CANADA

DEPARTMENT OF MINES

HON. SIR JAMES A. LOUGHEED, MINISTER; CHARLES CAMSELL, DEPUTY MINISTER

MINES BRANCH

JOHN MCLEISH, ACTING DIRECTOR

ANNUAL REPORT

ON THE

MINERAL PRODUCTION OF CANADA

During the Calendar Year

1920

OTTAWA
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INTRODUCTION

The Annual Report on the Mineral Production of Canada, presents revised statistical information descriptive of the mining and metallurgical production in Canada during the calendar year 1920 and replaces the preliminary report which was sent to press February 24, 1921, and issued the following week.

This report will be supplemented by separate and detailed reports on "The Production of Coal and Coke in Canada, 1920"; "The Production of Iron and Steel in Canada, 1920"; and "The Production of Copper, Gold, Lead, Nickel, Silver, Zinc and other Metals in Canada during 1920."

The section of the report dealing with metals and metalliferous ores has been prepared by Mr. A. Buisson; and the section dealing with non-metalliferous products, including structural materials, by Mr. John Casey.

The term "ton" is used throughout to signify a ton of 2,000 pounds and the year means calendar year, unless otherwise stated. The Government fiscal year prior to 1907 ended on the 30th June, but now terminates on the 31st March. The fiscal period ending March 31, 1907, covers only nine months.

Statistics of exports and imports are compiled from the reports of the Trade of Canada.

The term "production" may in general be interpreted to mean the quantity sold or shipped. Mineral products mined or manufactured, but not sold or shipped at the end of the year, are not included as "production." An exception to this usage is made in reference to pig-iron, in which case the statistics of production represent the quantities made.

The value of the metallic minerals produced, whether refined in Canada or not, is calculated on the basis of the average price of the metal in some recognized market. New York prices have usually been taken as the standard, except in the case of lead and zinc, for which the Montreal price is now used. The value of non-metallic products is given as at the mine or point of shipment.

The co-operation of Canadian mine and smelter operators who have, almost without exception, cheerfully furnished the department with statistics and information regarding their operations is gratefully acknowledged. Thanks are due also to railway and other transportation companies, and to smelter operators outside Canada for data furnished.

(Signed) **John McLeish.**
Chief, Division of Mineral Resources and Statistics.

September, 1921.

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MINERAL PRODUCTION OF CANADA

During the Calendar Year

1920

The preliminary report on the mineral production of Canada in 1920 was published on February 24, 1921, the statistical record being at that time partially estimated, and, therefore, subject to revision.

According to the revised statement now presented the total value[1] in 1920 was $227,859,665, over ten million dollars in excess of the total value estimated in the preliminary report.

Compared with the total value of the production in 1919, which was $176,686,390, that of 1920 shows an increase of about 29 per cent and the highest production on record.

The detailed comparative statement here presented shows the production of each important product during the past two years, the proportion which each contributes to the total production, and the increase or decrease as the case may be of the production in 1920 as compared with that of 1919.

The total value of the metallic production in 1920 was $77,939,630, as against a value of $73,262,793 in 1919, and $114,549,152 in 1918, showing an increase of about 6·4 per cent in 1920, as compared with the previous year.

The total value of the production of non-metallic products in 1920 was $149,920,035, as against $103,423,597 in 1919, and $96,752,745 in 1918. The value of non-metallic products in 1920 was greater than that of any previous year. Much of this increase is to be credited to higher prices realized for most of these products, though on the other hand important increases have been made in the quantities of products marketed including asbestos and the various classes of structural materials.

The total value of the production in 1886 was $10,221,255, or about $2.23 per capita. In ten years the value had increased to $22,474,256, or $4.38 per capita, more than twice the total in 1886, and nearly twice the production per capita. The next ten years witnessed an increase to $79,286,697 in 1906, or $12.81 per capita, about three and a half times the production in 1896. The total in 1920 was about three times that of 1906.

The record of annual mineral production in Canada since 1886 and the total annual production of metallic and non-metallic products since 1907 are shown in the following tables:—

[1] In presenting a total valuation of the mineral production as is here given, it should be explained that the production of the metals copper, gold, lead, silver, and zinc, is given as far as possible on the basis of the quantities of metals recovered in smelters, and the total quantities in each case are valued at the average market price of the refined metal in a recognized market. There is thus included, in some cases, the values that have accrued in the smelting or refining of metals outside of Canada.

Annual Mineral Production in Canada since 1886

Year	Value of production	Value per capita	Year	Value of production	Value per capita
	$	$		$	$
1886	10,221,255	2·23	1903	61,740,513	10·83
1887	10,321,331	2·23	1904	60,082,771	10·27
1888	12,518,894	2·67	1905	69,078,999	11·49
1889	14,013,113	2·96	1906	79,286,697	12·81
1890	16,763,353	3·50	1907	86,865,202	13·75
1891	18,976,616	3·92	1908	85,557,101	13·16
1892	16,623,415	3·39	1909	91,831,441	13·70
1893	20,035,082	4·04	1910	106,823,623	14·93
1894	19,931,158	3·98	1911	103,220,994	14·42
1895	20,505,917	4·05	1912	135,048,296	18·27
1896	22,474,256	4·38	1913	145,634,812	18·77
1897	28,485,023	5·49	1914	128,863,075	15·96
1898	38,412,431	7·32	1915	137,109,171	17·29
1899	49,234,005	9·27	1916	177,201,534	21·77
1900	64,420,877	12·04	1917	189,646,821	22·68
1901	65,797,911	12·16	1918	211,301,897	24·59
1902	63,231,836	11·36	1919	176,686,390	.....
			1920	227,859,665	.....

Annual Values of Metallic and Non-Metallic Production

Year.	Metallic	Non-Metallic		Total
		Fuels and other non-metallics	Structural or clay and stone quarry products	
	$	$	$	$
1907	42,426,607	31,275,546	12,863,049	(a) 86,865,202
1908	41,774,362	32,142,784	11,339,955	(a) 85,557,101
1909	44,156,841	31,141,251	16,533,349	91,831,441
1910	49,438,873	37,757,158	19,627,592	106,823,623
1911	46,105,423	34,405,960	22,709,611	103,220,994
1912	61,172,753	45,080,674	28,794,869	135,048,296
1913	66,361,351	48,463,709	30,809,752	145,634,812
1914	59,386,619	43,467,229	26,009,227	128,863,075
1915	75,814,841	43,373,571	17,920,759	137,109,171
1916	106,319,365	53,414,983	17,467,186	177,201,534
1917	106,455,147	63,354,363	19,837,311	189,646,821
1918	114,549,152	77,621,946	19,130,799	211,301,897
1919	73,262,793	76,002,087	27,421,510	176,686,390
1920	77,939,630	108,027,947	41,892,088	227,859,665

(a) Total includes $300,000 allowed for products not reported.

Comparative Statement of Mineral Production for Years 1919 and 1920

Product		1919			1920			Increase (+) or Decrease (−)		Increase (+) or Decrease (−)	
		Quantity	Value (a)	Per cent of total	Quantity	Value (a)	Per cent of total	Quantity	%	Value	%
Metallic.			$			$					
Cobalt metallic and contained in oxide	Lb.	530,371	1,325,928	0·75	546,023	1,365,058	0·60	+ 15,652	2·95	+ 39,130	2·95
Copper (b)	"	75,053,581	14,028,265	7·94	81,600,691	14,244,217	6·25	+ 6,547,110	8·72	+ 215,952	1·53
Gold	Fine oz.	766,764	15,850,423	8·97	765,007	15,814,098	6·94	− 1,757	0·23	− 36,325	0·23
Iron, pig, from Canadian ore (c)	Tons	38,457	899,406	0·51	75,869	2,066,997	0·91	+ 37,412	97·28	+ 1,167,591	129·82
Iron ore sold for export (k)	"	5,883	46,525	.....	8,885	64,538	.....	+ 3,002	51·03	+ 18,013	38·72
Lead (d)	Lb.	43,827,699	3,053,037	1·73	35,953,717	3,214,262	1·41	− 7,873,982	17·97	+ 161,225	5·28
Molybdenite	"	83,002	69,203	.....	.....	.....	.....	− 83,002	100·00	− 69,203	100·00
Nickel (e)	"	44,544,883	17,817,953	10·08	61,335,706	24,534,282	10·77	+ 16,790,823	37·69	+ 6,716,329	37·69
Palladium	Crude oz.	62	3,534	.....	913	58,392	.....	+ 851	.....	+ 54,858	.....
Platinum (h)	"	50	3,597	.....	595	37,680	.....	+ 545	.....	+ 34,083	.....
Rhodium	"	.....	.....	.....	513	31,815	.....	+ 513	.....	+ 31,815	.....
Silver (f)	Fine oz.	16,020,657	17,802,474	10·07	13,330,357	13,450,330	5·90	− 2,690,300	16·78	− 4,352,144	24·45
Zinc	Lb.	32,194,707	2,362,448	1·34	39,863,912	3,057,961	1·34	+ 7,669,205	23·82	+ 695,513	29·44
Total		.....	73,262,793	41·46	.....	77,939,630	34·20	.....	.....	+ 4,676,837	6·38
Non-metallic.											
Actinolite	Tons.	80	880	.....	100	1,160	.....	+ 20	25·00	+ 280	31·81
Arsenic, white and in ore	"	3,389	509,924	0·29	2,459	447,848	0·20	− 930	27·44	− 62,076	12·17
Asbestos	"	136,765	10,909,452	6·17	178,617	14,734,599	6·47	+ 41,852	30·60	+ 3,825,147	35·06
Asbestic	"	22,471	65,917	.....	20,956	57,602	.....	− 1,515	6·74	− 8,315	12·61
Barytes	"	468	8,154	.....	751	22,983	.....	+ 283	60·47	+ 14,729	180·64
Chromite	"	8,541	228,898	0·13	11,016	251,379	0·11	+ 2,475	28·98	+ 22,481	9·82
Coal	"	13,681,218	54,413,349	30·80	16,631,954	80,693,723	35·41	+ 2,950,736	21·57	+ 26,280,374	48·30
Corundum	"	.....	.....	.....	196	24,547	.....	+ 196	.....	+ 24,547	.....
Feldspar	"	14,679	86,231	.....	37,873	280,895	0·12	+ 23,194	158·00	+ 194,664	225·74
Fluorspar	"	5,063	97,837	.....	11,235	240,446	0·10	+ 6,172	121·90	+ 142,609	145·76
Graphite	"	1,360	100,221	.....	2,190	165,617	0·07	+ 830	61·02	+ 65,396	65·25
Graphite, artificial	"	179	.....	.....	104	.....	.....	− 75	41·90	.....	.....
Grindstones	"	2,020	60,516	.....	2,444	88,136	.....	+ 424	20·99	+ 27,620	45·64
Gypsum	"	299,063	1,215,287	0·69	429,144	1,893,991	0·83	+ 130,081	43·50	+ 678,704	55·85
Magnesite	"	11,273	328,465	0·19	18,378	512,756	0·23	+ 7,105	63·03	+ 184,291	56·11
Magnesium sulphate	"	738	9,115	.....	1,947	39,886	.....	+ 1,209	163·82	+ 30,771	337·58
Manganese	"	661	14,159	.....	649	11,029	.....	− 12	2·14	− 3,030	21·40
Mica	"	2,754	273,788	0·15	2,203	376,022	0·17	− 551	20·01	+ 102,234	37·34

Comparative Statement of Mineral Production for Years 1919 and 1920—*Continued*

Product		1919			1920			Increase (+) or Decrease (−)		Increase (+) or Decrease (−)	
		Quantity	Value (a)	Per cent of total	Quantity	Value (a)	Per cent of total	Quantity	%	Value	%
			$			$				$	
Mineral water			71,015			24,582				− 46,433	65·38
Natural gas (g)	M. cu. ft.	19,937,769	4,176,037	2·36	16,845,518	4,232,642	1·86	− 3,092,251	15·51	+ 56,605	1·36
Oxides	Tons.	11,862	113,427		19,128	157,909	0·07	+ 7,266	61·25	+ 44,482	39·22
Peat	"	986	6,561		4,550	18,650		+ 3,564	361·46	+ 12,089	184·26
Petroleum	Brl.	240,466	736,324	0·42	196,251	822,235	0·36	− 44,215	18·39	+ 85,911	11·67
Phosphate	Tons.	24	331					− 24	100·00	− 331	100·00
Pyrites	"	176,487	522,704	0·30	174,744	719,110	0·32	− 1,743	0·99	+ 196,406	37·58
Quartz	"	94,991	527,635	0·30	128,295	467,821	0·21	+ 33,304	35·06	− 59,814	11·34
Salt	"	148,301	1,397,929	0·79	209,855	1,544,724	0·68	+ 61,554	41·51	+ 146,795	10·50
Sodium sulphate	"				811	19,496		+ 811		+ 19,496	
Strontium	"	48	336		75	2,625		+ 27	56·25	+ 2,289	
Talc	"	18,642	116,295		21,671	166,934	0·07	+ ,029	16·24	+ 50,639	43·55
Tripolite	"	565	11,300		260	8,600		− 305	53·98	− 2,700	23·89
Total			76,002,087	43·02		108,027,947	47·41			+ 32,025,860	42·14
Structural Materials and Clay Products.											
Cement, portland and puzzolan	Brl.	4,995,257	9,802,433	5·55	6,651,980	14,798,070	6·49	+ 1,656,723	33·17	+ 4,995,637	50·96
Clay products—											
Brick, common	No.	291,469,996	3,850,219	2·18	303,343,028	4,835,996	2·12	+ 11,873,083	4·07	+ 985,777	25·60
Brick, pressed	"	74,423,703	1,304,162	0·74	85,137,125	2,004,537	0·88	+ 10,713,422	14·40	+ 700,375	53·70
Brick, moulded and ornamental	"	364,682	10,175		3,515,000	73,926				+ 63,751	
Fireclay, and fireclay products			389,354	0·22		474,113	0·21			+ 84,759	21·77
Fireproofing	Tons.	41,406	345,382	0·20	49,091	591,418	0·26	+ 7,685	18·56	+ 246,036	71·24
Hollow building blocks	No.	1,984,848	76,673			302,261	0·13			+ 225,588	294·22
Kaolin	Tons.	759	13,744		683	15,022		− 76	10·01	+ 1,278	9·30
Pottery			185,474			209,171	0·09			+ 23,697	12·78
Sewerpipe	Tons.	62,821	1,074,146	0·61	58,887	1,549,090	0·68	− 3,934	6·26	+ 474,944	44·22
Terra-cotta lumber	No.		40,527			46,743				+ 6,216	15·34
Tile, drain	"	20,078,000	616,510	0·35	14,527,000	562,652	0·25	− 5,551,000	27·65	− 53,858	8·74
Lime	Bush.	7,147,504	2,310,607	1·31	9,427,334	3,818,553	1·68	+ 2,279,833	31·90	+ 1,507,946	65·26
Sand-lime brick	No.	33,553,699	484,854	0·27	45,459,000	724,918	0·32	+ 11,905,000	35·48	+ 240,064	49·51
Sand and gravel	Tons.	10,364,481	2,680,460	1·52	11,530,795	4,291,067	1·88	+ 1,166,314	11·25	+ 1,610,607	60·09
Slate	Squares	1,632	10,853			14,200				+ 3,347	30·84

Stone—											
Granite		850,563	0·48		1,508,916	0·66			+	658,353	77·40
Limestone		3,074,815	1·74		5,665,693	2·49			+	2,590,878	84·26
Marble		213,982	0·12		240,593	0·11			+	26,611	12·44
Sandstone		86,577			165,149	0·07			+	78,572	90·75
Total		27,421,510	15·52		41,892,088	18·39			+	14,470,578	52·77
Grand total		176,686,390			227,859,665	100·00			+	51,173,275	28·96

*Short tons throughout. (*a*) The metals, copper, lead, nickel, silver and zinc as also cobalt oxides are for statistical and comparative purposes valued at the final average value of the refined metal. Pig-iron is valued at the furnace or spot, and non-metallic products at the mine or point of shipment. (*b*) Copper content of smelter products and estimated recoveries from ores exported, at 18·691 cents per pound in 1919, and 17·456 cents per pound in 1920. (*c*) The total production of blast furnace pig-iron in Canada in 1919 was 910,080 tons valued at $24,245,792, of which, it is estimated 871,623 tons valued at $23,346,386 should be credited to imported ores; in 1920 the total production was 1,081,561 tons valued at $29,939,676 of which 1,005,692 tons valued at $27,872,679 are credited to imported ores. (*d*) Pig-lead produced in Canada and estimated recoveries from lead ores exported at 6·956 cents per pound in 1919, and 8·940 cents in 1920, the average prices in Montreal. (*e*) Nickel content of matte produced and nickel recovered from silver-cobalt-nickel ores valued at 40 cents in 1919 and 1920. (*f*) Silver recovered in bullion and recoverable from ores and smelter products exported at 111·122 cents per ounce in 1919 and at 100·90 cents in 1920. (*g*) Gross returns of sale of gas as furnished by well operators. (*h*) In 1920 production from alluvial sands; Port Colborne and New Jersey refineries. In 1919 production from alluvial sands, and Port Colborne refinery only. For further details see article under 'Platinum'. (*k*) Sold for export as reported by the mine operators.

EXPORTS AND IMPORTS

A very large portion of the mineral production of Canada is exported for consumption or refining outside of Canada. On the other hand considerable quantities of mine products, chiefly those which have been refined or subject to partial treatment, or in the form of manufactured goods ready for consumption, are imported.

The total value of the exports of products of the mine, including direct mine products and manufactures thereof, in 1920, was $193,420,702, compared with $179,957,897 in 1919, according to records compiled from the Monthly Reports of the Trade of Canada published by the Department of Trade and Commerce. The classification is that used in the Trade reports.

A revision of the classification makes comparison in detail with previous records difficult. Of the total exports in 1920, about $60,000,000 can be attributed to metals either in crude or refined metallic form or contained in ores or some form of metallurgical product exported for further refining. About $38,000,000 is attributed to asbestos, coal, mica, and various other non-metallic minerals. About $12,000,000 is attributed to chemical products such as cyanamid, calcium carbide, ammonium sulphate, etc. The balance over $83,000,000 is made up largely of manufactured products, chiefly manufactures of iron and steel, such as agricultural implements, machinery, boilers and locomotives, rolling-mill products, wire, etc.

A great variety of mineral products, chiefly in the manufactured or semi-manufactured condition, are annually imported into Canada. These imports increased in value with great rapidity during the ten years preceding 1913. During the next two years, however, there was a falling off, but in 1916 the imports again increased to a value almost equal to that of 1913. The total value of these imports during the calendar year 1920 amounted to $482,060,739, as compared with a value of $326,468,755 in 1919, $350,610,946 in 1918, $354,313,551 in 1917, $256,346,726 in 1916, $146,465,510 in 1915, $181,675,667 in 1914, and $259,299,745 in 1913.

It is perhaps significant that of the total value of these imports in 1920, over one-half, about 250 million dollars, consisted of iron and steel goods, and over 151 million dollars, or about 29 per cent of coal, coke, and petroleum.

Exports of Products of the Mine and Manufactures of Mine Products, Calendar Years 1919 and 1920

Products		1919		1920	
		Quantity	Value	Quantity	Value
			$		$
Iron and its Products:					
Chromite (chromic iron)	Tons	9,078	198,733	8,431	151,456
Iron ore	"	14,480	78,490	19,879	99,179
Agricultural Implements:					
Cream separators and parts	$	.....	266,764	.....	213,585
Harvesters and binders	No.	14,136	2,773,756	13,427	2,804,524
Hay-rakes	"	1,862	73,516	3,394	148,847
Mowing machines	"	14,250	918,635	13,139	955,330
Reapers	"	1,009	95,113	2,048	231,470
Cultivators	"	11,250	638,741	6,470	434,666
Drills	"	8,227	856,642	2,522	310,685
Harrows	"	11,376	294,111	12,195	397,982
Ploughs and parts of	$	.....	2,833,743	.....	3,578,687
Seeders	No.	352	38,307	90	7,240
Garden and farm tools	$	..... *	247,697	.....	278,341
Spades and shovels	"	..... *	219,368	.....	234,942
Threshing machines, separators and parts	"	.....	2,184,605	.....	918,667
Other agricultural implements and machines	"	.....	333,232	.....	480,756
Parts of agricultural implements and machines, n.o.p.	"	.....	988,041	.....	1,202,272
Boilers, Engines, Pumps and Windmills:					
Gasoline engines and parts of	No.	2,706	1,184,667	1,569	265,487
Locomotives and parts of	"	130 *	5,874,091	77	3,463,914
Cutlery and Hardware:					
Bolts and nuts	Cwt.	9,211 *	84,545	25,938	265,970
Cutlery	$	..... *	2,025,493	.....	2,091,562
Hardware, n.o.p.	"	.....	1,580,628	.....	847,231
Nails, brads, spikes and tacks of all kinds	Cwt.	126,823 *	761,988	100,714	749,771
Nails, wire	"	204,772	1,302,413	787,919	4,834,407
Needles and pins of all kinds	$	..... *	72,793	.....	131,500
Screws of all kinds	"	..... *	46,820	.....	111,841
Machinery (except agricultural):					
Adding and calculating machines	"	.....	253,261	.....	.....
Dynamos, generators and motors	"	..... *	105,531	.....	103,720
Lawnmowers	No.	4,879 *	29,872	14,467	81,402
Linotype machines and parts of	$	.....	30,957	.....	21,934
Sewing machines and parts of	"	.....	568,224	.....	940,000
Typewriters	No.	3,830	297,948	3,726	316,577
Washing machines, domestic and wringers	$	.....	32,096	.....	195,557
Other machinery and parts of, n.o.p.	"	.....	5,852,327	.....	3,897,804
Rolling Mill Products:					
Bars and rods	Tons.	52,191	3,394,894	85,166	5,687,611
Metallic shingles and laths and corrugated roofing	$	.....	18,514	.....	59,573
Rails	Tons.	30,737	1,297,836	61,117	2,676,933
Structural steel	"	5,515 *	465,989	3,458	358,294
Tubes and piping	$	..... *	1,715,707	.....	2,614,154
Smelted Products:					
Billets, ingots and blooms	Tons.	28,087	1,731,529	69,269	3,696,974
Ferro-manganese and other ferro-products, n.o.p.	"	22,449	1,229,341	6,124	319,978
Ferro-silicon	"			19,298	977,742
Pig-iron	"	63,605	1,820,260	102,628	3,628,657
Vehicles:					
Automobiles, freight	No.	3,352	1,673,256	4,942	3,059,056
" passenger	"	19,597	11,580,260	18,070	13,576,179
" parts of	$	.....	3,490,577	.....	4,276,027
Bicycles	No.	121	4,968	285	17,821
" parts of	$	.....	114,683	.....	222,166
Cars and coaches, railway, and parts of	"	..... *	1,495,402	.....	696,220
Motor vehicles, n.o.p.	No.	9 *	4,130	21	6,026
Other vehicles, n.o.p.	$	.....	103,387	.....	428,240

*Last nine months, 1919.

