese	28	1 40	36	1 15	64	1 30
Chinese	102	1 35	407	1 20	509	1 30
Totals	3,041		933		3,974	

During the year 1901, the Vancouver Island coal mines yielded a total output of 1,312,202 long tons of coal, of which 50,458 tons were used in making coke. This is somewhat less than the output of the previous year. The export trade was less by about 55,000 tons prob-

Coal. British Columbia.

ably due to the increased use of oil as fuel in California. The exports of Vancouver Island coal are made principally to the state of California but also to the Hawaiian islands and Alaska. Coal for use as fuel is supplied to a large extent to the Australian, Japanese and Chinese mail steamers.

The following statistics of receipts of coal in the Californian market are given as illustrating the position which British Columbia coal occupies in this market.

—	1900.	1901.
	Tons, 2,240 lbs.	Tons, 2,240 lbs.
British Columbia	766,917	710,330
Australia	178,563	175,959
English and Welsh	54,099	52,270
Eastern (Cumberland and Anthracite)	17,319	27,370
Seattle (Washington)	250,590	240,574
Tacoma "	418,052	433,817
Mount Diable, Coos Bay and Tesla	160,915	143,318
Japan and Rocky Mountains (by rail)	42,673	51,147
Total	1,889,128	1,834,785

The following companies operated coal mines on Vancouver Island during 1901:—

The New Vancouver Coal Mining and Land Company, Limited, operating the Nanaimo colliery.

The Wellington Colliery Company, Limited, operating the Wellington colliery in Cranberry district, the Wellington Colliery in Comox district, and the Alexandria Colliery in Cranberry district.

The total output of the Crow's Nest Pass Coal Company in 1901 from their Coal Creek and Michel collieries was 379,355 long tons, of which 180,768 tons were used in making coke, the increase over 1900 being more than 83 per cent.

Further details relating to production and collieries working will be found in the Annual Report of the Minister of Mines for British Columbia.

Coke.

Coke.

More than twice as much coke was made in 1901 as in 1900. The inauguration of extensive iron smelting operations at Sydney, Nova

Scotia, employing coke as fuel, and the continued building of new coke ovens at Fernie B.C., to supply the increasing demand for fuel used in the reduction of British Columbia ores are mainly responsible for this greatly increased output. The production in 1900 amounted to 365,531 tons valued at $1,228,225, the increase in quantity over the previous year being over 132 per cent. Coal. Coke. Production.

Statistics of production, exports and imports, are given in Tables 1, 2, 3, 4.

TABLE 1.

COKE.

ANNUAL PRODUCTION

Calendar Year.	Tons.	Value.	Value. per Ton.
1886	35,396	$101,940	$2 88
1887	40,428	135,951	3 36
1888	45,373	134,181	2 96
1889	54,539	155,043	2 84
1890	56,450	166,298	2 95
1891	57,084	175,592	3 08
1892	56,135	160,249	2 85
1893	61,078	161,790	2 65
1894	58,044	148,551	2 56
1895	53,356	143,047	2 68
1896	49,619	110,257	2 22
1897	60,686	176,457	2 91
1898	87,600	286,000	3 26
1899	100,820	350,022	3 47
1900	157,134	649,140	4 13
1901	365,531	1,228,225	3 36

TABLE 2.

COKE.

PRODUCTION OF COKE BY PROVINCES.

Calendar Year.	Nova Scotia.		British Columbia.	
	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

Coal.

Coke.

Exports.

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

TABLE 4.

COKE.

Imports.

IMPORTS OF OVEN COKE.

Fiscal Year.	Tons.	Value.
		$
1880	3,837	19,353
1881	5,492	26,123
1882	8,157	36,670
1883	8,943	38,588
1884	11,207	44,518
1885	11,564	41,391
1886	11,858	39,756
1887	15,110	56,222
1888	25,487	102,334
1889	29,557	91,902
1890	36,564	133,344
1891	38,533	177,605
1892	43,499	194,429
1893	41,821	156,277
1894	42,864	176,996
1895	43,235	149,434
1896	61,612	203,826
1897	83,330	267,540
1898	135,060	347,040
1899	141,284	362,826
1900	187,378	506,839
1901	Duty free. 308,786	680,138

It will be seen that both the exports and imports have been increasing rapidly in amount. The exports are principally from British Columbia, over 53,000 tons having been exported from that province during the past year. The increase in imports amounted to over 64

per cent. A large portion of the imported coke is used in the iron furnaces at Hamilton and Midland, Ont. COAL. Coke.

In Nova Scotia the total quantity of coke made, was 242,996 tons, of which 222,694 tons were used or sold during the year, the balance remaining as stock on hand. Over 200,000 tons of this product was consumed at the iron blast furnaces at Sydney and New Glasgow.

The production of coke in British Columbia is given in the provincial report as follows:

Sales and Output for the Year.	Tons, 2,240 lbs.	Tons, 2,240 lbs.
Sold for consumption in Canada.....	80,154	
" export to United States.....	47,379	
Total sales	.....	127,533
Stock on hand, first of year..... ...	3,316	
" " last "	2,864	
Diff. taken from stock during the year.	....	452
Output for year....	.....	127,081

Peat.—During the past few years many companies have been organized to manufacture peat-fuel from peat bogs in the provinces of Ontario and Quebec. Some of these have met with indifferent success, while others are still in the experimental stage or developing their properties. Peat.

Sales of peat during the past two years have been reported as follows:—

	Tons.	Value.
Year 1900.....	400	$1,200
" 1901.....	220	660

COPPER.

COPPER.

Production.

Copper production in Canada has increased from less than 19 million pounds in 1900, to over 37 million pounds in 1901. In 1886 the production amounted to but little over three and a half million pounds and was all derived from mines in the provinces of Ontario and Quebec. In 1891 it had advanced to nearly nine million pounds.

Beginning with 1894, British Columbia began to become a factor in the yearly output, although for two or three years following, the product from this province was somewhat offset by decreases in the output from Quebec. From 1896 each year, with the exception of 1899 showed a substantial increase, until in 1900 a product of 18,937,138 pounds was reached, which, as already mentioned, was almost doubled in 1901.

Although still far behind the two chief copper producing countries, the United States and Spain, this year's output places Canada pretty much on a par with the most important of the other countries producing this metal.

The production in 1901 reached a total of 37,829,019 pounds. valued at $6,096,581 or an average of 16·117 cents per pound. The fall in the price of copper did not occur until the latter part of December and affected but slightly the average price for the year.

The various provinces contributed to the output in the following proportions : British Columbia 73 per cent, Ontario 23 per cent and Quebec 4 per cent. In 1900 the proportions were British Columbia 53 per cent, Ontario 35 per cent and Quebec 12 per cent.

Table B

COPPER

PRODUCTION

A. Total Canada..... Pounds
A$ Ditto..... Value
B. Quebec..... Pounds
C. Ontario..... "
D. British Columbia..... "

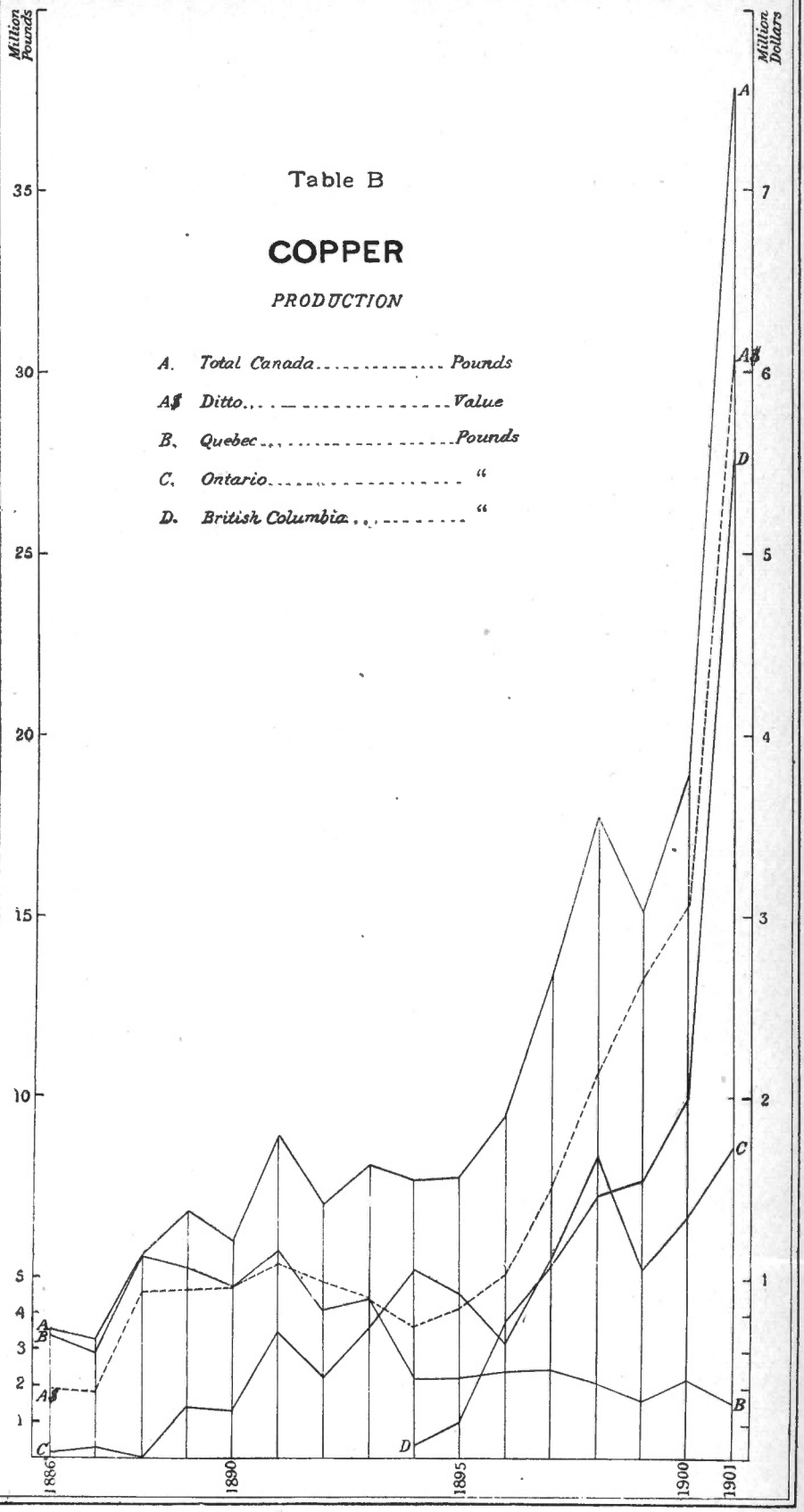


TABLE 1.

COPPER.

ANNUAL PRODUCTION.*

Calendar Year.	Lbs.	Increase or Decrease.		Value.	Increase or Decrease.		Average Price per Pound.
		Lbs.	%		$	%	
				$			Cts.
1886.....	3,505,000	... .	.....	385,550	.....	.....	11·00
1887.....	3,260,424	244,576	6·99	366,798	18,752	4·86	11·25
1888.....	5,562,864	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.....	8,928,921	2,915,250	48·40	1,149,598	202,445	21·37	12·87
1892.....	7,087,275	1,841,646	20·62	818,580	331,018	28·79	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

* The production is altogether represented by the copp r 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 decreasse in the ordinary way.

COPPER.

Exports.

The exports and imports of copper as obtained from the Customs returns are shown in Tables 2, 3 and 4.

TABLE 2.

COPPER.

EXPORTS OF COPPER IN ORE, MATTE, ETC.

Calendar Year.	Total.	
	Lbs.	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

TABLE 3.

COPPER.

Imports.

IMPORTS OF PIGS, OLD, SCRAP, ETC.

Fiscal Year.	Lbs.	Value.	Fiscal Year.	Lbs.	Value.
		$			$
1880	31,900	2,130	1891	107,800	10,452
1881	9,800	1,157	1892	343,600	14,894
1882	20,200	1,984	1893	168,300	16,331
1883	124,500	20,273	1894	101,200	7,397
1884	40,200	3,180	1895	72,062	6,770
1885	28,600	2,016	1896	86,905	9,226
1886	82,000	6,969	1897	49,000	5,449
1887	40,100	2,507	1898	1,050,000	80,000
1888	32,300	2,322	1899	1,655,000	246,740
1889	32,300	3,288	1900	1,144,000	180,990
1890	112,200	11,521			
1901 { Copper, old and scrap or in blocks ..... Duty free				37,200	4,739
1901 { Copper in pigs or ingots ..... "				914,300	147,535
Total, 1901				951,500	152,274

TABLE 4. COPPER.

COPPER. Imports.

IMPORTS OF MANUFACTURES.

Fiscal Year.	Value.
	$
1880	123,061
1881	159,163
1882	226,235
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

		Duty.	Pounds.	$
1901.	Copper in bolts, bars and rods, in coils, or otherwise in lengths not less than 6 feet, unmanufactured	Free.	3,102,800	521,614
	Copper, in strips, sheets or plates, not planished or coated, &c	"	2,587,400	208,477
	Copper tubing in lengths not less than 6 feet, and not polished, bent or otherwise manufactured	"	208,780	48,289
	Copper rollers, for use in calico printing, imported by calico printers for use in their own factories	"		15,300
	Copper and manufactures of:—			
	Nails, tacks, rivets and burrs or washers	30 p. c.		6,086
	Wire, plain, tinned or plated	15 "	555,847	102,664
	Wire cloth, &c	25 "		988
	All other manufactures of, N.O.P	30 "		47,627
	Total			951,045

QUEBEC: Quebec.

There are numerous occurrences of copper ores in this province chiefly in the Eastern Townships, from which there has been a small annual production for many years. At present the output is derived almost entirely from the pyrites deposits in the county of Sherbrooke the ore being mined primarily for its sulphur contents.

COPPER.

Quebec.

The production in 1901 amounted to 1,527,442 lbs, valued at $246,178 and was less than that of the previous year by 692,558 lbs, or a decrease of 31 per cent.

Statistics of production since 1886 are given below.

TABLE 5,

COPPER.

QUEBEC :—PRODUCTION.

Calendar Year.	Pounds.	Value.
		$
1886	3,340,000	367,400
1887	2.937,900	330,514
1888	5,562,864	927,107
1889	5,315,000	730,813
1890	4,710,606	741,920
1891	5,401,704	695,469
1892	4,883,480	564,042
1893	4,468,352	480,348
1894	2,176,430	208,067
1895	2,242,462	241,288
1896	2,407,200	261,903
1897	2,474,970	279,424
1898	2,100,235	252,658
1899	1,632,560	287,494
1900	2,220,000	359,418
1901	1,527,442	246,178

Ontario.

ONTARIO :

The nickel-copper ores of the Sudbury district, have been the source of the greater part of the copper production in this province for the past ten or twelve years. A good deal of attention has been paid to this district during the past two years and the new works inaugurated, notably those of the Mond Nickel Company, are beginning to result in a considerably increased output. A considerable amount of development work is also in progress on the copper properties in the vicinity of Bruce Mines, Rock Lake &c.

The production in Ontario in 1901 reached a total of 8,695,831 lbs. valued at $1,401,507, being an increase in quantity over the previous year of 1,955,773 lbs. or 29 per cent, and is also the largest yearly production recorded.

Statistics of production since 1886 are given in Table 6 below.

COPPER.

Ontario.

TABLE 6.

COPPER.

ONTARIO:—PRODUCTION.

Calendar Year.	Pounds.	Value.
		$
1886	5,207,679	18,150
1887	4,576,337	36,284
1888	3,167,256	.....
1889	5,500,652	201,678
1890	8,375,223	205,233
1891	5,723,324	454,129
1892	6,740,058	254,538
1893	8,695,831	391,461
1894	165,000	497,854
1895	322,524	492,414
1896	.....	344,598
1897	1,466,752	621,023
1898	1,303,065	1,007,539
1899	3,527,217	1,007,877
1900	2,203,795	1,091,215
1901	3,641,504	1,401,507

BRITISH COLUMBIA.

British Columbia.

The output of copper in this province advanced from a little less than 5,000 tons in 1900 to nearly 14,000 tons in 1901, the increase being 177 per cent. Statistics of production since 1894, the output of which year was less than 200 tons, are given in Table 7 following.

TABLE 7.

COPPER.

BRITISH COLUMBIA—PRODUCTION.

Calendar Year.	Copper contained in ores, matte, &c.	Increase.		Value.
	Lbs.	Lbs.	%	
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

COPPER.

British Columbia.

The output by district for the past two years was as follows :—

	1900. Lbs.	1901. Lbs.
East Kootenay	2,147	3,272
West Kootenay—		
Nelson	36,929	1,599,449
Trail Creek	2,071,865	8,333,446
Yale—		
Grand Forks, Kettle River and Osoycos	5,672,177	14,511,787
Ashcroft, Kamloops	.....	39,920
Coast Districts	2,193,962	3,115,872
	9,977,080	27,603,746

A comparison of the two years shows an increase in production in each separate district. The increase in the Nelson division appears especially large, owing to its small output in 1900. The Hall Mining and Smelting Company, owners of the Silver King mine, treated over 20,000 tons of ore from that property which averaged 3·8 per cent of copper, besides 16·1 ounces of silver. The same property shipped to the smelter in 1900 only about 700 tons of ore.

The ore shipped from the Rossland district in 1901 contained over four times as much copper as in the previous year, although the total quantity of ore shipped increased only 30 per cent. The copper content of these ores appears to have been somewhat variable. The average percentage of copper in the ore shipped in 1901 was 1·47 per cent, while in 1900 it was only ·476 per cent. In the years 1899, 1898 and 1897 it was 1·65 per cent, 2·35 per cent and 1·32 per cent respectively, while in each of the three preceding years it was over 2 per cent. There were only six mines in this district which shipped over 1,000 tons during the year 1901, viz. : LeRoi, LeRoi No. 2, Rossland, Great Western Mines, Ltd., Centre Star, War Eagle, and Iron Mask.

Up to 1899 productive operations in the Boundary district had been almost altogether confined to the mining of free-milling gold ore at Camp McKinney. In 1901, however, several copper properties in the district which had been undergoing extensive development during the previous few years commenced shipment, and the total output for that year from all the metal mines was 103,426 tons of ore, with a copper

content of 5,672,177 pounds. In 1901 the output increased to 396,210 tons of ore, containing 14,511,787 pounds of copper, or over 50 per cent of the total copper output of the province. "For years it has been recognized as a fact that this district contained tremendously large bodies of ore, but it has also been admitted that the values of such ores approached so near that line which divides profit from loss that it has been a very serious question as to just which side of the line they would finally be placed. The question was one entirely dependent upon the economies which could be brought about in mining and smelting, and in the handling of a large output. It is authoritatively stated that certain of the larger properties have reduced the cost of mining to about $1 per ton, and the cost of matting the ore to from $1.35 to $1.50 per ton. On such figures as these there is a fair margin of profit on most of the ores of the district, and it is a matter of much importance to this section that such results have been obtained, as it renders of value many deposits at present unworked. At the same time it must be recog nized that such low working costs are only possible after the expendi ture of immense amounts of capital and by treating a large tonnage. COPPER. British Columbia.

As in the Rossland district, the output has been derived from a few mines; in fact three properties, the Old Ironside and Knob Hill group, the Mother Lode and the B. C. contributed over 90 per cent of the total output of ore.

The increase in the production of copper in the Coast district amounted to over 42 per cent. "In addition to the Van Anda Smelter on Texada island in the Nanaimo mining division, which has been in operation for some years and has been fully described in previous reports, two new smelters are in course of erection on Vancouver Island, both in the Victoria mining division, viz.: The Tyee Copper Company's smelter at Ladysmith and the Northwestern Smelting and Refining Co.'s smelter at Crofton.

"*Crofton Smelter.*—The Northwestern Smelting and Refining Co.'s smelter is being constructed at Osborne bay, on the east coast of Vancouver island, and here the townsite of Crofton has been laid out. The smelter will treat the ore from the Lenora and other properties, and a line of narrow gauge railway is being built from the mine referred to, to Osborne bay.

The ore bins have a capacity of 1,600 tons, and a trestle railway has been laid over the top of these for convenience in unloading the

*Report of the Minister of Mines, British Columbia, 1901 p. 935.

COPPER.

British Columbia.

ore cars. From the bins, the ore goes to the crusher and sampling building, and is thence discharged into the furnace ore bins, from which it is taken to the furnace on hand cars. The plant consists briefly of : Three 200 h. p. boilers ; one 500 h. p. Corliss engine ; one 450 ton water-jacketed furnace ; one 65 ton water-jacketed furnace ; one Bessemer converter. The main flue will be 200 feet long and 12 feet wide, communicating with a large expansion chamber where the dust settles, and from which the gases will enter the brick smoke stack, 12 feet in diameter and 125 feet high.

"The initial capacity of the smelter will be 400 to 500 tons per day, but the plant is being built with a view to allow of the treatment of 1,250 tons per day. A wharf has been built extending 750 feet into the bay.

"*Tyee Smelter.*—The Tyee Copper Company's smelter is in course of construction at Ladysmith on Oyster harbour, and is designed to treat the ore from the Tyee mine and other properties.

"The smelter is expected to be in operation by September 1, 1902. The plant will consist briefly, of a 150 ton water-jacketed furnace, a complete sampling plant, the bins having a storage capacity of 1,600 tons, an 80 horse-power Corliss engine, and an 80 horse-power tubular boiler. The smelter shed is 80 by 60 feet, and the engine-room 50 by 70 feet, with ample space for further extension.

"The ore from the sampler goes direct to the roast piles, and after burning, to the bins at the rear of the smelter. The slag will be shotted with water and flumed into the lagoon. Grading has been done for considerable extension. The converter plant will not be installed at present, but foundations will be put in so that this may be done at any time."

GRAPHITE.

GRAPHITE.

Graphite was mined in Canada in 1901 in the provinces of New Brunswick, Quebec and Ontario and the total output of crude ore was 2,210 tons, valued at $38,780. 350 tons of this was milled at Buckingham, producing some 200 tons of the finished product. The value of the crude ore ranged from $12 to $20 per ton.

*Report of the Minister of Mines, British Columbia, 1901 p. 1122.

Statistics of production since 1886 are given in Table 1 below. GRAPHITE. Production.

TABLE 1.

GRAPHITE.

ANNUAL PRODUCTION.

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

* Exports.

The exports and imports of graphite are shown in Tables 2 and 3.

TABLE 2.

GRAPHITE.

EXPORTS. Exports.

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

		Cwt.	
1901	Crude	23,880	$30,535
	Manufacturers of		4,567
			$35,102

GRAPHITE.

Imports.

TABLE 3.

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	Plumbago, not ground, &c.	10 p.c.	$2,357		
	Black-lead	25 "		$25,646	
	Plumbago, ground and manufactures of N.E.S.	25 "			$11,016
	Crucibles, clay or plumbago				38,874
	Total, 1901		$2,357	$25,646	$49,890

In New Brunswick, the Marble Cove Mine, near Fairville Station, the product of which is used in the manufacture of paint, was continued in operation by the Canada Paint Co., of Montreal.

Comparatively little work was done in graphite mining in Quebec during the year. The Calumet Graphite Co. did some work on lots 16A in range II, and 16B in range III, of the township of Grenville and shipped the ore to Jersey City. At Buckingham the North American Graphite Co., put through their mill a quantity of ore from the Black Donald mine in Ontario, as well as some local ore.

The Ontario Graphite Company continue to operate the Black Donald mine in Brougham township, Renfrew county, Ontario, with increased output. This company has hitherto shipped the ore in its crude form to United States buyers, but a mill is now in course of erection and the year 1902 will probably witness the manufacture of graphite goods at this mine. GRAPHITE.

GYPSUM.

GYPSUM.

Production.

Probably the most important item to record in the working of the gypsum deposits in Canada in 1901, is the commencement of active operations in Manitoba, at Gypsumville, at the head of Portage bay, Lake Manitoba. The development of these properties was referred to in the report of this Section for 1900, and during the past year several hundred tons have been mined and milled. This is doubtless but the beginning of an industry that will rapidly grow, as the population of the province increases and the value of the product becomes known. The total product of gypsum in Canada in 1901, including all grades of product was 293,799 tons, valued at $340,148, being an increase over the output of the previous year of 41,698 tons, or 16·5 per cent in quantity, and $81,139 or 31·3 per cent in value. The greater part of the product is crude gypsum and is chiefly derived from the old workings in Hants county, Nova Scotia and Hillsborough, New Brunswick.

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

Production 1897.	Tons.	Value.	Value per ton.
		$	$ c.
Crude gypsum	228,416	187,918	0.82
Calcined and land plaster	1,956	4,753	2.43
Plaster of Paris and terra alba	9,319	51,860	5.62
Total	239,691	244,531	1·02

GYPSUM.

Production.

Production 1898.	Tons.	Value.	Value per ton.
		$	$ c.
Crude gypsum	208,061	174,445	0.84
Calcined and land plaster	1,583	4,574	2.89
Plaster of Paris and terra alba	9,612	53,496	5.57
Total	219,256	232,515	1.06

Production 1899.	Tons.	Value.	Value per ton.
		$	$ c.
Crude gypsum	233,819	198,831	0.85
Calcined and land plaster	717	2,246	3.13
Plaster of Paris and terra alba	10,030	56,252	5.61
Total	244,566	257,329	1.05

Production 1900.	Tons.	Value.	Value per ton.
		$	$ c.
Crude gypsum	240,970	200,323	0 83
Calcined and land plaster	1,523	4,806	3 15
Plaster of Paris and terra alba	9,608	53,880	5 60
Total	252,101	259,009	1 02

Production 1901.	Tons.	Value.	Value per ton.
		$	$ c.
Crude gypsum	280,286	236,877	0·84
Calcined and land plaster	3,139	14,574	4·64
Plaster of Paris and terra alba	10,374	88,697	8·55
Total	293,799	340,148	1·16

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	Nova Scotia	170,100	136,947	0 80
	New Brunswick	121,595	189,709	1 56
	Ontario	1,504	5,692	3 78
	Manitoba	600	7,800	13 00
	Total, 1901	293,799	340,148	1 16

TABLE 2.

GYPSUM.

ANNUAL PRODUCTION BY PROVINCES.

CALENDAR YEAR.	NOVA SCOTIA.		NEW BRUNSWICK.		ONTARIO.		MANITOBA.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
		$		$		$		$
1887	116,346	116,346	29,102	29,216	8,560	11,715		
1888	124,818	120,429	44,369	48,764	6,700	10,200		
1889	165,025	142,850	40,866	49,130	7,382	13,128		
1890	181,285	154,972	39,024	30,986	6,200	8,075		
1891	161,934	153,955	36,011	33,996	5,660	18,300		
1892	197,019	170,021	39,709	65,707	4,320	5,399		
1893	152,754	144,111	36,916	41,846	2,898	10,193		
1894	168,300	147,644	52,962	48,200	2,369	6,187		
1895	156,809	133,929	66,949	63,839	2,420	4,840		
1896	136,590	111,251	67,137	59,024	3,305	7,786		
1897	155,572	121,754	82,658	118,116	1,461	4,661		
1898	132,086	106,610	86,083	121,704	1,087	4,201		
1899	126,754	102,055	116,792	151,296	1,020	3,978		
1900	138,712	108,828	112,294	145,850	1,095	4,331		
1901	170,100	136,947	121,595	189,709	1,504	5,692	600	7,800

Gypsum.

Exports.

TABLE 3.

GYPSUM.

EXPORTS OF CRUDE GYPSUM.

Calendar Year.	Nova Scotia.		New Brunswick.		Ontario.		Total.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
1874	67,830	$ 68,164	.....	.....	.....	.....	67,830	$ 68,164
1875	86,065	86,193	5,420	$ 5,420	.....	.....	91,485	91,613
1876	87,720	87,590	4,925	6,616	120	$ 180	92,765	94,386
1877	106,950	93,867	5,030	5,030	.....	.....	111,980	98,897
1878	88,631	76,695	16,335	16,435	489	675	105,455	93,805
1879	95,623	71,353	8,791	8,791	579	720	104,993	80,864
1880	125,685	111,833	10,375	10,987	875	1,240	136,935	124,060
1881	110,303	100,284	10,310	15,025	657	1,040	121,270	116,349
1882	133,426	121,070	15,597	24,581	1,249	1,946	150,272	147,597
1883	145,448	132,834	20,242	35,557	462	837	166,152	169,228
1884	107,653	100,446	21,800	32,751	688	1,254	130,141	134,451
1885	81,887	77,898	15,140	27,730	525	787	97,552	106,415
1886	118,985	114,116	23,498	40,559	350	538	142,833	155,213
1887	112,557	106,910	19,942	39,295	225	337	132,724	146,542
1888	124,818	120,429	20	50	670	910	125,508	121,389
1889	146,204	142,850	31,495	50,862	483	692	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

*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

TABLE 5.

GYPSUM.

IMPORTS OF GYPSUM, ETC.

GYPSUM.] Imports.

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

*Equivalent to 218 barrels.

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

IRON.

IRON.

Iron Ore.—The production of iron ore in Canada in 1901 was 313,646 tons, as compared with 122,000 tons produced the previous year. The increase was therefore 191,646 tons or 157 per cent. This large increase is due almost entirely to the extensive operations at the Helen mine, Michipicoten, Ontario, as the output of the other iron producing districts remained much the same as during the past year or two.

Production of iron ore.

In the province of Nova Scotia, statistics of whose production are given in Tables 1 and 2 following, the output during the past five years has been considerably less than during the previous 10 or 15

IRON.

Production of iron ore.

years. With the opening up and development of the extensive and easily worked deposits on Bell island, Newfoundland, it has been found more economical to use these ores in the Nova Scotia furnaces with a result of a temporary decline in the local production of ore.

In Quebec, bog iron ores have been used in the furnaces at Drummondville and Radnor, as in the past, in the manufacture of charcoal, pig-iron, and the production has not varied much from 15,000 to 20,000 tons per annum in the last 15 years.

The production of iron ore in Ontario has increased from a little over 25,000 tons in 1899 to over 272,000 tons in 1901. This is due, as before mentioned, to the opening up and development of large bodies of hematite ore at Michipicoten, Lake Superior. Previous to 1899, production in this province was practically confined to the districts traversed by the Kingston and Pembroke Railway and the Central Ontario Railway. The development of the Helen mine, however, by the Lake Superior Power Company, has resulted in a rapidly increasing output which is shipped to several furnaces within the province, as well as exported to the United States.

There is a small yearly production of iron ore in British Columbia, used chiefly for fluxing purposes in the smelting of the other metalliferous ores of the province :—

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

Table C

IRON ORE

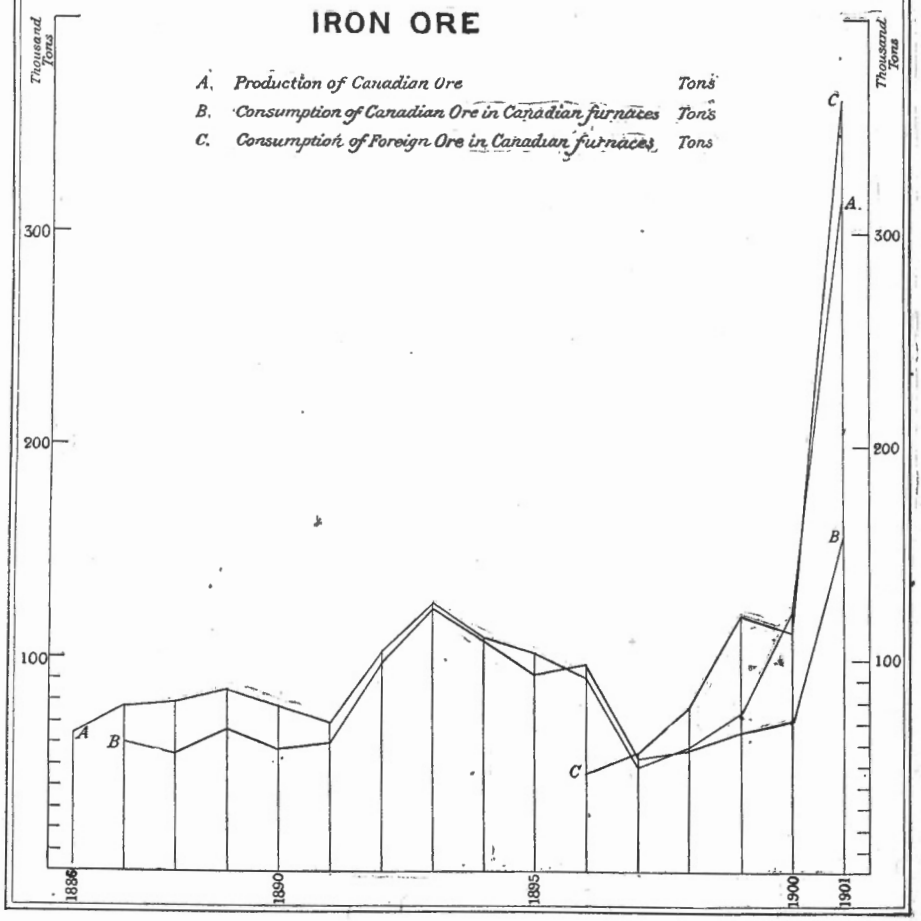


TABLE 2.
IRON.
NOVA SCOTIA:—ANNUAL PRODUCTION OF ORE
(Previous to 1886).

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

TABLE 3.
IRON.
EXPORTS OF IRON ORE.

Exports.

Calendar Year.	Tons.	Value.
		$
1893	2,419	7,590
1894		21,294
1895	1,571	3,909
1896	1,033	1,911
1897	403	811
1898	182	278
1899	4,145	9,538
1900	5,527	13,511
1901	306,199	762,283

TABLE 4.
IRON.
EXPORTS OF IRON ORE.

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

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	3,044	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	52,454	696,440	13 28
1896	(a) 96,560 (b) 46,300	200,887 100,205	756,600	32,256	(a) 48,660 (b) 33,990	106,939 109,253	1,407	2,288	37,462	36,140	67,268	924,129	13 74
1897	(a) 53,658 (b) 55,722	131,705 138,504	1,031,800	43,230	(a) 35,800 (b) 27,810	71,600 94,553	.....	.....	31,273	30,258	58,007	738,701	12 73
1898	(a) 57,881 (b) 77,107	151,760 213,165	836,400	41,820	(a) 31,952 (b) 50,407	63,904 158,783	.....	.....	33,913	31,153	77,015	912,395	11 85
1899	(a) 66,384 (b)120,650	216,322 402,860	1,928,025	87,858	(a) 44,844 (b) 64,648	134,532 193,944	.....	.....	51,826	44,286	102,940	1,377,306	13 38
1900	(a) 71,341 (b)113,042	184,191 351,382	1,799,737	82,408	(a) 45,021 (b) 59,345	180,084 255,892	.....	.....	52,966	39,332	96,575	1,501,698	15 55
1901	(a)156,613 (b)361,010	544,144 846,398	1,835,736	100,978	(a) 205,796 (b) 115,367	539,328 497,386	2,039	6,117	169,399	183,162	274,376	3,512,923	12 80

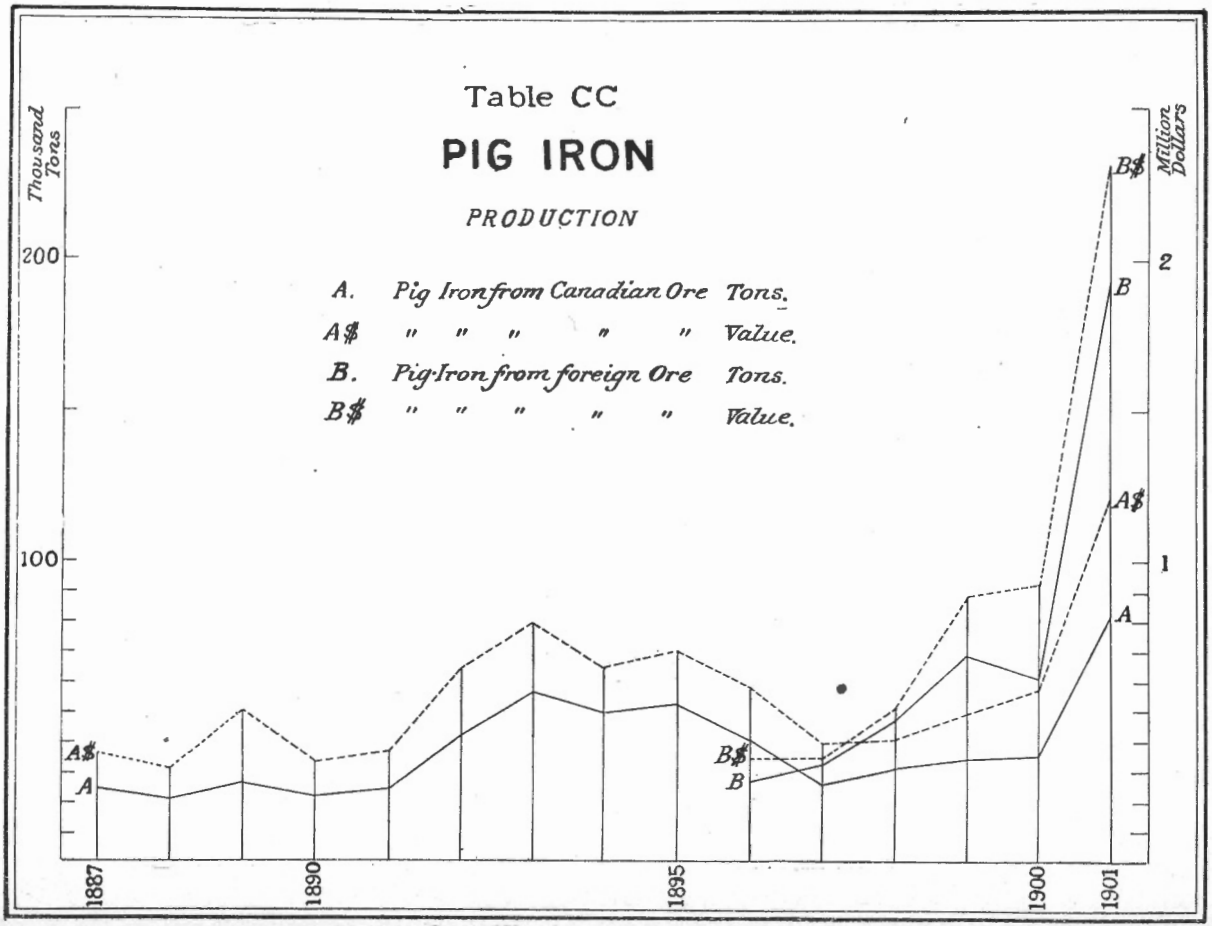
(a) Canadian. (b) Foreign.

Table CC

PIG IRON

PRODUCTION

A. Pig Iron from Canadian Ore Tons.
A$ " " " " " Value.
B. Pig Iron from foreign Ore Tons.
B$ " " " " " Value.



Pig Iron and Steel.—The successful operation of the recently constructed iron furnaces in Sydney, N.S., and Midland Ontario, is evidenced by the largely increased production of pig iron in 1901. From an output in 1900 of 96,575 tons valued at $1,501,698, the production of pig iron has advanced in 1901 to a total of 274,376 tons valued, at $3,512,923. The quantity of ore entering into this year's product was 156,613 tons mined in Canada and 361,010 tons imported from Newfoundland, the United States and Cuba, or a total of 517,623 tons. Of the total product of pig iron 18,048 tons or about 6·5 per cent was charcoal iron and the balance, 286,328 tons, made with coke as fuel. IRON. Pig iron and Steel.

Owing to its relatively higher price, the charcoal iron constituted 8·5 per cent of the total value. In 1900 the charcoal iron constituted 18 per cent by weight and 21 per cent by value of the whole.

Before 1896, the ores used in Canadian furnaces were derived entirely from Canadian mines. Beginning with that year, however, imported ores, chiefly from the United States and Newfoundland, began to be used, the imported ore in 1901 amounting to nearly 70 per cent of the total used.

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

IRON.

Pig iron and Steel.

There were nine furnaces in blast for varying periods during the year owned by six companies. The Dominion Iron and Steel Company had three furnaces in operation at Sydney, the Canada Iron Furnace Company, two furnaces, one at Radnor Forges and one at Midland, and the Nova Scotia Steel and Coal Company, John McDougall & Co., The Deseronto Iron Co., and the Hamilton Steel and Iron Co., one furnace each. The total daily capacity of the furnaces in operation was over 1,500 tons.

Three companies had steel plants in operation during the year; the Nova Scotia Steel and Coal Co., New Glasgow, N.S., the Canada Switch and Spring Co, Montreal, operating a Bessemer converter of two tons capacity but having completed before the close of the year the installation of a 15 ton open hearth furnace, and the Hamilton Steel and Iron Company. 41,948 tons of steel ingots, castings, &c., were made. The steel plants of the Dominion Iron and Steel Company, at Sydney, and The Lake Superior Power Company, at Sault St. Marie, were not yet completed at the close of the year, but have since been placed in operation.

Bounties.

Bounties—

Bounties on iron and steel made in Canada were provided for by the Dominion Government in 1897 (chapter 6 of 60-61 Victoria, Statutes of Canada) as follows :—

On steel ingots manufactured from ingredients of which not less than 50 per cent of the weight thereof consists of pig iron made in Canada	$3.00 per ton
On puddled iron bars manufactured from pig iron made in Canada.....	3.00 "
On pig iron manufactured from ore—	
On the proportion produced from Canadian ore	3.00 "
On the proportion produced from foreign ore.	2.00 "

The Act further provided that the above mentioned bounties should cease on April 23, 1902. In 1899, an Act was passed, extending the time for payment of bounties to June 30, 1907, and changing the rates in a manner providing for a gradual extinguishment of the bounties. Under the new regulations the bounties will be as follows, the classes of product being the same as those adopted in the Act of 1897 :—

IRON.
Bounties.