Exports of Products of the Mine and Manufactures of Mine Products, Calendar Years 1919 and 1920—*Continued*

Products		1919		1920	
		Quantity	Value	Quantity	Value
			$		$
Wire:					
Wire, barbed	Cwt.	24,960	167,142	21,868	139,353
Wire, woven, fencing	$	.....	88,140	.....	160,880
Other wire, n.o.p.	"	.....	2,059,304	.....	2,273,318
Other Iron and Steel Products:					
Castings, n.o.p.	$	.....	296,236	.....	895,650
Forgings	"	.....	* 1,612,236	.....	1,108,980
Furniture	"	.....	* 41,587	.....	76,413
Guns, rifles and firearms of all kinds	"	.....	2,735,086	.....	31,971
Lamps and lanterns	"	.....	80,129	.....	77,726
Scales and weighing beams	"	.....	* 70,619	.....	114,104
Scrap-iron and steel	Tons.	245,214	3,779,179	129,015	2,447,684
Stoves of all kinds	$	.....	124,331	.....	175,271
Tinware	"	.....	66,076	.....	79,290
Tools, hand or machine, n.o.p.	"	.....	1,059,992	.....	536,280
Other manufactures of iron and steel, n.o.p.	"	.....	6,645,007	.....	3,169,403
Non-Ferrous Metals and their Products:					
Aluminium bars, blocks, etc.	Cwt.	145,763	4,455 031	197,163	6,094,628
Aluminium, manufactures of	$	.....	59,339	.....	175,057
Arsenic, metallic	Cwt.	50,128	355,654	.....	.....
Arsenic, n.o.p.	"			33,093	313,311
Brass, old and scrap	"	96,569	1,275,448	34,398	475,809
Brass rods, sheets, tubing, etc.	"	5,355	173,654	2,440	49,728
Brass valves	$	.....	* 236,839	.....	325,974
Copper, fine contained in ore, matte, regulus, etc.	Cwt.	408,513	5,316,151	473,297	5,918,782
Copper, blister	"	199,561	* 3,747,355	381,989	8,701,184
Copper, old and scrap	"	31,170	537,225	7,744	113,265
Copper, in pigs, bars and sheets, etc.	"	181,923	4,186,549	26,665	710,978
Copper, wire and cable, insulated	$	.....	* 867,360	.....	433,097
Lead, metallic, contained in ore, etc.	Cwt.	131,429	616,278	75,494	385,839
Lead, in pigs, etc.	"	113,268	772,734	188	1,846
Cobalt alloys	Lbs.	3,402	14,878	10,219	43,970
Cobalt metallic	"	106,835	259,624	304,382	493,425
Nickel, fine contained in ore, matte, speiss	Cwt.	303,954	4,785,173	517,010	9,006,140
Nickel, fine	"	106,210	3,292,420	84,983	2,982,717
Gold-bearing quartz dust, nuggets and bullion direct from milling operations	$	.....	5,037,123	.....	4,642,909
Jewellers' sweepings	"	.....	262,643	.....	284,493
Platinum contained in concentrates or other forms	Oz.	325	28,815	473	53,956
Platinum, old and scrap	"	346	33,814	317	31,784
Silver, contained in ore, concentrates, etc.	"	2,854,928	2,850,592	1,903,130	2,007,550
Silver, bullion	"	12,550,233	13,560,205	9,931,374	10,230,659
Zinc ore	Tons.	6,630	296,212	3,126	122,387
Zinc spelter	Cwt.	76,938	* 701,249	69,799	512,279
Other Non-Ferrous Metal Products:					
Electric apparatus:					
Batteries, telegraph and telephone apparatus	$	.....	1,175,226	.....	53,092
Electric apparatus, n.o.p.	"			.....	493,591
Electrotypes and stereotypes	"	.....	15,178	.....	18,839
Molybdenum	Cwt.	1,135	84,226	1	75
Ore, antimony	Tons.	56	8,420	.....	.....
Ore, manganese	"	603	13,401	640	19,921
Ores, other, n.o.p.	"	8,727	8,512	41	830
Plated ware, n.o.p.	$	.....	119,326	.....	134,738
Pyrites	Tons.	89,089	388,508	30	63
Sulphur, (contained in pyrites)	"	.....	.....	119,106	458,340
Metals, other, unmanufactured	$	.....	39,182	.....	93,444
Metals, other, manufactured, n.o.p.	"	.....	1,574,716	.....	823,264

*Last nine months, 1919.

Exports of Products of the Mine and Manufactures of Mine Products, Calendar Years 1919 and 1920—*Continued*

Products		1919		1920	
		Quantity	Value	Quantity	Value
Non-Metallic Minerals and their Products (except chemicals):			$		$
Asbestos	Tons.	119,122	9,625,695	152,740	11,521,536
Asbestos, sand and waste	"	25,306	260,775	36,303	365,920
Asbestos, manufactures of	$	.....	232,501	.....	196,067
Clay and Clay Products:					
Bricks	M.	4,770	52,050	8,073	115,627
Clays, unmanufactured	Cwt.	5,901	* 3,672	4,738	2,175
Clay, manufactures of	$	.....	84,953	.....	196,222
Earthenware and all manufactures of	"	.....	23,579	.....	44,127
Coal and Its Products:					
Coal	Tons.	2,070,050	12,438,885	2,558,174	18,014,899
Coke	"	14,709	129,703	39,536	390,161
Cinders	$	.....	270	.....	295
Tar and pitch	Gal.	.....	61,654	8,815,172	481,259
Graphite and Its Products:					
Graphite or plumbago, crude and refined	Cwt.	20,055	72,917	42,830	159,817
Plumbago, manufactures	$	.....	23,970	.....	.....
Mica and Its Products:					
Mica, rough cobbed and thumb trimmed	Cwt.			848	55,724
Mica, scrap and waste	"	54,821	641,366	54,786	33,963
Mica, splittings				10,440	725,946
Mica, plate and manufactures of (micanite)	$	.....	596	.....	8,474
Mineral Waters:					
Mineral water, natural, not in bottles	Gal.	122	89	3	2
Mineral and ærated water in bottles	$	.....	59,580	.....	12,794
Petroleum and Its Products:					
Oil, coal and kerosene, crude	Gal.	603,748	40,648	2,684,427	293,325
Oil, coal and kerosene, refined	"	2,846,293	287,170	1,243,335	205,999
Oil, gasoline and naphtha	"	1,566,707	428,754	160,433	59,432
Mineral wax	Cwt.	71,259	626,799	26,915	230,172
Stone and Stone Products:					
Abrasives, natural, n.o.p., in ore or bulk, crushed or ground, including infusorial earth, rotten stone, tripoli, etc	"	8,529	10,743	81,330	236,569
Abrasives, artificial, crude, including carborundum	"	.....	1,520,218	598,664	1,579,508
Abrasives, artificial, made up into wheels, stones, etc	$	.....		.....	41,138
Corundum	Tons	.....	.....	954	115,031
Grindstones, manufactured	$	.....	38,682	.....	41,705
Stone for the manufacture of grindstones, rough	Tons.	.....	.....	.....	.....
Freestone, limestone and other building stone, unwrought	"	16,859	23,899	9,612	16,246
Granite and marble, unwrought	"	846	7,118	1,729	16,941
Stones of all kinds, dressed	$	.....	10,108	.....	13,807
Cement	"	.....	465,954	.....	2,193,626
Gypsum, or plaster, crude	Tons.	148,394	199,857	244,428	413,522
Lime	Cwt.	193,073	128,810	460,310	381,899
Plaster of Paris, ground, and prepared wall plaster	"	.....	140,235	251,521	232,736
Crushed stone	Tons.	13,176	12,990	41,972	55,994
Sand and gravel	"	1,074,341	131,140	1,491,786	193,503
Other Non-Metallic Minerals:					
Carbon electrodes	$	.....	* 691,747	.....	30,768
Feldspar	Tons.	.....	104,285	38,768	219,744
Fluorspar	"	697	* 9,616	6,900	109,683
Glass and glassware, n.o.p.	$	.....	596,613	.....	1,099,361
Magnesite, crude	Tons.			155	1,662
Magnesite, calcined, dead burned	Cwt.	.....	232,377	217,181	425,048
Salt	"	12,333	14,573	6,050	9,181
Talc, crude	"	.....	210,150	6,284	10,653
Talc, refined	"	.....	.....	298,174	253,055
Other non-metallic minerals and products	"	.....	.....	.....	38,158

*Last nine months, 1919.

Exports of Products of the Mine and Manufactures of Mine Products, Calendar Years 1919 and 1920—*Concluded*

Products		1919		1920	
		Quantity	Value	Quantity	Value
			$		$
Chemical and Allied Products:					
Acid, sulphuric	Cwt.	108,942	108,392	104,339	89,992
Cyanamid	"	1,174,584	4,104,052	1,196,574	4,031,162
Phosphate rock	Tons.	48	741	76	645
Other fertilizers, manufactured, n.o.p.	$	.....	241,934	.....	317,676
Mineral pigments, iron oxide, ochres, etc.	Cwt.	15,349	25,229	30,561	78,913
Acetate of lime	"	104,265	257,857	117,981	337,342
Ammonium sulphate	"	369,763	1,821,880	366,585	1,896,660
Calcium carbide	"	956,556	3,960,410	939,771	3,848,091
Cobalt oxides and cobalt salts	Lbs.	468,225	731,506	595,739	1,137,586
Magnesium sulphate	Cwt.	3	* 15	14,852	3,737
Potash, crude	"	* 633	* 8,559	720	19,009
			179,957,897		193,420,702

*Last nine months, 1919

IMPORTS

Imports of Products of the Mine and Manufactures of Mine Products—Calendar Years 1918, 1919, and 1920

Products	1918 Value	1919 Value	1920 Value
	$	$	$
Alumina	2,071,060	1,565,264	1,889,064
Alum, alum cake and chloralum	382,132	228,250	561,162
Aluminium and manufactures	383,985	594,694	1,590,541
Ammonia, nitrate of	19,019	205,346	185,472
Ammonia, sulphate of	1,273	12,129	31,531
Antimony regulus	92,678	81,257	86,803
Antimony salts	18,986	8,548	10,676
Arsenic, oxide and sulphide of	33,573	27,938	43,646
Asbestos	604,703	656,037	1,047,031
Asphaltum	428,173	469,016	686,892
Bells and gongs	77,729	88,914	101,859
Bismuth	13,496	9,569	54,923
Blanc fixé and satin white	92,241	114,732	102,198
Blast furnace slag	18,506	416	18,343
Borax	199,210	227,638	263,869
Brick and tile	303,596	520,708	590,722
Brick, fire, of a kind not made in Canada; silica brick, magnesite brick, and n.o.p.	3,712,677	1,618,549	2,792,959
Bromine and bromides	1,032	182	482
Burrstones	1,571	3,421	1,655
Cement, portland, and manufactures	28,360	64,443	130,919
Chalk, Cornwall stone, mica, schist			53,884
Feldspar	256,858	171,957	44,390
Fluorspar			113,818
Magnesite			49,799
Clays: china, fire, pipe, and all other	554,353	362,150	650,640
Coal: anthracite, bituminous, slack, and run-of-mine	71,650,584	61,160,799	98,033,598
Coke	8,975,445	2,405,740	6,458,596
Coke, ground, for electric batteries	22,849	26,615	29,970
Copper and manufactures of	6,372,412	7,147,783	10,836,206
Cryolite	167,586	143,141	163,414
Crucibles, clay or plumbago	113,856	59,239	176,711
Chloride of lime	162,748	304,691	1,179,663
Cyanides of potassium, sodium, cyanogen or cpd. of bromine	459,136	251,863	311,574
Diamonds, unset, and bort	1,367,801	3,632,026	3,821,610
Earthenware	2,163,455	2,925,295	5,380,462
Earths, crude	2,514	19,329	10,922
Electric carbons	793,030	709,621	905,466
Emery and manufactures	659,912	354,428	541,315
Fertilizers, compound or manufactured	1,054,962	1,201,121	2,335,001
Flint, quartz, silex, etc	121,879	114,727	196,452
Foundry facings	45,798	22,700	46,588
Fullers' earth	16,969	19,893	28,894
Fossils	11,324	16,395	37,530
Gannister	12,465	877	2,288
Gold and silver and manufactures of, including silver bullion	824,418	4,067,275	3,664,470
Graphite and manufactures of	226,777	87,574	106,920
Grindstones	297,287	281,066	312,672
Gypsum and plaster of Paris	22,065	47,455	78,302
Hydro-fluo-silicic acid	80	747	409
Iron and steel—Total, 1918: $178,340,779 1919: $178,210,710 1920: $249,632,055			
Pig-iron and kentledge	2,102,435	1,022,871	2,383,442
Ferro products and chrome steel	4,335,109	943,584	1,380,496
Ingots, blooms, billets, puddled bars, etc	262,210	494,101	863,183
Scrap iron and scrap steel	775,526	484,407	2,341,365
Plates and sheets	14,114,139	12,820,340	10,130,224
Tin plates and sheets	11,403,887	6,436,047	21,805,164
Bars, rods, hoops, bands, etc	17,849,982	12,771,836	22,819,490
Structural iron and steel	11,004,159	11,157,643	12,269,345
Rails and connexions	561,970	774,985	1,169,065
Pipes and fittings	128,257	90,879	107,781
Nails and spikes	404,913	228,580	260,035
Wire	3,760,004	4,558,836	6,106,281
Forging castings and manufactures	3,829,760	3,311,213	5,400,480
Other iron and steel products	107,808,428	123,115,388	162,595,704

Imports of Products of the Mine and Manufactures of Mine Products—Calendar Years 1918, 1919, and 1920—*Continued*

Products	1918 Value	1919 Value	1920 Value
	$	$	$
Iron ore	5,895,974	4,706,440	5,812,912
Iron sand	67,528	10,247	17,000
Kainite	4,931	22,627	169,416
Lead and manufactures; litharge	1,350,689	1,022,265	3,008,958
Lime	53,745	53,190	48,790
Lithographic stone	2,757	10,698	6,271
Manganese, oxide of	93,477	89,314	93,062
Magnesia	13,200	61,740	84,339
Mercury or quicksilver	68,903	31,573	272,152
Metallic alloys:—			
Babbitt metal	27,062	31,863	85,568
Brass and manufactures of	4,670,140	4,257,738	6,337,775
Britannia metal and manufactures	25,898	15,105	32,919
German silver, nickel, and nickel silver	443,103	585,405	827,543
Type metal	85	200	152
Phosphor tin and phosphor bronze in blocks, bars, plates, sheets and wire	46,554	61,647	120,720
Yellow metal, in bars, bolts, or sheets, for use in the construction or repairs of vessels	5,229	11,354	4,373
Mineral and bituminous substances	914,442	629,865	1,016,287
Mineral water, including aerated water	105,967	113,743	178,511
Nickel anodes	3,734	5,237	7,911
Ochres, etc	475,853	584,524	802,920
Ore, cobalt	.....	43	520
Ores of metals, n.o.p	1,276,092	444,844	434,109
Paraffin wax	209,916	108,049	168,521
Paraffin candles	64,033	59,151	68,173
Petroleum and products of	30,477,543	29,394,190	46,861,638
Phosphates (fertilizer)	90,363	30,267	114,480
Platinum and manufactures of	31,140	160,885	125,977
Potash and manufactures of	118,900	143,919	859,257
Precious stones	186,365	726,773	1,300,456
Pumice	36,938	29,910	57,068
Salt	1,267,169	1,310,129	1,434,687
Saltpetre	204,121	35,889	83,109
Sand and gravel	435,992	200,428	267,950
Slate and manufactures of	133,054	142,977	259,173
Sand paper	317,048	362,069	560,180
Soda products: barilla, bichromate, caustic, sal and salt cake	3,656,459	2,208,460	2,183,847
Stone and manufactures of (including marble)	732,162	960,925	1,217,216
Soda, nitrate of	4,077,903	411,423	1,651,934
Sulphate of iron (copperas)	7,783	16,761	29,288
Sulphur and phosphorus	2,093,936	1,035,151	2,163,412
Sulphuric acid	208,288	38,759	22,664
Tar, coal, and pine	256,372	236,216	256,740
Tin and manufactures of (including tinware)	4,204,532	3,454,995	4,627,732
Whiting and prepared chalk	270,197	283,323	533,012
Zinc and manufactures of	2,804,027	2,131,176	2,458,351
	350,610,946	326,486,755	482,060,739

Summary of Imports

	1917		1918		1919		1920	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Brass and mfgs		$ 5,328,659		$ 4,670,140		$ 4,257,738		$ 6,337,775
Coal Tons	20,857,460	70,562,357	21,678,587	71,650,584	17,308,837	61,160,799	18,772,542	98,033,598
Coke "	970,106	6,517,260	1,165,590	8,975,445	383,374	2,405,740	586,406	6,458,596
Copper and mfgs		10,615,561		6,372,412		7,147,783		10,836,206
Iron ore Tons	2,251,397	5,124,889	2,200,838	5,895,974	1,783,098	4,706,440	1,938,943	5,812,912
Iron and steel mfgs		187,191,534		178,340,779		178,210,710		249,632,055
Lead and mfgs		1,732,428		1,350,689		1,022,265		3,008,958
Petroleum and mfgs Gals	379,148,415	22,741,827	420,733,643	30,477,543	451,303,731	29,394,190	491,372,140	46,861,638
Structural materials		7,901,398		8,117,394		6,691,291		11,338,831
Tin and mfgs		5,656,665		4,204,532		3,454,995		4,627,732
Zinc and mfgs		3,641,272		2,804,027		2,131,176		2,458,351
All other		27,899,701		27,751,427		25,885,628		36,654,087
Total		354,313,551		350,610,946		326,468,755		482,060,739

PRODUCTION BY PROVINCES

Summaries of the mineral production by provinces in 1920 and 1919 are shown in the accompanying tables. The first shows the total production in the several provinces and the percentages of each for the past three years.

In comparing the relative production of the various provinces it should be remembered that Nova Scotia is not credited with the large production of pig-iron and steel at Sydney and Sydney Mines, which is made almost entirely from imported iron ores and is not naturally credited as Canadian mine product. Similarly a large proportion of the pig-iron production in Ontario is excluded from the total value, because it is derived from imported ores. The province of Quebec, also, is not credited with the production of aluminium at Shawinigan Falls, which is made from imported bauxite.

Mineral Production by Provinces, 1918, 1919, and 1920

Province	1918		1919		1920	
	Value of production	Per cent of total	Value of production	Per cent of total	Value of production	Per cent of total
	$		$		$	
Nova Scotia	22,317,108	10·56	23,445,215	13·27	34,130,017	14·98
New Brunswick	2,144,017	1·01	1,770,945	1·00	2,491,787	1·09
Quebec	19,605,347	9·28	21,267,947	12·04	28,886,214	12·68
Ontario	94,694,093	44·82	67,917,998	38·44	81,715,808	35·86
Manitoba	3,120,600	1·53	2,868,378	1·62	4,223,461	1·85
Saskatchewan	1,019,981	0·48	1,521,964	0·86	1,837,468	0·81
Alberta	23,109,987	10·94	21,087,582	11·94	33,586,456	14·74
British Columbia	42,935,333	20·27	34,865,427	19·73	39,411,728	17·30
Yukon	2,355,631	1·11	1,940,934	1·10	1,576,726	0·69
Dominion	211,301,897	100·00	176,686,390	100·00	227,859,665	100·00

Mineral Production of Nova Scotia, 1919 and 1920

Product		1919		1920	
		Quantity	Value	Quantity	Value
			$		$
Barytes	Tons.	468	8,154	751	22,983
Coal	"	5,720,373	22,078,726	6,429,291	32,238,129
Grindstones	"	283	9,000	211	8,440
Gold	Ozs.	850	17,571	690	14,263
Gypsum	Tons.	163,852	250,174	260,661	573,752
Manganese	"	45	3,600	62	4,140
Tripolite	"	565	11,300	260	8,600
Clay products		.....	432,900	.....	541,114
Lime	Bus.	366,543	73,309	201,500	40,300
Salt	Tons.	174	2,188	3,023	32,000
Stone		.....	413,194	.....	420,175
Other products		.....	145,099	.....	226,121
Total		.....	23,445,215	.....	34,130,017

The total production of blast furnace pig-iron in Nova Scotia in 1919 was 285,087 tons valued at $7,141,641 and in 1920, 332,493 tons valued at $7,687,614.

Mineral Production of New Brunswick, 1919 and 1920

Product	1919		1920	
	Quantity	Value	Quantity	Value
		$		$
Coal.....Tons.	179,108	794,761	166,048	1,055,286
Grindstones..... "	1,737	51,516	2,233	79,696
Gypsum..... "	42,409	315,656	49,405	428,183
Natural gas.....M. cu. ft.	682,890	120,510	682,502	130,506
Petroleum..... Bls.	4,225	13,141	5,148	19,963
Clay products	.....	52,941	.....	73,484
Lime..... Bus.	468,533	223,193	701,859	365,030
Stone.....	.....	125,294	.....	280,167
Other products.....	.....	73,933	.....	59,472
Total.....	.....	1,770,945	.....	2,491,787

Mineral Production* of Quebec, 1919 and 1920

Product	1919		1920	
	Quantity	Value	Quantity	Value
		$		$
Copper..... Lbs.	2,691,695	503,105	880,638	153,724
Gold..... Ozs.	1,470	30,388	955	19,742
Iron ore, sold for export.....Tons.	321	1,005	960	3,000
Lead..... Lbs.	2,280,000	158,825	905,472	80,949
Molybdenite..... "	83,002	69,203	.....	.....
Silver..... Ozs.	140,926	156,600	61,003	61,552
Zinc..... Lbs.	1,752,000	128,562	1,120,200	85,931
Asbestos and asbestic.....Tons.	159,236	10,975,369	199,573	14,792,201
Chromite..... "	8,541	228,898	11,016	251,379
Feldspar..... "	925	13,073	649	10,052
Graphite..... "	20	400	233	31,913
Magnesite..... "	11,273	328,465	18,378	512,756
Mica..... "	.....	218,437	.....	281,460
Mineral water..... Gals.	.....	13,257	24,219	10,109
Iron oxides..... Tons.	11,862	113,427	19,128	157,909
Peat..... "	486	4,811	.....	.....
Phosphate..... "	22	300	.....	.....
Pyrites..... "	52,746	203,222	14,817	44,451
Quartz..... "	2,221	7,773	1,986	5,558
Talc..... "	.....	.....	150	1,050
Cement..... Bls.	2,260,422	4,340,010	3,013,463	6,545,054
Clay products.....	.....	1,563,832	.....	2,361,007
Kaolin..... Tons.	759	13,744	683	15,022
Lime..... Bus.	1,796,822	493,762	2,108,203	826,044
Slate..... .....Squares.	1,632	10,853	(a)	14,200
Stone.....	.....	1,441,919	.....	2,189,325
Other products.....	.....	248,707	.....	431,826
Total.....	.....	21,267,947	.....	28,886,214

*There is also in this Province an important production of aluminium from imported ores.
(a) 1,532 squares, and 240 tons of crushed material.

Mineral Production of Ontario, 1919 and 1920

Product		1919		1920	
		Quantity	Value	Quantity	Value
			$		$
Cobalt, metallic and in oxide, etc.	Lbs.	530,371	1,325,928	546,023	1,365,058
Copper	"	24,346,623	4,550,627	32,059,993	5,596,392
Gold	Ozs.	505,739	10,454,553	564,995	11,679,483
Iron ore, sold for export	Tons.	5,562	45,520	6,683	54,266
Iron, pig, from Canadian ore (a)	"	38,457	899,406	75,869	2,066,997
Lead	Lbs.	1,487,586	103,625	2,255,520	201,643
Nickel	"	44,544,883	17,817,953	61,335,706	24,534,282
Platinum	Crude oz.	25	1,447	578	36,961
Palladium	"	62	3,534	913	58,392
Rhodium, ruthium, osmium, etc.	"	.....	.....	513	31,815
Silver	Ozs.	12,117,878	13,465,628	9,907,626	9,996,795
Zinc	Lbs.	147,692	10,838	13,950	1,070
Actinolite	Tons.	80	880	100	1,160
Arsenious oxide	"	2,859	488,706	1,831	425,617
Corundum	"	.....	.....	196	24,547
Feldspar	"	13,754	73,158	37,224	270,843
Fluorspar	"	3,425	59,281	3,758	68,475
Graphite	"	1,340	99,821	1,957	133,704
Gypsum	"	58,899	278,120	74,707	404,162
Mica	"	325	55,351	1,466	94,562
Mineral water	.....	.....	55,958	.....	14,473
Natural gas	M. cu ft.	11,024,041	2,690,400	10,529,374	2,920,731
Peat	Tons.	500	1,750	4,550	18,650
Petroleum	Bls.	219,804	625,342	180,071	726,286
Phosphate	Tons.	2	31	.....	.....
Pyrites	"	117,011	285,832	148,652	618,283
Quartz	"	60,055	179,549	90,433	321,063
Salt	"	148,112	1,395,291	206,832	1,512,724
Strontium	"	48	336	75	2,625
Talc	"	18,542	115,795	21,411	162,784
Cement	Bls.	2,023,280	3,650,585	2,035,594	4,377,814
Clay products	.....	.....	4,574,796	.....	5,613,488
Lime	Bus.	3,578,834	1,143,973	5,109,635	1,962,086
Sand-lime brick	No.	24,141,399	335,200	30,664,720	451,175
Stone	.....	.....	1,936,268	.....	4,035,478
Other products	.....	.....	1,192,516	.....	1,931,924
Total	.....	.....	67,917,998	.....	81,715,808

(a) The total production of blast-furnace pig-iron in Ontario in 1919 was 624,993 tons, valued at $17,104,151; and in 1920, 749,068 tons, valued at $22,252,062.