Period.	On steel ingots, puddled iron bars, and pig iron from Canadian ore.	On pig iron from foreign ore.
	Per ton.	Per ton.
Up to April 23, 1902	$ 3.00	$ 2.00
From April 23, 1902, to June 30, 1903	2.70	1.80
" July 1st, 1903 to June 30, 1904	2.25	1.50
" " 1904 to June 30, 1905	1.65	1.10
" " 1905 to June 30, 1906	1.05	0.70
" " 1906 to June 30, 1907	0.60	0.40

It is also provided that no bounty shall be paid on steel ingots made from puddled iron bars manufactured in Canada.

The payments by the Dominion Government on account of iron and steel bounties during the fiscal year ending June 30, 1901, were as follows, the figures having been compiled from the Auditor General's Report for 1901.

BOUNTIES ON PIG IRON.

Company.	On Pig Iron from Canadian Ore.		On Pig Iron from Imported Ore.		Total Bounties.
	Tons.	Bounties.	Tons.	Bounties.	
		$ c.		$ c.	$ c.
Canada Iron Furnace Co...					
Radnor Forges, Que....	5,463·945	16,391 83	111·565	223 13	75,784 31
Midland, Ont.....	18,948·100	56,844 30	1,162·525	2,325 05	
Deseronto Iron Co.....	54·000	162 00	13,653·000	27,306 00	27,468 00
Dom. Iron and Steel Co....	.....	.....	27,643·695	55,287 39	55,287 39
Electric Reduction Co.....	391·000	1,173 00	.....	.....	1,173 00
Hamilton Steel and Iron Co.	15,033·160	45,099 48	38,678·070	77,356 14	122,455 62
John McDougall & Co.....	793·150	2,379 46	.....	.....	2,379 46
N. Scotia Steel and Iron Co.	9,897·295	29,691 88	18,509·705	37,019 41	66,711 29
	50,580·650	151,741 95	99,758·560	199,517 12	351,259 07

BOUNTY ON PUDDLED IRON BARS.

Company.	Tons.	Bounty.
		$ c.
Hamilton Steel and Iron Co	5,567 695	16,703 09

IRON.

Bounties.

BOUNTY ON STEEL INGOTS.

Company.	Tons.	Bounty.
		$ c.
Hamilton Steel and Iron Co	9,436 985	28,310 96
Nova Scotia Steel Co	23,915 595	71,746 78
	33,352 580	100,057 74

Table 6 following, illustrates the extent of the foreign trade of the country in regard to iron and steel products and machinery, &c., made therefrom. While the figures show a considerable falling off during the year in the export of hardware, castings N.E.S. and scrap iron and steel, they show on the other hand a very large increase in the exports of pig iron.

TABLE 6.

IRON.

Exports.

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

Calendar Year 1901.		Quantity.	Value.
			$
Stoves	No	694	7,438
Sewing Machines	"	837	18,279
Machinery, N.E.S	$	.....	470,136
Hardware, N.E.S	"	.....	95,213
Steel and Manufactures of	"	.....	416,796
Castings, N.E.S	"	.....	67,140
Scrap Iron and Steel	Cwt	194,353	168,438
Pig Iron	Tons	57,650	593,739
Total		.....	1,837,179

The Canadian consumption of iron and steel products is illustrated in the following tables Nos. 7, 8, 9, 10a, 10b, and 11. The first three of these deal with the cruder forms of the metal, the next two with the manufactured articles wholly or largely composed of iron and steel, whilst the last table summarises all the preceeding ones. They all cover the fiscal year ending, June 30, 1901.

A general summary of the tables shows a total import of iron and steel goods of over 400,000 tons, and this leaves out of consideration a number of items the value of which only, and not the quantity is given.

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

(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.

IRON.

Imports.

TABLE 8.

IRON.

IMPORTS OF FERRO-MANGANESE, &c.

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

*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	1891	41,567	38,931
1881	111,666	111,374	1892	64,397	56,186
1882	203,888	222,056	1893	65,269	58,533
1883	258,639	269,818	1894	50,891	45,018
1884	252,310	264,045	1895	78,639	67,321
1885	312,329	287,734	1896	128,535	110,757
1886	273,316	248,461	1897	56,560	48,954
1887	522,853	421,598	1898	162,891	122,426
1888	110,279	93,377	1899	124,311	103,198
1889	80,383	67,181	1900	255,145	362,463
1890	15,041	45,923	1901*	234,925	206,975

*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.

TABLE 10a.

IRON.

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1901.		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.	267,293	448,419
Castings, iron or steel, in the rough, N.E.S.	$	25 %	.....	164,866
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 "	316,513	758,389
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 "	143,010	378,976
Malleable iron castings and iron or steel castings, N.E.S.	"	25 "	3,180	14,442
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 "	30,883	116,569
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 "	4,947	142,590
Railway fish-plates and tie plates	"	$8 per ton.	4,618	165,960
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	298,105	460,548
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.	29,618	53,278
Rolled iron or steel hoop, band, scroll or strip, thinner than No. 18 gauge, N.E.S.	"	5 %	35,565	77,276
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.	129,361	200,343
Rolled iron or steel plates or sheets, sheared or unsheared, and skelp iron or steel, sheared or rolled in grooves, N.E.S.	"	$7 "	73,109	122,883
Carried forward		.....	.....	3,104,539

IRON.

Imports.

TABLE 10*a*—*Continued.*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1901.		Duty.	Quantity.	Value.
				$
Brought forward				3,104,539
Rolled iron or steel plates, not less than 30 inches in width and not less than ¼ inch in thickness, N.O.P.	Cwt.	$10 per ton	210,036	290,960
Rolled iron or steel sheets No. 17 gauge and thinner, N.O.P.	"	5 "	130,317	347,640
Rolls of chilled iron or steel	"	30 "	3,147	10,177
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 "	182,457	251,524
Swedish rolled iron and Swedish rolled steel nail rods under half an inch in diameter for the manufacture of horse-shoe nails	"	15 "	16,628	38,375
Switches, frogs, crossings and intersections for railways	"	30 "	3,075	17,301
Steel—chrome steel	"	15 "	1,871	11,549
Steel plate, universal mill or rolled edge bridge plates imported by manufacturers of bridges	"	10 "	63,571	87,598
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 "	125,803	415,036
Hoop iron not exceeding ⅜ of an inch in width and being No. 25 gauge and thinner, used for the manufacture of tubular rivets	"	Free.	44,343	65,301
Iron or steel beams, sheets, plates, angles, knees and cable chains for wooden, iron, steel, or composite ships or vessels	"	"	103,112	292,958
Locomotive and car wheel tires of steel, in the rough	"	"	23,173	70,116
Steel for saws and straw cutters cut to shape, but not further manufactured	"	"	15,482	131,262
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	"	"	2,040	9,366
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	"	"	2,662	9,739
Steel valued at 2½ cents per lb. and upward, imported by the manufacturers of skates, for use exclusively in the manufacture thereof in their own factories	"	"	2,376	10,365
Carried forward				5,163,806

TABLE 10*a*—*Concluded.* IRON.

IRON. Imports.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1901.		Duty.	Quantity.	Value.
				$
Brought forward				5,163,806
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	Cwt.	Free.	2,337	4,781
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	"	"	657	1,433
Steel of No. 24 and 17 gauge, in sheets sixty-three inches long, and from 18 inches to 32 inches wide, imported by the manufacturers of tubular bow sockets for use in the manufacture of such articles in their own factories	"	"	2,754	4,764
Steel for the manufacture of bicycle chains, imported by the manufacturers of bicycle chain for use in the manufacture thereof in their own factories	"	"	374	1,640
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	"	"	62,581	138,816
Steel springs for the manufacture of surgical trusses imported by the manufacturers for use exclusively in the manufacture thereof in their own factories	"	"	475	1,264
Barbed fencing wire of iron and steel	"	"	142,535	316,664
Total				5,633,168

IRON.

Imports.

TABLE 10*b*.

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1901.		Duty.	Quantity.	Value.
				$
Agricultural implements, N.E.S., viz:				
Binding attachments	No.	20 %	.....	31,081
Cultivators	"	20 "	1,939	16,038
Drills, grain seed	"	20 "	1,499	31,092
Farm, road or field rollers	"	25 "	83	2,049
Forks, pronged	"	25 "	7,178	4,584
Harrows	"	20 "	3,760	47,862
Harvesters, self binding and without binders	"	20 "	7,888	828,118
Hay tedders	"	25 "	366	8,839
Hoes	"	25 "	26,337	3,013
Horse rakes	"	20 "	5,310	104,075
Knives, hay or straw	"	25 "	438	174
Knives, edging	"	25 "	13	107
Lawn mowers	"	35 "	1,028	5,367
Manure spreaders	"	20 "	157	5,101
Mowing machines	"	20 "	13,092	426,084
Ploughs	"	20 "	10,184	147,485
Post hole diggers	"	25 "	212	197
Potato diggers	"	25 "	41	1,297
Rakes, N.E.S.	"	25 "	7,797	1,585
Reapers	"	20 "	1,003	57,681
Scythes and snaths, sickles or reaping hooks	Doz.	25 "	3,333	10,551
Spades and shovels and spade and shovel blanks, and iron or steel cut to shape for the same	"	35 "	4,048	21,130
Weeders	No.	20 "	388	457
All other agricultural implements, N.E.S.	$	25 "	.....	132,193
Anvils and vises	"	30 "	.....	16,325
Cart or wagon skeins or boxes	Lbs.	30 "	94,822	3,705
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 "	32,612	63,728
Butts and hinges, N.E.S.	$	30 "	.....	20,212
Cast iron pipe of every description	Cwt.	$8 per ton	31,439	50,223
Chains, coil chains, chain links and chain shackles of iron or steel 5-16 of an inch in diameter and over	"	5 %	51,260	95,183
Chain, malleable sprocket or link belting, for binders	$	20 "	.....	15,070
Chains, N.E.S.	"	30 "	.....	40,182
Tacks, shoe	Lbs.	35 "	60,321	5,533
Cut tacks, brad sprigs, or shoe nails, double pointed, and other tacks of iron and steel, N.O.P.	"	35 "	115,888	9,813
Engines, locomotives for railways, N.E.S.	No.	35 "	67	497,401
Fire engines	"	35 "	2	2,854
Fire extinguishing machines	"	35 "	18,143	22,511
Steam engines and boilers	"	25 "	686	370,153
Fittings, iron or steel, for iron and steel pipe	Lbs.	30 "	3,975,318	203,089
Carried forward	.....	.....	.....	3,302,142

TABLE 10*b*—*Continued.*

IRON. Imports.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1901.		Duty.	Quantity.	Value.
				$
Brought forward				3,302,142
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 %	2,097,696	72,107
Hardware, viz:				
Builders', cabinet-makers', upholsterers', harness-makers', saddlers' and carriage hardware, including currycombs and horse boots, N.E.S	$	30 "		542,149
Horse, mule and ox shoes	"	30 "		11,709
Locks of all kinds	"	30 "		127,423
Machines and machinery, &c.:				
Fanning mills	No.	25 "	102	2,184
Grain crushers	"	25 "	42	482
Windmills	"	25 "	452	20,583
Ore crushers and rock crushers, stamp mills, cornish and belted rolls, rock drills, air compressors, cranes, derricks and percussion coal cutters	$	25 "		82,513
Portable machines:				
Fodder or feed cutters	No.	25 "	24	5,355
Horse powers	"	25 "	26	2,142
Portable engines	"	25 "	75	57,417
Portable saw mills and planing mills	"	25 "	2	1,087
Threshers and separators	"	25 "	157	41,654
All other portable machines	"	25 "	1,099	27,123
Parts of above articles	$	25 "		24,031
Sewing machines and parts of	No.	30 "	10,392	203,075
Slot machines	"	25 "	208	9,116
Machines, type-writing	"	25 "	1,749	102,584
All other machinery composed wholly or in part of iron or steel, N.O.P	$	25 "		3,569,643
Nails and spikes, composition and sheathing nails	Lbs.	15 "	15,314	2,521
Nails and spikes, wrought and pressed, trunk, clout, coopers, cigar box, Hungarian horseshoe and other nails, N.E.S.	"	30 "	280,221	11,832
Nails and spikes, cut, and railway spikes	"	½c. per lb.	2,018,609	47,061
Nails, wire of all kinds, N.O.P	"	⅝c. "	627,170	22,078
Pumps, N.E.S	$	25 %		179,141
Safes, doors for safes and vaults	"	30 "		12,014
Screws, iron and steel, commonly called "woodscrews," N.E.S	Lbs.	35 "	133,855	17,318
Scales, balances, weighing beams and strength testing machines	$	30 "		95,658
Skates of all kinds and parts thereof	Pairs	35 "	31,500	14,491
Stoves of all kinds and parts thereof, N.E.S.	$	25 "		128,747
Stove plates, and sad or smoothing, hatters' and tailors' irons, plated wholly or in part or not	"	25 "		10,050
Carried forward				8,745,430

IRON.

Imports.

TABLE 10*b*—*Continued.*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1901.		Duty.	Quantity.	Value.
Brought forward				8,745,430
Tubing:				
Boiler tubes of wrought iron or steel, including flues and corrugated tubes for marine boilers	Lbs.	5 %	4,991,898	231,209
Tubes of rolled steel, seamless, not joined or welded, not more than 1½ inches in diameter	"	10 "	86,225	3,559
Tubes, seamless steel, for bicycles	"	10 "	282,473	32,843
Tubing, wrought iron or steel, plain or galvanized, threaded and coupled or not, over two inches in diameter, N.E.S.	"	15 "	5,551,525	227,701
Tubing, wrought iron or steel, plain or galvanized, threaded and coupled or not, 2 inches or less in diameter, N.E.S.	"	35 "	2,252,598	85,310
Other iron or steel tubes or pipes, N.O.P.	"	30 "	588,587	35,436
Ware, galvanized sheet iron or of galvanized sheet steel, manufactures of, N.O.P.	$	25 "	.....	44,535
Ware, agate, granite or enamelled iron or steel hollow ware	"	35 "	.....	22,740
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 "	.....	60,005
Wire cloth or wove wire and netting of iron or steel	Lbs.	30 "	463,234	32,032
Wire screens, doors and windows	$	30 "	.....	11,426
Wire fencing, woven, buckthorn strip and wire fencing of iron or steel, N.E.S.	Lbs.	15 "	1,892,541	67,543
Wire, single or several, covered with cotton, linen, silk, rubber or other material, &c., N.E.S.	"	30 "	2,753,378	354,859
Wire of all kinds, N.O.P	"	20 "	2,785,510	99,856
Wire rope, stranded or twisted wire, clothes lines, picture or other twisted wire and wire cables, N.E.S.	"	25 "	1,541,186	120,935
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 %	1,932,240	79,488
Pen-knives, jack-knives and pocket knives of all kinds	$	30 %	.....	88,835
Table cutlery, all kinds, N.O.P	"	30 "	.....	196,418
All other cutlery, N.E.S	"	30 "	.....	198,122
Guns, rifles, including air guns and air rifles, (not being toys) muskets, cannons, pistols, revolvers, or other firearms	"	30 "	.....	180,072
Bayonets, swords, fencing foils and masks	"	30 "	.....	1,772
Needles of any material or kind, N.O.P.	"	30 "	.....	53,232
Carried forward				10,973,358

TABLE 10*b*—*Continued.*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1901.		Duty.	Quantity.	Value.
				$
Brought forward				10,973,358
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 %		21,013
Axes	Doz.	25 "	5,120	29,590
Saws	$	30 "		90,561
Files and rasps, N.E.S.	"	30 "		83,568
Tools, hand or machine, of all kinds, N.O.P	"	30 "		526,020
Knife blades, or blanks, and forks of iron or steel, in the rough not handled, filed, ground or otherwise manufactured	"	10 "		882
Manufactured 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 "		1,346,747
Anchors	Cwt.	Free	3,838	19,567
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 factories	"	"	410,094	645,136
Iron or steel masts, or parts of	"	"	24	52
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	"	"	19,762	57,659
Steel bowls for cream separators and cream separators	$	"		260,969
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.	"	2,514,785	3,329,919
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	"	"	107	299
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	"	"	3,708	13,021
Carried forward				17,398,361

IRON.

Imports.

TABLE 10*b*—*Concluded.*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1901.	Duty.	Quantity.	Value.
			$
Brought forward			17,398,361
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.	Free.	2,006	13,822
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 "	"	35,106	72,190
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 "	"	16,826	30,251
Wire, crucible cast steel Lbs.	"	1,025,416	82,063
Galvanized iron or steel wire Nos. 9, 12 and 13 gauge Cwt.	"	124,858	326,633
Total			17,923,320

TABLE 11.

IRON.

IMPORTS OF PIG IRON, IRON AND STEEL GOODS, &c., FISCAL YEAR, 1900-1901.

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

——	Tons.	Value.
Pig iron and iron kentledge	35,293	$ 548,033
Pig iron, charcoal	490	7,121
Scrap iron, cast	4,499	51,032
Scrap steel, wrought	24,773	242,189
Ferro-manganese, &c	1,512	38,954
Iron in slabs, blooms, puddled bars, &c	11,746	206,975
Iron and steel goods partially manufactured		5,633,168
Iron and steel goods highly manufactured*		17,923,320
Total		$24,650,792

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

LEAD.

Production.

With the exception of a very small output from the eastern provinces, the lead production in Canada is still derived entirely from the province of British Columbia.

The total production in 1901 amounted to nearly 26,000 tons and although this is a decrease as compared with the year 1900 of over 17 per cent, it is still 33 per cent greater than the highest output of any year previous to 1900.

TABLE 1.

LEAD.

ANNUAL PRODUCTION.

Calendar Year.	Pounds.	Price per Pound.	Value.
		cts.	
1887.....	204,800	4·50	$ 9,216
1888.....	674,500	4·42	29,812
1889.....	165,100	3·93	6,488
1890.....	105,000	4·48	4,704
1891.....	88,665	4·35	3,857
1892.....	808,420	4·09	33,064
1893.....	2,135,023	3·73	79,636
1894.....	5,703,222	3.29	187,636
1895.....	16,461,794	3·23	531,716
1896.....	24,199,977	2·98	721,159
1897.....	39,018,219	3.58	1,396,853
1898.....	31,915,319	3·78	1,206,399
1899.....	21,862,436	4·47	977,250
1900.....	63,169,821	4·37	2,760,521
1901.....	51,900,958	4·334	2,249,387

In order to encourage the establishment of plants for the refining of lead ores within Canada, the Dominion at its last session provided for the payment of a bounty on lead refined in Canada from materials produced by Canadian smelters from Canadian lead ores (1 Edward VII, Chap. 8). In effect the act provided for the payment of the bounty for five years, beginning the first day of July 1902, the rates to be five dollars per ton for the first year, and decreasing one dollar per ton each year thereafter. The total sum payable for such bounties is not to exceed one hundred thousand dollars in any year.

LEAD.

Production.

The value of the exports of lead in ore, &c., is shown in Table 2, while the imports are given in Tables 3 and 4 and of litharge in Table 5. Imports of dry white and red lead are shown in Table 6. In the latter table since 1890 the imports of zinc-white have been included with the lead oxides.

The total value of the imports in 1901 including lead manufactured and unmanufactured, lead oxides and zinc-white amounted to $890,510.

TABLE 2.

LEAD.

Exports.