Mineral Production of Manitoba, 1919 and 1920

Product		1919		1920	
		Quantity	Value	Quantity	Value
			$		$
Copper	Lbs.	3,348,000	625,775	3,062,577	534,604
Gold	Ozs.	724	14,966	781	16,145
Silver	"	20,760	23,069	15,510	15,649
Gypsum, calcined	Tons.	32,903	371,337	44,371	487,894
Natural gas	M. cu.ft.	.....	.....	200	60
Clay products	.....	.....	131,737	.....	206,764
Lime	Bus.	476,452	147,131	605,399	210,984
Sand-lime brick	No.	7,389,300	124,847	10,278,802	197,734
Stone	.....	.....	89,067	.....	374,286
Other products	.....	.....	1,340,449	.....	2,179,341
Total	.....	.....	2,868,378	.....	4,223,461

Mineral Production of Ontario, 1919 and 1920

Product		1919		1920	
		Quantity	Value	Quantity	Value
			$		$
Coal	Tons.	380,169	820,522	343,475	819,320
Magnesium sulphate	"	.....	.....	2	103
Sodium sulphate	"	15	450	811	19,496
Clay products		.....	270,989	.....	471,448
Sand-lime brick	No.	1,294,000	14,601	2,258,500	35,383
Other products		.....	415,402	.....	491,718
Total		.....	1,521,964	.....	1,837,468

Mineral Production of Alberta, 1919 and 1920

Product		1919		1920	
		Quantity	Value	Quantity	Value
			$		$
Gold, alluvial	Ozs.	24	500	.....	.....
Coal	Tons.	4,964,535	18,294,495	6,833,500	29,849,608
Natural gas	M. cu ft.	8,230,838	1,365,127	5,633,442	1,181,345
Petroleum	Brl.	16,437	97,841	11,032	75,986
Clay products		.....	571,949	.....	786,430
Lime	Bush.	109,067	41,276	139,433	72,477
Sand-lime brick	No.	729,000	10,206	2,257,000	40,626
Stone		.....	3,189	.....	4,415
Other products		.....	702,999	.....	1,575,569
Total		.....	21,087,582	.....	33,586,456

Mineral Production of British Columbia, 1919 and 1920

Product		1919		1920	
		Quantity	Value	Quantity	Value
			$		$
Copper (a)	Lbs.	44,502,079	8,317,884	45,319,771	7,911,019
Gold	Ozs.	167,252	3,457,406	124,808	2,580,010
Iron ore sold for export	Tons.	.....	.....	1,212	7,272
Lead	Lbs.	40,060,113	2,790,587	32,792,725	2,931,670
Platinum	Ozs.	25	2,150	17	719
Silver	"	3,713,537	4,126,556	3,327,028	3,356,971
Zinc	Lbs.	30,295,015	2,223,048	38,729,762	2,970,960
Arsenic	Tons.	530	21,218	628	22,231
Coal	"	2,435,933	12,420,445	2,858,877	16,726,950
Fluorspar	"	1,638	38,556	7,477	171,971
Manganese	"	616	10,559	587	6,889
Magnesium sulphate	"	738	9,115	1,945	39,783
Mineral water	.....	.....	1,800	.....	.....
Pyrites	Tons.	6,730	33,650	11,275	56,376
Quartz	"	32,715	340,313	35,876	141,200
Talc	"	100	500	110	3,100
Clay products	.....	.....	293,478	.....	596,172
Lime	Bush.	351,253	187,963	561,305	341,632
Stone	.....	.....	217,006	.....	276,505
Other products	.....	.....	373,193	.....	1,270,298
Total	.....	.....	34,865,427	.....	39,411,728

(a) Smelter recoveries of copper.

Mineral Production of Yukon, 1919 and 1920

Product		1919		1920	
		Quantity	Value	Quantity	Value
			$		$
Copper	Lbs.	165,184	30,874	277,712	48,478
Gold	Ozs.	90,705	1,875,039	72,778	1,504,455
Silver	"	27,556	30,621	19,190	19,363
Coal	Tons.	1,100	4,400	763	4,430
Total	.....	.....	1,940,934	.....	1,576,726

Mineral Production by Provinces, 1899-1920

Calendar Year	Nova Scotia*	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Yukon	British Columbia	Total
1899	$ 6,817,274	$ 420,227	$ 2,585,635	$ 9,819,557		$ 17,108,707			$12,482,605	$49,234,005
1900	9,298,479	439,060	3,292,383	11,258,099		23,452,330			16,680,526	64,420,877
1901	7,770,159	467,985	3,759,984	13,970,010		19,297,940			20,531,833	65,797,911
1902	10,686,549	607,129	3,743,636	14,619,091		16,127,400			17,448,031	63,231,836
1903	11,431,914	580,495	3,585,938	14,160,033		14,082,986			17,899,147	61,740,513
1904	11,212,746	559,913	3,688,482	12,582,843		12,713,613			19,325,174	60,082,771
1905	11,507,047	559,035	4,405,975	18,833,292		11,387,642			22,386,008	69,078,999
1906	12,894,303	646,328	5,242,058	25,111,682		10,092,726			25,299,600	79,286,697
1907	14,532,040	664,467	6,205,553	30,381,638	$ 898,775	$ 533,251	$ 4,657,524	$ 3,335,898	25,656,056	86,865,202
1908	14,487,108	579,816	6,372,949	30,623,812	584,374	413,212	5,122,505	3,669,290	23,704,035	85,557,101
1909	12,504,810	657,035	7,086,265	37,374,577	1,193,377	456,246	6,047,447	4,032,678	22,479,006	91,831,441
1910	14,195,730	581,942	8,270,136	43,538,078	1,500,359	498,122	8,996,210	4,764,474	24,478,572	106,823,623
1911	15,409,397	612,830	9,304,717	42,796,162	1,791,772	636,706	6,662,673	4,707,432	21,299,305	103,220,994
1912	18,922,236	771,004	11,656,998	51,985,876	2,463,074	1,165,642	12,073,589	5,933,242	30,076,635	135,048,290
1913	19,376,183	1,102,613	13,475,534	59,167,749	2,214,496	881,142	15,054,046	6,276,737	28,086,312	145,634,812
1914	17,584,639	1,014,570	11,836,929	53,034,677	2,413,489	712,313	12,684,234	5,418,185	24,164,039	128,863,075
1915	18,088,342	903,467	11,619,275	61,071,287	1,318,387	451,933	9,909,347	5,057,708	28,689,425	137,109,171
1916	20,042,262	1,118,187	14,406,598	80,461,323	1,823,576	590,473	13,297,543	5,491,610	39,969,962	177,201,534
1917	21,104,542	1,435,024	17,400,077	89,066,600	2,628,264	860,651	16,527,535	4,482,202	36,141,926	189,646,821
1918	22,317,108	2,144,017	19,605,347	94,694,093	3,120,600	1,019,781	23,109,987	2,355,631	42,935,333	211,301,897
1919	23,445,215	1,770,945	21,267,947	67,917,998	2,868,378	1,521,964	21,087,582	1,940,934	34,865,427	176,686,390
1920	34,130,017	2,491,787	28,886,214	81,715,808	4,223,461	1,837,468	33,586,456	1,576,726	39,411,728	227,859,665

*Includes a small production from Prince Edward Island.

MINE PRODUCTION

The statistics of mineral production presented in the preceding tables are based, as already explained, in so far as metalliferous ores are concerned, on the actual, or probable recovery of refined metals from the ores treated. An endeavour has been made to compile another series of records eliminating as far as possible the metallurgical operations, and to include only the actual quantities of ores or concentrates shipped from mines and the net value of the same. It has not been found feasible, however, to eliminate entirely the metallurgical operations in certain cases, such as the recovery of bullion in placer operations, the recovery of gold bullion from milling ores and of silver bullion by those plants carrying on milling operations as well as mining, there being no commercial basis on which a separation of values could be made.

A record of mine production compiled on this basis is shown in the following tables, and includes a record of the tonnage and value of ores, or minerals mined, treated and shipped, the quantities of metals contained in ores shipped and records of labour employed and wages paid. It should be noted that these records cover only active shipping mines and do not include any record of the labour employed in the smelting and refining of ores, nor in blast furnace operations, with the exceptions noted. Previous to 1917 no record was obtained of the labour employed in connexion with the production of petroleum, and similar returns in respect to placer mining were not sufficiently complete to be included in the tables. The values of the ores given are in general those furnished by the operators. In certain cases, however, where such values have not been furnished, estimates have been made.

The tables showing the quantities of metals contained in the ores shipped give the total quantities of metals contained without any deductions or allowances being made for smelter or treatment losses.

Mine Production, 1915

——	No. of mines or works	Men employed		Wages paid	Ores or minerals mined	Metals, ores, concentrates or minerals shipped	Net value of shipments
		Underground	Surface				
METALLIFEROUS ORES	No.	No.		$	Tons	Tons	$
Antimony ore	7	157		55,038	15,318	1,491	83,971
Molybdenite	4	52		16,990	.....	37	28,450
Iron ores	5	399		230,346	251,742	398,112	774,427
Milling gold ores—							
Bullion shipped	50	1,324	1,555	2,893,187	1,180,477	18	8,953,130
Concentrates						8,335	711,947
Silver-cobalt ores—							
Mine bullion shipped	25	1,008	1,531	2,363,414	588,404	232	3,410,936
Ore and concentrates						61,362	8,326,776
Nickel-copper ores	9	857	1,745	2,202,536	1,364,048	1,372,724	10,552,673
Copper ores	6	173	205	215,065	141,758	142,121	1,026,562
Silver-lead and zinc ores	66	328	784	960,894	215,694	73,752	2,958,394
Zinc						14,895	540,022
Gold-copper-silver ores	33	886	1,694	2,868,449	2,380,709	2,186,646	10,947,059
Placer mining—							
Yukon	.....	.....	.....	.....	.....	9	4,776,145
British Columbia	.....	.....	.....	.....	.....	.....	770,000
Alberta	.....	.....	.....	.....	.....	.....	4,026
Total metalliferous	205	12,698		11,805,919	6,138,150	4,259,734	53,864,518
Total non-metalliferous	472	30,392		20,257,126	16,594,889	14,481,882	43,373,571
Total structural materials	943	13,786		5,657,717	.....	.....	17,920,759
	1,618	56,876		37,720,762	.....	.....	115,158,848

Content of Shipments

——	Gold	Silver	Nickel	Copper	Lead	Zinc	Antimony
	Ozs.	Ozs.	Tons	Tons	Tons	Tons	Tons
Antimony ore	.....	.....	.....	.....	.....	.....	540
Milling gold ores—							
Bullion	430,981	87,116	.....	.....	.....	.....	.....
Concentrates	35,779	37,507	.....	.....	.....	.....	.....
Silver-cobalt ores—							
Mine bullion shipped	.....	6,752,183	.....	.....	.....	.....	.....
Ore and concentrates	.....	17,603,943	.....	.....	.....	.....	.....
Nickel-copper ores	.....	.....	43,891	23,318	.....	.....	.....
Copper ore	1,151	64,965	.....	3,538	.....	.....	.....
Silver-lead-zinc ores—							
Lead ore and concentrate	459	2,637,444	.....	.....	24,354	.....	.....
Zinc ore and concentrate	.....	316,731	.....	.....	.....	6,116	.....
Gold-copper-silver ores	202,127	849,784	.....	34,758	.....	.....	.....
Placer mining—							
Yukon	229,803	25,689	.....	.....	.....	.....	.....
British Columbia	37,249	.....	.....	.....	.....	.....	.....
Alberta	195	.....	.....	.....	.....	.....	.....
Total	937,744	28,375,362	43,891	61,614	24,354	6,116	540

Mine Production, 1916

——	No. of mines or works	Men employed		Wages paid	Ores or minerals mined	Metals, ores, concentrates or minerals shipped	Net value of shipments
		Underground	Surface				
METALLIFEROUS ORES	No.	No.		$	Tons	Tons	$
Antimony ore	5	116		59,957	14,947	(a) 938	136,360
Molybdenite	9	262		122,072	13,522	(b) 78	156,461
Iron ores	4	530		376,716	331,822	275,176	715,107
Milling gold ores—							
Bullion shipped	49	1,304	1,709	3,540,899	1,502,336	21	10,418,052
Concentrates						9,340	522,409
Silver-cobalt ores—							
Mine bullion shipped	32	1,034	1,561	2,450,614	574,882	171	3,444,736
Ore and concentrates						77,453	9,736,490
Nickel-copper ores	6	875	1,837	2,824,818	1,566,333	1,566,333	11,766,201
Copper ores	12	232	261	293,115	170,666	155,999	1,444,676
Silver-lead and zinc ores	84	573	1,070	1,803,633	395,802	84,516	4,568,500
Zinc						82,077	1,086,249
Gold-copper-silver ores	59	1,259	1,975	4,395,924	2,907,344	2,431,930	18,544,772
Placer mining—							
Yukon						9	4,413,958
British Columbia							580,500
Alberta							1,695
Total metalliferous	260	14,598		15,867,748	7,450,654	4,684,041	67,536,166
Total non-metalliferous	532	30,541		24,987,562	18,170,207	15,699,830	53,414,983
Total structural materials	816	12,465		6,237,168			17,467,186
Total	1,608	57,604		47,092,478			138,418,331

(a) Includes refined antimony.
(b) MoS_2 contents of concentrates produced.

Content of Shipments

——	Gold	Silver	Nickel	Copper	Lead	Zinc	Antimony
	Ozs.	Ozs.	Tons	Tons	Tons	Tons	Tons
Antimony ore							429
Milling gold ores—							
Bullion	519,202	102,349					
Concentrates	30,138	54,136					
Silver-cobalt ores—							
Mine bullion shipped		4,982,702					
Ore and concentrates		15,690,716					
Nickel-copper ores			51,127	25,266			
Copper ores	713	65,438		4,638			
Silver-lead-zinc ores	784	2,582,952			27,062		
Zinc products		363,262				24,249	
Gold-copper-silver ores	163,466	905,685		42,126			
Placer mining—							
Yukon	211,010	47,703					
British Columbia	28,082						
Alberta	82						
Total	954,477	24,794,943	51,127	72,030	27,062	24,249	429

Mine Production, 1917

——	No. of mines or works	Men employed		Wages paid	Ores or minerals mined	Metals, ores, concentrates or minerals shipped	Net value of shipments
		Underground	Surface				
METALLIFEROUS ORES	No.	No.	No.	$	Tons	Tons	$
Antimony ore	1	46		35,739	8,182	361	22,000
Molybdenite	23	501		260,692	26,871	1,554	320,006
Iron ores	9	528		509,163	305,330	215,302	758,621
Milling gold ores—							
Bullion shipped	45	1,388	1,633	3,687,392	1,303,410	18	9,312,424
Concentrates						8,874	365,375
Silver-cobalt ores—							
Mine bullion shipped						318	7,628,740
Ore and concentrates	32	1,079	1,369	2,667,607	527,850	72,719	10,123,838
Nickel-copper ores	6	907	1,737	2,981,896	1,518,783	1,509,841	11,323,808
Silver-lead-zinc ores—							
Lead ore and concentrate	87	716	1,198	2,295,090	445,663	46,799	3,866,862
Zinc ore and concentrate						116,489	1,323,985
Gold-copper-silver ores	83	1,730	2,253	4,667,578	2,554,738	1,878,911	16,048,186
Placer mining—							
Yukon	69	890		1,337,063	.....	8	3,310,268
British Columbia	34	275		208,589	.....		496,000
Total metalliferous	389	16,250		18,650,809	6,690,827	3,851,194	64,900,113
Total non-metalliferous	763	32,088		31,398,570	18,438,815	15,468,048	63,354,363
Total structural materials	739	10,814		6,609,872	.....	.....	19,837,311
	1,891	59,152		56,659,251	25,129,642	19,319,242	148,091,787

Content of Shipments

——	Gold	Silver	Nickel	Copper	Lead	Zinc	Antimony	Molybdenite
	Ozs.	Ozs.	Tons	Tons	Tons	Tons	Tons	Tons
Antimony ore	.....	.....	.....	.....	.....	.....	144	.....
Molybdenum ore	.....	.....	.....	.....	.....	.....	.....	165
Milling gold ores—								
Bullion	447,373	77,250	.....	.....	.....	.....	.....	.....
Concentrates	21,905	99,119	.....	.....	.....	.....	.....	.....
Silver-cobalt ores—								
Mine bullion shipped	.....	9,248,717	.....	.....	.....	.....	.....	.....
Ore and concentrates	.....	12,042,990	.....	.....	.....	.....	.....	.....
Nickel-copper ores	.....	.....	52,587	24,521	.....	.....	.....	.....
Gold-copper-silver ores	77,599	782,521	.....	40,479	.....	.....	.....	.....
Silver-lead-zinc ores—								
Lead ore and concentrate	1,033	1,670,064	.....	.....	19,348	.....	.....	.....
Zinc ore and concentrate	.....	465,153	.....	.....	.....	32,328	.....	.....
Placer mining—								
Yukon	176,548	39,723	.....	.....	.....	.....	.....	.....
British Columbia	23,994	.....	.....	.....	.....	.....	.....	.....
Alberta	.....	.....	.....	.....	.....	.....	.....	.....
Total	748,452	24,425,537	52,587	65,000	19,348	32,328	144	165

Mine Production, 1918

——	No. of mines or works	Men employed		Wages paid	Ores or minerals mined	Metals, ores concet rates or minerals shipped	Net value of shipments
		Underground	Surface				
METALLIFEROUS ORES	No.	No.	No.	$	Tons.	Tons.	$
Molybdenum ore	18	196	110	274,945	34,030	461	428,997
Iron ore	11	624		693,383	254,424	211,608	885,893
Gold ores—							
Bullion shipped	45	1,238	1,541	3,249,578	974,977	18	9,173,037
Concentrates						15,112	411,090
Silver-cobalt ores—							
Mine bullion shipped	30	1,044	1,143	2,918,474	521,472	228	6,821,528
Ore and concentrates						73,646	9,763,737
Nickel-copper ores	6	975	1,449	3,186,909	1,641,617	1,641,617	12,312,128
Copper-gold-silver ores	46	1,125	1,723	4,296,649	2,665,548	1,856,899	11,658,397
Silver-lead-zinc ore—							
Lead ore and concentrate	83	647	1,044	1,980,351	428,066	75,256	4,705,573
Zinc " "						121,200	1,228,195
Placer mining—							
Yukon	65	478		878,858	.....	4·5	1,907,702
British Columbia	22	128		134,092	.....	0·5	320,000
Alberta	.....	.....		.....	.....	.....	558
Total metalliferous	326	13,475		17,613,239	6,520,134	3,995,050	59,616,745
" non-metalliferous	787	32,848		39,322,157	19,107,261	16,237,486	77,621,946
" structural	643	9,504		6,989,496	.....	.....	19,130,799
Grand total	1,756	55,827		63,924,892	25,627,395	20,232,536	156,369,490

Content of Shipments

——	Gold	Silver	Nickel	Copper	Lead	Zinc	Molybdenite
	Oz.	Oz.	Tons	Tons	Tons	Tons	Tons
Molybdenum ore	.....	.....	.....	.....	.....	.....	139
Gold ores—							
Bullion	441,120	75,176	.....	.....	.....	.....	.....
Concentrates	17,108	118,785	.....	.....	.....	.....	.....
Silver-cobalt ores—							
Mine bullion shipped	.....	6,675,863	.....	.....	.....	.....	.....
Ore and concentrates	.....	9,599,621	.....	.....	.....	.....	.....
Nickel-copper ores	.....	.....	56,980	27,688	.....	.....	.....
Copper-gold-silver ores	128,235	811,912	.....	23,376	.....	.....	.....
Silver-lead-zinc ores—							
Lead ore and concentrate	1,479	2,314,542	.....	.....	23,422	.....	.....
Zinc " "	97	431,888	.....	.....	.....	31,513	.....
Placer mining—							
Yukon	101,744	22,892	.....	.....	.....	.....	.....
British Columbia	15,480	.....	.....	.....	.....	.....	.....
Alberta	27	.....	.....	.....	.....	.....	.....
Total	705,290	20,050,679	56,980	51,064	23,422	31,513	139

Mine Production, 1919

——	No. of mines or works	Men employed		Wages paid	Ores or minerals mined	Metals, ores, concentrates or minerals shipped	Net value of shipments
		Underground	Surface				
METALLIFEROUS ORES	No.	No.	No.	$	Tons	Tons	$
Molybdenum ore	1	25	80	35,536	7,280	46	69,203
Iron ore	5	556		649,517	289,991	195,970	687,386
Gold ores—							
Bullion shipped	28	1,042	1,479	3,506,442	1,212,760	29	10,972,559
Concentrates						5,229	298,223
Silver-cobalt ores—							
Mine bullion shipped	35	922	1,095	2,556,767	444,471	179	4,868,543
Ore and concentrates						62,045	7,096,775
Nickel-copper ores	7	432	590	1,244,713	572,400	572,400	4,579,200
Copper-gold-silver ores	30	951	1,250	3,191,524	1,779,956	1,085,950	9,265,569
Silver-lead-zinc ore—							
Lead ore and concentrate	67	615	1,000	1,884,338	409,959	54,508	3,044,839
Zinc " "						135,535	1,049,493
Placer mining—							
Yukon	70	382		684,159	.....	4½	1,701,514
British Columbia	23	116		93,732	.....	½	288,650
Alberta	.....	.....		.....	.....	.....	500
Total metalliferous	266	10,535		13,846,728	4,716,817	2,111,896	43,922,453
" non-metalliferous	733	34,422		41,674,932	18,047,064	14,641,415	76,002,087
" structural	654	12,270		9,304,045	.....	.....	27,421,510
Grand total	1,653	57,227		64,825,705	22,763,881	16,753,311	147,346,050

Content of Shipments

——	Gold	Silver	Nickel	Copper	Lead	Zinc	Molybdenite
	Oz.	Oz.	Tons	Tons	Tons	Tons	Tons
Molybdenum ore	.....	.....	.....	.....	.....	.....	41½
Gold ores—							
Bullion	529,409	94,327	.....	.....	.....	.....	.....
Concentrates	10,525	168,673	.....	.....	.....	.....	.....
Silver-cobalt ores—							
Mine bullion shipped	.....	4,293,887	.....	.....	.....	.....	.....
Ore and concentrates	.....	6,636,457	.....	.....	.....	.....	.....
Nickel-copper ores	.....	.....	19,356	10,807	.....	.....	.....
Copper-gold-silver ores	121,482	637,020	.....	26,307	.....	.....	.....
Silver-lead-zinc ores—							
Lead ore and concentrate	1,623	2,185,376	.....	.....	16,074	.....	.....
Zinc " "	90	535,829	.....	.....	.....	29,980	.....
Placer-mining—							
Yukon	87,923	19,783	.....	.....	.....	.....	.....
British Columbia	13,859	.....	.....	.....	.....	.....	.....
Alberta	24	.....	.....	.....	.....	.....	.....
Total	764,935	14,571,352	19,356	37,114	16,074	29,980	41½

Mine Production 1920

——	No. of mines or works	Men employed		Wages paid	Ores or minerals mined	Metals, ores, concentrates or minerals shipped	Net value of shipments
		Underground	Surface				
METALLIFEROUS ORES	No.	No.		$	Tons	Tons	$
Iron ores	3	404		566,110	195,870	127,614	509,315
Gold ores—							
Bullion shipped	31	1,195	1,331	4,089,526	1,300,316	27	12,088,474
Concentrates						8,456	187,635
Silver-cobalt ores—							
Mine bullion shipped	38	731	1,059	2,844,666	579,261	175½	5,247,809
Ore and concentrate						52,328	4,703,215
Nickel-copper ores	6	431	830	2,070,648	1,135,792	1,135,792	9,086,336
Copper-gold-silver ores	20	796	1,027	2,978,503	1,779,477	987,506	5,522,350
Silver-lead-zinc ores—							
Lead ore and concentrate	65	577	866	1,751,428	461,925	69,493	2,985,848
Zinc " "						249,136	1,157,844
Placer mining—							
Yukon	56	453		730,482	.....	3	1,520,392
British Columbia	19	115		82,460	.....	½	221,600
Total metalliferous	238	9,815		15,113,823	5,452,641	2,630,531	43,230,818
Total non-metalliferous	754	37,126		57,981,087	21,346,216	17,911,471	108,027,947
Total structural materials	665	13,902		15,036,618	.....	.....	41,892,088
	1,657	60,843		88,131,528	26,798,857	20,542,002	193,150,853

Content of Shipments

——	Gold	Silver	Nickel	Copper	Lead	Zinc
	Oz.	Oz.	Tons	Tons	Tons	Tons
Milling gold ores—						
Bullion	581,555	100,550	.....	.....	.....	.....
Concentrates	7,082	169,667	.....	.....	.....	.....
Silver-cobalt ores—						
Mine bullion shipped	.....	5,103,582	.....	.....	.....	.....
Ore and concentrate	.....	5,301,114	.....	.....	.....	.....
Nickel-copper ores	.....	.....	39,156	19,017	.....	.....
Copper-gold-silver ores—	95,897	584,974	.....	28,482	.....	.....
Silver-lead-zinc ores—						
Lead ore and concentrate	1,745	2,228,560	.....	.....	18,163	.....
Zinc " "	131	653,618	.....	.....	.....	45,517
Placer mining—						
Yukon	72,750	16,369	.....	.....	.....	.....
British Columbia	10,719	.....	.....	.....	.....	.....
Total	769,879	14,158,434	39,156	47,499	18,163	45,517

Labour and Wages Statistics Covering Non-Metalliferous Mines during 1918, 1919, and 1920

—	1918			1919			1920		
	Number active mines or works	Number employed	Wages paid	Number active mines or works	Number employed	Wages paid	Number active mines or works	Number employed	Wages paid
NON-METALLIC			$			$			$
Asbestos and asbestic	13	3,074	2,871,643	15	3,567	3,954,407	18	3,572	4,765,305
Chromite	13	233	223,375	5	138	164,036	4	143	170,041
Coal	381	25,419	32,899,501	370	27,198	34,826,363	369	29,387	49,171,238
Feldspar	12	143	108,592	12	98	46,870	20	277	152,379
Fluorspar	9	125	89,858	4	100	153,034	4	119	123,050
Graphite	5	413	121,885	4	121	72,098	5	128	112,168
Grindstones, pulpstones and scythestones	6	116	45,853	5	95	36,080	4	104	45,064
Gypsum	8	435	275,312	13	725	380,105	11	1,016	955,602
Magnesite	4	305	326,417	3	186	98,045	3	200	158,908
Mica and phosphate	16	165	84,521	21	147	109,411	20	186	145,247
Mineral pigments: barytes, and oxides	6	95	51,735	5	94	43,473	6	88	61,125
Mineral water	18	50	17,271	16	36	17,119	15	24	12,824
Natural gas	101	711	641,542	99	681	631,567	104	616	643,320
Petroleum	153	264	195,141	120	274	210,936	122 (a)	202	182,787
Pyrites (b)	15	617	688,720	11	372	372,620	9	253	357,277
Quartz	11	236	319,840	4	111	121,183	11	179	181,257
Salt	9	302	286,781	11	329	350,141	12	345	472,031
All others†	7	145	74,170	15	150	87,444	17	287	271,464
Total non-metallic	787	32,848	39,322,157	733	34,422	41,674,932	754	37,126	57,981,087
STRUCTURAL									
Cement	10	1,249	1,474,547	10	1,535	1,836,359	13	2,248	3,716,001
Clay products	230	3,423	2,131,614	221	4,613	3,356,464	224	5,232	5,071,645
Lime	65	741	664,367	58	868	829,459	58	1,069	1,314,186
Sand-lime brick	10	146	69,514	13	286	206,405	14	291	264,045
Sand and gravel	186	1,558	991,169	192	1,945	997,484	186	1,546	1,343,212
Slate	1	19	11,298	1	24	17,004	2	29	25,276
Stone	141	2,368	1,646,987	159	2,999	2,060,870	168	3,487	3,302,253
Total structural	643	9,504	6,989,496	654	12,270	9,304,045	665	13,902	15,036,618
Total non-metalliferous	1,429	42,352	46,311,653	1,387	46,692	50,978,977	1,419	51,028	73,017,705

†Includes in 1918—actinolite, corundum, magnesium sulphate, manganese, talc, and tripolite.
" 1919—actinolite, magnesium sulphate, manganese, peat, strontium, talc, and tripolite.
" 1920—actinolite, corundum, manganese, magnesium sulphate, sodium sulphate, peat, strontium, talc, and tripolite.

(a) Not complete. (b) Partial.

METALLIC PRODUCTS

ALUMINIUM

No commercial ores of aluminium have as yet been found in Canada. Aluminium is, however, made in extensive works at Shawinigan Falls, Quebec, from imported ores by the Northern Aluminium Company.

The imports of alumina, including bauxite, were in 1920, 57,414·3 tons, valued at $1,889,064, as against 29,302 tons, valued at $1,565,264, in 1919.

The imports of aluminium in ingots, bars, tubes, etc., were, in 1920, 935·4 tons, valued at $633,733, besides manufactures of aluminium valued at $589,106, or a total of $1,222,733, as against 379·5 tons, valued at $247,565, and manufactures of aluminium valued at $347,129, or a total of $594,694 in 1919.

The exports of aluminium in ingots bars, tubes, etc., were, in 1920, 9,858 tons, valued at $6,094,620, together with manufactures of aluminium valued at $175,057, as against 7,288 tons, valued at $4,455,031, and manufactures valued at $59,339 in 1919.

There was little fluctuation in the price of aluminium during 1919 and 1920. The average price in New York in 1920 was 32·14 cents per pound.

ANTIMONY

Shipments of antimony ore and concentrate and of refined antimony were made intermittently during the last ten or twelve years. There has been no reported shipment of antimony in any form during the last three years, although the Customs Department report exports of ore amounting in 1919 to 56 tons, valued at $8,420, and in 1918 to 26 tons, valued at $1,430.

The imports of antimony as regulus, salts, etc., were, in 1920, 539·7 tons valued at $97,288, as against 520·9 tons, valued at $89,805, in 1919.

The price of antimony in New York was quoted around 11 cents per pound during the first four months of 1920. Then it started to decline gradually to an average of 5·53 cents for December. The average for the year was 8·49 cents per pound.

COBALT

The Cobalt district of Ontario has been for several years the principal source of the world's supply of cobalt. The cobalt ores and cobalt residues produced from the mines and the reduction plants of Cobalt area are shipped mostly to the south-eastern Ontario smelters. The recovery of the cobalt in these smelters is first in the form of cobalt oxide usually of three different grades. The oxide is partly marketed as such, and partly re-treated for the production of metallic cobalt, cobalt salts, and stellite.

The total production of cobalt contained in smelter products shipped and in cobalt residues exported amounted to 546,023 pounds, valued at $1,365,058 (at $2.50 per pound), as against 530,371 pounds, valued at $1,325,928 (at $2.50 per pound), in 1919.

The 1920 production included: (*a*) 166,375 pounds of metallic cobalt, valued at $389,708; (*b*) 536,457 pounds of cobalt oxides, valued at $1,170,288; and (*c*) 300 pounds of cobalt compounds, valued at $600, making a total valuation of $1,560,596.

The 1919 production included: (*a*) 113,943 pounds of metallic cobalt, valued at $220,676; (*b*) 429,359 pounds of cobalt oxides, valued at $611,909; (*c*) other cobalt

compounds, such as stellite and cobalt sulphate, amounting to 60,437 pounds, valued at $34,308; and (*d*) cobalt ores and residues exported amounting to 842 tons, containing 93,143 pounds of cobalt and valued at $133,294, making a total valuation of $900,187.

The total amount of cobalt ores and residues treated in 1920 amounted to 8,988 tons with a cobalt content of 1,200,040 pounds, as against 9,084 tons with a cobalt content of 1,070,826 pounds, in 1919.

No price quotations for cobalt are available for the last three years but the metal produced in the refineries of Ontario is reported to have obtained a price of around $2.50 per pound.

Summary of Cobalt Statistics

—		1917	1918 (*b*)	1919	1920
Cobalt ores and residues treated	Tons.	7,770	8,354	9,084	8,988
Cobalt content of ores and residues treated	Lbs.	866,327	972,679	1,070,826	1,200,040
Cobalt recovery from smelter products	Lbs.	1,079,572	737,157	530,371	546,023
	Value.	$1,727,315	$1,842,893	$1,325,928	$1,365,058
Metallic cobalt produced	Lbs.	393,773	294,476	113,943	166,375
	Value.	$616,633	$713,072	$220,676	$389,708
Cobalt oxide produced	Lbs.	802,448	476,053	429,359	536,457
	Value.	$1,104,500	$760,121	$611,909	$1,170,288
Other cobalt compounds	Value.	$740,032	$936,139	$34,308	$600

(*b*) The record of cobalt production for 1918 as published in the Annual Report for that year have been revised because of duplication caused by the inclusion of materials re-treated.

COPPER

The production of copper in 1920 amounted to 81,600,691 pounds, valued at $14,244,217 (17·456 cents per pound), as against 75,053,581 pounds, valued at $14,028,265 (18·691 cents per pound), in 1919.

The 1920 production included: (*a*) 31,481,884 pounds contained in blister copper partly exported and partly refined in Canada; (*b*) 32,000,079 pounds contained in nickel-copper matte, partly exported and partly refined in Canada; (*c*) 44,766 pounds contained in copper sulphate; and (*d*) 18,073,962 pounds, the estimated recoveries from ores and concentrates exported.

The 1919 production included: (*a*) 6,934,000 pounds of refined copper; (*b*) 23,167,024 pounds contained in blister copper exported for refining; (*c*) 24,197,382 pounds contained in nickel-copper matte, partly exported and partly refined in Canada; (*d*) 41,445 pounds contained in copper sulphate; and (*e*) 20,713,730 pounds, the estimated recoveries from ores and concentrates exported.

The production of refined copper in 1920 amounted to 2,590 tons, as against 3,467 tons in 1919; 3,809 tons in 1918; 3,901 tons in 1917, and 483 tons in 1916, the first year that refined copper was produced commercially in Canada.

There are now two companies producing refined copper in Canada; the Consolidated Mining and Smelting Company of Canada, Limited, which has been producing since 1916, and the British America Nickel Corporation, Limited, which started production early in 1920.

The production of copper by provinces was as follows: British Columbia contributed 55·5 per cent of the total; Ontario, 39·3 per cent; Quebec, 1·1 per cent; Manitoba 3·8 per cent, and the Yukon, 0·3 per cent.

The imports of copper in 1920 were valued at $10,836,206 and included: (*a*) copper ore and concentrate, 1,220 tons, valued at $57,640; (*b*) copper "old and scrap," 2,481,100 pounds, valued at $404,161; (*c*) copper in pigs, ingots and blocks, 9,236,575 pounds, valued at $1,784,370; (*d*) copper in bars and rods, 33,907,300 pounds, valued at $6,408,717; (*e*) copper in strips, tubing, wire, precipitate, etc., 2,905,207 pounds, valued at $998,461; (*f*) copper sulphate 2,365,535 pounds, valued at $192,900, and (*g*) other manufactures of copper, valued at $989,957.

The imports in 1919 were valued at $7,147,783 and included: (*a*) copper ore, 1,648·6 tons, valued at $78,983; (*b*) copper "old and scrap," 1,010,000 pounds, valued at $138,023; (*c*) copper in pigs, ingots or blocks, 3,042,197 pounds, valued at $659,214; (*d*) copper in bars and rods, 23,982,500 pounds, valued at $4,971,310; (*e*) copper in strips, tubing, wire, precipitate, etc., 2,285,812 pounds, valued at $694,842; (*f*) copper sulphate, 1,874,801 pounds, valued at $150,388; and (*g*) other manufactures of copper, valued at $455,023.

The exports of copper in 1920 were valued at $15,877,306, and included: (*a*) copper in ore, matte, regulus, etc., 47,329,700 pounds, valued at $5,918,782; (*b*) blister copper, 38,198,900 pounds, valued at $710,978; (*c*) copper, black or coarse, and in pigs, etc., 2,666,500 pounds, valued at $710,978; (*d*) copper "old and scrap," 774,400 pounds, valued at $113,265; and (*e*) copper wire and clable, valued at $433,097.

The exports of copper in 1919 were valued at $14,654,640 and included: (*a*) copper in ore, matte, regulus, etc., 40,851,300 pounds, valued at $5,316,151; (*b*) blister copper, 19,956,100 pounds, valued at $3,747,355; (*c*) copper black or coarse and in pigs, etc., 18,192,300 pounds, valued at $4,186,549; (*d*) copper "old and scrap," 3,117,000 pounds, valued at $537,225; and (*e*) copper wire and cable, valued at $867,360.

The price of copper remained fairly steady around 18 cents per pound until October when it dropped to 16 cents. The decline continued until the end of the year with copper at 13 cents per pound. The average for the year was 17·456 cents per pound.

Summary of Copper Statistics

		1917	1918	1919	1920
Ores and concentrates shipped (*a*)	Tons.	1,878,911	1,856,899	1,085,950	987,506
	Value.	$16,048,186	$11,658,397	$9,265,569	$5,522,350
Copper production	Tons.	54,614	59,385	37,527	40,800
	Value.	$29,687,989	$29,250,536	$14,028,265	$14,244,217
Production by provinces:—					
Quebec	Lbs.	5,015,560	5,869,649	2,691,695	880,638
Ontario	"	42,867,774	47,074,475	24,346,623	32,059,993
Manitoba	"	(*c*)1,152,960	2,339,751	3,348,000	3,062,577
British Columbia	"	57,730,959	62,865,681	44,502,079	45,319,771
Yukon	"	2,460,079	619,878	165,184	277,712
Imports of copper (*b*)	Tons.	16,549	12,538	15,395	24,561
	Value.	$10,015,561	$6,373,361	$7,147,783	$10,836,206
Exports of copper	Tons.	59,961	60,536	41,058	44,485
	Value.	$23,256,278	$20,772,109	$14,654,640	$15,877,306

(*a*) Does not include the nickel-copper ores, but only the copper-gold-silver ores with also small shipments of copper ore. See Nickel.

(*b*) Includes manufactures of copper for which no quantities are given; in 1917, $316,190; in 1918, $253,579; in 1919, $455,023; and in 1920, $989,957; includes also copper ores in 1919, 1,685 tons valued at $78,983, and in 1920, 1,220 tons valued at $57,640.

(*c*) Includes in 1917 small quantities from New Brunswick and Alberta.

GOLD

The production of gold in 1920 amounted to 765,007 fine ounces, valued at $15,814,098, as against 766,764 fine ounces, valued at $15,850,423, in 1919.

The production in 1920 included: (*a*) alluvial gold, 83,469 ounces; (*b*) gold obtained from milling ore, 581,455 ounces; (*c*) gold obtained from ores and concentrates treated at Canadian copper and lead smelters, 45,886 ounces; and (*d*) the estimated gold recoveries from ores and concentrates exported, $54,197 ounces.

The production in 1919 included: (*a*) alluvial gold, 104,495 ounces; (*b*) gold obtained from milling ore, 529,296 ounces; (*c*) gold obtained from ores and concentrates treated at the Canadian copper and lead smelters, 67,636 ounces, and (*d*) the estimated gold recoveries from ores and concentrates exported, 65,337 ounces.

There are two refineries producing fine gold in Canada, that of the Royal Mint at Ottawa, Ont., and that of the Consolidated Mining and Smelting Company of Canada, Limited, at Tadanac (near Trail), B.C.

The production of gold by provinces is as follows: Nova Scotia, 0·1 per cent of the total; Quebec, 0·1 per cent; Ontario, 73·9 per cent; Manitoba, 0·1 per cent; British Columbia, 16·3 per cent; and the Yukon, 9·5 per cent.

The imports in 1920 were: gold fringe, valued at $36,919, and manufactures of gold and silver, valued at $845,089.

The imports in 1919 were: gold fringe, valued at $17,949, and manufactures of gold and silver, valued at $459,463.

The exports of gold in the form of dust, nuggets, etc., in 1920 were valued at $4,642,909, as against $5,037,123 in 1919.

Summary of Gold Statistics

		1917	1918	1919	1920
Gold ores and concentrates shipped (*a*)	Tons.	8,874	15,112	5,229	8,456
	Value.	$365,375	$411,090	$298,222	$187,635
Gold bullion shipped from quartz mines	Tons.	18	18	29	27
	Value.	$9,312,424	$9,173,037	$10,972,559	$12,088,474
Gold bullion shipped by placer operators	Tons.	7·0	5·0	4·0	3·5
	Value.	$3,806,268	$2,228,260	$1,990,664	$1,741,992
Gold production (*b*)	Fine ounces	738,831	699,681	766,764	765,007
	Value.	$15,272,992	$14,463,689	$15,850,423	$15,814,098
Production by provinces:—					
Nova Scotia	Ozs.	2,210	1,196	850	690
Quebec	"	1,511	1,939	1,470	955
Ontario	"	423,261	411,976	505,739	564,995
Manitoba	"	440	1,926	724	781
Alberta	"	.....	27	24	.....
British Columbia	"	133,742	180,163	167,252	124,808
Yukon	"	177,667	102,474	90,705	72,778
Imports of gold	Value.	$14,601,931	$1,831,795	$477,412	$882,008
Exports of gold	"	$15,929,051	$10,040,813	$5,037,123	$4,642,909
Number of men employed	No.	4,186	3,485	3,019	3,094
Wages paid		$4,233,044	$4,262,528	$4,284,333	$4,902,468

(*a*) The greater portion of the gold ores are treated in the reduction plants, at the mines. Thus these figures of shipments represent only a small proportion of the output from the mines.
(*b*) Includes gold from gold milling ores, copper ores and lead-zinc ores.

IRON ORE

The shipments of iron ore from Canadian mines, which in 1919 were the lowest that had been recorded in nineteen years, have again fallen off in 1920 to 129,072 tons, valued at $517,987, as compared with 197,160 tons valued at $693,386, in the previous year, and were it not for the continued operations at the Magpie and Moose Mountain mines in Ontario, commercial production would practically cease.

The shipments in 1920 included 960 tons of titaniferous ore shipped from Baie St. Paul, on the north shore of the St. Lawrence; a little over 1,200 tons from Texada Island, B.C., shipped to Seattle, 4 cars of limonite shipped from Alta Lake, Mons, B.C., to the Vancouver Gas Works, and the balance from the Magpie and Moose Mountain mines.

The Magpie siderite mine, in the Michipicoten district of Ontario, was operated throughout the year by the Algoma Steel Corporation, the siderite ore being roasted as usual in the rotary kiln plant at the mine. About 118,990 short tons of roasted ore were shipped to the blast furnace plant at Sault Ste. Marie. The raw ore averages about 34·3 per cent and the roasted ore about 50 per cent metallic iron.

Messrs. Moose Mountain, Limited, operating at Sellwood, Ont., were actively engaged till the end of November, in the development of the milling and briquetting processes, which are being employed in the treatment of these low grade magnetites. The raw ore averages about 33·8 per cent iron, while the briquettes produced during 1920 averaged about 66 per cent iron. A large tonnage of raw ore was mined during the year but only a comparatively small quantity, 7,664 short tons of briquettes, were marketed.

In the Great Lakes region ore prices Lake Erie ports were from February 2, 1920: Old Range Bessemer, $7.45 per gross ton (basis 55 per cent iron); Messabi Bessemer, $7.20; Old Range Non-Bessemer, $6.70 (basis 51·5 per cent iron); Messabi Non-Bessemer, $6.55. During the season of 1919 the ruling prices were $1 per ton less than these figures.

Of the total shipments in 1920 mine operators reported 8,855 tons as sold for export to the United States and 120,217 tons shipped to Canadian blast furnaces. **The Customs Department records show exports of iron ores to the United States** during the year of 19,879 tons, valued at $99,179, and imports of iron ore amounting to 1,938,943 tons, valued at $5,812,912.

The quantity of iron ore charged to blast furnaces in 1920 was 2,107,253 tons, of which 149,515 tons were of domestic origin and 1,957,738 tons imported. The imported ore included 621,370 tons of Newfoundland ore and 1,336,368 tons of ore from the United States. Shipments of iron ore from Wabana mines, Newfoundland, in 1920 by the two Canadian companies operating there were 651,304 short tons, of which 624,596 tons went to Nova Scotia and 36,708 tons to Great Britain and Europe, as against 499,972 tons in 1919, all of which went to Sydney and North Sydney in Cape Breton.

PIG-IRON

The total production of pig-iron in Canada in 1920, excluding the production of ferro-alloys, was 1,090,396 short tons (973,568 gross tons), having a value of $30,319,-024, as compared with a total production in 1919 of 917,346 short tons (819,447 gross tons), valued at $24,577,589, showing an increase of 172,615 tons, or 18·8 per cent. Of the 1920 total, 1,081,561 tons were made in blast furnaces and 8,835 tons were made in electric furnaces from scrap metal, chiefly shell turnings. In 1919 the blast furnace production was 910,080 tons, and the electric furnace production from scrap steel was 7,701 tons.

The production of blast furnace pig-iron in Nova Scotia in 1920 was 332,493 tons, as against 285,087 tons in 1919. In Ontario the production of blast furnace pig-iron was 749,068 tons, as against 624,993 tons in 1919.

By grades the 1920 production included: Basic, 740,598 tons; foundry and malleable, etc., 340,963 tons; low phosphorus iron (electric furnace), 8,835 tons. By grades the 1919 production included: Basic, 580,426 tons; Bessemer, 7,637 tons; foundry and malleable, etc., 322,017 tons; low phosphorus iron (electric furnace), 7,701 tons.

The blast furnace plants operated included those of the Dominion Iron and Steel Company at Sydney, N.S.; the Nova Scotia Steel and Coal Company at North Sydney; The Steel Company of Canada at Hamilton, Ont.; the Canadian Furnace Company at Port Colborne, Ont.; the Algoma Steel Corporation, Limited, at Sault Ste. Marie, Ont.; the Midland Iron and Steel Co., at Midland, Ont.

Electric furnaces were operated for the production of pig-iron from scrap at Hull, Shawinigan Falls, and Montreal, in Quebec, and at Orillia, in Ontario.

The production of ferro-alloys in Canada in 1920, including ferro-silicon, spiegeleisen and ferro-phosphorus, all with the exception of the spiegeleisen being made in electric furnaces, was about 28,173 tons, valued at $1,432,153. In 1919 the production was 48,601 tons, valued at $2,000,809.

The exports of pig-iron during 1920 were 102,628 tons, valued at $3,628,657, or an average of $35.25 per ton, and of ferro-alloys 25,422 tons, valued at $1,297,720, or an average of $51.04 per ton. The exports of pig-iron included 82,772 tons to the United States, 18,902 to the United Kingdom, and 954 tons to other countries. The ferro-alloy exports included 1,914 tons to the United Kingdom, 20,657 tons to the United States, and 2,831 tons to other countries.

The imports during 1920 included 57,483 tons of pig-iron, valued at $2,383,442, or an average of $41.46 per ton, and 7,908 tons of ferro-alloys, valued at $1,324,061, or an average of $167.43 per ton, making a total import of pig-iron and ferro-alloys of 65,391 tons, valued at $3,707,503. The United States trade records show exports to Canada during 1920 of pig-iron and ferro-alloys amounting to 56,100 gross tons (62,832 short tons), valued at $2,872,466.

STEEL

The total production of steel ingots and direct steel castings in 1920 was 1,232,697 short tons (1,100,622 long tons), of which 1,167,273 tons were ingots and 65,424 tons direct steel castings.

The total production of steel in 1919 was 1,030,342 short tons (919,948 long tons), of which 993,039 tons were ingots and 37,303 tons direct castings.

The 1920 production included: open-hearth steel, 1,192,145 tons; electric steel, 28,301 tons; crucible and converter steels, 12,251 tons.

The 1919 production included: open-hearth steel, 1,007,495 tons; electric steel, 15,502 tons; crucible and converter steels, 7,345 tons.