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

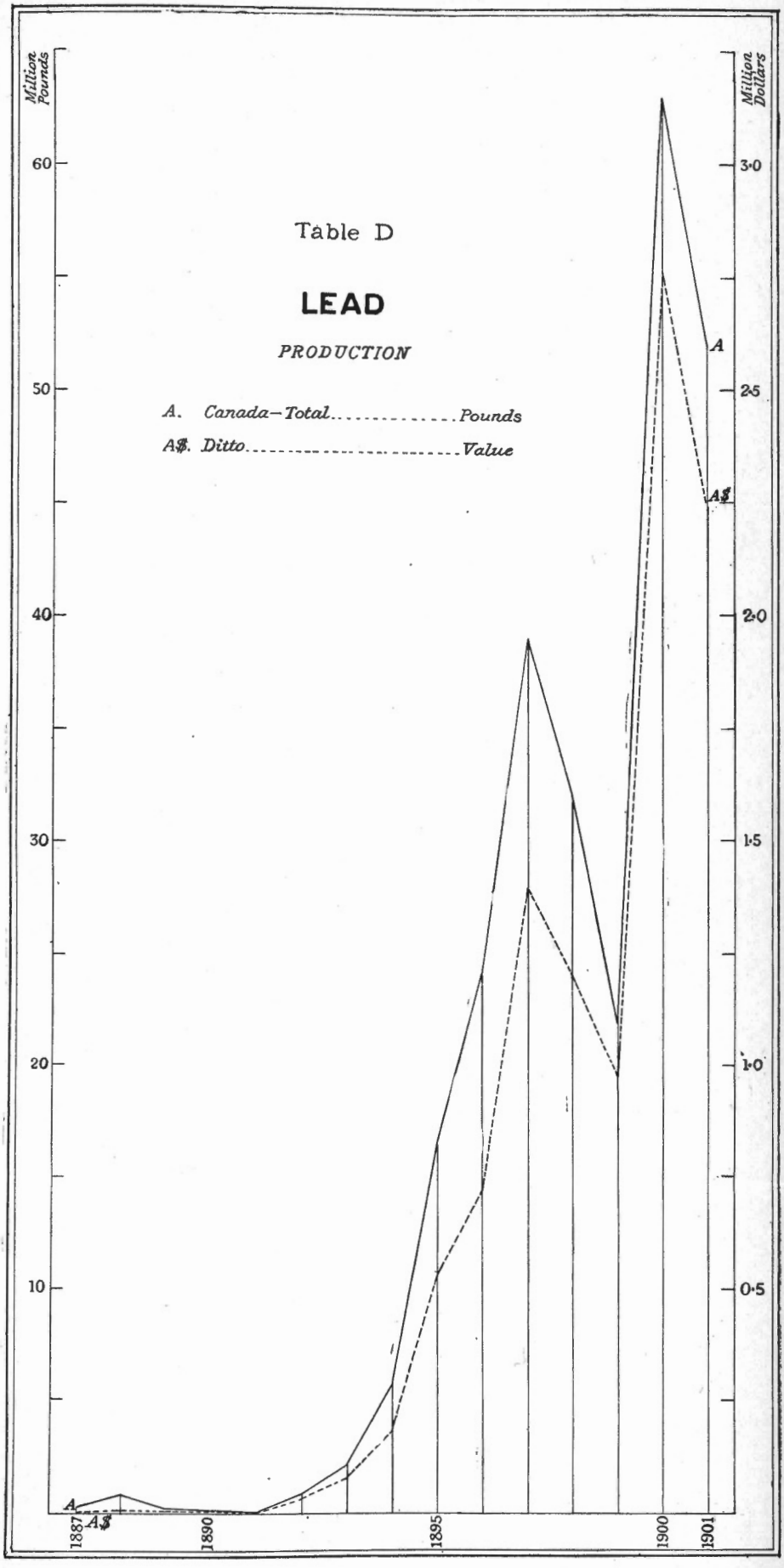


Table D
LEAD
PRODUCTION
A. Canada—Total.....Pounds
A$. Ditto.....Value
Million Pounds
Million Dollars
60
50
40
30
20
10
3·0
2·5
2·0
1·5
1·0
0·5
A
A$
1887
1890
1895
1900
1901

TABLE 3. LEAD.

LEAD. Imports.

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

* 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.

LEAD.

Imports.

TABLE 4.

LEAD.

IMPORTS OF LEAD MANUFACTURES.

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

		Duty.	
1901	Lead Tea	Free.	$41,776
	" Pipe	35 p. c.	11,789
	" Shot and bullets	35 "	2,535
	" Manufactures, N.E.S.	30 "	51,160
	Total		$107,260

TABLE 5.

LEAD.

IMPORTS OF LITHARGE.

Fiscal Year.	Cwt.	Value.
1880	3,041	$14,334
1881	6,126	22,129
1882	4,900	16,651
1883	1,532	6,173
1884	5,235	18,132
1885	4,990	16,156
1886	4,928	16,003
1887	6,397	21,865
1888	7,010	23,808
1889	8,089	31,082
1890	9,453	31,401
1891	7,979	27,613
1892	10,384	34,343
1893	7,685	24,401
1894	38,547	28,685
1895	11,955	32,953
1896	10,710	32,817
1897	12,028	34,538
1898	11,446	32,904
1899	9,530	32,518
1900	9,139	29,176
1901 Duty free	11,132	51.944

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 Duty, 5 p.c.	10,241,601	461,368

LEAD.

BRITISH COLUMBIA—

Production.

British Columbia.

The production of lead in British Columbia since 1887 is shown in Table 7 below.

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

The various mining districts have contributed to the output for 1900 and 1901 as follows:—

——	1900.	1901.
	Pounds.	Pounds.
East Kootenay—		
Fort Steele	38,494,077	29,129,128
Other districts	81,354	775,016
West Kootenay—		
Ainsworth	3,366,962	3,788,412
Nelson	1,485,899	2,470,350
Slocan	19,365,743	15,025,759
Trail Creek	1,045	
Other districts	363,439	391,844
Yale	102	2,397
	63,158,621	51,582,906

Fort Steele again contributes the largest proportion of the output with 56 per cent of the whole, the Slocan occupying second place with 29 per cent.

MANGANESE.

Production.

There is nothing of special interest to report regarding manganese production in 1901.

The exports according to customs returns were 440 tons, valued at $4,820, and in the absence of complete returns of production this figure has been taken as the output for the year.

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

TABLE 1.

MANGANESE.

ANNUAL PRODUCTION.

Calendar Year.	Tons.	Value.	Value per ton.
1886	1,789	$41,499	$23 20
1887	1,245	43,658	35 07
1888	1,801	47,944	26 62
1889	1,455	32,737	22 50
1890	1,328	32,550	24 51
1891	255	6,694	26 25
1892	115	10,250	89 13
1893	213	14,578	68 44
1894	74	4,180	56 49
1895	125	8,464	67 71
1896*	123¼	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

*Exports.

MANGANESE.

Exports.

TABLE 2.

MANGANESE.

EXPORTS 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	1,054	469	9,035	603	20,089
1885	77	5,054	1,607	29,595	1,684	34,649
1886	(a) 441	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	$\frac{3}{10}$	3	$108\frac{3}{10}$	6,351
1896	$123\frac{1}{2}$	3,975	.....	.....	$123\frac{1}{2}$	3,975
1897	$15\frac{1}{4}$	1,166	.....	.....	$15\frac{1}{4}$	1,166
1898	11	325	.....	.....	11	325
1899	67	2,328	3	82	70	2,410
1900	.....	.....	.....	.....	34	1,720
1901	.....	.....	.....	.....	440	4,820

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

TABLE 3.

MANGANESE.

Imports.

IMPORTS: OXIDE OF MANGANESE.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
1884	3,989	$ 258	1893	94,116	$3,696
1885	36,778	1,794	1894	101,863	4,522
1886	44,967	1,753	1895	64,151	2,781
1887	59,655	2,933	1896	108,590	4,075
1888	65,014	3,022	1897	70,663	2,741
1889	52,241	2,182	1898	130,456	5,047
1890	67,452	3,192	1899	141,356	5,539
1891	92,087	3,743	1900	126,725	4,155
1892	76,097	3,530	1901....Duty free	272,134	8,176

MICA.

Production.

The production of mica has been calculated according to the practice followed during the past few years, viz., of adding to the known exports an estimate of the value of the home consumption. On this basis the production for 1901 was valued at $160,000.

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

TABLE 1.

MICA.

ANNUAL PRODUCTION.

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

TABLE 2.

MICA.

EXPORTS.

Exports.

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

Mineral Pigments.

MINERAL PIGMENTS.

Production.

Under this heading is included the production of ochres and baryta.

Ochres.

Ochres.—The production of ochres in 1901 amounted to 2,233 tons, valued at $16,735. The output is mined from deposits near Three Rivers, Champlain county, Quebec, and is used chiefly in the manufacture of paints. The firms engaged in the production were, The Canada Paint Company, Montreal, the Champlain Oxide Company, Three Rivers, and Thomas H. Argall, Three Rivers.

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

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

TABLE 2.

MINERAL PIGMENTS.

IMPORTS OF OCHRES.

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
		Duty.		
1901	Ochres and ochrey earths and raw siennas	20 p. c.	805,509	$ 7,849
	Oxides, dry fillers, fire-proofs umbers and burnt siennas N.E.S.	25 "	1,286,558	19,418
	Total, 1901		2,092,067	$27,267

TABLE 3.

MINERAL PIGMENTS.

EXPORTS OF MINERAL PIGMENTS, IRON OXIDES &C.

Exports.

Calendar Year.	Tons.	Value.
1897	512	$7,706
1898	283	4,227
1899	308	5,408
1900	651	7,154
1901	401	8,233

Baryta.—The baryta produced during the past five or six years has been obtained near Lake Ainslie, Inverness county, and from Brookfield, Colchester county, Nova Scotia, while a small quantity has also been mined near Cantley, Hull township, Quebec.

Baryta.

MINERAL PIGMENTS.

Baryta.

Production.

TABLE 4.

MINERAL PIGMENTS.

ANNUAL PRODUCTION OF BARYTA.

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

TABLE 5.

MINERAL PIGMENTS.

Imports.

IMPORTS OF BARYTA.

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

TABLE 6.

MINERAL PIGMENTS.

MISCELLANEOUS IMPORTS, FISCAL YEAR, 1901.

MINERAL PIGMENTS.

Miscellaneous imports.

—		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.	56,463	3,924
Paints and colours, and rough stuff and fillers, anti-corrosive and anti-fouling paints commonly used for ship hulls, N.E.S.	"	25 "	262,672	15,198
Paris green, dry	"	10 "	335,173	32,510
Paints and colours ground in spirits, and all spirit varnishes and lacquers	Galls.	$1.12½ par gallon	456	1,520
Putty	Lbs.	20 p. c.	238,996	3,544
Total				56,696

MINERAL WATER.

MINERAL WATER.

Production.

Mineral springs are known to occur at many places throughout Canada, and at a number of them the water is being utilized, either put up in bottles for sale throughout the country, or used for drinking or bathing purposes at the places where it is found. At several points, hotels have been erected, at which the guests have the privilege of using the mineral water at the place. In view of this, it is difficult to obtain statistics giving any intelligent idea of the extent or value of the industry.

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

TABLE 1.

MINERAL WATERS.

ANNUAL PRODUCTION.

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

MINERAL WATER.

Imports.

TABLE 2.

MINERAL WATERS.

IMPORTS.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$15,721	1891	$41,797
1881	17,913	1892	55,763
1882	27,909	1893	57,953
1883	28,130	1894	49,546
1884	27,879	1895	48,613
1885	32,674	1896	55,864
1886	22,142	1897	47,006
1887	33,314	1898	52,989
1888	38,046	1899	54,891
1889	30,343	1900	66,331
1890	40,802		
1901 Mineral waters, natural, not in bottle.....Duty free..	$ 749		
1901 Mineral and aerated waters..... " 20 p.c.	70,772		
Total	$71,521		

NATURAL GAS.

NATURAL GAS.

Production.

The total value of the natural gas sold in Canada in 1901 was $339,476. This output is practically all derived from the wells in southern Ontario, although at Medicine Hat, N.W.T., a small quantity is used for the burning of lime.

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

NICKEL.

Production.

The production of nickel in Canada in 1901 from the nickel-copper ores of the Sudbury district, Ontario, amounted to 9,189,047 pounds, or 4,594 tons as compared with 7,080,227 pounds or 3,540 tons in 1900, an increase of 1,054 tons or nearly 30 per cent. The price of refined nickel at New York was steady throughout the year, ranging from 50c. to 60c. per pound, according to size and terms of order.

The companies operating in the Sudbury district are

The Canadian Copper Company,

The Mond Nickel Company,

The Lake Superior Power Company,

The Nickel Copper Company of Ontario.

Of these, the first two operate smelting plants, producing nickel-copper matte. The operations of the Lake Superior Power Company have so far been limited to development work on their properties.

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	4,626,627	60c.	2,775,976
1892	2,413,717	58c.	1,399,956
1893	3,982,982	52c.	2,071,151
1894	4,907,430	38¼c.	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

* Calculated from shipments made by rail.

NICKEL.

Exports.

TABLE 2.

NICKEL.

EXPORTS.*

Calendar Year.	Value.
1890	$ 89,568
1891	667,280
1892	293,149
1893	629,692
1894	559,356
1895	521,783
1896	658,213
1897	723,130
1898	1,019,363
1899	939,915
1900	1,031,030
1901	751,080

*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 happened 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.

TABLE 3.

NICKEL.

Imports.

IMPORTS.

Calendar Year.		Duty.	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	Nickel anodes	10 p. c.	11,965
	Nickel*	Free.	64
			$ 12,029

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

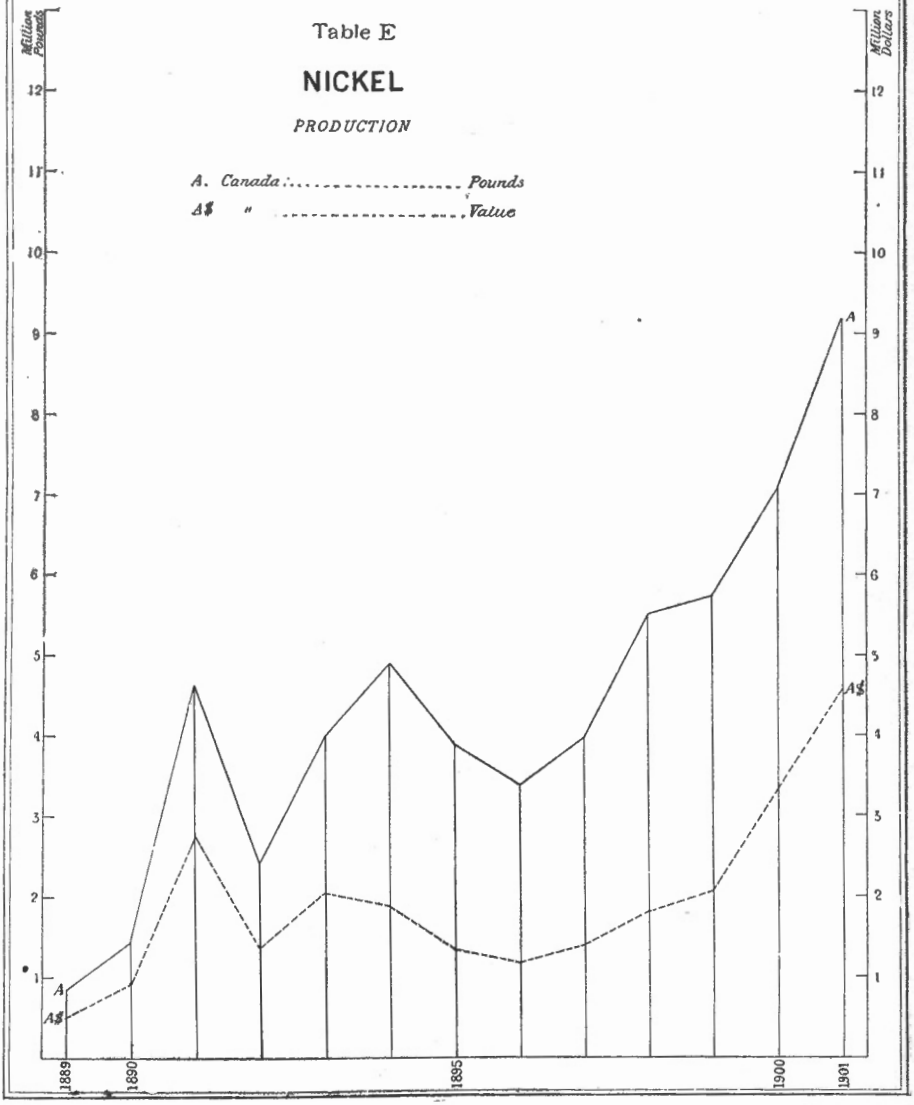
Table E

NICKEL

PRODUCTION

A. Canada ..... *Pounds*

A$ " ..... *Value*



PETROLEUM.

During the past two years a considerable quantity of crude petroleum has been sold directly for gas-making, fuel, lubricating and other purposes. The quantity sold in this way in 1901 was, according to returns received from shippers 113,715 barrels, while the sales to refineries reached a total of 508,677 barrels. Thus the total sales of crude oil for the year amounted to 622,392 barrels, valued at $1,008,275 or an average of $1.62 per barrel. These figures do not of course include stocks on hand on December 31, 1901, but on the other hand they do or should include stocks which were held at December 31, 1900, and sold during the year 1901.

Messrs. Chas. Jenkins, president of the Petroleum Crude Oil Tanking Company, and Mr. O. Simmons, M.P., of Petrolia, very kindly placed us in possession of important information concerning the increasing sale and shipment of oil for gas and fuel purposes, which has enabled us to arrive at a close approximation to the quantity used in this way as given above.

In former years, when the crude oil was practically all sent to Canadian refineries, an estimate of the production was arrived at by taking the quantity of refined oils inspected and deducing therefrom the quantity of crude oil used. A statement of the production from 1881 to 1900, calculated on this basis, will be found in Table 1.

In Table 2 statistics are shown of the value of the petroleum products of the refineries.

PETROLEUM.

Inspection of oils.

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.
	Galls.	Galls.				
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 production.

VALUE OF PRODUCTION OF CANADIAN OIL REFINERIES.

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

PETROLEUM.

Amount of oil inspected.

TABLE 3.

PETROLEUM.

TOTAL AMOUNT OF OIL INSPECTED, CANADIAN AND IMPORTED.

Fiscal Year	Canadian.	Imported.	Total.	Canadian.	Imported.
	Galls.	Galls.	Galls.	%	%
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

* Item (*a*) Table 5.

TABLE 4.

PETROLEUM.

EXPORTS OF CRUDE AND REFINED PETROLEUM.

Exports.

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	859	3,425	859
1900	40	2	8,559	2,394	8,599	2,396
1901	14,168	691	375	66	14,543	757

PETROLEUM.

Imports.

TABLE 5.

PETROLEUM.

IMPORTS OF PETROLEUM AND PRODUCTS OF.

Fiscal Year.	Gallons.	Value.	Fiscal Year.	Gallons.	Value.
		$			$
1880	687,641	131,359	1891	5,071,386	498,330
1881	1,437,475	262,168	1892	5,649,145	475,732
1882	3,007,702	398,031	1893	6,002,141	446,389
1883	3,086,316	358,546	1894	6,597,108	439,988
1884	3,160,282	380,082	1895	7,577,674	525,372
1885	3,767,441	415,195	1896	8,005,891	735,913
1886	3,819,146	421,836	1897	8,415,302	697,169
1887	4,290,003	467,003	1898	9,074,311	724,519
1888	4,523,056	408,025	1899	10,394,208	763,303
1889	4,650,274	484,462	1900	9,633,647	864,833
1890	5,075,650	515,852			

		Duty.	Gallons.	$
1901	Oils: Mineral—			
	(*a*) Coal and kerosene, distilled, purified or refined, naphtha and petroleum, N.E.S.	5c. p. gall.	9,232,165	780,937
	(*b*) Products of petroleum	5c. "	328,181	34,462
	(*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	2½c. "	362,942	27,498
	(*d*) Illuminating oils composed wholly or in part of the products of petroleum, coal, shale or lignite, costing more than 30 cents per gallon	25 p. c.	11,691	4,213
	(*e*) Lubricating oils composed wholly or in part of petroleum, costing less than 25 cents per gallon	5c. p. gall.	1,147,843	135,530
	Total		11,082,822	982,640

TABLE 6.*

PETROLEUM.

IMPORTS OF CRUDE AND MANUFACTURED OILS, OTHER THAN ILLUMINATING.

Fiscal Year	Gallons.	Fiscal Year.	Gallons,
1881	960,691	1892	3,047,199
1882	1,656,290	1893	1,481,749
1883	1,895,488	1894	1,860,829
1884	2,017,707	1895	1,106,907
1885	2,489,326	1896	1,079,940
1886	2,491,530	1897	800,411
1887	2,624,399	1898	1,046,493
1888	2,701,714	1899	727,014
1889	2,882,462	1900	1,071,996
1890	3,054,908	1901	1,476,024
1891	3,049,384		

* This table is composed of items (*b*) 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...(Duty, 30 p. c.)	118,848	9,639

TABLE 8.

PETROLEUM.

IMPORTS OF PARAFFINE WAX CANDLES.

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

PETROLEU Prices.

TABLE 9.

PETROLEUM.

AVERAGE MONTHLY PRICES FOR CRUDE OIL AT PETROLIA DURING YEAR 1901.

MONTH.	PRICE.	MONTH.	PRICE.
January	$1 55 to $1 60	July	$1 41 to $1 61
February	1 55 to 1 60	August	1 61
March	1 60 to 1 61	September	1 61 to 1 66
April	1 51 to 1 59	October	1 66
May	1 41 to 1 51	November	1 66
June	1 41	December	1 61 to 1 66
		The Year	1 62

PHOSPHATE *(Apatite.)*

PHOSPHATE.