The total production of electric furnace steel in 1918 was 119,130 tons; in 1917, 50,467 tons, and in 1916, 19,639 tons.

The total production of pig-iron, ferro-alloys and steel in electric furnaces was 59,813 tons in 1920, as compared with 41,683 tons in 1919, 19,869 tons in 1918, and 101,031 tons in 1917.

The exports of steel during 1920 as per Customs Department records included: billets, blooms and ingots, 69,269 tons, valued at $3,696,974, or an average of $53.37 per ton; bars and rods, 85,166 tons, valued at $5,687,611, or an average of $86.82 per ton; steel rails, 61,117 tons, valued at $2,676,933, or an average of $43.80 per ton; wire and wire nails, valued at $7,407,958; structural steel, 3,458 tons, valued at $358,294, or an average of $103.62 per ton; scrap iron and steel, 129,015 tons, valued at $2,447,684, or an average of $18.97 per ton, together with a large quantity of manufactured iron and steel goods.

The production of rolled iron and steel products in 1920 (including blooms, billets and axle blanks rolled for forging purposes and blooms, billets and slabs rolled for export sale), was 1,061,614 tons of which 73,970 tons were rolled iron and 987,644 tons rolled steel. The total production of rolled products included: steel rails, 255,322 short tons; plates and sheets, 78,565 short tons; wire rods, 216,883 short tons; merchant bars and structural shapes, 423,855 short tons; rolled blooms and billets for forging purposes and rolled blooms, billets or slabs sold for export, 86,989 tons.

The total production in 1919 of finished rolled products was 804,407 tons which included: steel rails, 316,304 tons; plates and sheets, 25,408 tons; wire rods, 153,723 tons; merchant bars and structural shapes, 205,643 tons; rolled blooms and billets for forging purposes and rolled blooms, billets, or slabs sold for export, 25,090 tons.

Summary of Iron and Steel Statistics, 1917-20

		1917	1918	1919	1920
Iron ore shipped from mines	Short tons.	215,302	211,608	197,170	129,072
Canadian iron ore charged to blast furnaces	"	92,065	96,745	78,391	149,515
Imported iron ore charged to blast furnaces	"	2,084,231	2,146,995	1,674,194	1,957,738
Iron ore charged to steel furnaces	"	39,793	48,599	32,409	64,146
Pig-iron made in blast furnaces	"	1,156,789	1,163,520	910,080	1,081,561
" " elec. furnaces	"	13,691	32,031	7,701	8,835
" exported	"	12,081	2,130	63,605	102,628
" imported	"	83,400	67,397	35,800	57,483
Ferro-alloys made	"	43,465	44,704	48,601	28,173
" imported	"	12,829	35,284	4,384	7,908
" exported	"	33,212	23,781	22,449	25,422
Pig-iron and ferro-alloy consumption	"	1,264,870	1,316,025	932,349	1,181,228
" used in steel furnaces	"	1,112,082	897,537	609,670	732,486
Steel ingots and castings made	"	1,745,734	1,873,708	1,030,342	1,232,697
Steel rails made	"	46,645	162,747	316,304	255,322
Can. coke used in iron blast furnaces	"	634,962	561,135	372,203	415,742
Imp. " " "	"	723,657	861,522	689,548	788,795
Iron and steel imported	"	929,776	786,151	738,175	1,092,612
No. of completed blast furnaces	No.	15	20	17	15
No. of men employed in blast furnaces	"	1,177	1,391	1,259	1,179
Wages paid in blast furnaces	$	1,546,374	1,941,500	2,017,880	2,186,779
Value of pig-iron produced	$	24,290,101	33,495,171	24,577,589	29,939,676
Value of iron and steel goods exported	$	46,791,681	61,772,613	81,578,461	84,357,906
Value of iron and steel goods imported	$	187,191,534	178,340,779	178,210,710	249,632,055

LEAD

The production of lead in 1920 amounted to 35,953,717 pounds, valued at $3,214,262 (8·940 cents per pound), as against 43,827,699 pounds, valued at $3,053,037 (6·966 cents per pound), in 1919.

The production in 1920 included: (*a*) 28,985,590 pounds of lead bullion produced at Tadanac, B.C., and pig-lead produced at Galetta, Ont.; (*b*) 6,958,637 pounds, the estimated recoveries from lead ores exported; and (*c*) 9,490 pounds, the estimated recoveries from the gold and silver ores of Ontario also exported.

The production in 1919 included: (*a*) 34,330,920 pounds of refined lead produced at Tadanac, B.C., and pig-lead produced at Galetta, Ont.; (*b*) 9,448,113 pounds, the estimated recoveries from lead ores exported; and (*c*) 48,666 pounds, the estimated recoveries from the gold and silver ores of Ontario, also exported.

The total shipments of lead ores and concentrates, as reported by the operators, were in 1920, 64,493 tons, valued at $2,985,848, and containing 36,325,507 pounds of lead, as against 54,508 tons, valued at $3,044,839, and containing 32,147,989 pounds of lead, in 1919.

The production of refined lead at Trail in 1920 was 13,237 tons, as against 16,446 tons in 1919.

The production of lead bullion and pig-lead amounted in 1920 to 15,138 tons, as against 17,795 tons in 1919.

The imports of lead, including the lead in pigments, salts, etc., in 1920, were 15,720 tons, valued at $2,743,451, with also manufactures of lead valued at $265,507. The imports in 1919 were 7,876 tons of lead, valued at $883,536, besides manufactures of lead valued at $138,729.

The exports of lead in 1920 amounted to 3,784·1 tons, valued at $387,685, and included: lead in ores, etc., 3,774·7 tons, valued at $385,839, and pig-lead, 9·9 tons, valued at $1,846. The exports in 1919 amounted to 12,234·8 tons, valued at $1,389,012, and included: lead in ores, etc., 6,571·5 tons, valued at $616,278; and pig-lead, 5,663·4 tons, valued at $772,734.

The average price of lead in Montreal, the main Canadian market in 1920, was 8·940 cents per pound, as against 6·966 cents in 1919.

Summary of Lead Statistics

—		1917	1918	1919	1920
Ores and concentrates shipped (a)	Tons.	46,799	75,256	54,508	69,493
" " " (a)	Value.	$3,866,862	$4,705,573	$3,044,839	$2,985,848
Lead production	Tons.	16,288	25,699	21,914	17,977
"	Value.	$3,628,020	$4,754,315	$3,053,037	$3,212,262
Imports of lead	Tons.	8,490	7,853	7,876	15,720
" (b)	Value.	$1,732,428	$1,350,689	$1,022,265	$3,008,958
Exports of lead, in ores, and as pig	Tons.	7,208	15,073	12,235	3,784
" " "	Value.	$987,509	$1,990,697	$1,389,012	$387,685
Number of men employed		1,914	1,691	1,615	1,443
Wages paid		$2,295,090	$1,980,351	$1,884,338	$1,751,428

(a) Does not include zinc ore shipments—See "Zinc."
(b) Includes manufactures of lead for which no quantities are given; in 1917, $165,764; in 1918, $110,442; in 1919, $138,729, and in 1920, $265,507.

MERCURY

There has been no production of mercury recorded since 1897, although the Kerr Lake Mines, Limited, of Cobalt, Ont., in their report to shareholders mention a small recovery for 1918 and 1919.

The imports of mercury in 1920 were 209,030 pounds, valued at $272,152, as against 26,465 pounds, valued at $31,573, in 1919.

The average price of mercury in New York in 1920 was $81.12 per flask of 75 pounds, as against $92.15 in 1919.

MOLYBDENUM

There was no production of molybdenite in 1920, whereas in 1919 the production amounted to 83,002 pounds, valued at $69,203, and in 1918 to 378,029 pounds, valued at $434,733.

The production of molybdenum ores was stimulated during the war period by the demand for molybdenum for munition purposes, and although its use in the peaceful trades has been greatly extended, such relatively small quantities are required that the surplus stocks left over at the end of hostilities have been very slowly liquidated.

The exports of molybdenite in 1920 were 100 pounds, valued at $75, as against 113,500 pounds, valued at $84,226, in 1919, and 351,600 pounds, valued at $402,435, in 1918.

Summary of Molybdenum Statistics

		1916	1917	1918	1919
Ore mined	Tons.	13,522	26,871	34,030	7,280
Ore treated	"	9,106	22,605	33,935	6,783
Ore or concentrates shipped	"	610	1,554	461	46
" "	Value.	$188,316	$320,006	$428,807	$69,203
MoS_2 contents of shipments paid for	Pounds.	156,461	288,705	378,029	83,002
" "	Value.	$156,461	$288,705	$434,733	$69,203
Exports of molybdenite	Pounds.	(a)	(b) 64,700	351,600	113,500
"	Value.	(a)	(b) $ 81,173	$402,435	$84,226
Men employed	No.	262	501	119	105
Wages paid	$	$122,072	$260,692	$274,945	$35,536

(a) No figures available for 1916.
(b) Cover 9 months only.

NICKEL

The production of nickel in 1920 amounted to 61,335,706 pounds (30,667·9 tons), valued at $24,534,282 (40 cents per pound), as against 44,544,883 pounds (22,272·4 tons), valued at $17,817,953 (40 cents per pound), in 1919, showing an increase of 37·7 per cent.

This production included: (a) the nickel in the matte produced from the treatment of the Ontario nickel-copper ores partly refined in Canada at Port Colborne, Ont., and at Deschenes, Que., and partly exported for refining; and (b) the refined nickel and the estimated contents of the nickel oxides and nickel salts produced in the southeastern Ontario smelters from the treatment of the silver-cobalt-nickel-arsenic ores of the Cobalt area.

The refined nickel produced in 1920 amounted to 5,481·4 tons, as against 5,064 tons in 1919.

There were mined in 1920, 1,135,792 tons of nickel-copper ores, and smelted 1,086,159 tons, from which were produced 57,938 tons of Bessemer matte carrying approximately 30,557 tons of nickel and 16,000 tons of copper. In 1919 there were mined 572,400 tons of ore and smelted 754,567 tons, from which were produced 42,736 tons of Bessemer matte carrying approximately 22,035 tons of nickel and 12,099 tons of copper.

The imports of nickel in 1920 were valued at $827,543, and included: (a) nickel, nickel silver, German silver, in ingots, blocks, bars, sheets, etc., 735,663 pounds, valued at $256,559; and (b) manufactures of nickel valued at $570,984. The imports of nickel in 1919 were valued at $585,405 and included: (a) nickel, nickel silver, German silver, in ingots, bars, sheets, etc., 726,408 pounds, valued at $242,342; and (b) manufactures of nickel valued at $343,063.

The exports of nickel in 1920 amounted to 60,199,300 pounds, valued at $11,988,857 and included: (a) nickel in ore and matte 51,701,000 pounds, valued at $9,006,140; and (b) nickel fine 8,498,300 pounds valued at $2,982,717. The exports in 1919 were 41,016,400 pounds, valued at $8,077,593 and included: (a) nickel in ore, etc., 30,395,400 pounds valued at $4,785,173; and (b) nickel fine, 10,621,000 pounds, valued at $3,292,420.

The price of electrolytic nickel in New York was quoted at 45 cents per pound throughout 1919 and 1920.

Summary of Nickel Statistics

—		1917	1918	1919	1920
Nickel copper ore shipped	Tons.	1,509,841	1,641,617	572,400	1,135,792
" smelted	"	1,453,661	1,559,892	754,567	1,086,159
Bessemer matte produced	"	78,897	87,184	42,736	57,938
Nickel contents of matte	"	41,887	48,886	22,035	30,557
Copper "	"	21,196	23,482	12,099	16,000
Refined nickel produced from nickel-copper matte	"	.....	1,082	4,865	5,379
Refined nickle produced from cobalt-nickel ores	"	133	122	199	102
Total nickel production from all sources	"	42,165	46,254	22,272	30,668
" " "	Value.	$33,732,112	$37,002,917	$17,817,953	$24,534,282
Imports of nickel	Tons.	427	319	363	368
" (a)	Value.	$519,064	$443,103	$585,405	$827,543
Exports of nickel in ore, etc., and nickel fine	Tons.	40,636	43,739	20,508	30,100
" " " "	Value.	$8,708,650	$11,263,246	$8,077,593	$11,988,857
Number of men employed in nickel-copper mines	No.	2,644	2,424	1,022	1,261
Wages paid in nickel-copper mines	$	$2,981,896	$3,186,909	$1,244,713	$2,070,648

(a) Includes manufactures of nickel for which no quantities are given: in 1917, $149,718; in 1918, $204,208; in 1919, $343,063; and in 1920, $570,984.

PLATINUM AND ALLIED METALS

The most important sources of the metals of the platinum group in Canada are those of the nickel-copper ores, but no attempt to recover them in Canada had been made previous to 1919, these metals have been recovered for several years past in the refineries in the United States and England. No data is available as to the recoveries in England, but those reported in the United States are believed to be derived mostly if not all from the treatment of the Canadian nickel-copper matte. These metals of the platinum group are now being recovered in an impure state at the refinery of the International Nickel Company of Canada, Limited, at Port Colborne, Ont., and will soon be recovered also at the plant of the British America Nickel Corporation, Limited, at Deschenes, Que.

A small recovery of platinum is reported every year from the treatment of the alluvial sands of British Columbia.

The Royal Mint at Ottawa has also recovered a few ounces of platinum during the last few years from the treatment of the residues obtained in its refinery.

The Port Colborne refinery of the International Nickel Company of Canada reported in 1920 a recovery, in an impure state, of 89 ounces of platinum, 174 ounces of palladium, and 20 ounces of rhodium, osmium, etc., with also a certain quantity of gold and silver. The recovery in 1919 was 25 ounces of platinum and 62 ounces of palladium with also a small quantity of gold and silver.

The recoveries at the New Jersey refinery were in 1920, 488·9 ounces of platinum, 739·2 ounces of palladium, 390·3 ounces of rhodium, and 102·4 ounces of osmium, iridium and ruthenium. The recoveries in 1919 were: 616·7 ounces of platinum, 762·2 ounces of palladium, 227·3 ounces of rhodium, and 76·6 ounces of osmium, iridium, and ruthenium.

The Mond Nickel Company has not furnished figures as to the precious metal contents of its matte, nor of the recoveries from the residues.

The British America Nickel Corporation has not yet started treating the residues produced from the operations at Deschenes, Que.

The recovery at the Royal Mint, Ottawa, in 1920 was: 14·6 ounces of platinum valued at $775.07, as against 23·3 ounces of platinum valued at $1,990, and 0·7 ounces of palladium valued at $87 in 1919. There was also in 1919 a small recovery of iridium produced from the treatment of the South African gold bullion.

The production from the alluvial sands in 1920 was 17 crude ounces, valued at $719, as against 25 crude ounces, valued at $2,150, in 1919.

The imports of platinum in 1920 were valued at $125,977 and included: (*a*) platinum crucibles, valued at $13,772; (*b*) platinum wire, bars, strips, etc., valued at $105,718; and (*c*) platinum retorts, etc., valued at $6,487. The imports in 1919 were valued at $160,885 and included: (*a*) crucibles, valued at $15,642; (*b*) wire, bars, strips, etc., valued at $144,989; and (*c*) retorts, etc., valued at $254.

The exports of platinum in 1920 amounted to 790 ounces, valued at $85,740, and included: (*a*) platinum in ore, etc., 473 ounces, valued at $53,956; and (*b*) platinum "old and scrap," 317 ounces, valued at $31,784. The exports of platinum in 1919 were 671 ounces, valued at $62,629, and included: (*a*) platinum in ore, etc., 325 ounces, valued at $28,815; and (*b*) platinum "old and scrap," 346 ounces, valued at $33,814.

Summary of Platinum Statistics

		1917	1918	1919	1920
Platinum production from alluvial sands	Ozs.	57	39	25	17
	Value	$3,823	$2,560	$2,150	$719
Platinum recovered at the Ottawa Royal Mint	Ozs.	18	16	23	15
	Value	$1,663	$1,456	$1,990	$775
Platinum metals recovered in Canada from the treatment of Sudbury mattes:					
Platinum	Ozs.	.....	.....	25	89
	Value.	.....	.....	$1,447	$5,665
Palladium	Ozs.	.....	.....	62	174
	Value.	.....	.....	$3,534	$11,096
Rhodium, etc	Ozs.	.....	.....	.....	20
	Value.	.....	.....	.....	$1,249
Platinum metals recovered in United States from treatment of Sudbury mattes:*					
Platinum	Fine Ozs.	971	650	617	489
Palladium	" "	1,354	787	762	739
Rhodium	" "	325	473	227	390
Osmium, iridium and ruthenium	" "	.....	.....	77	102
Imports of platinum as crucibles, wire, bars, etc.	Value.	$114,279	$31,140	$160,885	$125,977
Exports of platinum in conc'tes and "old scrap"	Ozs.	331	197	671	790
	Value.	$29,599	$20,892	$62,629	$85,740

*Other residues have occasionally been treated along with those derived from the Sudbury mattes but it is believed that the greater part of these recoveries may be credited to the Canadian source.

SILVER

The production of silver in 1920 amounted to 13,330,357 fine ounces, valued at $13,450,330 (100·9 cents per ounce), as against 16,020,657 fine ounces, valued at $17,802,474 (111·122 cents per ounce), in 1919, being a decrease of 16·8 per cent in quantity and 24·5 per cent in value.

The production in 1920 included: (*a*) refined silver and silver in gold and silver bullion, 9,201,094 ounces; (*b*) silver contained in blister copper and lead bullion, 2,373,650 ounces; and (*c*) silver estimated as recoverable from ores, etc., 1,755,613 ounces.

The production in 1919 included: (*a*) refined silver and silver in bullion, 11,717,599 ounces; (*b*) silver contained in blister copper, 927,308 ounces; and (*c*) silver estimated as recoverable from ores exported, 3,375,750 ounces.

In 1920 Ontario produced 74·3 per cent of the total, as against 75·5 per cent in 1919; British Columbia produced 25·0 per cent, as against 23·1 per cent in 1919. The balance was derived from Quebec, Manitoba, and the Yukon Territory.

The imports of silver in 1920 were: (*a*) silver bullion, valued at $2,453,450; (*b*) sterling silver, valued at $314,869; (*c*) silver coins, valued at $100; and (*d*) silver medals, valued at $14,043. The imports in 1919 were: (*a*) silver bullion, valued at $3,458,097; and (*b*) sterling silver, valued at $131,766.

The exports of silver in 1920 were: 11,834,504 fine ounces, valued at $12,238,209, and included: (*a*) silver in ores, etc., 1,903,130 ounces, valued at $2,007,550; and (*b*) silver in bullion, 9,931,374 ounces, valued at $10,230,659. The exports in 1919 were: 15,405,161 ounces, valued at $16,410,797, and included: (*a*) silver in ore, etc., 2,854,928 ounces, valued at $2,850,592; and (*b*) silver in bullion, 12,550,223 ounces, valued at $13,560,205.

The price of silver, which was around $1.35 per ounce in January, 1920, gradually declined throughout the year, being quoted at about $1 in the middle of May and at a minimum of 63 cents in December. The average for the year was 100·9 cents per ounce.

Summary of Silver Statistics

		1917	1918	1919	1920
Shipments from the mines of Cobalt and adjacent districts:—					
Ores and concentrates (*a*)	Tons.	72,719	73,646	62,045	52,328
	Value.	$10,123,338	$9,763,737	$7,096,775	$4,703,215
Silver bullion	Tons.	318	228	179	176
	Value.	$7,628,740	$6,821,528	$4,868,543	$5,247,809
Total silver production of Canada (*b*)	Fine oz.	22,221,274	21,383,979	16,020,657	13,330,357
	Value.	$18,091,895	$20,693,704	$17,802,474	$13,450,330
Production by Provinces:—					
Quebec	Ozs.	136,194	178,675	140,926	61,003
Ontario	"	19,301,835	17,198,737	12,117,878	9,907,626
Manitoba	"	7,201	13,316	20,760	15,510
British Columbia	"	2,655,994	3,921,336	3,713,537	3,327,028
Yukon	"	119,605	71,915	27,556	19,190
Alberta and New Brunswick	"	445	.....	.....	.....
Imports of silver, as bullion, sterling and coins	Value.	$1,063,418	$437,270	$3,589,863	$2,453,450
Exports of silver, as bullion and in ores, etc.	Ozs.	21,718,784	19,357,076	15,405,161	11,834,504
	Value.	$17,621,398	$18,382,902	$16,410,797	$12,238,209
Number of men employed in Cobalt district		2,448	2,187	2,017	1,790
Wages paid		$2,667,607	$2,918,474	$2,556,767	$2,844,666

(*a*) Does not include the ore treated in the reduction plants, at the mines.
(*b*) Includes silver from silver ores of Cobalt district, with also that derived from the treatment of the lead, zinc, gold, and copper ores.

TIN

Tin ores have not yet been found in sufficient quantities in Canada to be of economic importance.

The imports of tin in 1920 were valued at $4,505,393, as against $3,367,900 in 1919, and included tin in blocks, pigs, etc., tin foil, bichloride of tin, tin ware and tin crystals.

There are also large imports of tin-plates, sheets, wire products tin-plated, the quantity in 1920 being 68,183 tons, valued at $10,130,224, as against 43,407 tons, valued at $6,436,047, in 1919.

TUNGSTEN

There has been no production of tungsten ore reported since 1918. The production has been intermittent and in very small quantities, and has been derived mostly from the mines at Burnt Hill, New Brunswick, and at Moose River, Nova Scotia.

ZINC

The production of zinc in 1920 amounted to 39,863,912 pounds, valued at $3,057,961 (7·671 cents per pound), as against 32,194,707 pounds, valued at $2,362,448 7·338 cents per pound), in 1919.

The production in 1920 included: (*a*) 37,034,000 pounds of refined zinc produced at Tadanac, B.C.; and (*b*) 2,829,912 pounds, being the estimated recoveries from ores and concentrates exported to the United States. The production in 1919 included: (*a*) 24,652,000 pounds of refined zinc; and (*b*) 7,542,707 pounds, the estimated recoveries from ores and concentrates exported.

The total shipments of zinc ores and concentrates from the mines were, in 1920, 249,136 tons, valued by the operators at $1,157,844, and containing 91,033,202 pounds of zinc, as against 135,535 tons, valued at $1,049,493, and containing 59,959,709 pounds of zinc.

The imports of zinc in pigs, sheets, etc., and manufactures in 1920, were 27,272,102 pounds, valued at $2,458,205, besides other manufactures of zinc valued at $96,961, as against 26,445,461 pounds, valued at $2,088,021, and other manufactures of zinc valued at $43,155.

The imports of brass, which alloy contains about 30 per cent zinc, were valued in 1920 at $1,097,121, with also manufactures of brass, valued at $5,240,654, as against imports of brass valued at $697,996, and manufactures of brass valued at $3,559,742, in 1919.

The exports of zinc in 1920 were: zinc ore, 3,126 tons, valued at $122,387, and metallic zinc, 3,490 tons, valued at $512,279, as against 6,630 tons of zinc ore valued at $296,212, and 3,847 tons of metallic zinc valued at $70,249 in 1919.

The exports of brass in 1920 were valued at $851,511 and included: (*a*) brass "old and scrap," 3,439,800 pounds, valued at $475,809; (*b*) brass rods, sheets, etc., 244,000 pounds, valued at $49,728; and (*c*) brass valves, valued at $325,974. The exports in 1920 were valued at $1,685,941 and included: (*a*) "old and scrap," 9,656,900 pounds, valued at $1,275,448; (*b*) rods, sheets, etc., 535,500 pounds, valued at $173,654; and (*c*) valves, valued at $236,839.

The price of zinc in Montreal in 1920 averaged 9·558 cents per pound, as against 9·284 cents in 1919.

There was no quotation for zinc in New York during the last quarter of the year, so that no average can be given.

The price in St. Louis averaged 7·671 cents per pound. This price is slightly below the New York price.