Direct returns of the production of phosphate were not obtained. The production in Quebec according to Mr. Obalski was 1,033 tons, valued at$6, 280. This was obtained chiefly as a by-product in the mining of mica in the vicinity of Buckingham and Templeton.

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

TABLE 2. PHOSPHATE. EXPORTS.

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

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

PLATINUM.

PLATINUM.

Production.

As in the past the production of this metal is altogether derived from the placer working on the Similkameen river district of British Columbia. As will be seen on inspection of the figures in Table 1 below, the yield has been generally falling off for some years past. The amount is now insignificant.

PLATINUM.

Production.

TABLE 1.

PLATINUM.

ANNUAL PRODUCTION OF PLATINUM.

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

As articles of platinum are not manufactured in Canada, there is no home market for the crude metal and the imports, as shown in Table 2, represent only the finished articles.

TABLE 2.

PLATINUM.

Imports.

IMPORTS OF PLATINUM.

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

*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.

It is to be hoped that the increasing demand for this valuable metal may stimulate prospecting and lead to the discovery of other workable deposits. With this in view Mr. Theo. Denis, B. Sc., of the Staff of the Mines Section has prepared the following article on the subject, giving in condensed form, information inaccessible to the ordinary reader on account of its being scattered throughout a number of technical publications. Descriptive matter relating to the mode of occurrence and methods of working deposits in other countries has been included as suggestive of points likely to be of use to the prospector and miner in Canada. PLATINUM.

OCCURRENCES OF PLATINUM IN CANADA.

Occurrences.

Although the first reference to the occurrence of platinum in Canada was made as early as 1852, by Dr. T. Sterry Hunt, yet, the production so far, as may be seen by the table given above, has been very small and moreover the figures show great irregularity from year to year. This is due to the fact that in Canada this metal is obtained as a by-product only, mainly in the working of some auriferous placers in British Columbia, and in many cases the black platiniferous sand which is held back in the riffles of the sluiceboxes, is overlooked and thrown away owing to the ignorance, on the part of the miners, of its value or of the mode of further treatment. Even as late as 1899, the Provincial Mineralogist for British Columbia in his report for the year says that 'It appears that many of the placer miners do not know its value and throw it away as so much black sand.' This may have been due to the fact that until a few years ago the demand for platinum was somewhat limited and the market price accordingly comparatively low; but at present, owing to its extended uses, the price has risen, so that it now rivals that of gold, the market price for ingot platinum during 1901, ranging from $18.00 to $22.00 per ounce.

Platinum was first noticed in Canada in 1852, as mentioned in the Geology of Canada of 1863. It was found on Rivière-du-Loup, province of Quebec, near its junction with the Chaudière, in the course of washing sand for gold. Associated with this native platinum were plates of a hard steel gray metal resembling iridosmine. There is also another record of platinum having been found under similar conditions in Rivière des Plantes, Beauce county, in the province of Quebec. The quantity was very small and these finds possess at present only a historical interest. If, however, placer mining should be more vigorously prosecuted in this region it is not impossible that platinum might become a valuable by-product of the operation.

PLATINUM. Occurrences.

The recorded Canadian production of platinum comes from British Columbia, where the metal is obtained mainly in connection with the working of the auriferous deposits of the Similkameen and Tulameen rivers.

It is rather difficult to ascertain when platinum was first discovered in British Columbia. In his 'Mines and Minerals of Economic value of British Columbia,' (Geol. Surv. Rep. 76-77), the late Dr. G. M. Dawson mentioned finds of platinum on the Similkameen, Tranquille and Fraser rivers. But as some of those placers were first worked as far back as 1858 it is very probable that the black platiniferous sand must have come to the notice of gold miners a good many years before.

However, the first record of its having been saved is found in the report of the gold commissioner of the Similkameen division for 1886 in which he says: 'Mixed with the gold found in this district, and possessed of a greater specific gravity, is a whitish metal which at first was thrown away under the impression that it was worthless. For considerable time no definite idea could be procured as to its value. Mr. Jenson, of Granite City, who forwarded a sample to a cousin of his at Manchester, England, for analysis has kindly supplied me with the desired information. The metal is principally platinum, containing small quantities of iridium, osmium, and palladium. Its value depends on the percentage of platinum, which varies in quantity and may be considered as worth about $2.50 per ounce. The selling price at Granite City was 50 cents per ounce; so the purchasers will reap a handsome return for their investment.' The following year he estimates the production to have reached some 2,000 ounces, which commanded from $2.60 to $3.00 per ounce.

Platinum has been found in many places in British Columbia in association with gold, in alluvial deposits, an annotated list of localities being given below, but the region of the Similkameen and Tulameen rivers (north fork of Similkameen) is by far the most important.

The origin of the platinum found in the placers of the district, has not been definitely ascertained; Dr. Dawson in his report on the Mineral Wealth of British Columbia expresses himself as follows: The metal (platinum) occurs in notable quantity in the region of the upper Similkameen and Tulameen, in minute scales where the gold is "fine" but increasing in coarseness to small pellets and nuggets in places where "coarse" gold is found. Coarse grains and pellets of platinum have so far been found only on Granite, Cedar and Slate creeks, all entering the Tulameen on the south side. In certain claims in these creeks, the platinum has been found to equal half

the weight of gold obtained ..... Though above referred to as platinum, the metal so named is alloyed with several other metals of the same class, of which osmiridium is the most abundant. Specimens of the native platinum from Granite creek have been subjected to careful examination and analysis by Dr. Hoffmann, who states that the material "having the composition of the ore here in question would, at the present time, be worth, from $2.90 to $3.65 per ounce troy in the English market." Osmiridium is employed, on account of its great hardness, for tipping the nibs of gold pens. "For this purpose it is necessary that it should be in the form of natural grains, and these are very carefully selected, the requirements being that they should be solid, compact and the proper size and shape.' This was not however found to be the case with the grains present in the platinum from Granite creek.

PLATINUM. Occurrences.

Platinum has very rarely been discovered in veins or otherwise in its original matrix. In Russia, whence the greatest quantities are obtained, it is almost always found as in the cases above cited in association with gold-bearing alluvions, although it has been noted in a few places with little or no accompanying gold. It appears to be derived from rocks consisting of serpentine and peridotite with talcose and chloritic schists and chromite. While there is a notable abundance of greenish chloritic and hornblendic schists and diabase rocks (resulting from the metamorphism of old volcanic rocks) in the Tulameen and upper Similkameen region of British Columbia, and chromite and magnetite are here found in the workings in associat on with the platinum and gold, no peridotite or serpentine is actually known to occur. The circumstances in connection with the occurrence of the 'coarse' platinum appear to point to the vicinity of an important mass of intrusive diorite as its point of origin. A great part of the associated magnetite is certainly derived from veins in this rock and it seems not improbable that the platinum, and possibly also a great part of the gold of this district, may occur in scattered grains in this intrusive mass. Very little vein-stuff occurs in the gravels with which the platinum and gold of this region are associated. (Geol. Surv. Rep. 87-88 part R.)

Later investigations however have led to a modification of the views expressed as above by Dr. Dawson in 1888.

The following statement by Mr. R. W. Brock was published in the Summary Report of the Geological Survey of Canada for 1901 p. 67 : "It (platinum) has been found in the Similkameen district and is known to occur at many points in the western United States. When found in

PLATINUM. Occurrences.

place it has generally been confined to serpentine, and when found in sands it is usually in the neighborhood of serpentine. Consequently streams draining masses of serpentine in particular should be prospected for platinum. Serpentine, as above noted, occurs at a number of points in the district examined this summer, as on July creek, Hardy mountain and Central Camp. It also occurs on the range east of the Cascade."

A very interesting investigation on a sample of platinum from Granite creek was conducted by Dr. G. C. Hoffmann of the Geological Survey. The original sample weighed 18.266 grams, of which .372 consisted of rock matter, pyrite and gold. The sample was submitted to magnetic separation, and divided into two parts, which on analysis gave the following results :

	Non Magnetic.	Magnetic.
Weight	11·115 grams.	6·779 grams.
Platinum	69·19 °/₀	78·43 °/₀
Palladium	0·26	0·09
Rhodium	3·10	1·70
Iridium	1·21	1.04
Osmium	....	....
Copper	3·09	3·89
Iron	7·87	9·78
Osmiridium	14·62	3·77
Gangue	1·95	1·27
	100·29	99·97

This determination shows, therefore, a proportion of 72·07°/₀ of platinum in the 17·894 grams of material analyzed. For the purpose of comparison, platinum contents of samples of platinum bearing material from different parts of the world are given: The analyses are by Messrs. Deville and Debray ; Oregon, 51·45 °/₀ ; Australia, 61·40 ; California, 85·50 ; Choco, Columbia, 86·20 ; Nischne Tagilsk, Urals, 76·40.

The following is a list of Canadian localities at which the occurrence of platinum has been noticed. With the exception of that at Sudbury, Ont., all the finds have been made in the alluvial deposits, usually while working for gold.

Rivière du Loup, and Rivière des Plantes, province of Quebec. (See note above.)

Sudbury, Ontario.—This occurrence is one of the very few in the world where platinum is found "in situ."—In this case the metal is found in combination with arsenic and associated with the nickeliferous pyrrhotite deposits. The arsenical platinum mineral was named sperrylite by H. A. Wells who described it, and found it to consist on analysis of: Platinum 52. 57 per cent; Rhodium 0.72; Antimony 0.50; Arsenic 40.98; Iron 0.07; Tin oxide 4.62. PLATINUM. Occurrences.

At Sudbury the ore bodies consist of chalcopyrite and nickeliferous pyrrhotite, which are primarily worked for their nickel and copper contents, and yield a large proportion of the world's supply of nickel. The ore undergoes a first treatment at the mines, where it is smelted, the low grade matte first made containing approximately 15 per cent of nickel and about the same proportion of copper and the Bessemerized matte from 35 to 40 p.c. of nickel. This is shipped to the refinery in New Jersey where it is finally treated. According to a reliable authority this matte holds 1.25 oz. of the platinum metals per ton of nickel contents of the matte, and of this some 80 per cent is extracted. In 1900 the matte shipped from Sudbury, contained approximately 4,594 tons of nickel. The platinum metals would therefore, on that basis have amounted to 5,742 oz. This however is not included in the table of production, as returns of platinum from this source are not sent in to the Mines Section.

North Saskatchewan, N.W.T. Native platinum has been found in association with gold on the bars in the North Saskatchewan river, in the neighborhood of Edmonton, district of Alberta. A sample of the material from this locality received from Mr. Pearce consisted of exceedingly minute rounded and flattened grains of native platinum, the largest not exceeding one fourth of a millimeter in diameter, with intermixed, equally minute scales of native gold. (Geol. Surv. Rep. 90-91 part R).

Yukon river and tributaries, Y. T. Platinum was reported to have been found in small quantities along all or nearly all tributaries of the Yukon in association with river-bar gold (Geol. Surv. Rep. 87-88). but these reports have not been verified by fuller investigation and it is still uncertain whether this metal has been discovered or not on the Yukon river.

It has been reported lately that comparatively large quantities of platinum were bought at low prices from placer miners in the Yukon, who were ignorant of its value, and sold again at a large profit in Vancouver.

PLATINUM. Occurrences.

Teslin (Hootalinqua river), Y.T.—A discovery of platiniferous sand was made in 1898, at the mouth of the Hootalinqua river and on Thirty Mile (Lewis) river. A company was said to have been subsequently organized to work these alluvions for the gold and platinum, by means of dredges.

Upper Similkameen and Tulameen rivers, British Columbia, especially on Granite, Cedar and Slate Creeks. (See note above.)

Tranquille river, B. C. This river which flows into Kamloops lake, was worked before 1862 by gold miners; later the work was taken up by Chinamen. Gold is found for a distance of eight miles from the mouth. The metal is scaly and mixed with it are particles of platinum, similar in shape and size to those of gold.
(Geol. Surv. Rep. 1877-1878 part B.)

Fraser river, British Columbia. Found in small quantities in fine scales, with gold, particularly at a place ten miles below Lillooet. (Geol. Surv. Rep. 87-88).

A sample of crude platinum sand from washings in the Fraser river gave the following result :—

Base metals	6·48%
Platinum group	81·30
Osmiridium	12·20

Rock creek, Camp McKinney, Yale district, B.C. A sample of heavy black sand taken from the riffles of sluice-boxes at Camp McKinney, Rock creek, a tributary of Kettle river which contained in addition to gold a large proportion of native platinum, gave on analysis the following results :

Native platinum	44·7
Gold	1·8
Magnetite	47·4
Quartzose sand	6·1

The platinum was in the form of exceedingly minute to moderately coarse irregularly shaped grains, the largest of which measured four millimeters in diameter. (Geol. Surv. Rep. 92-93).

North Thompson and Clearwater rivers, B.C. The discovery of platinum in the North Thompson and Clearwater rivers has created some interest, as its existence was not formerly suspected. It is found associated with the alluvial gold but the extent and condition of the finds are not yet fully determined. (Rep. Minister of Mines, B.C., 1900).

PLATINUM

SOURCES OF THE WORLD'S SUPPLY. OCCURRENCE AND TREATMENT.

Although platinum is known to occur in situ in several places, it is in such small quantities, that nowhere are these occurrences worked for the metal. These deposits have therefore at present no direct economic value although their study may eventually throw light on the origin of this metal which so far is not well understood. Platinum has been found in place (in contradistinction to alluvial deposits) in the following countries, a short description being given in each case.

Columbia.—In Columbia the platinum deposits may be divided into two main classes, the more recent alluvial deposits and the "caliche" beds. These last are deposits which consist of clay, sand and boulders indiscriminately mixed and which show no stratification. Those deposits are probably of glacial origin, and are the oldest platiniferous deposits of El Choco. They frequently contain diorite boulders, and it seems possible that the platinum will eventually be found disseminated in this rock. The true gravel deposits of El Choco are newer than the "caliche' beds and in part derived from them. The largest deposits of the kind are situated along the Tamana, Iro, and San Juan rivers. These are from 6 to 20 feet deep and have been extensively worked by the natives. (Min. Ind. Vol. I.) Although the caliche" beds cannot be said to contain platinum in situ, yet the occurrence differs from the ordinary alluvial deposits. The annual production of Columbia has varied for the last few years between 10,000 and 12,000 oz.

New South Wales.—In New South Wales platinum is said to have been detected in felsite and granite at Broken Hill. It is, of course, very sparsely disseminated. It has also been found in small quantities in washings for gold at several places, and since 1894 there is a production recorded, which is very irregular and varies between 500 and 2,000 ozs. annually.

Brazil.—In Brazil platinum is found associated with gold in quartz lenses intercalated in gneiss and schists.

United States.—As to the United States, Mr. David T. Day in a paper read before the American Institute of Mining Engineers in February 1900 makes the following statement:

"Messrs. William E. Hidden and J. H. Pratt have found sperrylite-platinum arsenide in placers at several points in the Cowee valley of North Carolina. The conditions favour the belief that the source of this mineral is a ledge of impure rhodonite and biotite, containing

PLATINUM.

much disseminated iron sulphides, conditions much like those at Sudbury, Canada.

"There have been unsubstantiated reports of the occurrence of platinum in place in certain localities of the Catskills in New York, in granite near Philadelphia, and again near Port Deposit, Maryland."

As to alluvion deposits he says:

"Platinum has been found at many places on the Pacific beach, from as far south as San Bernardino county, northward to the mouth of the Columbia. Indefinite reports have been made of its occurrence further north on the Washington beach; but its amount is certainly not great. The principal beaches where platinum has been reported, beginning at the south, are: Santa Barbara, Lampoc, the beaches of San Luis, Obispo county; Santa Cruz, and occasionally between Santa Cruz and the Golden Gate. In accordance with Blake's statement, the richest beaches are further north, in Humboldt and Del Norte Counties. The beach mines of Gold Bluff north of Arcata, Big Lagoon, Stone Lagoon, Little River, Crescent City, Cal., and Gold Beach and Port Orford, in Curry county Oregon, have all yielded platinum in commercially appreciable quantities. Still further north, platinum is found at Yaquina beach, Oregon, but the sands there are poor."

Russia.—The metal is found in the Ural mountains sparsely disseminated in peridotite and serpentine masses. The platiniferous alluvial deposits are also characterized by the presence of boulders of olivinite and serpentine, which both contain chromite. Thus the source may be said to have been placed, the matrix being beyond doubt the serpentintized olivinite. It is even reported that a streak or zone of this rock some six feet wide in a massive olivinite, was actually worked for some time for its contents of platinum, but at a depth of about 35 feet it was no longer workable. It does not seem certain that platinum has been found in the perfectly fresh igneous rock which had not yet undergone serpentinization, hence there is a possibility that the same agencies that brought about the conversion of the olivine into serpentine also introduced the platinum into the rock. (Min. Ind. Vol. VI. Abstract.)

Over 90 per cent of the world's production of platinum is derived from the placer deposits of the Urals in Russia. The whole of the platinum producing portion of these mountains is contained within a length of 100 miles along the 60° meridian E. of Greenwich, between latitudes 57.30° and 59° and is all included within the government of Perm. Within this area there are two chief districts, Goroblagodatsk in the north and Nishni Tagilsk in the south. The platinum

placers occupy the valley bottoms of a number of streamlets and their branches, the alluvions of the larger streams being rarely rich enough for working. In the Goroblagodatsk district, which lies wholly on the Asiatic side of the Urals, the placers are found on the river system of the Iss and its tributaries which, in its turn, discharges into the Tourna. The total length of the Iss and its affluents is about 60 miles. PLATINUM.

In the southern district the main producing area lies on the European side of the Ural watershed in the river systems of the Vissine and the Martian. On these 18 placers are being worked. On the Asiatic side there are three fields of operation on the Chornaia and its tributary, the Chonge.

The platiniferous alluvion is very variable in thickness and in richness, but always shallow, the placers being undoubtedly of quaternary age. These placers carry gold in addition to the platinum, but these metals did not occur together in primary deposits, and their presence together is due to the fact that the stream which formed the alluvial deposit, received the product of disintegration of rocks containing gold and of rocks containing platinum, the source of gold being traceable to quartz veins or to rocks of an acid type, whereas the platinum is derived from basic rocks.

The thicknessess of the respective layers of overburden and platiniferous alluvion are also recorded, and are as follows: Overburden average 16 feet (maximum 63 feet, minimum 2½ feet), pay gravel, average 3½ feet (maximum 6 feet, minimum 1 foot). The average richness of these pay-sands being at present about 2 dwt., crude, to the ton. The yield of platinum to the ton of gravel washed was at first much higher, but has decreased considerably within recent years. According to private records the sands of the Gorablagodatsk district in 1870 yielded 1 oz per ton, in 1882 this fell to 9 dwt., in 1886 to 4½ dwt. and in 1895 it was 1½ dwt. In the Nishni Tagilsk district, the same decrease is noticeable. This progressive impoverishment is due to the fact that at first only the small shallow and rich placers at the headwaters of the smaller streams were worked; and as these were exhausted, gradually poorer and poorer deposits further down stream had to be attacked, till now there is nothing left but the more extensive low grade placers in the large valleys and the tailings of earlier washings.

Crude platinum, as obtained by washing of the gravels, is in the form of fine particles, grains and scales, of about the size of the finest gunpowder; its colour varying from light to very dark grey. Nuggets

PLATINUM.

are occasionally met with, the largest found in the Gorablagodatsk district was 72½ ozs, and in the Nishni Tagilsk 310 ozs.

Methods of Working.—The method of working the placer gravels is almost everywhere identical. There are two different labour systems in force in all the alluvial workings of Russia. The men are either day labourers receiving regular wages, or they are 'starateli' or free labourers. These latter are what the Cornish miner would call 'tributers'; they are allowed to work certain portions, in some cases the whole of a placer, practically as they please, and are in turn bound to sell the platinum they produce, to the individual or company owning the placer, at a fixed price, which is usually less than half its value. These men are said to be able to work gravels too poor to be worked by day wages.

The method of working adopted by the 'starateli' is simple in the extreme; they establish a short sluice-box or 'tom' in some position where they can run a stream of water into the head of the box. One of the most usual types of sluice used in the Urals consists of a box about 2 feet wide, into which the gravel is dropped, and through which a current of water is run. The stream of gravel and water is carried into the sluice proper, which consists of a box, some two feet wide by 30 feet long, inclined at a low angle (about 5°). The far end is opened and terminates in a chute under which a cart can stand to receive the boulders and large pebbles. On the bottom of this sluice, at intervals of about 7 feet, there are three openings which are 9 inches by two feet (the width of the box). These openings are grated with bars of iron set ¼ inch apart, and through these, practically all the finer sand and water drop, whereas the larger stones continue on to the chute. Beneath each grating runs a transverse box to receive the sand and water which drop through the gratings. These boxes are also inclined at a low angle and deliver into a trough which lies at a steeper angle; this trough carries the sands, which are now considered worthless, into a settling box, whereas the water runs off into the ditch. The sands are shovelled from the settling box into carts for removal. The bottoms of the main sluice of the transverse boxes, and of part of the trough are covered with riffles and coarse matting, forming interstices for catching the heavy sand. As will be seen, this sluice is really the hydraulic miners sluice, undercurrent and grizzly in miniature. In some places this sluice is combined with a simple machine for disintegrating clayey gravels. When the work is done on an extended scale either by a large company of starateli or by mine owners, washing machines are built and the pay gravels are brought

to them in small carts drawn by one horse. The machines are usually driven by steam. One type of washing machine consists of a cylindrical tub, the bottom of which is a circular cast iron pan 15 inches deep, pierced with $\frac{5}{8}$ inch holes; around the top of the pan runs an annular cast iron pipe, perforated so as to allow water in small jets to play into the pan. In the centre is a vertical shaft carrying a six-armed spider, from each of the arms of which hang a couple of iron bars that almost touch the bottom of the pan. The shaft is revolved at about 25 revolutions per minute, and the gravel is fed in continuously. The large stones which remain after the disintegration are removed from time to time, while the sands and clayey matter suspended in water pass through the perforated bottom and fall upon a sloping board covered with stout sheet iron which discharges into a large box, the front of which is closed by a strong wooden grating kept always padlocked while the machine is in operation. The bottom of the box is inclined at an angle of about 15°. It is eight feet wide and the bottom is covered by stout bass mats, which are held in place by stout pieces of wood about 3 inches deep, which are kept in their places by wedges, and act as riffles. The sands drop through the grating into a transverse shallow trough, then over a table some 18 feet long and furnished with wooden riffles and one or two more troughs. At the bottom of the table the sands drop into a wooden chute which is at such a height above the ground that these sands can be carried by the stream of water to a low dump, some 100 yards away from the machine. PLATINUM.

It is evident that any coarse pieces of platinum or nuggets which are the most liable to be stolen, will be retained in the padlocked section of the table, while most of the finer platinum sands are also caught in the mats; the lower table is said to catch very little, but this however is no proof that the tailings are clean, for all the arrangements now in use are obviously unsuitable for catching flour platinum. The machine referred to above can treat about 100 tons in 12 hours, the volume of water required being from 5 to 10 times that of the gravel. The clean-up of the different appliances usually takes place every 12 hours at 5 p.m. and 5 a.m. The sands resulting from the clean-up are then further concentrated in another very simple sluice, consisting of an upper portion in the shape of a box lined with sheet iron and a lower portion which consists of a narrow box about 15 feet long which is laid with well washed peats forming shallow riffles. The sands are thrown in small quantities into the box and then worked about with a hoe or a narrow shovel in a carefully regulated current of water; the bulk of the platinum is retained in the box, the rest being caught in the riffles and most of the lighter mate-

PLATINUM.

rial is carried away. The rich concentrates thus obtained, seem to consist of crude platinum, chromite and a few of the heavier minerals. They are finally cleaned on a small flat table or wash-board. This consists of two tables separated by a drop of two inches. Above the upper one is a small box which delivers a regular shallow stream of water over the whole breadth of the table, the force of the current being just sufficient to move the average-size particles of platinum. The breadth of the board is about 3 feet. The concentrated sands from the sluice are thrown on the upper table and are continually pushed upward against the current by means of a little wooden hoe. On this table the concentration is finished; the sands are worked with the hoe until fairly clean and are then allowed to be carried by the stream of water to the lower table, where the washing is completed. The clean platinum sands are then collected off both tables and stirred up with sufficient mercury to dissolve any gold that may be present. The platinum left behind is now ready for the market. In its crude state it usually contains from 75 to 85 per cent of pure metal. It is then ready to be sold to the refineries. The bulk of the produce of Russia is exported in the crude state.

In *Columbia*, which is the platinum producer next in importance to Russia, the metal is also recovered by very simple methods. The greater proportion is obtained from the working of the "caliche" beds which are usually ground-sluiced. River bars and beds are worked in even a more primitive way; women diving for the black sand and washing it in pans.

PRECIOUS METALS.

PRECIOUS METALS.

The precious metals, gold and silver, are considered together, following the custom of past years.

Gold.

GOLD.

Production.

The production of gold in Canada in 1901 was $24,128,503, a decline as compared with the previous year of $3,779,652. This is the first time in ten years that the production has not shown an increase. This is mostly due to the fact that the output of 1901 of the Yukon, was less than in 1900 by $4,275,000, this falling away being

offset in a small degree by a steady increase in the British Columbia production. It was only to be expected that as the richer parts of the more easily worked shallow placer ground became exhausted the production should show a falling off. With the gradual introduction however of more elaborate and through methods for mining the poorer parts of the gravels, and with the discovery and working of quartz, deposits a gradual increase in the output should set in, thus repeating the history of most districts on the continent starting in a similar way. Nearly 79 per cent of the production of the whole of Canada in 1901 was derived from placer diggings, as compared with 84 per cent in 1900, while the proportion of the output from lode mines increased from 16 per cent to 21 per cent. The output from lode mines in 1900 was $4,349,492 and in 1901 $5,143,403. The placer output in 1901 was $18,985,100 of which $18,000,000 came from the Yukon and the balance, with the exception of a small quantity from the Saskatchewan river, was obtained from British Columbia.

Precious Metals. Gold. Production.

The various provinces contributed to the total in 1901 in about the following proportions. Yukon district 75 per cent, British Columbia 22 per cent, Nova Scotia 2 per cent, and Ontario 1 per cent.

Table 1.

Precious Metals.

Gold—Annual Production in Canada.

Calendar Year.	*Ounces. Fines.	Value.
1887	57,465	$ 1,187,804
1888	53,150	1,098,610
1889	62,658	1,295,159
1890	55,625	1,149,776
1891	45,022	930,614
1892	43,909	907,601
1893	47,247	976,603
1894	54,605	1,128,688
1895	100,806	$ 2,083,674
1896	133,274	2,754,774
1897	291,582	6,027,016
1898	666,445	13,775,420
1899	1,028,620	21,261,584
1900	1,350,176	27,908,153
1901	1,167,320	24,128,503

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

Precious Metals. Gold.

Production

Table 2.

Precious Metals.

Gold:—Production by Provinces and Districts, Calendar Year 1901.

Provinces.	*Ounces. Fine.	Value.
Nova Scotia	(b) 26,462	$ 546,963
Quebec	(b) 145	3,000
Ontario	(b) 11,845	244,837
North west Territories—		
Yukon District	(a 870,827	18,000,000
Saskatchewan river	(a) 726	15,000
British Columbia	(c 257,315	5,318,703
Total	1,167,320	$24,128,503

* 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. .....$ 970,100

" vein " 4,348,603

$5,318,703

Nova Scotia.

Nova Scotia:—

The gold output of this province is obtained entirely from free-milling quartz ores and the production has never reached very large proportions, having varied for many years between quarter and a half million dollars.

The statistics of gold-production are given in Tables 3, 4, 5 and 6. Table 3 shows the annual gold output, Table 4 the tons of quartz crushed, and the average yield per ton, in Table 5 the total product of each district from 1862 to the end of 1901 is exhibited as well as the average yield per ton, and Table 6 shows the amount of ore crushed and the yield per district for 1901.

Table F

GOLD

PRODUCTION

A. Canada ..... Value
B. Nova Scotia ..... do
C. Quebec ..... do
D. Ontario ..... do
E. Northwest Territories chiefly Yukon ..... do
F. British Columbia ..... do

NOTE.—In Quebec for many years, small quantities of gold have been produced, which, however, cannot be shown on a diagram of this scale.

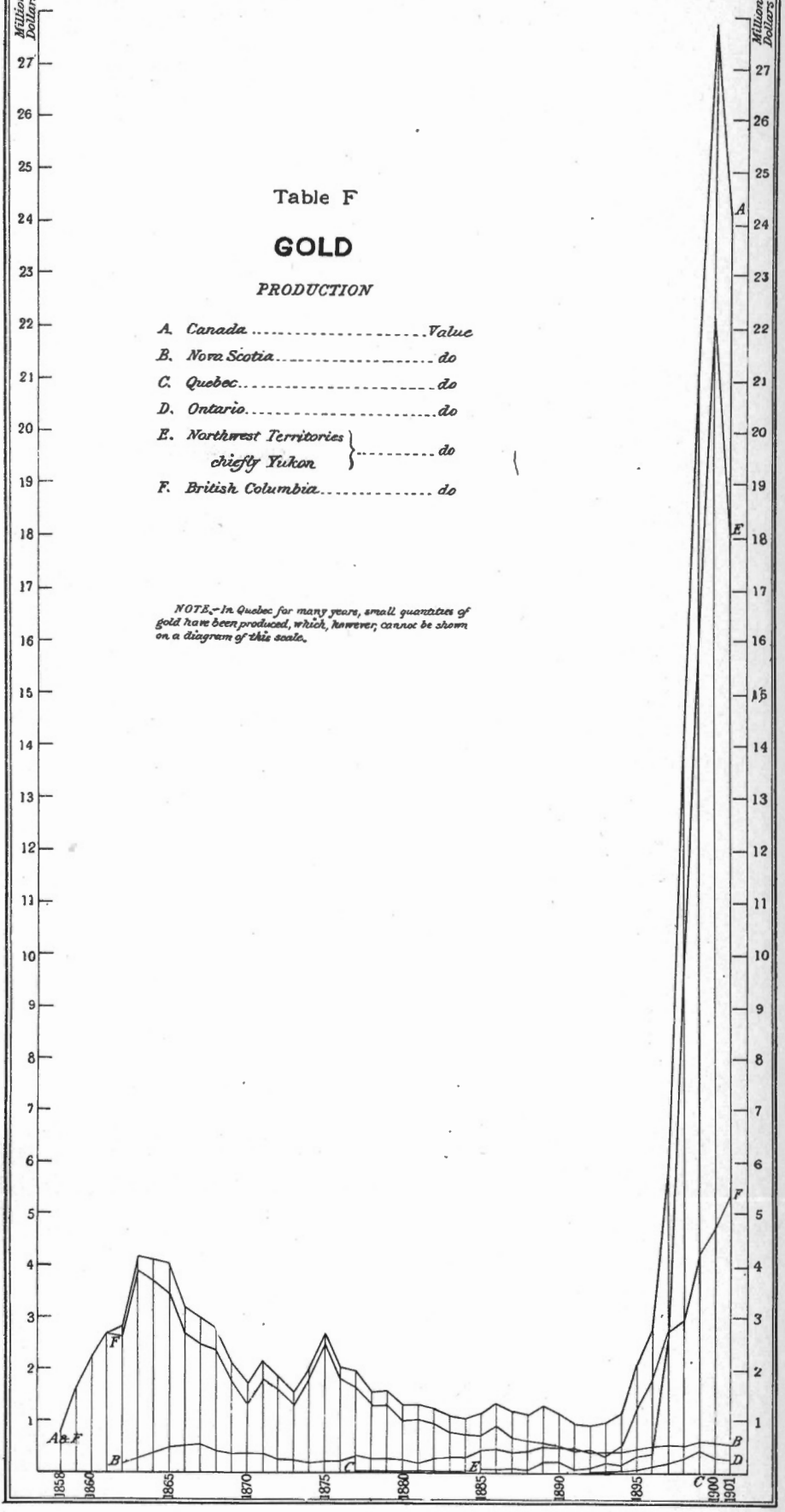


TABLE 3.

PRECIOUS METALS.

GOLD:—NOVA SCOTIA—ANNUAL PRODUCTION.

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

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	1882	21,081	$13·04
1863	17,000	16·02	1883	25,954	11·60
1864	21,431	18·21	1884	25,186	12·44
1865	24,421	20·32	1885	28,890	14·98
1866	32,157	15·28	1886	29,010	15·70
1867	31,384	16·96	1887	32,280	12·81
1868	32,259	12·41	1888	36,178	12·08
1869	35,144	19·91	1889	39,160	13·02
1870	30,824	12·56	1890	42,749	11·11
1871	30,787	12·17	1891	36,351	12·42
1872	17,089	14·94	1892	32,552	11·98
1873	17,708	13·05	1893	42,354	8·99
1874	13,844	12·87	1894	55,357	7·04
1875	14,810	14·76	1895	60,600	7·47
1876	15,490	15·08	1896	69,169	7·13
1877	17,369	18·95	1897	73,192	7·68
1878	17,989	13·63	1898	82,774	6·50
1879	15,936	16·83	1899	112,226	5·50
1880	13,997	18·42	1900	87,390	6·85
1881	16,556	12·66	1901	91,948	5·32

PRECIOUS METALS.

Gold.

Production.

Nova Scotia.

TABLE 5.

PRECIOUS METALS.

GOLD:—NOVA SCOTIA.—PRODUCTION OF THE DIFFERENT DISTRICTS FROM 1862 TO 1901, INCLUSIVE.

Districts.	Tons of Ore Crushed.	Total Yield.				Average Yield per Ton of 2,000 lbs.
		Oz.	Dwt.	Grs.	Value at $19.00 per oz.	
					$	$ c.
Brookfield	60,474	28,055	13	22	533,058	8·81
Caribou	137,036	45,958	12	21	873,214	6·37
Central Rawdon	13,340	10,121	11	21	192,310	14·42
Fifteen-mile Stream	40,280	18,132	13	5	344,520	8·55
Killag	1,291	1,967	8	12	37,381	28·95
Lake Catcha	17,018	13,920	7	22	264,487	15·54
Malaga	24,617	17,261	3	4	327,962	13·32
Montague	25,878	40,005	10	—	760,105	29 37
Oldham	49,537	53,293	13	10	1,012,580	20·44
Renfrew	49,945	41,868	16	12	795,508	15·93
Salmon River	103,602	33,898	6	21	644,068	6·22
Sherbrooke	264,131	148,477	5	13	2,821,068	10·68
Stormont	245,409	78,750	16	21	1,496,266	6·10
Tangier	38,257	22,498	5	2	427,467	11·17
Uniacke	58,192	39,988	15	8	759,787	13.06
Waverly	138,990	66,112	9	15	1,256,137	9·04
Wine Harbour	55,335	35,422	13	6	673,031	12·16
Whiteburn	7,378	10,218	18	20	194,160	26·32
Other districts	83,807	58,209	19	17	1,105,990	13·20
	1,414,517	764,163	2	12	14,519,099	10·26
From tailings, &c.		463	9	2	8,806	
		764,626	11	14	14,527,905	

TABLE 6.

PRECIOUS METALS.

GOLD :—NOVA SCOTIA, DISTRICT DETAILS—CALENDAR YEAR, 1901.

PRECIOUS METALS.

Gold.

Nova Scotia.

Districts.	Mines.	Mills.	Tons of Ore Crushed.	Total Yield of Gold.			Average Yield of Gold per Ton.		
				Oz.	Dwt.	Grs.	Oz.	Dwt.	Grs.
Blockhouse	1	2	465	808	..	..	1	14	18
Brookfield	1	1	7,515	2,834	4	..		7	13
Caribou	5	6	7,037	2,027	1	1	..	5	18
Harrigan Cove	2	3	4,167	2,595	6	9	..	12	11
Lake Catcha	3	3	1,855	973	2	..	..	10	12
Leipsigate	1	2	1,286	604	14	5	..	9	10
Malaga Barrens	1	1	349	320	9	7	..	18	9
Mills Village	1	1	642	520	..	..	..	16	5
Montague	*	3	380	349	14	9	..	18	11
Oldham	2	1	640	364	2	10	..	11	9
Renfrew	2	2	650	1,694	9	..	2	12	..
Sherbrooke	2	3	17,391	2,985	16	3	..	3	10
Stormont	3	4	29,664	5,592	10	..	..	3	18
Tangier	1	1	536	201	5	..	..	7	12
Uniacke	3	4	1,736	940	..	..	..	10	19
Waverly	2	2	12,523	3,044	10	12	..	4	21
Wine Harbour	2	3	3,955	1,269	16	12	..	6	10
Other districts	7	10	1,157	460	18	..	..	7	23
Total	†42	52	91,948	27,585	18	20	..	5	11
Mortared	....	....	.....	37	12	17	.....		
Cyanide process (Tailings)	....	2	7,445	425	16	9	.....		
Total	....	...	... .	28,049	7	22	..	.....	

* Tributers, &c. † Approximate.

QUEBEC.

Quebec.

No returns of production from placer deposits were received for 1901. The small output of $3,000, credited to this province represents

PRECIOUS METALS.

values recovered from the pyrites mined primarily as sulphur ores in the Eastern Townships.

Gold.

Quebec.

TABLE 7.

PRECIOUS METALS.

GOLD—QUEBEC—ANNUAL PRODUCTION.

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

Ontario.

ONTARIO.

Production of gold in Ontario in 1901 amounted to only $244,837, of which $131,044, was obtained from the Belmont, Deloro and Gatling Five Acres mines in Peterborough and Hastings, counties the balance having been derived from the mines of north-western Ontario, more particularly from the Mikado, Sultana, and Sakoose.

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

* Calculated from the value at $20·67 per ounce.

North-west Territories.

Precious Metals.

Gold.

North-west Territories.

The gold fields of the North-west Territories, to which attention has so far been chiefly directed are confined, to the alluvial workings of the Saskatchewan river, and those of the Yukon river and its tributaries. The difficulty of obtaining anything like accurate statistics of the output, from such deposits as these, where thousands of men are independently engaged in mining the precious metal, will be easily recognized. Much of the Saskatchewan river gold, finds its way to the local banks and a basis for an estimation of the product is thus found, while the greater part of the Yukon gold is ultimately sold at the different receiving offices of the United States mint. The receipts of these offices, taken in conjunction with careful estimates by government officers, bank managers, and transportation companies at Dawson, furnish a means of estimating the Yukon output, probably as accurately as it is possible to obtain it.

Statistics of production in the district since 1887 are shown in Table 9.

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
Total	3,401,717	70,313,500	13,689	282,946

*Calculated from the value at $20.67 per ounce.

PRECIOUS Territories.

A statement compiled in the Timber and Mines branch, and published in the report of the Department of the Interior showing the total gold production, the total exemption, the total amount upon which the royalty was collected and the amount of royalty paid, as shown by returns from May 1st 1898 to June 30th 1901 is given below. Comparison with Table 9 will show that quite a large proportion of the Yukon output escaped the royalty dues.

MONTH.	Total Gold Production.	Total Exemption.	Royalty Collected on.	Royalty Paid.
1898.	$ cts.	$ cts.	$ cts.	$ cts.
May	45,277 00	10,850 00	34,427 00	3,442 70
June	3,027,496 20	342,550 00	2,698,501 20	269,850 12
Two months	3,072,773 20	353,400 00	2,732,928 20	273,292 82
July	928,818 00	135,000 00	793,818 00	79,381 80
August	395,045 50	140,000 00	255,045 50	25,504 55
September	251,547 70	64,540 00	187,007 70	18,700 75
October	13,669 65	2,496 00	11,173 65	1,117 37
November	4,851 56	2,912 00	1,939 56	193 95
December	8,719 55	624 00	8,095 55	809 55
Six months	1,602,651 96	345,572 00	1,257,079 96	125,707 97
1899.				
January	6,552 76	4,784 00	1,768 76	176 94
February	4,868 29	624 00	4,244 29	424 41
March	15,431 40	3,952 00	11,479 40	1,147 93
April	43,889 57	15,400 00	28,489 57	2,848 92
May	844,606 18	180,703 00	663,903 18	66,390 28
June	5,064,282 86	1,148,622 02	3,915,660 84	391,565 92
Six months	5 979,631 06	1,354,085 02	4,625,546 04	462,554 40
July	664,205 72	208,380 82	455,824 90	45,582 49
August	1,521,708 96	311,740 16	1,209,968 80	120,996 88
September	924,907 09	187,413 99	737,493 10	73,749 31
October	371,947 82	63,863 02	308,084 80	30,808 48
November	176,599 48	29,088 48	147,511 00	14,751 10
December	84,531 76	31.976 26	52,555 50	5,255 55
Six months	3,743,900 83	832,462 73	2,911,438 10	291,143 81
1900.				
January	.....	.....	.....	.....
February	42,179 62	19,333 22	22,846 40	2,284 64
March	96,968 23	42,500 33	54,467 90	5,446 79
April	59,839 70	21,667 80	38,171 90	3,817 19
May	796,866 25	313,642 65	483,223 60	48,322 36
June	5,069,710 01	1,272,137 91	3,797,572 10	379,757 21
Six months	6,065,563 81	1,669,281 91	4,396,281 90	439,628 19

PRECIOUS METALS.

Gold.

North-west Territories.