Summary of Zinc Statistics

—		1917	1918	1919	1920
Ores and concentrates shipped	Tons.	116,489	121,200	135,535	249,136
	Value.	$1,323,985	$1,228,195	$1,049,493	$1,157,844
Zinc production	Tons.	14,834	17,542	16,097	19,932
	Value.	$2,640,817	$2,862,436	$2,362,448	$3,057,961
Refined zinc product	Tons.	9,985	12,574	12,326	18,517
Imports of zinc.....(*a*)	Tons.	18,566	15,055	13,223	13,636
	Value.	$3,641,272	$2,804,027	$2,131,176	$2,458,205
Imports of brass and man'frs of brass	Value.	$4,051,410	$4,670,140	$4,257,738	$6,337,775
Exports " " "	"	.....	.....	$1,685,941	$851,511
Exports of zinc ore	Tons.	(*c*) 5,972	10,545	6,630	3,126
	Value.	$320,296	$476,791	$296,212	$122,387
Exports of metallic zinc	Tons.	(*d*)	(*d*)	3,847	3,490
	Value.	(*d*)	(*d*)	$701,249	$512,279

(*a*) Includes manufactures of zinc valued at $21,711 in 1915; at $48,101 in 1916; at $79,044 in 1917; at $85,177 in 1918, at $43,155 in 1919, and at $96,961 in 1920.
(*b*) Not separately classified previous to April, 1918.
(*c*) For nine months only.
(*d*) Previous to 1919 not separately classified.

NON-METALLIC PRODUCTS

ABRASIVE MATERIALS

Corundum.—Sales of grain corundum in 1920 were reported as 197 tons, valued at $24,547. There were no sales in 1919.

Three hundred and twenty-two tons of grain corundum were recovered in 1920 from 13,025 tons of old mill tailings treated, as against twenty-six tons recovered in 1919 from 1,300 tons. In the earlier days of the industry from 6 to 10 per cent of the rock milled was recovered in the form of grain corundum. During recent years a much lower grade has been milled.

Corundum is found in an area embracing several townships in Renfrew and Hastings counties, in the province of Ontario. The industry made its appearance there in 1900, the production reaching a maximum in 1906. From 1907 to 1913 the yearly production was smaller, but fairly uniform. Operations were indefinitely suspended during August, 1918, but were renewed again in 1919, since which time old tailings have been treated for the recovery of grain corundum.

Exports for the calendar year 1920 are given by the "Trade" reports as 954 tons, valued at $115,031.

Grindstones, Pulpstones, etc.—The total production of grindstones, pulpstones, and scythestones in 1920 was 2,444 tons, valued at $88,136, as against a production in 1919 of 2,020 tons, valued at $60,516.

The production of abrasives has been a long-established industry in Nova Scotia and New Brunswick, and in so far as output is concerned has remained practically stationary for many years.

Production

(In Short Tons)

Calendar Year	Corundum-bearing rock treated	Grain corundum graded	% Recovery	Grain Corundum				Average price, *cents per pound*
				Sold in Canada	Exported	Total	Total value	
							$	
1915	1,724	116	6·7	21	240	262	33,138	6·33
1916	1,864	67	3·6	8	59	67	10,307	7·65
1917	4,659	188	4·0	16	172	188	32,153	8·55
1918	3,184	137	4·3	0	137	137	26,112	9·9
1919	1,300	26	2·0	0	0	0	0	0·
1920	(a) 13,025	322	2·5	20	176	196	24,547	6·25

(a) Tailings only.

	1917		1918		1919		1920	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		$		$		$		$
Production—								
Nova Scotia Tons.	375	9,875	256	8,000	283	9,000	211	8,440
New Brunswick... "	2,148	35,879	2,816	75,005	1,737	51,516	2,233	79,696
	2,523	45,754	3,072	83,005	2,020	60,516	2,444	88,136
Exports of grindstones(a)	.....	31,304	.....	47,148	.....	38,682	.....	41,705
Exports—Abrasives.								
(m)Artificial	.....	.....	.....		.....	(m)465,228	.....	.....
(o)Artificial, crude....Cwt.	.....	.....	.....	2,028,839	.....	(n)1,040,132	598,664	1,579,508
Artificial, for wheels,etc	.....	.....	.....		.....	(n) 14,858	.....	41,138
(g)Natural, n.o.p.....Cwt.	.....	.....	.....	.....	8,529	10,743	81,330	236,569
Imports—Abrasives								
Grindstones	.....	185,607	.....	297,287	.....	281,066	.....	312,672
(b) Burrstones.....No.	519	910	733	1,571	1,106	3,421	343	1,655
(c) Emery	.....	79,176	.....	89,020	.....	38,106	.....	69,462
(d) Mfgs. emery	.....	553,660	.....	570,892	.....	316,322	.....	471,853
(e) Pumice stone	.....	34,162	.....	36,938	.....	29,910	.....	57,068
(f) Iron sand	.....	36,737	.....	67,528	.....	10,247	.....	17,000
(g) Sand paper	.....	331,776	.....	317,048	.....	362,069	.....	560,180
Artificial abrasives	.....	112,614	.....	134,328	.....	82,866	.....	251,260
	.....	1,334,642	.....	1,514,612	.....	1,124,007	.....	1,741,150

(a) Including stone for the manufacture of grindstones. (b) Burrstones in blocks, rough or unmanufactured, not bound up or prepared for binding into millstones. (c) Emery in bulk, crushed or ground, duty free. (d) Emery and carborundum wheels and manufactures of emery or carborundum. (e) Pumice and pumice stone, ground or unground. Duty free. (f) Iron sand or globules for polishing glass or granite, or for sawing stone. Duty free. (g) Sandpaper, glass, flint, and emery paper or emery cloth. (m) No entries under this class since April, 1919. (n) Last nine months. (o) Including carborundum; (q) In ore or bulk, crushed or ground; infusorial earth, rotten stone, tripoli, etc.

The grindstones are shipped chiefly in a finished condition and are marketed in Canada, Newfoundland, and the United States, the prices ranging in 1920 from $30 to $62 per ton, as against $30 to $50 per ton in 1919.

A number of pulpstones are usually made each year. Scythestones, both finished and in the rough, are also shipped, as well as occasionaly small quantities of grit for marble polishing.

The greater portion of the Canadian production of grindstones is exported. The value of the finished grindstones so exported during 1920 was $41,705, as compared with $38,682, in 1919.

To meet Canadian requirements, in Ontario and Quebec chiefly, there were imported during 1920 grindstones to the value of $312,672; burrstones, 343, valued at $1,655; emery, $69,462; manufactures of emery, $471,853; pumice stone, $57,068; sandpaper, $560,180; iron sand for glass, or polishing, or for sawing stone, $17,000; artificial abrasives, valued at $251,260, or a total value of $1,741,150.

Tripolite (diatomaceous or infusorial earth).—The shipments of tripolite in 1920 were reported as 260 tons, valued at $8,600, as compared with shipments in 1919 of 565 tons, valued at $11,300.

The shipments from year to year have varied considerably, and in some seasons the producing companies shipped from stock only, as was the case in 1919.

Since 1902, Nova Scotia has been the only province from which shipments of tripolite have been made. At the present time the principal operator is the Oxford Tripoli Company, operating in Colchester county. The crude product is dried and treated in a small mill.

A brief review of the uses of tripolite, together with a list of the principal known Canadian occurrences, was published in the Annual Report on Mineral Production for 1914.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
Production	600	$ 18,000	500	$ 12,500	565	$ 11,300	260	$ 8,600

ACTINOLITE

Mining operations were carried on for a short time only during 1920; shipments were reported as 100 tons, valued at $1,160—the value of the material after having been milled and prepared for market.

Production of actinolite in Canada has been confined to Elzevir and Kaladar townships, in Hastings and Addington counties, province of Ontario, the centre of the industry being Actinolite. The earliest operations date back to about 1883. For a time deposits were worked only at intervals long apart, when sufficient rock was broken to meet the demand for several subsequent years.

Actinolite is used as an ingredient for a coal-tar roofing compound, the grinding of the crude material being done in such a way so as not to destroy the fibre.

The only shipper in recent years is the Actinolite Mining Company, of Bloomfield, New Jersey, U.S.A., which owns the deposit noted, and also a grinding mill at Actinolite.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
Production	120	$ 1,320	228	$ 2,508	80	$ 880	100	$ 1,160

ARSENIC

The demand for arsenic has been particularly strong. The Canadian production includes arsenious oxide, refined and crude, produced in the smelting of the arsenical silver-cobalt-nickel ores of the Cobalt district; in addition to which arsenic has been recovered at Tacoma, Wash., from the arsenical gold concentrates shipped from the Hedley gold mine at Hedley, B.C.

The total production in 1920 was 1831 tons of arsenious oxide and approximately 628 tons of arsenic in concentrates, having a total valuation of $447,848. The production in 1919 was 2,859 tons of arsenious oxide and approximately 530 tons of arsenic in concentrates, having a total valuation of $509,924.

The exports of white arsenic in 1920 were 1,655 tons, valued at $313,311. The imports of white arsenic were 962 pounds, valued at $201; imports of sulphide of arsenic, 337,153 pounds, valued at $43,445; and imports of arseniate, bi-arseniate, and stannate of soda, 48,863 pounds, valued at $10,568.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production:—								
From arsenical concentrates	280	11,200	1,078	43,114	530	21,218	628	22,231
White arsenic	2,656	658,231	2,482	520,525	2,859	488,706	1,831	425,617
	2,936	669,431	3,560	563,639	3,389	509,924	2,459	447,848
Exports: arsenic	4,286	507,898	2,672	393,883	2,506	355,654	1,655	313,311
	Pounds.		Pounds		Pounds		Pounds	
Imports:—								
White arsenic	247,610	32,083	995	222	4,706	1,325	962	201
Sulphide of arsenic	252,848	22,053	301,985	33,351	304,694	26,613	337,153	43,445
Arseniate of soda	4,469	588	121	34	5,566	1,661	48,863	10,568

ASBESTOS

As usual the production has all been derived from Black Lake, Thetford, Robertsonville, Coleraine, East Broughton and Danville, in the Eastern Townships, province of Quebec.

There was a slight increase in the output of both crude and milled asbestos in 1920 as compared with the previous year. The shipments however showed an increase of over 30 per cent in quantity, and 35 per cent in value.

The total value of the shipments of asbestos and asbestic in 1920 was $14,792,201, as against $10,975,369 in 1919.

The average number of men employed in mining was 2,150 and in milling 1,422, or a total of 3,572, and the total wages paid were $4,765,305. The tonnage of rock mined and quarried was 3,142,827 and the tonnage milled 2,668,946.

Exports of asbestos during 1920 were 152,740 tons, valued at $11,521,536, or an average of $75.43 per ton, and of asbestic sand and waste, 36,303 tons, valued at $365,920, or an average of $10.08 per ton. There was also an export of manufactures of asbestos valued at $196,067. In 1920 there were 11,881 tons, valued at $1,270,172, exported to Great Britain; 115,283 tons, valued at $7,955,772, to United States; 2,011 tons, valued at $216,867, to France; 2,390 tons, valued at $290,609, to Italy; 4,863 tons, valued at $293,344, to Japan; 8,251 tons valued at $698,615, to Belgium; 3,265 tons, valued at $396,933, to Germany; and 4,796 tons, valued at $399,224, to other countries.

The imports of asbestos and manufactures of asbestos in 1920 were valued at $1,047,031.

Output, Sales, and Stocks of Asbestos

	Output	Sales			Stocks on hand December 31		
	Tons	Tons	Value	Per ton	Tons	Value	Per ton
1919			$	$		$	$
Crude	4,065	3,928	3,214,022	818·23	1,338	974,260	728·14
Mill stock	153,507	132,837	7,695,430	57·93	31,110	1,952,629	62·76
	157,572	136,765	10,909,452	79·77	32,448	2,926,889	90·20
Asbestic	.....	22,471	65,917	2·93	.....	.....	.....
1920							
Crude	4,098	3,894	3,811,762	978·88	1,295	1,443,583	1,124·73
Mill stock	165,348	174,723	10,922,837	62·52	22,114	1,650,981	74·66
	169,446	178,617	14,734,599	82·49	23,409	3,094,564	132·19
Asbestic	.....	20,956	57,602	2·75	.....	.....	.....

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Rock mined	2,635,010	.....	2,462,381	.....	3,082,384	.....	3,142,827	.....
Rock milled	2,260,191	.....	2,185,572	.....	2,636,783	.....	2,668,946	.....
Output—								
Milled	135,475	.....	139,143	.....	153,507	.....	165,348	.....
Crude	6,268	.....	4,313	.....	4,065	.....	4,098	.....
	141,743	.....	143,456	.....	157,572	.....	169,446	.....
Mill recovery %	6·0	.....	6·4	.....	5·8	.....	6·2	.....
Sales—								
Asbestos	135,502	7,183,099	141,462	8,936,804	136,765	10,909,452	178,617	14,734,599
Asbestic	18,279	47,284	16,797	33,993	22,471	65,917	20,956	57,602
	153,781	7,230,383	158,259	8,970,797	159,236	10,975,369	199,573	14,792,201
Exports—								
Asbestos	93,932	4,903,326	119,454	7,786,710	119,122	9,625,695	152,740	11,521,536
Sand and waste	52,088	430,956	22,144	228,059	25,306	260,775	36,303	365,920
Manufactures	.....	55,666	.....	40,763	.....	232,501	.....	196,067
	.....	5,389,948	.....	8,055,532	.....	10,118,971	.....	12,083,523
Imports—	.....	537,431	.....	604,703	.....	656,037	.....	1,047,031

BARYTES

Shipments of ground barytes in 1920 were 751 tons, valued at $22,983, as compared with 468 tons, valued at $8,154, in 1919.

During recent years the only barytes deposit worked in Canada has been that at Lake Ainslie, Inverness county, N.S. In the province of Ontario, however, a deposit located in Langmuir township, south of Porcupine, has been under development during the past few years by the Premier Langmuir Mines, Limited.

The imports of barytes were 2,998 tons, valued at $74,314. The imports of barium peroxide for the manufacture of hydrogen peroxide amounted to 83 tons, valued at $40,986, in 1920, as compared with 52 tons, valued at $23,788, in 1919. There is also a small import of artificial sulphate of barium known as blanc fixé, the imports being included with satin white. These imports in 1920 were 2,429 tons, valued at $102,198.

Blanc fixé (barium sulphate) is artificially prepared by treating a solution of barium salt, generally the chloride with sulphuric acid, or aluminium sulphate. It is used for coating papers.

Satin white is an artificially prepared mineral for coating paper, consisting of precipitated calcium sulphate and alumina, prepared by grinding together the necessary proportions of alum and slaked lime with sufficient water.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production—								
Nova Scotia	3,490	54,027	580	9,145	468	8,154	751	22,983
Ontario	.....	.....	60	1,020	.....	.....	.....	.....
Imports—								
Barium peroxide	73	17,393	53	27,893	52	23,788	83	40,986
Blanc fixé and satin white	3,600	90,482	3,528	92,241	3,718	114,732	2,429	102,198
Barytes	.....	.....	.....	.....	(a) 1,585	34,441	2,998	74,314

(a) Not separately classified previous to April, 1919.

CHROMITE

The total shipments in 1920 of ores and concentrates, all from the Eastern Townships, Quebec, were 11,016 short tons, valued at $251,379, or an average of $22.82 per ton, the total content of Cr_2O_3 being 5,105 tons.

The 1920 shipments included: crude ore, 3,095 short tons, valued at $78,495, or an average of $25.36 per ton, and with an average of Cr_2O_3 content of 38·0 per cent; concentrates, 7,921 short tons, valued at $172,884, or an average of $21.83 per ton, and with an average Cr_2O_3 content of 49·6 per cent. The crude ore shipped included 1,482 tons sold for consumption in Canada and 1,613 tons sold for export. The concentrates with the exception of about 339 tons were sold for export.

The exports of chromite in 1920 as per "Trade" reports were 8,431 tons, valued at $151,456, or an average of $17.96 per ton, as compared with exports in 1919 of 9,078 tons, valued at $198,733, or an average of $21.89 per ton.

Ferro-chrome has been imported into Canada, but there is no separate record of the quantities thereof. The imports of bichromate of soda in 1920 were 1,358,080 pounds, valued at $267,235; and imports of bichromate of potash, 37,825 pounds, valued at $14,256.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production (shipments)—								
Crude ore	20,153	441,540	15,605	456,408	3,376	69,894	3,095	78,495
Concentrates	3,558	140,256	6,389	410,714	5,165	159,004	7,921	172,884
	a 23,711	581,796	21,994	867,122	8,541	228,898	11,016	251,379
Shipments by Provinces—								
Quebec	36,725	499,682	21,324	835,727	8,541	228,898	11,016	251,379
Br. Columbia	.....	.....	670	31,395	.....	.....	.....	.....
Exports	19,229	342,528	15,831	353,616	9,078	198,733	8,431	151,456
Imports—								
Bichromate of soda	667	248,621	523	208,669	502	113,478	679	267,235
Bichromate of potash	10·1	6,697	10·4	10,686	29	19,525	8	5,650

(a) Shipments as reported directly by operators in 1917, were 36,725 tons valued at $499,682.

COAL AND COKE

Coal.—The total production of marketable coal during 1920 (comprising sales, colliery consumption, and coal used in making coke, or used otherwise by colliery operators) was 16,631,954 short tons, valued at $80,693,723, or an average of $4.85 per ton.

The production in 1919 was 13,681,218 short tons, valued at $54,413,349, compared with which the 1920 production shows an increase of 2,950,736 tons, or 21·57 per cent in quantity, and $26,280,374, or 48·30 per cent, in total value.

The total output of coal, including waste and unmarketable slack, in 1920, was 17,023,391 tons, as against 14,080,655 tons in 1919.

The 1920 production included 155,679 tons of anthracite, all from one mine in Alberta; 12,865,851 tons of bituminous coal and 3,610,424 tons of lignite.

The Nova Scotia production increased by 708,918 tons, as compared with 1919; New Brunswick fell off by 13,060 tons; Saskatchewan decreased by 36,694 tons; Alberta increased by 1,868,965 tons; British Columbia increased by 422,944 tons; and Yukon decreased by 337 tons.

Output[1] and Production[2] of Coal by Provinces, 1920

Province	No. of active operators	Average No. of men employed	Wages paid	Production of Coal				Output
				Short tons	Per cent of total	Value	Average per ton	Short tons
			$		%	$	$	
Nova Scotia	28	12,241	17,282,725	6,429,291	38·66	32,238,129	5·02	6,495,237
New Brunswick	14	476	584,344	166,048	1·00	1,055,286	6·36	165,811
Saskatchewan	63	453	582,964	343,475	2·06	819,320	2·38	346,328
Alberta	250	10,054	19,667,521	6,833,500	41·09	29,349,608	4·37	6,904,935
British Columbia	13	6,156	11,049,071	2,858,377	17·17	16,726,950	5·85	3,110,217
Yukon Territory	1	7	4,613	763	.....	4,430	6·00	863
Total	369	29,387	49,171,238	16,631,954	100·00	80,693,723	4·85	17,023,391

[1] Output includes waste and unmarketable slack. [2] Production includes sales, colliery consumption and coal used by operators in making coke, or for other uses.

Coal: Production by Provinces, by Kinds, Imports and Exports

	1917		1918		1919		1920	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
		$		$		$		$
Output	14,435,361	.....	15,460,385	.....	14,080,655	.....	17,023,391	.....
Production: *by provinces*—								
Nova Scotia	6,327,091	19,410,737	5,818,562	21,095,470	5,720,373	22,078,726	6,429,291	32,238,129
N. Brunswick	189,095	708,010	268,212	1,331,710	179,108	794,761	166,048	1,055,286
Saskatchewan	355,445	662,451	346,847	722,148	380,169	820,522	343,475	819,320
Alberta	4,736,368	14,153,685	5,972,816	20,537,287	4,964,535	18,294,495	6,833,500	29,349,608
B. Columbia	2,433,888	8,235,716	2,568,589	11,494,681	2,435,033	12,420,445	2,858,377	16,726,950
Yukon	4,872	20,232	2,900	11,600	1,100	4,400	763	4,430
	14,046,759	43,199,831	14,977,926	55,192,896	13,681,218	54,413,349	16,631,954	80,693,723
Production: *by kinds*—								
Anthracite	108,225	35,359,920	115,405	44,967,894	111,324	44,357,443	155,679	65,974,658
Bituminous	11,154,251		11,036,190		10,642,902		12,865,851	
Lignite	2,784,283	7,830,911	3,226,331	10,225,002	2,926,992	10,055,906	3,610,424	14,719,065
Imports—								
Bituminous[1]	12,407,486	33,712,894	13,656,360	37,291,057	10,127,965	24,750,717	11,548,475	50,808,626
Bituminous[2]	3,129,776	8,739,877	3,237,067	8,351,639	2,228,197	4,814,388	2,312,754	10,451,621
Anthracite	5,320,198	28,109,586	4,785,160	26,007,888	4,952,675	31,595,694	4,881,313	36,773,351
	20,857,460	70,562,357	21,678,587	71,650,584	17,308,837	61,160,799	18,742,542	98,033,598
Exports—								
The produce of Canada	1,733,156	7,387,192	1,817,195	9,405,423	2,070,050	12,438,885	2,558,174	18,014,899
All other	47,328	173,176	67,486	205,389	56,988	157,202	84,801	501,911
Consumption	33,123,735	106,201,820	34,771,832	117,232,668	28,363,017	102,978,061	32,731,521	160,210,511

[1] Round and run-of-mine. [2] Slack such as will not pass through ¾" screen

Coke.—The accompanying statistics cover only the production of coke in by-product and Beehive oven plants and do not include retort coke recovered by gas companies.

Both domestic and imported coal are used in the manufacture of coke in Canadian coke-oven plants.

The total output during 1920 was 1,306,644 short tons made from 2,046,969 tons of coal, of which 957,945 tons were of domestic origin and 1,089,024 tons imported. The output thus averaged 0·638 tons of coke per ton of coal charged. The total coke used, or sold by producers during the year was 1,327,180 tons, valued at $14,515,674, or an average of $10.94 per ton.

By provinces the output was: Nova Scotia, 428,298 tons; Ontario, 726,728 tons; and British Columbia, 151,618 tons.

The ovens operated during the year were those at Sydney and Sydney Mines, N.S., Sault Ste. Marie and Hamilton, Ont., and Fernie and Anyox, B.C.

At the close of the year 660 ovens were in operation.

The exports of coke in 1920 were 39,536 tons, valued at $390,161, or an average of $9.87 per ton, as against exports in 1919 of 14,709 tons, valued at $129,703, or an average of $8.82 per ton. The imports of coke in 1920 were 586,406 tons, valued at $6,458,596, or an average of $11.01 per ton, as against imports in 1919 of 383,374 tons, valued as $2,405,740, or an average of $6.27 per ton.

The estimated consumption of oven coke in 1920 was 1,874,050 tons as compared with 1,502,345 tons in 1919.

Of the total output of coke, 1,140,276 tons or 87·3 per cent, were made in by-product recovery ovens and the recovery of by-products included: **ammonium sulphate**, 19,934 tons, and tar, 14,026,172 gallons, as against 11,765 tons of ammonium sulphate and 12,394,249 gallons of tar in 1919.

Coke and Coke By-products

		1917		1918		1919		1920	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
			$		$		$		$
Coal charged—									
Domestic	Tons.	1,379,038		1,348,232		854,835		957,945	
Imported	"	549,885		635,010		1,025,706		1,089,024	
Total	"	1,928,923		1,983,242		1,880,541		2,046,969	
Output: coke	"	1,231,865		1,258,284		1,160,470		1,306,644	
Recovery	%	63·9		63·4		61·7		63·8	
Production—									
Nova Scotia	Tons.	643,757	3,218,785	580,433	5,966,609	383,253	3,939,906	429,618	4,349,986
Ontario	"	389,048	2,155,326	425,087	3,300,127	649,506	4,886,662	746,246	8,163,613
Alberta	"	31,649	181,982	32,564	213,884	565	3,602		
British Columbia	"	181,408	1,106,488	212,570	1,554,575	100,356	890,217	151,316	2,002,075
Total	"	1,245,862	6,662,581	1,250,744	11,035,195	1,133,680	9,720,387	1,327,180	14,515,674
Exports	"	23,595	137,318	29,612	223,629	14,709	129,703	39,536	390,161
Imports	"	970,106	6,517,260	1,165,590	8,975,445	383,374	2,405,740	586,406	6,458,596
Consumption	"	2,192,373	13,042,523	2,386,722	19,787,011	1,502,345	11,996,424	1,874,050	20,584,109
By-products—									
Ammonium Sulphate—									
Production	Tons.	9,941		10,825		11,765		19,934	
Imports	"	283·5	26,062	4·2	1,273	101·7	12,129	312·3	31,531
Exports	"	(a) 8,047	693,377	8,696	1,027,558	18,488	1,821,880	18,329	1,896,660
Tar—									
Production	Gals.	8,277,078		8,009,327		12,394,249		14,026,172	
Exports	"		43,547		67,646	(b) 836,210	61,654	8,815,172	481,259
Imports: coal tar, crude, and coal pitch	"	2,388,331	146,962	2,579,273	192,569	2,988,280	193,011	3,527,667	256,740
coal tar, base or salt (paranitraniline)—	Lbs.	81,978	61,103	96,458	63,803	60,463	43,205	82,466	51,395
Gas	M. ft.	3,963,826		4,699,009		8,538,210		10,675,863	
Ovens in operation Dec. 31	No.	1,657		1,640		587		660	

(a) Not separately shown previous to April, 1917. (b) Quantity for 9 mos.