MONTH.	Total Gold Production.	Total Exemption.	Royalty Collected on.	Royalty Paid.
1900.	$ cts.	$ cts.	$ cts.	$ cts.
July	2,346,440 64	410,399 99	1,936,040 65	193,707 36
August	1,354,543 88	137,500 00	1,219,148 10	121,914 81
September	1,012,731 48	91,100 00	921,630 90	92,163 09
October	378,991 50	40,000 00	338,990 17	31,772 73
November	63,591 79	38,500 00	25,091 79	2,509 15
December	14,595 47	.....	14,595 47	1,459 54
Six months	5,170,894 76	717,499 99	4,455,497 08	443,526 68
1901.				
January	28,486 81	10,000 00	18,486 81	1,832 65
February	34,923 53	10,000 00	24,923 53	2,492 34
March	13,651 91	2,500 00	11,151 91	1,115 23
April	65,156 32	5,000 00	60,156 32	6,015 63
May	183,953 75	40,833 33	143,119 67	10,728 39
June	3,665,015 71	1,141,833 30	2,523,182 41	126,950 06
Six months	3,991,188 03	1,210,166 63	2,781,020 65	149,134 30

BRITISH COLUMBIA.

British Columbia.

$5,318,703 in gold was produced from the mines of British Columbia in 1901 of which amount 18 per cent or $970,100 was obtained from placer workings and $4,348,603 from lode mining.

Statistics of production are given in Tables 10 and 11.

Precious Metals.

Gold¶

British Columbia.

Table 10.

Precious Metals.

Gold—British-Columbia—Annual Production.

Calendar Year.	Value.
	$
1858	705,000
1859	1,615,072
1860	2,228,543
1861	2,666,118
1862	2,656,903
1863	3,913,563
1864	3,735,850
1865	3,491,205
1866	2,662,106
1867	2,480,868
1868	2,372,972
1869	1,774,978
1870	1,336,956
1871	1,799,440
1872	1,610,972
1873	1,305,749
1874	1,844,618
1875	2,474,904
1876	1,786,648
1877	1,608,182
1878	1,275,204
1879	1,290,058
1880	1,013,827
1881	1,046,737
1882	954,085
1883	794,252
1884	736,165
1885	713,738
1886	903,651
1887	693,709
1888	616,731
1889	588,923
1890	494,436
1891	429,811
1892	399,525
1893	379,535
1894	530,530
1895	1,266,954
1896	1,788,206
1897	2,724,657
1898	2,939,852
1899	4,202,473
1900	4,732,105
1901	5,318.703

TABLE 11.

PRECIOUS METALS.

GOLD—BRITISH COLUMBIA—PRODUCTION BY DISTRICTS—1901.

DISTRICTS.	GOLD, PLACER.		GOLD, LODE.	
	Ounces.	Value.	Ounces.	Value.
				$
Cariboo :				
Cariboo Division	13,980	279,600		
Quesnel "	12,000	240,000		
Omineca "	955	19,100		
Cassiar :				
Atlin Lake Division	15,000	300,000		
All other	1,140	22,800	5	103
East Kootenay :				
Fort Steele Division	630	12,600		
Other Divisions	40	800		
West Kootenay :				
Ainsworth Division			63	1,312
Nelson "			32,868	679,340
Slocan "			244	5,043
Trail Creek "			132,333	2,735,323
All other	100	,000	234	4,837
Lillooet	1,304	26,080	1,079	22,303
Yale :				
Grand Forks &c	250	5,000	37,388	772,810
Similkameen Division	234	4,680		
Yale "	2,272	45,440	18	370
Coast and other Districts	600	12,000	6,152	127,162
Total	48,505	970,100	210,384	4,348,603

The main features concerning the progress of gold mining in British Columbia during the year are well summarized by Mr. W. F. Robertson the Provincial Mineralogist in the report of the Minister of Mines for the province as follows :—

Placer Mining :—"The placer gold output for the year 1901 was $970,100, a decrease from the previous year of $308,624. This is accounted for by the fact that the Atlin production has again suffered a serious diminution ; the ordinary placers are mostly worked out, and the hydraulic companies which should have been at work making an output, have managed to get into litigation among themselves and with individual miners so that the season was practically lost. It is hoped and expected that by next season the existing plants, and those now under construction, will be able to work, and if so, the output of the camp will certainly be doubled."

PRECIOUS METALS.

Gold.

British Columbia.

"The Cariboo district shows a considerably decreased production, which is due almost entirely to the small output of the largest company in the district, the Cariboo Consolidated, which through shortage of water, was only able to work a part of the season. This shortage of water was occasioned by the sudden melting of the snow in the spring, leaving insufficient water for the latter part of the season. The snow usually retained on the mountains is, as a rule, a sufficient reserve supply to last through the season, but last year this all melted at once causing spring freshets and a dry summer season. The smaller companies in the district did well, and with a normal snowfall and spring all should make a very good showing next season.

"A small output has been made from the Liard division, but as last year was the first year of the operations of the hydraulic companies there, most of the work was preparatory and of the nature of development.

"On the coast certain deposits of black sand have been worked to a profit but have not made the output expected.

"Dredging for gold, although it continues to receive much attention and large amounts have been invested in capital, has not as yet yielded any very material return or output. That the gold exists in the beds of many of the rivers in considerable quantities has been conclusively proved many times, but the difficulty seems to be to save it.

"It might be pointed out that in every instance, as far as is known, the dredges operating in British Columbia, work up stream and it is very questionable if such a practice is best suited to the conditions here prevailing, or whether they should not, on the contrary, work down stream.

"In most of our rivers, dredging is done under the following conditions, viz.: a swift current, numerous boulders, fine flaky gold to be recovered, and finally, a hard undredgeable and uneven bedrock.

"It is submitted that under these conditions, a dredge working up stream cannot be expected to save or take up all the gold. The agitation of the river bed by the buckets is great, and the gold will and is bound to settle into crevices in the bedrock. A very small crevice may hold the profits of a month, from which in a hard bedrock it is impossible for a dredge to recover it. Any gold, once raised and afterwards dropped, is swept by the force of the current back of the dredge and bucket and is consequently lost. On the other hand, in working down stream a 'face' is formed, which will be more or less inclined ; the gold is swept from the bedrock on to this inclined face of removable material and would be taken up in a subsequent bucket load.

"*Lode Gold Mining.*—Placer mining is of necessity, dependent on the weather, and is as variable in this province as that commodity, but in lode gold mining, as the mines develop, the output becomes as regular as the output of a manufacturing business, and it is to lode mining that the province is indebted for its ever increasing gold production. In 1901 the lode mines of the province produced $4,348,603 in value of gold, an increase over the previous year of $895,222 or 26%. When it is remembered that this increase follows an increase in 1899 of about 30% and in 1900 of 21%, a fair idea may be formed of the development and growth of the industry. This great increase is due first and chiefly to the development of the Boundary district, but the increased tonnage of the Rossland and Nelson districts has also had its effect. Approximately this gold has been derived from—

PRECIOUS METALS.

Gold.

British Columbia.

Direct smelting of copper-gold ores	$3,474,738
Combined amalgamation and concentration	873,865
Total	$4,348,603

It may be said that no absolutely 'free-milling' gold property is worked in the province; they all carry sufficient values in sulphides to necessitate the saving of such."

The following tables show the production of the Rossland mines and illustrate the average results attained during the past eight years.

NET PRODUCTION, PER SMELTER RETURNS.

Year.	Ore, tons, 2,000 lbs.	Gold, oz.	Silver, oz.	Copper, lbs.	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
Total	913,371	621,796	1,745,872	25,678,081	17,179,105

Precious Metals.

Gold.

British Columbia.

AVERAGE NET SMELTER RETURNS, OR ACTUAL YIELD PER TON.

Year.	Gold.	Silver.	Copper.	Value.
	Ounces.	Ounces.	%	$ 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
Average 913,371 tons	·681	1·911	1·405	18 81

Silver.

SILVER.

Production.

The production of silver in Canada in 1901 amounted to 5,539,192 ounces, valued at $3,265,354 or 58.95 cents per ounce, the average market value of the metal for the year in New York. The increase of the year's output as compared with 1900 was 1,070,967 ounces, though still less than the output of 1897 by 19,254 ounces.

Statistics of production of silver are shown in Table 12.

TABLE 12.

PRECIOUS METALS.

SILVER:—ANNUAL PRODUCTION.

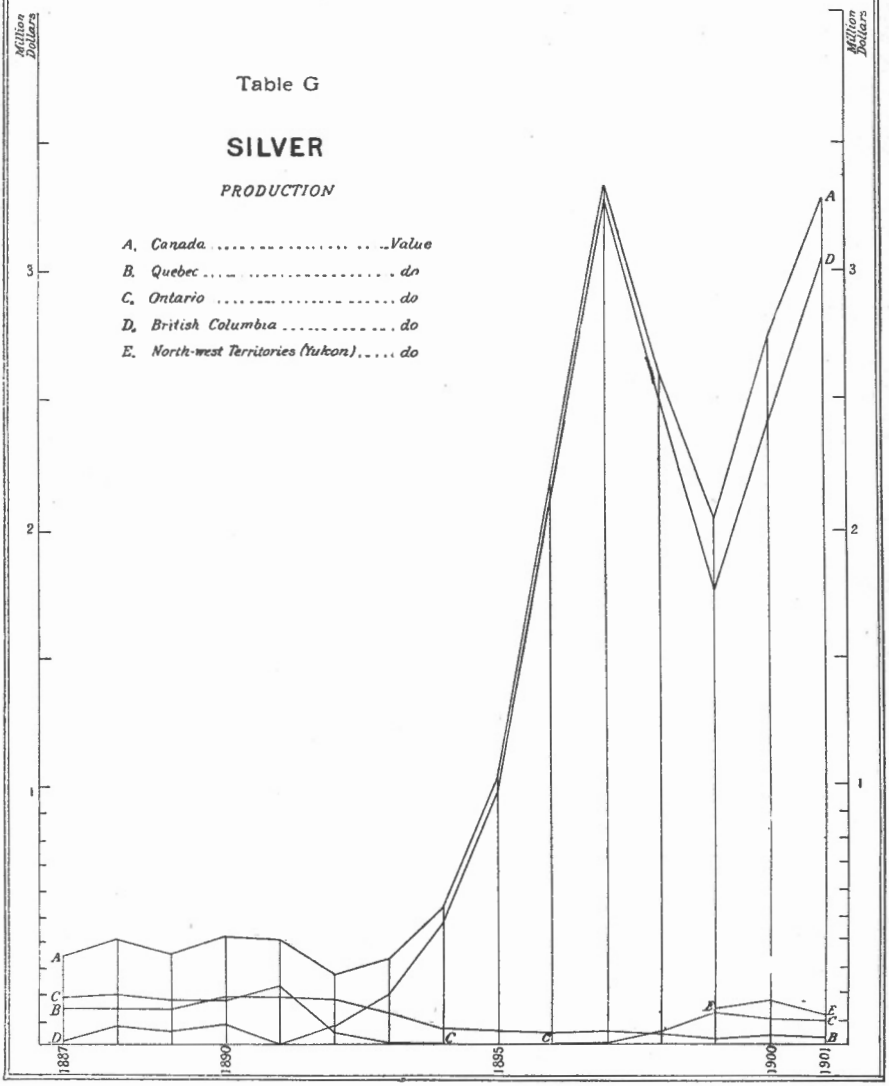
Calendar Year.	Ontario.		Quebec.		British Columbia.		Total.	
	Ounces.	Value.	Ounces.	Value.	Ounces.	Value.	Ounces.	Value.
1887	190,495	$186,304	146,898	$143,666	17,690	$17,301	355,083	$347,271
1888	208,064	195,580	149,388	140,425	79,780	74,993	437,232	410,998
1889	181,609	169,986	148,517	139,012	53,192	49,787	383,318	358,785
1890	158,715	166,016	171,545	179,436	70,427	73,666	400,687	419,118
1891	225,633	222,926	185,584	183,357	3,306	3,266	414,523	409,549
1892	41,581	36,425	191,910	168,113	77,160	67,592	310,651	272,130
1893	.....	8,689	.....	126,439	.....	195,000	.....	330,128
1894	.....	.....	101,318	63,830	746,379	470,219	847,697	534,049
1895	.....	.....	81,753	53,369	1,496,522	976,930	1,578,275	1,030,299
1896	.....	.....	70,000	46,942	3,135,343	2,102,561	3,205,343	2,149,503
1897	5,000	2,990	80,475	48,116	5,472,971	3,272,289	5,558,446	3,323,395
1898	85,000	49,521	74,932	43,655	4,292,401	2,500,753	4,452,333	2,593,929

Table G

SILVER

PRODUCTION

A. Canada ..... Value
B. Quebec ..... do
C. Ontario ..... do
D. British Columbia ..... do
E. North-west Territories (Yukon) ..... do



PRECIOUS METALS.
Silver.
Production.

PROVINCE.	1899.		1900.		1901.	
	Ounces.	Value.	Ounces.	Value.	Ounces.	Value.
Quebec.....	40,231	$23,970	58,400	$35,817	41,459	$24,440
Ontario.....	202,000	120,352	161,650	99,140	151,400	89,250
Yukon district.	230,000	137,034	290,000	177,857	195,000	114,953
British Col'mbia	2,939,413	1,751,302	3,958,175	2,427,548	5,151,333	3,036,711
	3,411,644	2,032,658	4,468,225	2,740,362	5,539,192	3,265,354

The silver produced in the province of Quebec, is represented by the small amount contained in the pyrites ores mined in the vicinity of Capelton in the "Eastern Townships". The pyrites is extracted primarily as a source of sulphur for acid making, but the silver is saved as a by-product.

The principal source of silver produced in Ontario since 1887 has been the West End Silver Mountain Mine, situated south-west of Port Arthur, in the Thunder Bay district.

The output of silver credited to the Yukon district during the past three years represents the silver carried by the placer gold obtained in this district.

British Columbia has since 1894 supplied the greater part of the silver production in Canada, the proportion of the total in 1901 being nearly 93 per cent.

The output by district for the past three years has been as follows :—

District.	1899.	1900.	1901.
	Ounces.	Ounces.	Ounces.
Cassiar.....	.....	.....	82.
Kootenay East—			
Fort Steele division.....	33,516	960,411	718,451
Other divisions.....	1,627	2,219	34,181
Kootenay West—			
Ainsworth division.....	268,165	352,167	324,913
Nelson "	483,659	109,870	377,167
Slocan "	1,891,025	2,121,176	2,276,259
Trail Creek "	185,818	167,378	970,460
Other divisions.....	48,463	96,416	133,774
Yale			
Osoyoos division.....	2,719	112,145	241,489
Similkameen.....	16	.....	
Yale	47	.....	74
Coast and other districts.....	24,358	36,393	74,483
Totals.....	2,939,413	3,958,175	5,151,333

PRECIOUS METALS.

Silver.

Production.

There was a falling off in the output of silver-lead ores in 1901 with a consequent diminution in the production of silver in several of the districts producing silver-lead ores. This however has been more than made up by the increased output of silver from the Trail Creek, Boundary and Coast districts, etc., chiefly from copper-silver and gold-copper-silver ores. The total silver output from Trail Creek mines in 1901, was over five times what it was in 1900. There was of course a considerable increase in tonnage of ore handled, but there was also a very remarkable increase in the silver contents of the ores; while in 1900 the Trail creek ores smelted averaged only .769 of an ounce of silver to the ton, the output of 1901 averaged 3.424 ounces per ton.

The following tables show the output and average yield per ton of the Slocan mines for the past seven years.

NET PRODUCTION PER SMELTER RETURNS.

Year.	Ore, Tons, 2,000 lbs.	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
Total	162,852	16,075,423	136,665,110	674	14,470,181

AVERAGE YIELD PER TON.

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
Average for seven y'rs, 162,852 tons	98·7 oz.	41·9%	$88 85

The value of silver ores exported is given in Table 13 following.

PRECIOUS METALS.

Silver.

Exports of ore.

TABLE 13.

PRECIOUS METALS.

SILVER—EXPORTS OF ORE.

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

PYRITES.

PYRITES.

Production.

The output of pyrites, statistics of which are shown in the accompanying table, is almost altogether the product of the mines of the Eustis Mining Company, and the Nichols Chemical Co., situated in the Eastern Townships, province of Quebec. During the past two years however, there has been a small output of iron pyrites from the vicinity of Bannockburn, Ont.

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

PYRITES.

Imports.

TABLE 2.

PYRITES.

IMPORTS.—BRIMSTONE AND CRUDE SULPHUR.

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

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

SALT.

SALT.

Production.

The production of salt in Canada in 1901, according to returns received, was 59,428 tons valued at $262,328, a slight falling off from the production of the previous year. The above figure represents the value of the salt alone, the value of the packages used, barrels, bags, etc., was over $85,000. This salt is altogether the product of wells in the counties of Essex, Lambton, Middlesex, Huron, and Bruce in the province of Ontario.

Small quantities of brine are occasionally evaporated at Plumweseep, N.B., and at Lake Winnipegosis, Man., but nothing has been done at either of these places during the past two years.

TABLE 1.

SALT.

ANNUAL PRODUCTION.

Calendar Year.	Tons.	Value.
1886	62,359	$227,195
1887	60,173	166,394
1888	59,070	180,460
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

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

SALT.

Imports.

TABLE 3.

SALT.

IMPORTS—SALT PAYING DUTY.

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

		Duty.		
1901	Salt, coarse, N.E.S.	5c. per 100 lbs.	7,298,504	20,494
	Salt, fine, in bulk	5c. "	2,391,400	5,185
	Salt, N.E.S., in bags, barrels or other packages	7½c. "	1,935,784	8,408
	Total		11,625,688	34,087

TABLE 4.

SALT.

IMPORTS—SALT NOT PAYING DUTY.

Fiscal Year.	Pounds.	Value.
1880	212,714,747	$400,167
1881	231,640,610	488,278
1882	166,183,962	311,489
1883	246,747,113	386,144
1884	225,390,121	321,243
1885	171,571,209	255,719
1886	180,205,949	255,359
1887	203,042,332	285,455
1888	184,166,986	220,975
1889	180,847,800	253,009
1890	158,490,075	252,291
1891	195,491,410	321,239
1892	201,831,217	314,995
1893	191,595,530	281,462
1894	196,668,730	328,300
1895	201,691,248	332,711
1896	205,005,100	338,888
1897	215,844,484	312,117
1898	202,634,927	293.410
1899	183,046,365	267,520
1900	193,554,550	295,253
1901*	216,271,603	339,887

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

STRUCTURAL MATERIALS.

STRUCTURAL MATERIALS.

Under this heading are comprised building stone, granites, marbles, slates, flagstone, cements, lime, &c., as well as the manufactures of clay, which include building bricks, tiles, drain-pipe, earthenware and coarse pottery.

The industries based on the structural materials are so widespread and are carried on in so many different places, on various scales and often intermittently, that it is impossible to obtain anything like complete returns of quantity or value of products. The figures of production are therefore to be taken only as rough approximations.

TABLE 1.

STRUCTURAL MATERIALS.

ANNUAL PRODUCTION OF BUILDING STONE.

Production of building stone.

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

TABLE 2.

STRUCTURAL MATERIALS.

EXPORTS OF STONE AND MARBLE, WROUGHT AND UNWROUGHT.

Exports of stone and marble.

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

Structural Materials.

Imports.

Building stone.

TABLE 3.

STRUCTURAL MATERIALS.

IMPORTS OF BUILDING STONE.

Calendar Year	Value.	Calenda Year.	Value.
1880	$ 35,970	1891	$170,890
1881	58,149	1892	95,550
1882	33,623	1893	56,510
1883	35,061	1894	52,908
1884	51,088	1895	44,282
1885	30,491	1896	54,130
1886	41,675	1897	38,714
1887	54,368	1898	28,495
1888	86,373	1899	48,040
1889	100,314	1900	64,533
1890	132,155		

1901	Flagstones, granite and rough freestone, sandstone, and all building stone, not hammered or chiselled. Duty 15 p.c.	$45,039
	Granite and freestones, dressed; all other building stone dressed, except marble. Duty 20 p.c.	1,039
		$46,078

TABLE 4.

STRUCTURAL MATERIALS.

Manufactures of stone or granite.

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

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$29,408	1891	$61,051
1881	36,877	1892	39,479
1882	37,267	1893	49,323
1883	45,636	1894	49,510
1884	45,290	1895	51,050
1885	39,867	1896	51,499
1886	41,984	1897	34,026
1887	41,829	1898	41,240
1888	47,487	1899	60,148
1889	61,341	1900	57,039
1890	84,396		

1901	Granite—Sawn only	Duty, 20 p.c.	$ 796
	" Finished and polished	" 35 p.c.	20,530
	" Manufactures of N.O.P.	" 35 p.c.	21,220
	Paving blocks	" 20 p.c.	8,053
	Manufactures of stone, N.O.P.	" 30 p.c.	16,040
			$66,639

STRUCTURAL MATERIALS.

Production of marble.

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 1901 inclusive	Nil.	Nil.

TABLE 6.

STRUCTURAL MATERIALS.

IMPORTS OF MARBLE.

Imports of marble.