FELDSPAR

The shipments of feldspar in 1920 were 37,873 tons, valued at $280,895, or an average of $7.42 per ton, as compared with shipments in 1919 of 14,679 tons, valued at $86,231, or an average of $5.87 per ton.

The greater part of the feldspar shipped from Canadian mines is marketed with the pottery manufacturers in the United States. The production comes chiefly from the counties of Frontenac and Lanark, Ontario, and the counties of Ottawa and Labelle in Quebec.

The exports of feldspar during the year were 38,768 tons, valued at $219,744.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	value
		$		$		$		$
Production (shipments)—								
Quebec	1,188	8,204	191	4,279	925	13,073	649	10,052
Ontario	18,274	81,622	18,591	108,449	13,754	73,158	37,224	270,843
	19,462	89,826	18,782	112,728	14,679	86,231	37,873	280,895
Exports	(a)....	69,195	.....	101,187	.....	104,285	38,768	219,744
Imports	.....	.....	.....	.....	(b) 980	15,863	1,991	44,390

(a) Not separately stated prior to April, 1917. (b) Last 9 months.

FLUORSPAR

The production of fluorspar was double that of the previous year.

The total shipments during 1920 were 11,235 tons, valued at $240,446, as compared with 5,063 tons, valued at $97,837, in 1919.

Only three companies in the Madoc district reported shipments during the year, at an average value of $18.22, as compared with an average of $17.31 in 1919. Prices varied with the grade of the product from $17.50 to $20.50 per ton.

The Consolidated Mining and Smelting Company operated the "Rock Candy" fluorspar deposit on Kennedy creek, Kettle river, near Grand Forks, B.C., and reported a production nearly double that of Ontario.

The imports during the year were 6,812 tons, valued at $113,818, while the exports were 6,900 tons, valued at $109,683.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production—								
Ontario	4,249	68,756	7,187	150,779	3,425	59,281	3,758	68,475
British Columbia	.....	.....	175	5,250	1,638	38,556	7,477	171,971
	4,249	68,756	7,362	156,029	5,063	97,837	11,235	240,446
Exports	.....	.....	.....	.....	(a) 697	9,616	6,900	109,683
Imports—								
Hydro-fluo-silicic acid	0·2	97	0·5	80	2·8	747	1·2	409
Fluorspar	.....	.....	.....	.....	(a) 8,273	84,702	6,812	113,818

(a) Last 9 months.

GRAPHITE

The total shipments of graphite in 1920 were 2,190 tons, valued at $165,617, and included 1,957 tons, valued at $133,704, from Ontario, and 233 tons, valued at $31,913, from Quebec. By grades there were 196 tons of No. 1 flake, valued at $40,382, or an average of $206.03 per ton; 255 tons of No. 2 flake, valued at $28,572, or an average of $126.99 per ton; and 1,769 tons of No. 3, and dusts, valued at $96,663, or an average of $54.64 per ton.

In 1919, Ontario contributed 1,340 tons, valued at $99,821, and Quebec, 20 tons, valued at $400.

The quantity of ore milled during the year was 5,153 tons, from which were produced 2,155 tons of milled, or refined graphite.

The Black Donald (Calabogie, Ont.) ore consists largely of amorphous graphite, from which a large mill recovery was made.

Graphite operators reported that of the total shipments, 2,029 tons, valued at $149,606, were sold for export. Trade records show exports of graphite or plumbago, crude and refined, 2,142 tons, valued at $159,817. The Customs exports classification was revised as from April 1, 1919, the class "plumbago, crude and concentrates" being replaced by "graphite, or plumbago, crude and refined."

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Ore milled	19,614	.....	11,358	.....	7,076	.....	5,153	.....
Output, milled graphite	4,003	.....	3,225	.....	1,648	.....	2,155	.....
Production (shipments)—								
No. 1 Flake	540	158,656	366	97,518	95	22,100	196	40,382
No. 2 Flake	650	99,621	73	13,780	103	14,853	225	28,572
No. 3 Flake and dust	2,524	144,615	2,675	137,572	1,162	63,268	1,769	96,663
	3,714	402,892	3,114	248,870	1,360	100,221	2,190	165,617
Exports—								
Crude ore and concentrates	112	7,455	664	32,710	.....	.....	.....	.....
Crude and refined	.....	.....	.....	.....	1,003	72,917	2,142	159,817
Manufactures (*a*)	.....	384,505	.....	205,993	.....	(*b*) 3,970	.....	(*b*)
Imports—								
Plumbago, not ground	.....	47,218	.....	93,956	.....	6,604	.....	4,352
Ground and manufactures	.....	123,991	.....	132,821	.....	80,970	.....	102,568
Crucibles: clay, or plumbago	.....	798,044	.....	113,856	.....	59,239	.....	176,717
	.....	969,253	.....	340,633	.....	146,813	.....	283,631

(*a*) The entries under this item are believed to be chiefly refined graphite.
(*b*) First three months only. No entries under this class since April, 1919.

Artificial Graphite.—Artificial graphite is manufactured in electric furnaces at Niagara Falls, Ont., by the International Acheson Graphite Company. The annual production has been as follows:—

Calendar Year	Pounds	Calendar Year	Pounds	Calendar Year	Pounds
1906	445,047	1911	2,172,098	1916	525,048
1907	407,779	1912	2,302,625	1917	1,096,172
1908	428,540	1913	2,184,472	1918	1,808,698
1909	513,436	1914	1,234,239	1919	358,524
1910	2,442,166	1915	497,271	1920	207,180

GYPSUM

The total quantity of gypsum rock quarried in 1920 was 460,020 tons, of which 148,864 tons were calcined. The shipments of all grades totalled 429,144 tons, valued at $1,893,991, and included: lump gypsum, 262,442 tons, valued at $457,158; crushed, 48,379 tons, valued at $146,947; fine ground, 6,615 tons, valued at $46,584, and calcined, 111,708 tons, valued at $1,243,302. By provinces the shipments were: Nova Scotia, 260,661 tons, valued at $573,752; New Brunswick, 49,405 tons, valued at $428,183; Ontario, 74,707 tons, valued at $404,162; and Manitoba, 44,371 tons, valued at $487,894.

The average number of men employed in 1920 was 1,016 and wages paid $955,602, as compared with 725 men employed and $380,105 paid in wages in 1919.

Exports of crude gypsum were 244,428 tons, valued at $413,522, and of gypsum ground, 12,576 tons, valued at $232,736.

The imports of gypsum of all grades during 1920 were valued at $78,302 and included: crude gypsum, 2,294 tons, valued at $25,477; ground gypsum, 118 tons, valued at $3,966; and plaster of Paris, 2,822 tons, valued at $48,859.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Ore, mined	365,659	.....	155,298	.....	303,998	.....	460,020	.....
Ore, calcined	97,667	.....	88,748	.....	121,496	.....	148,864	.....
Production: *by grades:*—								
Lump	223,760	246,774	43,728	47,727	172,781	206,858	262,442	457,158
Crushed	32,305	51,869	25,074	55,079	27,939	68,002	48,379	146,947
Fine ground	4,843	19,222	4,558	12,621	3,842	18,901	6,615	46,584
Calcined	75,424	564,119	78,927	707,579	94,501	921,526	111,708	1,243,302
	336,332	881,984	152,287	823,006	299,063	1,215,287	429,144	1,893,991
Production: *by Provinces:*—								
Nova Scotia	215,472	301,261	49,365	115,976	163,852	250,174	260,661	573,752
New Brunswick	38,556	191,631	27,225	214,114	42,409	315,656	49,405	428,183
Ontario	48,947	130,138	38,214	151,564	59,899	278,120	74,707	404,162
Manitoba	33,347	258,934	37,483	341,352	32,903	371,337	44,371	487,894
British Columbia	10	20	.....	.....	.....	.....	.....	.....
Exports—								
Crude	224,423	245,182	67,824	80,843	148,394	199,857	244,428	413,522
Ground	.....	146,384	.....	101,618	.....	140,235	12,576	232,736
	.....	391,566	.....	182,461	.....	340,092	.....	646,258
Imports—								
Crude	64	999	112	2,015	1,238	22,556	2,294	25,477
Ground	282	5,355	79	1,836	85	2,695	118	3,966
Plaster of Paris	3,101	29,106	1,095	18,214	1,525	22,204	2,822	48,859
	3,447	35,460	1,286	22,065	2,848	47,455	5,234	78,302

MAGNESITE

The production of magnesite obtained from the deposits in Argenteuil county, Quebec, is marketed as crude magnesite, calcined, and dead burnt clinker (the latter being sintered in rotary kilns after mixture with about 5 per cent of iron ore in the form of magnetite). The total shipments in 1920 were 18,378 tons, valued at $512,756, as compared with shipments in 1919 of 11,273 tons, valued at $328,465.

There were marketed about 4,296 tons of crude magnesite, valued at $39,779, averaging about $9.26 per ton. Calcined material sold at from $20 to $22 per ton and dead burnt clinker averaged $37.50 per ton.

In 1920 about 31,040 tons of magnesite rock were quarried and about 30,230 tons were calcined in lime-kilns, or sintered in rotary cement kilns. The sintering was done at Calumet and Grenville, Que.

Exports of magnesite in 1920 were 11,014 tons, valued at $426,710, consisting of 155 tons crude, valued at $1,662, and calcined, or dead burned material, 10,859 tons, valued at $425,048.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Crude magnesite mined	64,767	.....	57,799	.....	14,952	.....	31,040	.....
Crude magnesite calcined	11,401	.....	49,303	.....	12,214	.....	30,230	.....
Production—								
Crude magnesite	52,711	528,260	16,697	158,380	1,638	14,664	4,296	39,779
Calcined							3,154	64,402
Dead burnt	5,379	200,015	22,668	858,385	9,635	313,801	10,928	408,575
	58,090	728,275	39,365	1,016,765	11,273	328,465	18,378	512,756
Exports	.....	(c) 72,228	.....	816,553	.....	425,892	(b) 11,014	426,710
Imports—								
Magnesia	58	16,186	47	13,200	183	61,740	287	84,339
Magnesite	.....	.....	.....	.....	(c) 886	21,734	1,521	49,799

(b) Consisting of 155 tons crude valued at $1,662; balance, calcined product. (c) Last 9 months.

Metallic Magnesium.—The manufacture in Canada of metallic magnesium was carried on for a few years during the war by the Shawinigan Electro Metals Company, Limited, at Shawinigan Falls, Que., the metal being made from imported magnesium chloride salts.

Magnesium Sulphate.—Sulphate of magnesium, epsomite, or crude Epsom salt, has been found in several localities in southern British Columbia.

Commercial shipments were made during the past few years by the Stewart-Calvert Company, Inc., of Oroville, Washington, from a deposit near Kruger mountain, Osoyoos division, B.C., where the mineral is found in a flat depression known as Spotted lake, which is a partially dried-up lake containing alternate circles of water and dry places. The crude magnesium sulphate salt is hauled to the company's works at Oroville, where the crude salt is refined and prepared for the market. This deposit was not operated in 1920. In addition to this deposit, the same company owns another near Clinton, in Lillooet, B.C., from which the 1920 shipments were made.

Several lakes containing these salts have been observed on the Basque ranch, near Ashcroft. Following investigations of their probable commercial value shipments were made in 1920 by the Basque Chemical Production Company, Limited.

The greater part of the refined salt is used for industrial purposes, the tanning industry taking the largest proportion, though considerable amounts are also used in the textile industries and in the manufacture of dyes. About 20 per cent of the total shipments go to the drug trade.

During the year 743 tons, valued at $3,737, were exported, while the imports were valued at $72,709.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Quantity extracted	2,600	.....	4,500	.....	.....	.....	2,056	.....
" shipped	929	4,645	1,949	14,565	738	9,115	1,947	39,886
Exports	.....	.....	.....	.....	.....	15	743	3,737
Imports	.....	.....	.....	.....	(a)	54,779	.....	72,709

(a) Not separately classified prior to April, 1919.

MANGANESE ORE

The production of manganese ore in Canada has been small and irregular. During 1920 operations were continued at New Ross, in Nova Scotia, but the bulk of the reported shipments for the year were, however, made from the Hill 60 group of claims near the village of Cowichan Lake, Vancouver island.

The manganese ores which have been mined in eastern Canada are pyrolusite, manganite, psilomelane, and bog manganese. These were mostly ores with a high manganese content, and fairly free from deleterious constituents. The largest part of the production was consequently put to those uses, where a high-grade raw material is desired, e.g., as an oxidizing agent in the manufacture of chlorine, bromine, manganates, and permanganates; as a decolorizer of glass, porcelain, and enamels; as a colouring material in dyeing and pottery and paint manufacture; as a drier in paints and varnishes, and in the manufacture of dry and Leclanche cells, etc.

The first shipments of manganese ore from British Columbia were made in 1918 from deposits near Kaslo. These consist mainly of wad, or bog manganese.

At the Cowichan Lake deposits, Vancouver island, "Manganese ore of merchantable value is found as a mixture of secondary oxides, principally pyrolusite, psilomelane, and magnetite, derived from the alteration of rhodonite, the silicate of manganese, which occurs in strong outcrops throughout the manganiferous area. On Hill 60 claim, oxidation of the silicate has taken place on a considerably larger scale than on some of the other claims, resulting in outcrops of hard and massive oxides containing from 15 to 57 per cent metallic manganese."

Shipments from these deposits have been made to the Bilrowe Alloys Company, of Tacoma, Wash., U.S.A.

No separate record of imports of manganese ore is kept in the Trade classification but statistics of oxide of manganese are given. In 1920 these imports were 1,510 tons, valued at $93,062. Imports of ferro-silicon, spiegeleisen and ferro-manganese in 1920 were 7,908 tons, valued at $1,324,061. The exports of manganese ore in 1920 were 640 tons, valued at $19,921.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production—								
Nova Scotia	158	14,836	.....	.....	45	3,600	62	4,140
British Columbia	.....	.....	440	6,230	616	10,559	587	6,889
	158	14,836	440	6,230	661	14,159	649	11,029
Imports—								
Manganese oxide	1,769	92,616	1,068	93,477	2,082	89,314	1,510	93,062
Ferro-silicon, spiegeleisen and ferro-manganese	12,828	2,029,990	35,284	4,283,133	4,383	901,678	7,908	1,324,061
Exports—								
Manganese ore	185	16,031	784	29,208	603	13,401	640	19,921
Ferro-silicon and compounds	33,212	2,616,924	23,781	2,671,434	22,449	1,229,341	25,422	1,297,720

MICA

The total shipments of mica by mine operators in 1920 were 2,203 tons, valued at $376,022. By provinces the production was: from Quebec, 737 tons, valued at $281,460; Ontario, 1,466 tons, valued at $94,562.

The statistics as to the value of production should be considered with due regard to the conditions under which the industry is conducted. The condition in which mica is shipped from the mines varies greatly; one operator may ship his output cleaned and trimmed, while the output of another is in a rough cobbed state, with consequent noteworthy difference in prices realized. And, further, companies operating trimming shops as well as mines may place only a nominal value on shipments from mines to trimming shops.

Canada's production of mica has come exclusively from two fields: one in the province of Quebec, a short distance north of the city of Ottawa, and the other embracing parts of the counties of Lanark, Leeds and Frontenac, in the province of Ontario. The city of Ottawa (and the adjacent city of Hull), lying between these two fields, is the centre to which almost all the production of the various mines and numerous small prospects is shipped for trimming, grading, and marketing. In preparation for the market a considerable proportion of the tonnage received is cobbed out and the mica split, trimmed and otherwise manufactured, with the result that the exports, though usually of smaller tonnage than the shipments from the mines, exceed them in total value.

According to "Trade" records the exports of mica in 1920 were 3,303 tons, valued at $824,107.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production—								
Quebec	774	286,730	481	229,119	2,429	218,437	737	281,460
Ontario	392	72,121	266	42,431	325	55,351	1,466	94,562
	1,166	358,851	747	271,550	2,754	273,788	2,203	376,022
Exports—								
Cobbed	636	451,345	433	410,000	(a) 100	100,942	.....	.....
Splittings					(b) 108	214,227	42	55,724
Scrap and waste					(b) 350	314,238	522	725,946
Plate and manufactures					(b) 2,182	11,959	2,739	33,963
					(b)	596	.....	8,474
	.....	451,345	.....	410,000	.....	641,962	.....	824,107

(a) First 3 months. (b) Last 9 months.

MINERAL PIGMENTS (IRON OXIDES)

For many years there has been an annual production in the province of Quebec of iron oxide from deposits situated between Champlain and Three Rivers, a short distance from the St. Lawrence river.

These oxides are marketed after calcining, as paint materials, and are also sold crude for use in the purification of illuminating gas. The mineral paint is calcined, washed, and fine ground before shipment.

There was a small production, included in the totals for 1917, 1919 and 1920, of zinc oxide for use as a pigment, the production being obtained at the oxide plant of the Canadian Zinc Products Company, Limited, at Notre-Dame-des-Anges.

The total production of iron oxides in 1920 was 19,128 tons, valued at $157,909.

The exports of mineral pigments, iron oxides, ochres, etc., in 1920, are reported as 1,528 tons, valued at $78,913.

Imports of mineral pigments are included under two classifications: (1) ochres and ochrey earths, siennas and umbers, duty 20 per cent, and (2) oxides, roughstuffs, fillers, fireproofs and colours, dry, n.e.s., duty 25 per cent. During 1920 imports under the first classification were 3,231 tons valued at $182,997, and under the second 3,567 tons, valued at $619,923, or a total import of 6,793 tons, valued at $802,920.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production	9,409	87,605	17,317	112,440	11,862	113,427	19,128	157,909
Imports—								
Ochrey earths	1,956	59,864	1,560	66,011	1,297	65,744	3,231	182,997
Oxides	2,538	357,638	2,460	409,841	3,378	518,780	3,567	619,923
Exports: (a)	1,451	30,052	769	18,377	767	25,229	1,528	78,913

(a) Mineral pigments, iron oxides and ochres.

MINERAL WATER

The statistics of production given herewith represent as usual, as closely as can be ascertained, the value of mineral water shipped from mineral springs in bottles, barrels, or other containers, and do not include any estimate of the value of the mineral water used at springs for drinking or bathing purposes; nor are the natural pure spring waters included, of which a considerable quantity is sold in bottled form.

The value of the production in 1920 was $24,582, as compared with $71,015 in 1919; of the 1920 production Quebec is credited with $10,109, and Ontario, $14,473.

The imports of mineral and aerated waters during the calendar year 1920 were valued at $178,511, being 358 gallons of natural mineral water, valued at $405; and aerated water valued at $178,106. The exports of mineral water were valued at $12,796, of which three gallons, valued at $2, were for natural mineral water, and $12,794 for bottled aerated water.

	1917	1918	1919	1920
	Value	Value	Value	Value
	$	$	$	$
Production	145,814	154,468	71,015	24,582
Imports	108,444	105,967	113,743	178,511
Exports	10,765	20,214	59,669	12,796

NATURAL GAS

The total production of natural gas in Canada in 1920 was 16,845,518 thousand cubic feet, valued at $4,232,642, of which Ontario contributed 10,529,374 thousand cubic feet, valued at $2,920,731; Alberta, 5,633,442 thousand cubic feet, valued at $1,181,345; and New Brunswick, 682,502 thousand cubic feet, valued at $130,506.

The value of the gas, as reported by producers, varies from 5 cents to 30 cents per thousand feet, but these prices do not represent what the consumer has to pay. In some cases the producer also owns the distribution pipe line and receives the full price paid by the consumer. In other cases the producer may sell to a pipe line company who either sells directly to consumers, or may in turn resell to other pipe line companies for retail distribution; in such cases as these the producer receives only a fraction of the amount paid by the consumer, but he is saved the expense of distribution. The statistics given herewith represent, as far as possible, the value received by the producer, or owner, of the gas well, whether such producer be the owner of the distribution line or not.

Natural Gas Production, 1917-18-19

	1917		1918		1919	
	M cu. ft.	Value	M cu. ft.	Value	M. cu. ft.	Value
		$		$		$
Production—						
New Brunswick	796,775	103,735	792,396	107,842	682,890	120,510
Ontario	19,868,035	3,641,587	13,029,524	2,884,460	11,024,041	2,690,400
Alberta	6,744,130	1,299,976	6,318,389	1,358,638	8,230,838	1,365,127
Total	27,408,940	5,045,298	20,140,309	4,350,940	19,937,769	4,176,037

Natural Gas Production, 1920

Province	No. of operators	No. men	Wages	Wells, 1920						Production		
				(a)	(b)	(c)	(d)	(e)	(f)	M cu. ft.	Value	Average
			$								$	$
New Brunswick	1	17	33,729	23	....	....	2	21	....	682,502	130,506	0·191
Quebec	....	....	....	* 6	....	....	....	6	....	....	....	....
Ontario	86	494	461,916	1872	93	24	117	1862	12	10,529,374	2,920,731	0·277
Manitoba	1	....	....	1	....	....	....	1	....	200	60	0·30
Alberta	16	105	147,675	67	....	2	3	64	3	5,633,442	1,181,345	0·21
Total	104	616	643,320	1969	93	26	122	1954	15	16,845,518	4,232,642	0·251

(*a*) Total number of productive wells at beginning of year.
(*b*) Number of productive wells drilled during year.
(*c*) Number of dry wells drilled during year.
(*d*) Number of wells abandoned during year.
(*e*) Number of productive wells at end of year.
(*f*) Number of wells on which drilling was in progress at end of year.
*Idle.

PEAT

During the year two bogs were operated, one in Bruce county, and the other at Alfred, both in Ontario. About 6,300 tons were manufactured, while shipments were reported as 4,550 tons, valued at $18,650.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production	....	....	....	....	986	6,561	4,550	18,650

PETROLEUM

A bounty of 1½ cents per gallon is paid on the marketed production of crude oil from Canadian oil-fields, the administration of the "Petroleum Bounty Act" being under the Department of Trade and Commerce. According to the bounty record the production in 1920 in Ontario was 180,071 barrels (6,302,477 imperial gallons), which at the average price per barrel of $4.03⅓ was worth $726,286. The New Brunswick production was 5,148 barrels, worth about $19,963, or an average value of $3.88. For several years there has been a small but growing production of crude petroleum in Alberta, the greater part of which, however, does not earn the bounty because of its lightness, or low specific gravity. The approximate production in 1920 was 11,032 barrels, valued at $75,986.

The total production in Canada from all sources was therefore 196,251 barrels (6,868,785 imperial gallons), valued at $822,235.

The price of crude oil at Petrolia was quoted at $3.54, January, 1920, $3.63 in February, $4.06 in March, and $4.13 in April, which price remained firm to end of the year. The average monthly price was therefore $4.03⅓ as compared with $2.85 in 1919, $2.69 in 1918, $2.33 in 1917 and $1.98 in 1916.

The production (in barrels) of the various fields in the province of Ontario, as kindly furnished by the Supervisor of Petroleum Bounties at Petrolia, was as follows: Petrolia and Enniskillen, 65,082; Oil Springs, 39,388; Moore township, 7,037; Sarnia township, 3,495; Plympton township, 531; Bothwell, 26,564; Tilbury East, 623; West Dover, 12,171; Raleigh township, 488; Dutton, 837; Onondaga, 341; Mosa township, 24,063; Thamesville, 1,131.