Fiscal Year.		Duty.	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	Marble and manufactures of :—		
	Marble sawn only	20 %	$69,000
	Finished and polished	35 %	9,242
	Rough, not hammered or chiselled	15 %	4,491
	Manufactures of, N.O.P.	35 %	13,426
	Total, marble and manufactures of		$96,159

STRUCTURAL MATERIALS.

Production.

Granite.

TABLE 7.

STRUCTURAL MATERIALS.

ANNUAL PRODUCTION OF GRANITE.

Calendar Year.	Tons.	Value.
1886	6,062	$63,309
1887	21,217	142,506
1888	21,352	147,305
1889	10,197	79,624
1890	13,307	65,985
1891	13,637	70,056
1892	24,302	89,326
1893	22,521	94,303
1894	16,392	109,936
1895	19,238	84,838
1896	18,717	106,709
1897	10,345	61,934
1898	23,897	81,073
1899	13,418	90,542
1900	.....	80,000
1901	.....	155,000

Slate.

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

STRUCTURAL MATERIALS.

Slate.

Exports.

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

TABLE 10.

STRUCTURAL MATERIALS.

IMPORTS OF SLATE.

Imports.

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

		Duty.	
1901	Slate and manufactures of—		
	Mantels	30 %	$ 162
	Roofing slate	25% not over 75c per square	38,009
	School writing slates	25 %	17,548
	Slate pencils	25 %	4,384
	Slate of all kinds and manufactures of, N.E.S.	30 %	12,084
	Total		$72,187

STRUCTURAL MATERIALS.

Flagstone.

Production.

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

TABLE 12.

STRUCTURAL MATERIALS.

Imports.

IMPORTS OF FLAGSTONE.

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

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

Cement.

Cement :—Statistics of the production, exports and imports of cement are given in the six tables following.

The figures given in Table 13 represent the total sales and shipments of cement in each year. The sales in 1901 amounted to 450,394 barrels, as compared with 417,552 barrels in 1900, and 396,753 barrels in 1899. The total value of cement sold in 1901 was slightly less than in 1900, owing to the reduced prices prevailing during the past year. A reference to Table 17 will show that the imports of Portland cement have also been increasing rapidly during the past few years, the value of the imports in 1901 being about equal to the home production, so that only about half the demand is supplied by the Canadian product.

There were four firms in Ontario and one in Manitoba making natural rock cement, and the total quantity manufactured during the year was 148,628 barrels, while the sales were 133,328 barrels, and stocks on hand at December 31, 1901, 15,300 barrels.

Portland cement was manufactured by one firm in Quebec province and three in Ontario, and the total quantity made during the year was 360,160 barrels. The quantity sold was 317,066 barrels, and 58,094 barrels were in manufacturers' hands on December 31, 1901.

Following is a list of companies either operating or erecting plants for the manufacture of cement :—

Natural rock cement—

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

Portland cement—

The Crescent Cement Works.....Longue Point, Que.
The Canadian Portland Cement Co.....Deseronto, Ont.
The Lakefield Portland Cement Co.....Lakefield, Ont.
The Imperial Cement Co., Ltd.....Owen Sound, Ont.
The Owen Sound Portl'd Cement Co., Ltd. " "
The Sun Portland Cement Co., Ltd. .... " "
The National Portland Cement Co., Ltd.Toronto, Ont.
The Hanover Portland Cement Co.....Hanover, Ont.

STRUCTURAL MATERIALS.

Cement.

Production.

TABLE 13.

STRUCTURAL MATERIALS.

ANNUAL PRODUCTION OF CEMENT.

Calendar Year.	Barrels.	Value.
1887	69,843	$ 81,909
1888	50,668	35,593
1889	90,474	69,790
1890	102,216	92,405
1891	93,473	108,561
1892	117,408	147,663
1893	158,597	194,015
1894	108,142	144,637
1895	128,294	173,675
1896	149,090	201,651

		Barrels.	Value.		
1897	Naturel	85,450	$ 65,893	205,213	$275,273
	Portland	119,763	209,380		
1898	Naturel	87,125	73,412	250,209	397,580
	Portland	163,084	324,168		
1899	Naturel	141,387	119,308	396,753	633,291
	Portland	255,366	513,983		
1900	Naturel	125,428	99,994	417,552	662,910
	Portland	292,124	562,916		
1901	Natural	133,328	94,415	450,394	660,030
	Portland	317,066	565,615		

Exports.

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

TABLE 15.

STRUCTURAL MATERIALS.

IMPORTS ON CEMENT IN BULK OR BAGS.

Fiscal Year.	Bushels.	Value.	Fiscal Year.	Bushels.	Value.
1880	65	$ 28	1891	11,281	2,890
1881	579	298	1892	14,351	3,394
1882	386	86	1893	12,534	2,909
1883	1,759	548	1894	9,027	2,618
1884	4,626	1,236	1895		2,112
1885	4,598	1,315	1896		3,672
1886	6,808	1,851	1897		4,318
1887	5,421	1,419	1898		3,263
1888	23,919	5,787	1899		8,929
1889	32,818	10,668	1900		10,452
1890	21,055	5,443	1901*		4,890

*Cement, N.E.S., 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 (Cement hydraulic or waterlime)*	17,784	6,865

*Duty, 12½c. per 100 lbs.

STRUCTURAL MATERIALS.

Cement.

Imports.

TABLE 17.

STRUCTURAL MATERIALS.

IMPORTS OF PORTLAND CEMENT.

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

* Duty, 12½c. per 100 lbs.

TABLE 18.

STRUCTURAL MATERIALS.

Roofing.

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 1901 inclusive	Nil.	Nil.

TABLE 19.

STRUCTURAL MATERIALS.

ANNUAL PRODUCTION OF LIME.

Calendar Year.	Value.
1886	$283,755
1887	394,859
1888	339,951
1889	362,848
1890	412,308
1891	251,215
1892	411,270
1893 estimated	900,000
1894 "	900,000
1895 "	700,000
1896 "	650,000
1897 "	650,000
1898 "	650,000
1899 "	800,000
1900 "	800,000
1901 "	920,000

TABLE 20.

STRUCTURAL MATERIALS.

EXPORTS OF LIME.

Exports.

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

STRUCTURAL MATERIALS.

Lime.

Imports.

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	4,276
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 Duty, 20 p.c.	19,657	14,534

TABLE 22.

STRUCTURAL MATERIALS.

Building bricks.

ANNUAL PRODUCTION OF BUILDING BRICKS.

Production.

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

STRUCTURAL MATERIALS.

Bricks.

Exports.

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

Imports.

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 Duty, 20 p.c.	20,677

Imports of paving brick in 1898: Value, $2,337; duty, 20 p.c.

" " 1899: " 23,648; "

" " 1900: " 35,644; "

" " 1901: " 10,414; "

STRUCTURAL MATERIALS.

Terra cotta.

Production.

TABLE 25.

STRUCTURAL MATERIALS.

PRODUCTION OF TERRA COTTA, &c.

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

TABLE 26.

STRUCTURAL MATERIALS.

Sewer pipes.

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

STRUCTURAL MATERIALS.

Drain tiles and sewer pipes.

Imports.

TABLE 27.
STRUCTURAL MATERIALS.
IMPORTS OF DRAIN TILES AND SEWER PIPES.

Fiscal Year.		Duty.	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			33,898
1900			39,149
1901	Drain tile, not glazed	20 %	$ 1,264
	Drain pipes, sewer pipes, chimney linings or vents, chimney tops and inverted blocks, glazed or unglazed	35 %	54,819
	Total		$56,083

Pottery.

Production.

TABLE 28.
STRUCTURAL MATERIALS.
ANNUAL PRODUCTION OF POTTERY.

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

STRUCTURAL MATERIALS.

Earthenware.

Imports.

TABLE 29.

STRUCTURAL MATERIALS.

IMPORTS OF EARTHENWARE.

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

		Duty.	
1901	Earthenware and china :—		
	Baths, tubs and washstands, of earthenware, stone cement or clay, or of other material, N.O.P.	30 %	$ 22,620
	Brown or coloured earthen and stoneware, and Rockingham ware	30 %	19,328
	Decorated, printed or sponged, and all earthenware, N.E.S.	30 %	291,843
	Demijohns, churns and crocks	30 %	972
	White granite or ironstone ware, C.C. or cream coloured ware	30 %	193,726
	China and porcelain ware	30 %	331,007
	Earthenware tiles	35 %	34,413
	Manufactures of earthenware, N.E.S.	30 %	220,768
	Total		1,114,677

TABLE 30.

STRUCTURAL MATERIALS.

Sand and gravel.

EXPORTS OF SAND AND GRAVEL.

Exports.

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

MISCELLANEOUS.

Antimony :—There has been no record of production of antimony ore since 1898. In that year there was a resumption of work for a short time at the Rawdon mines, Hants county, Nova Scotia, which mines had been idle since 1891, when they were closed down owing to the reduced price of antimony. Previous to that year they were worked more or less actively from the time they were opened up in 1884. Antimony.

Table 2 shows that some antimony has been exported from Canada under the name of antimony ore, although the mines recorded no production. This discrepancy is thought to arise from a misapplication of the term antimony ore. The exports probably represent some manufacture of antimony produced from imported material.

Other deposits of antimony ore are known to occur in Canada, some of which have been worked to a small extent. Mention of these has been made in previous reports of the Section.

TABLE 1.

MISCELLANEOUS.

ANNUAL PRODUCTION OF ANTIMONY ORE. Prodnction.

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

MISCELLANEOUS.

Antimony.

Exports.

TABLE 2.

MISCELLANEOUS.

EXPORTS OF ANTIMONY ORES.

Calendar Year.	Tons.	Value.	Calendar Year.	Tons.	Value.
1880.....	40	$ 1,948	1889.....	30	$ 695
1881.....	34	3,308	1890.....	38	1,000
1882.....	323	11,673	1891.....	3½	60
1883.....	165	4,200	1892 to 1897..	Nil.	Nil.
1884.....	483	17,875	1898.....	1,232	15,295
1885.....	758	36,250	1899.....	6¾	190
1886.....	665	31,490	1900.....	210	3,441
1887.....	229	9,720	1901.....	10	1,643
1888.....	352½	6,894			

TABLE 3.

MISCELLANEOUS.

Imports.

IMPORTS OF ANTIMONY.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1880.....	42,247	$ 5,903	1891.....	114,084	17,483
1881.....	.....	7,060	1892.....	180,308	17,680
1882.....	183,597	15,044	1893.....	181,823	14,771
1883.....	105,346	10,355	1894.....	139,571	12,249
1884.....	445,600	15,564	1895.....	79,707	6,131
1885.....	82,012	8,182	1896.....	163,209	9,557
1886.....	89,787	6,951	1897.....	134,661	8,031
1887.....	87,827	7,122	1898.....	156,451	12,350
1888.....	120,125	12,242	1899.....	289,066	16,851
1889.....	119,034	11,206	1900.....	186,997	20,001
1890.....	117,066	17,439			

		Duty.		
1901	Antimony, or regulus of, not ground pulverized or otherwise manufactured.	Free.	195,626	$ 7,799
	Antimony salts.....	"	155,111	16,915
	Total.....	.....	350,737	24,714

Arsenic.

Arsenic.—The production of arsenic in 1901 was 695 tons, valued at $41,676. This is over twice the quantity produced in 1900 and more than twelve times that produced in 1899.

It is all obtained as a by-product in working the auriferous mispickel ores of the Deloro mine, Hastings county, Ont., and this is the only mine on the continent producing arsenic at the present time. The world's supply of arsenic is derived largely from England and

Germany, the production for the past six or seven years having varied from 7,000 to 8,000 metric tons per annum. MISCELLANEOUS.

Arsenic.

The greater part of the Canadian product finds a market in the United States, the imports into which country in 1900 of white and metallic arsenic and arsenic sulphides amounted to 5,765,559 lbs. valued at $265,500.

TABLE 4.

MISCELLANEOUS.

ANNUAL PRODUCTION OF ARSENIC. Production.

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

TABLE 5.

MISCELLANEOUS.

IMPORTS OF ARSENIC. Imports.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1880	18,197	$ 576	1891	115,248	4,027
1881	31,417	1,070	1892	302,958	9,365
1882	138,920	3,962	1893	447,079	12,907
1883	51,953	1,812	1894	292,505	10,018
1884	19,337	773	1895	1,115,697	31,932
1885	49,080	1,566	1896	664,854	27,523
1886	30,181	961	1897	152,275	8,378
1887	32,436	1,116	1898	291,967	14,270
1888	27,510	1,016	1899	582,383	24,203
1889	69,269	2,434	1900	230,730	11,035
1890	138,509	4,474	1901...Duty free.	159,263	8,361

MISCELLANEOUS.

Chalk and whiting.

Imports.

Chalk and Whiting.—The needs of Canada in respect to these two articles are entirely met by importation. The total value of the imports of these two products amount to over $70,000, so that a home market awaits the finder of deposits having the necessary qualities to meet the needs of users of the imported articles.

TABLE 6.

MISCELLANEOUS.

IMPORTS OF CHALK.

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

* Chalk prepared Duty, 20 p. c.

TABLE 7.

MISCELLANEOUS.

IMPORTS OF WHITING.

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

*Whiting or whitening, gilders whiting, and Paris white. Duty free.

Feldspar.—The production of feldspar in Canada in 1901 was 5,350 tons, valued at $14,548 at Montreal. A few hundred tons were sold from Mr. W. A. Allan's mine, township of Templeton, Ottawa county, Quebec, but the greater part of the output was mined by the Kingston Feldspar Mining Company from their property in Bedford township, Frontenac county, Ontario.

MISCELLANEOUS.

Feldspar.

TABLE 8.

MISCELLANEOUS.

PRODUCTION OF FELDSPAR.

Production.

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	14,548

* Exports.

Fire-clay.— Returns of fire-clay production were received from British Columbia, Nova Scotia and New Brunswick, the importance of the value from each province being in the order named. Practically the total output is obtained in connection with the mining of coal from thin beds usually underlying the coal seams, and the material is mostly used locally in the construction and repairs of coke ovens and in connection with metallurgical operations.

Fire-clay.

In connection with refractory materials, it might be interesting to mention that experiments were made on samples from a deposit of felsite near Coxheath Hills, Cape Breton, N.S. This series of experiments conducted in the laboratory of the Geological Survey of Canada some years ago has shown the material to be well adapted to the manufacture of fire bricks.

MISCELLANEOUS.

Fire-clay.

Production.

TABLE 9.

MISCELLANEOUS.

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

Mercury.

Mercury.—There has been no output of mercury since 1897. The small output for the years 1895, 1896 and 1897 was obtained from the cinnabar mines in the vicinity of Kamloops lake, B.C.

These deposits are the only known occurrences of mercury ore in Canada which appear to be of economic value, but the mines have in reality never been worked beyond preliminary development, nor have the reduction works built near them passed the experimental stage. The main deposits in Lower Kamloops lake district are those of Cooper creek, and of Hardie mountain which are situated at a distance of about three miles from each other. The country rock consists of a Tertiary eruptive, very basic in character which is traversed by felspathic zones containing veins of quartz, calcite and dolomite with cinnabar, which in some places occurs in very rich pockets. Descriptions of the deposits and of work done in the district, as well as of the plants erected, will be found in the reports of the Minister of Mines for British Columbia for the past few years, as well as in reports of this Section.

'The properties owned by the Hardie Mountain Cinnabar Company, have been the subject of negotiations which it is hoped will lead to the speedy resumption of work on a large scale. On the other claims on Hardie mountain the necessary assessments have been performed, and on the "Toon-Kwa" situated 12 miles south of Savonas, the work done shows a good body of cinnabar ore.'*

* Rep. Minister of Mines for B.C. 1901 p. 1020.

TABLE 10.

MERCURY.

PRODUCTION.

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

TABLE 11.

MERCURY.

IMPORTS.

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 Duty free	140,610	94.564

Moulding Sand :—The figures given in Table 12 are derived from returns of railway shipments and do not therefore nearly represent the total production. Deposits of sands 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 keep record or to obtain returns of output from the producers. The greater proportion of the above railway shipments is derived from deposits in the Ontario peninsula, and is exported to the United States.

MISCELLANEOUS.

Moulding sand.

Production.

TABLE 12.
MISCELLANEOUS.
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

Quartz.

Quartz:—No returns of production of quartz have been received for the past two years. Quartz mining in Canada is irregular and spasmodic and is not the object of a definite industry. The small quantities which have been mined at different times were used mostly as refractory material entering the composition of furnace linings.

There are numerous other uses to which quartz may be put.

In the United States, the production of quartz represents a substantial figure. The output of quartz of that country is mainly derived from the mining of vein quartz and is used chiefly for the manufacture of certain potteries.

Production.

TABLE 13.
MISCELLANEOUS.
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	.....	.....
1901	.....	.....

TABLE 14.
MISCELLANEOUS.
IMPORTS OF "SILEX"—CRYSTALLIZED QUARTZ.

MISCELLANEOUS.
Quartz.
Imports.

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 Duty free.	3,562	2,106

Soapstone :—As may be seen from the following table, soapstone is another material of which the production is irregular. No output has been reported for the year 1901, but it is not due to absence of deposits. A list of steatite deposits of workable size was given in the report of this Section for 1897.

Soapstone.

TABLE 15.
MISCELLANEOUS.
ANNUAL PRODUCTION OF SOAPSTONE.

Production.

Calendar Year.	Tons.	Value.	C lendar Year.	Tons.	Value.
1886	50	$ 400	1894	916	1,640
1887	100	800	1895	475	2,138
1888	140	280	1896	410	1,230
1889	195	1,170	1897	157	350
1890	917	1,239	1898	405	1,000
1891	Nil	Nil	1899	450	1,960
1892	1,374	6,240	1900	420	1,365
1893	717	1,920	1901		

Tin :—No ores of tin are known to occur in Canada, and the various reports of finds of tin ore have never been substantiated; there is therefore no production to record.

Tin.

MISCELLANEOUS.

The importance of Canadian trade in tin and tin manufactures may be gathered from the accompanying table.

TABLE 16.

MISCELLANEOUS.

Tin and tinware.

IMPORTS OF TIN AND TINWARE.

Imports.

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

		Duty.	
1901	Tin crystals	Free.	$ 2,410
	Tin in blocks, pigs and bars	"	697,664
	Tin plates and sheets	"	1,466,965
	Tin foil	"	49,758
	Tin strip waste	"	110
	Tin and manufactures of:—		
	Tin plate in sheets, decorated	25 %	329
	Tinware, plain, japanned, or lithographed and all manufactures of tin, N.E.S.	25 %	121,873
	Total		$2,339,109

Tripolite.

Tripolite:—No returns were received direct from operators of tripolite deposits, but Dr. E. Gilpin, Inspector of Mines for Nova Scotia estimates the production for the fiscal year 1901 at 800 tons. This product is put to various uses such as polishing material, steam pipe covering, etc. The following are the chief known deposits in Canada.

Quebec Province, Montcalm county, Chertsey Tp., range V, lot 15.

New Brunswick, Fitzgerald lake, Pollet River lake.

Nova Scotia, Colchester county, Bass river; Victoria county, St. Ann; Cumberland county, Folly lake; besides numerous minor occurrences.

TABLE 17.
MISCELLANEOUS.
PRODUCTION OF TRIPOLITE.

MISCELLANEOUS.

Tripolite.

Production.

Calendar Year.	Tons.	Value.
		$
1896	664	9,960
1897	15	150
1898	1,017	16,660
1899	1,000	15,000
1900	336	1,950
1901		

Zinc :—The only operators were the Grand Calumet Mining Company, who operate the Zenith mine near Nipigon bay, Lake Superior. Operations at the Calumet island mines which had been a producer for three or four years, have been discontinued. Zinc.

The production of zinc for the past four years stands as follows: 1898, tons 394, value $36,011; 1899, tons 407, value $46,805; 1900, tons 106, value $9,342.

Although the Ontario Mining Bureau reports some production from the Zenith mine nothing has been credited to the year 1901 herein, as from returns received directly from the company, no ore was sold or shipped or otherwise utilized. As frequently explained on former occasions "production" for purposes of this report is always limited to mineral substances realized upon in some way in distinction from that merely mined, quarried, etc., and stored in dumps to be utilized or not, as may happen in future years.

TABLE 18.
MISCELLANEOUS.
IMPORTS OF ZINC IN BLOCKS, PIGS AND SHEETS.

Imports.

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

MISCELLANEOUS.

Imports.

Spelter.

TABLE 19.

MISCELLANEOUS.

IMPORTS OF SPELTER.

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

*Spelter in blocks and pigs.

TABLE 20.

MISCELLANEOUS.

Manufactures of zinc.

IMPORTS OF ZINC, MANUFACTURES OF.

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

		Duty.	
1901	Zinc seamless drawn tubing	Free.	$
	" manufactures of, N.O.P	25 %	6,882
	Total		6,882