The production in New Brunswick is all obtained in the Stoney Creek district, Albert county. The Alberta production was obtained from six wells situated in the Turner Valley field, near Black Diamond, and about 35 miles southwest of Calgary.

In 1920, ten oil refineries in Canada used 294,479,064 gallons of crude oil, of which 288,076,946 gallons were imported and 6,402,118 gallons were obtained from Canadian wells. The production of refined oils and petroleum products included: gasolene and motor oils, 83,890,326 gallons; benzoline, benzine, and other light oils, 5,701,558 gallons; illuminating oils, 54,155,655 gallons; lubricating oils, 21,890,082 gallons; gas and fuel oils and tar, 88,248,396 gallons; wax and candles, 10,398,126 pounds; petroleum coke, 67,054,149 pounds. There was also a production of asphalt and other products amounting to $1,715,087. The total value of the products of refineries was $57,347,479.

According to inspection returns of the Inland Revenue Department the total quantity of illuminating oils inspected during the calendar year 1920 was 58,940,118 gallons, and the quantity of naphtha or gasolene and other light oils was 99,826,802 gallons.

Exports of petroleum entered as crude mineral oil in 1920 were 2,684,427 gallons, valued at $293,325, and of refined oil, 1,243,335 gallons, valued at $205,999. There was also an export of naphtha or gasolene of 160,433 gallons, valued at $59,432.

The total value of the imports of petroleum and petroleum products in 1920 was $47,786,550, as against a value of $30,077,722 in 1919.

In 1920, the total petroleum oils, crude and refined, imported were 491,372,140 gallons, as compared with 451,303,731 gallons in 1919. A detailed record will be found in the accompanying tables.

Oil Wells and Oil Shipments, 1920

Province	Men employed	Wages paid	(a)	(b)	(c)	(d)	(e)	(f)	(g)	Oil Shipped (h)		
										Barrels	Value	Average value
		$									$	$
New Brunswick	*	*	6	1	....	3	3	9	....	5,148	19,963	3·88
Ontario (not complete)	198	176,206	3,139	56	2	6	353	3,015	4	180,071	726,286	4·03⅓
Manitoba	....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Alberta	4	6,581	5	6	....	1	1	5	16	11,032	75,986	6·89
British Columbia	....	Dev.	.....	4	....	....	2	.....	5	.....	.....	.....
Total	202	182,787	3,150	67	2	10	359	3,029	26	196,251	822,235	4·19

*Included with natural gas statistics.
(a) Number of productive wells at beginning of year.
(b) Number of oil wells drilled during year.
(c) Number of gas wells drilled during year.
(d) Number of dry wells drilled during year.
(e) Number of wells abandoned during year.
(f) Total number of productive wells at end of year.
(g) Number of wells on which drilling was still in progress at end of year.
(h) Record of oil shipments for Ontario based on bounty payments.

Petroleum

		1917		1918		1919		1920	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
			$		$		$		$
Bounty paid			107,799		153,958		119,714		97,700
Production crude—									
New Brunswick	Bbls.	2,341	5,460	3,009	7,402	4,225	13,141	5,148	19,963
Ontario	"	202,991	473,477	288,692	777,737	219,804	625,342	180,071	726,286
Alberta	"	8,500	63,302	13,040	100,004	16,437	97,841	11,032	75,986
		213,832	542,239	304,741	885,143	240,466	736,324	196,251	822,235
Production refinery—									
Refined oils	Gals.	173,235,606	23,575,358	232,469,829	35,372,773	258,455,395	40,484,222	253,886,017	54,363,183
Other products (*n*)			1,561,785		1,915,088		2,371,852		2,984,296
			25,137,143		37,287,861		42,856,074		57,347,479
Refined oils inspected*—									
Petroleum	Gals.	41,366,586		55,443,056		63,480,214		58,940,118	
Naphtha	"	59,892,046		74,310,352		97,519,950		99,826,802	
		101,258,632		129,753,408		161,000,164		158,766,920	
Exports—									
Coal and kerosene, crude	Gals.	2,130	183	270,302	28,415	603,478	40,648	2,684,427	293,325
Coal and kerosene, refined	"	28,212	6,558	1,946,967	206,675	2,846,293	287,170	1,243,335	205,999
Gasoline and naphtha	"	24,304	7,419	91,229	28,778	1,566,707	428,754	160,433	59,432
		54,646	14,160	2,308,498	263,868	5,016,748	756,572	4,088,195	558,756
Imports—									
(*a*) Crude (1) for refining	Gals.	183,105,102	8,411,730	229,010,561	13,359,636	305,748,960	15,104,287	290,736,366	20,814,899
Crude (2) all other	"	142,524,473	5,958,930	148,537,043	8,355,387	99,559,068	4,702,771	122,750,650	7,790,137
(*g*) For use in ore treatment, etc	"	909	118	4,710	1,922	42,085	1,367	16,249	1,344
(*b*) Crude gas oils	"	854,778	65,404	65,845	7,584	155,145	23,866	178,641	28,869
(*c*) Coal and kerosene, distilled	"	13,258,815	978,366	5,241,881	526,606	6,757,159	926,822	14,971,509	2,359,621
(*d*) Illuminating	"	198,281	115,194	205,839	152,825	156,126	119,565	176,340	127,889
(*e*) Lubricating	"	3,438,430	559,605	2,450,588	476,641	1,496,809	289,442	881,102	175,478
Lubricating, n.o.p	"	1,877,381	650,325	2,849,051	1,203,130	3,480,183	1,467,593	4,376,192	2,267,611
Gasoline	"	15,369,172	3,293,760	3,121,982	798,387	4,391,607	1,142,855	8,515,545	2,404,488
(*f*) Products, n.o.p	"	18,521,574	2,708,395	29,246,143	5,595,425	29,516,589	5,615,622	48,769,546	10,891,302
		379,148,915	22,741,827	420,733,643	30,477,543	451,303,731	29,394,190	491,372,140	46,861,638

Petroleum—*Continued*

	1917		1918		1919		1920	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		$		$		$		$
Paraffin wax..... Lbs.	1,620,634	140,722	1,755,422	209,916	844,838	108,049	1,455,939	168,521
Paraffin wax, candles..... "	513,337	75,257	327,657	64,033	297,419	59,151	264,794	68,173
	2,133,971	215,979	2,083,079	273,949	1,142,257	167,200	1,720,733	236,694
Grease, axle..... Lbs.	5,827,746	335,379	5,333,432	401,988	3,927,278	357,495	4,754,633	467,109
Vaseline and similar preparations of petroleum..... "	.....	65,765	.....	152,694	.....	158,037	.....	221,109

(*a*) (1) Crude petroleum in its natural state ·7900 specific gravity or heavier at 60 degrees temperature, when imported by oil refineries to be refined in their own factories. (2) Petroleum (not including crude petroleum imported to be refined, or illuminating or lubricating oils) ·8235 specific gravity or heavier at 60 degrees temperature.
(*b*) Crude petroleum, gas oils (other than benzene, naphtha and gasoline).
(*c*) Coal and kerosene, distilled, purified, or refined.
(*d*) Illuminating oils composed wholly or in part of the products of petroleum, coal, shale or lignite, costing more than 30 cents per gallon.
(*e*) Lubricating oils composed wholly or in part of petroleum, costing less than 25 cents per gallon.
(*f*) Products of petroleum, n.o.p.
(*g*) Petroleum imported by miners or mining companies or concerns for use in the concentration of ores of metals in their own establishments.
(*n*) Including wax, candles, and asphalt. In 1919 and 1920, this item included petroleum coke also. (See table following).
* Department of Inland Revenue returns.

Oil Refinery Production

		1919		1920	
		Quantity	Value	Quantity	Value
			$		$
Number of men employed: wages	No.	4,082	.....	3,869	6,014,037
Crude oil receipts—					
Canadian	Gal.	8,179,865	752,161	6,612,826	839,717
Imported	"	303,557,828	24,497,369	296,725,320	35,471,040
		311,737,693	25,249,530	303,338,146	36,310,757
Materials used—					
Crude oil, Canadian	Gal.	7,705,053	.....	6,402,118	.....
Crude oil, imported	"	292,281,146	.....	288,076,946	.....
Sulphuric acid	Lb.	52,010,125	.....	47,981,510	.....
Soda and alkali	"	2,440,732	.....	2,806,174	.....
Litharge	"	87,195	.....	204,423	.....
Sulphur	"	32,303	.....	66,666	.....
Other material	"	392,976	.....	238,840	.....
Output—					
Gasoline and motor oils	Gal.	87,248,413	23,162,889	83,890,326	27,598,386
Benzoline, benzene and other petrol spirits	"	4,516,783	883,194	5,701,558	1,411,360
Illuminating	"	55,360,322	8,301,042	54,155,655	10,887,976
Lubricating	"	16,113,694	3,174,318	21,890,082	4,945,640
Fuel and gas oils, tar	"	95,216,183	4,962,779	88,248,396	9,519,821
Wax and candles	Lb.	11,271,993	1,044,798	10,398,126	971,805
Other solids		.....	(a) 1,327,054	.....	(a) 2,012,491
Total		.....	42,856,074	.....	57,347,479
Crude equivalent of stocks on hand Dec. 31	Gals	68,883,671	.....	76,122,660	.....

(a) In 1919 includes 113,514,982 pounds petroleum coke valued at $426,025 and in 1920 includes 67,054,149 pounds petroleum coke valued at $297,404.

PHOSPHATE

The small production of phosphate, or apatite, which has been obtained in Canada since 1886 has been produced almost altogether as a by-product in connexion with the mining of mica. There were no shipments during 1920.

Phosphate is used at Buckingham, Que., in the manufacture of phosphorus and ferro-phosphorus, and the main supply of ore is obtained from Florida.

	1917		1918		1919		1920.	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production—								
Quebec	123	1,230	140	1,200	22	300	.....	.....
Ontario	26	256	.....	.....	2	31	.....	.....
	149	1,486	140	1,200	24	331	0	0
Exports-Phosphate rock	14	200	.....	.....	48	741	76	645
Imports—								
Phosphate rock (fertilizer)	.....	62,543	.....	90,363	.....	30,267	13,476	114,480
Acid phosphate (a)	1,440	209,298	1,558	302,424	1,423	295,387	1,728	369,105
Phosphorus	36	34,519	37	35,125	24	19,928	43	49,699
Phosphor, tin and bronze	.....	50,709	.....	46,554	62	61,647	124	120,720
Manufactured fertilizers	.....	1,045,140	.....	670,364	.....	651,832	.....	1,241,360
Superphosphate (b)	.....	.....	.....	.....	.....	178,292	.....	470,970

(a) Probably refined phosphate of lime and phosphate of soda.
(b) Separately classified as from April 1, 1919; formerly included under manufactured fertilizers.

PYRITES

In 1920 the shipments of pyrites as sulphur ore from Canadian mines were slightly lower in point of tonnage than in the previous year. The total shipments were 174,744 tons, valued at $719,110, and included 14,817 tons, valued at $44,451, from the province of Quebec; 148,652 tons, valued at $618,283, from the province of Ontario; and 11,275 tons, valued at $56,376 from the province of British Columbia. The total sulphur content of shipments was 67,608 tons, or an average of 38·7 per cent.

The principal shipments were obtained from the same sources as in the previous year. In Quebec, cupriferous ores were shipped from Weedon mine in the Eastern Townships. In Ontario the largest shippers for export were the mines at Goudreau, on the Algoma Central railway, in Michipicoten district, and at North Pines, on the Canadian National railway, northwest of Port Arthur. Mines shipping for domestic consumption were the Helen, in Michipicoten, the Sulphide, the Queensboro, and the Clyde Lake. In British Columbia shipments were made from the Sullivan mine at Kimberley to the sulphuric acid plant at Trail, and from Anyox to the acid plant at Barnet, B.C.

Customs records show exports of pyrites during 1920 as 119,136 tons, valued at $458,403. These figures are much less than those reported directly by the operators, and it is possible that some of the exports from Quebec may be entered as a copper ore. The imports of brimstone, or sulphur in roll or flour were 144,733 tons, valued at $2,113,713.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production—								
Quebec	122,882	501,351	124,871	507,802	52,746	203,222	14,817	44,451
Ontario	288,058	1,080,866	268,507	1,133,963	117,011	285,832	148,652	618,283
British Columbia	5,709	28,545	18,238	63,454	6,730	33,650	11,275	56,376
	416,649	1,610,762	411,616	1,705,219	176,487	522,704	174,744	719,110
Sulphur content	155,453	.....	154,269	.....	65,674	.....	67,608	.....
Exports	279,646	974,200	240,453	949,067	89,089	388,508	119,136	458,403
Imports—								
Brimstone or sulphur in roll or flour	82,445	1,515,309	92,062	2,058,811	56,062	1,015,223	144,733	2,113,713

Sulphuric Acid.—Sulphuric acid is manufactured in different grades or strengths, and in recording statistics of production it is desirable for purposes of comparison that the quantities of the several grades should be reduced as far as possible to a uniform standard.

Production records have been obtained in terms of the standard grades of 50° Bé., 60° Bé., 66° Bé., and stronger acids. The quantities of the first two grades have, however, in the following statistics been reduced to their equivalent in 66° Bé., acid.

Exports of sulphuric acid during 1920 were 10,433,900 pounds, valued at $89,992. Imports of sulphuric acid in 1920 were 320 tons, valued at $22,664.

	1917		1918		1919		1920	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		$		$		$		$
Ore used—								
Sulphur..... Tons	25,994	.....	25,552	.....	2,245	.....	13,534	.....
Pyrites..... "	66,128	.....	75,941	.....	54,879	.....	44,398	.....
Production.....* "	153,530	.....	190,621	.....	63,596	.....	82,811	.....
Imports..... "	216	15,680	5,954	208,288	1,437	38,759	320	22,664
Exports..... "	9,478	197,888	5,600	165,579	5,447	108,392	5,217	89,992

*Expressed in terms of 66° Bé acid. Record includes a small production of oleum and other grades, the strength of which is not specified. An approximate estimate of production in terms of 50° acid will be obtained by increasing these figures by 50 per cent.

QUARTZ (SILICA)

The statistics of quartz, or silica production given in the tabulated statement herewith include chiefly the quartz, or quartzite used in the smelting of nickel and copper ores, in the manufacture of ferro-silicon, and in the manufacture of sanitary ware, or earthenware. Production of silica in the form of infusorial earth has already been included under tripolite, and a small production of silica in the form of crushed sandstone used in the manufacture of glass and for foundry work in steel plants is included in the statistics of sandstone production. The quantities in the form of silica brick are included under refractories.

The total shipments of quartz, or quartzite, in 1920 were 128,295 tons, valued at $467,821.

Imports of silex, a finely ground quartz, in 1920 were 1,154 tons, valued at $26,097, and the imports of flint were 9,047 tons, valued at $170,355.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production—								
Quebec.....	550	1,788	1,730	5,383	2,221	7,773	1,986	5,558
Ontario.....	177,983	362,251	216,539	474,772	60,055	179,549	90,433	321,063
British Columbia.....	37,755	132,143	49,886	149,658	32,715	340,313	35,876	141,200
	216,288	496,182	268,155	629,813	94,991	527,635	128,295	467,821
Imports—								
Silex.....	851	12,812	607	12,054	641	13,825	1,154	26,097
Flint.....	3,774	64,292	5,749	109,825	5,411	100,902	9,047	170,355

SALT

The total sales of salt in 1920, including the salt equivalent of brine used for chemical manufacturing, were 209,855 tons, valued at $1,544,724. These values as far as possible exclude the value of packages, which amounted to $753,763. By grades the production included: table and dairy, 42,475 tons; common fine, 39,700 tons; common coarse, 122,628 tons; and land salt, 5,052 tons.

The number of men employed in 1920 was 345; wages paid, $472,037

The Canadian production was obtained almost entirely from the salt field in southern Ontario. Some years ago there was a small production from brines near Sussex, New Brunswick, and at lake Winnipegosis in Manitoba. The deposit of salt rock opened up in the neighbourhood of Malagash, Cumberland county, Nova Scotia, continued development work during 1917 and shipped over 3,600 tons in 1920. This is the first known discovery of rock salt in the Maritime Provinces, and the first in Canada to be discovered at a depth sufficiently shallow to allow it to be won economically by actual mining.

The exports of salt in 1920 were 303 tons, valued at $9,181. The imports of salt were 155,646 tons, valued at $1,434,687, and included: 54,338 tons of fine salt in bulk, valued at $356,389; 28,712 tons of salt in packages, valued at $446,671; and 72,596 tons of salt imported from Great Britain, or any British possession for the use of fisheries, valued at $631,627.

The calculated consumption of salt in 1920 was 365,798 tons, valued at $2,970,230 (the value of the imported salt being that at point of origin).

Caustic soda and chloride of lime are manufactured by the Canadian Salt Company at their chemical works at Sandwich, Ont. The Brunner-Mond Canada, Ltd., Amherstburg, Ont., manufacture soda ash.

The imports of salt cake (sodium sulphate) in 1920 were 42,974 tons, valued at $958,628; soda ash (sodium carbonate), 7,458 tons, valued at $372,936; sal soda, 5,064 tons, valued at $200,788; and chloride and hypochlorite of lime, 19,529 tons, valued at $1,179,663.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production—								
Table and dairy	34,252	.....	34,324	.....	34,396	.....	42,475	.....
Common, fine	65,117	.....	54,210	.....	47,571	.....	39,700	.....
Common, coarse	37,398	.....	41,152	.....	64,426	.....	122,628	.....
Land salt	2,142	.....	2,041	.....	1,908	.....	5,052	.....
Total*	138,909	1,047,792	131,727	1,285,039	148,301	1,397,929	209,855	1,544,724
Value packages	.....	403,879	.....	574,033	.....	573,795	.....	753,763
Stocks on hand, Dec. 31	2,024	.....	2,775	.....	2,974	.....	5,481	.....
Exports	(a)	.....	893	16,743	617	14,573	303	9,181
Imports—								
Fine, in bulk[1]	44,973	184,792	51,450	294,676	51,941	289,109	54,338	356,389
In bags, barrels[2]	12,293	120,665	13,941	156,736	33,173	467,581	28,712	446,671
All other[3]	113,550	782,748	100,103	815,757	62,292	553,439	72,596	631,627
	130,816	1,088,205	165,494	1,267,169	147,406	1,310,129	155,646	1,434,687
Consumption of salt	e269,725	2,135,997	296,328	2,535,465	295,090	2,693,485	365,798	2,970,230

*Quantity sold or used; value excludes packages. (e) Estimated.
[1]Duty 5c. per 100 pounds; [2]Duty 7½c. per 100 pounds; [3]Free—Imported for use of fisheries.
(a) Correct figures not available.

TALC

The total shipments of crude and ground talc by mine operators during 1920 were 21,671 tons, valued at $166,934. A considerable portion of the shipment of crude mineral included above is ground at Madoc, and the total shipments of ground talc during 1920 were 19,610 tons of varying grades, having an average value of about $15.49 per ton, as compared with 15,927 tons averaging about $14.75 in 1919. Crude talc sold at from $4 to $8 per ton.

The Henderson mine has been operated for some years, the greater part of the output being sold to Geo. H. Gillespie & Co., who operate a grinding mill at Madoc, the balance being exported to United States. The Connolly mine, of the Anglo-American Talc Corporation—recently changed to the Asbestos Pulp Company, Limited—was also operating, as well as the Eldorado mine of the Eldorado Mining and Milling Company. Small shipments of talc were reported from British Columbia in 1917, 1919, and 1920.

Exports of talc for the twelve months ending December 31, 1920, were valued at $263,708, being: crude talc, valued at $10,653; refined talc, 14,909 tons, valued at $253,055.

Imports of talc are not being separately recorded.

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production (*a*)—								
Crude	13,184	51,856	12,772	47,494	12,243	49,074	11,820	48,939
Refined	2,619	24,683	5,397	71,703	6,399	67,221	9,851	117,995
	15,803	76,539	18,169	119,197	18,642	116,295	21,671	166,934
Exports	.....	** 131,637	.....	208,301	.....	210,150	.....	263,708
Total refined sold (*b*)	13,703	171,788	15,903	222,167	15,927	235,000	19,610	303,738

**Last 9 months.
(*a*) Mine operators' returns. (*b*) Product Canadian plants.

STRUCTURAL MATERIALS AND CLAY PRODUCTS

INTRODUCTORY

The subjects included under this heading comprise cement, clay products, of various kinds, such as brick, sewer pipe, and tile, pottery, etc., lime, sand-lime brick, sand and gravel, slate and stone for building and other purposes, including granite, marble, limestone, sandstone, etc.

The total value of the production of these structural products in 1920 was $41,892,088, as compared with $27,421,510 in 1919, $19,130,799 in 1918, and $19,837,311 in 1917, the increase in 1920 being $14,470,578, or 52·8 per cent, as compared with the previous year.

The total value of this class of imports in 1920 was $11,338,831, as against $6,691,291 in 1919, $8,117,394 in 1918, and $7,901,398 in 1917.

The total exports were valued at $3,230,167, as against $944,273 in 1919, $608,886 in 1918, and $647,369 in 1917.

The apparent total consumption based upon the record of production, imports and exports, was, therefore, in 1920, valued at $50,000,752, as compared with $33,168,528 in 1919, $26,639,307 in 1918, and $27,091,340 in 1917, the increase in value of consumption in 1920 being $16,832,224.

A summary of the production, imports, exports, and consumption of structural materials and clay products in 1920 follows:—

Structural Materials, Calendar Year 1920

—	Production	Imports	Exports	Consumption
	$	$	$	$
Cement, portland and puzzolan	14,798,070	130,919	2,193,626	12,735,363
Clay products	10,664,929	9,414,783	358,151	19,721,561
Lime	3,818,553	48,790	381,899	3,485,444
Sand-lime brick	724,918	.....	.....	724,918
Sand and gravel	4,291,067	267,950	193,503	4,365,514
Slate	14,200	259,173	.....	273,373
Stone	7,580,351	1,217,216	102,988	8,694,579
	41,892,088	11,338,831	3,230,167	50,000,752

CEMENT

The total quantity of cement sold from Canadian cement mills in 1920 was 6,651,980 barrels, valued at $14,798,070, or an average of $2.22 per barrel—an increase in quantity sold of 1,656,723 barrels, or 33 per cent, and an increase in total value of $4,995,637, or about 51 per cent.

Sales of cement from mills in Quebec in 1920 were 3,013,463 barrels, valued at $6,545,054; in Ontario, 2,035,594 barrels, valued at $4,377,814; and the balance from Nova Scotia, Manitoba, Alberta, and British Columbia.

The total quantity of cement made in 1920 was 6,498,550 barrels, as compared with 4,613,588 barrels in 1919, an increase of 1,884,962 barrels, or about 41 per cent.

Stocks of cement on hand January 1, 1920, were 1,089,603 barrels, and at the end of December had been reduced to 936,173 barrels.

The total imports of cement in 1920 were 115,370 hundredweight, equivalent to 32,963 barrels of 350 pounds each, valued at $112,466, or an average of $3.41 per barrel.

The total consumption of cement, therefore, was 5,849,276 barrels, an increase of 1,017,459 barrels.

	1917		1918		1919		1920	
	Brl.	Value	Brl.	Value	Brl.	Value	Brl.	Value
Plants—		$		$		$		$
Active: No. and capacity	9—28,340		10—29,275		10—30,025		13—39,025	
Idle — No. and capacity	17—21,890		13—18,940		11—19,000		14—19,200	
Output—								
Marl	96,755		86,532		110,899		(*b*) 86,171	
Limestone	4,890,500		3,331,128		4,512,689		6,412,379	
	4,987,255		3,417,660		4,613,588		6,498,550	
Sold or used	4,768,488	7,724,246	3,591,481	7,076,503	4,995,257	9,802,433	6,651,980	14,798,070
Stocks Dec. 31	1,660,406		1,480,565		1,089,970		936,173	
Imports—								
Portland	8,580	19,646	5,913	19,851	14,066	51,314	32,963	112,466
Manufactures		8,710		8,509		13,129		18,453
Exports		16,857		13,752	(*a*) 177,506	465,954	(*a*) 835,667	2,193,626
Consumption	4,777,068		3,597,394		4,831,817		5,849,276	

(*a*) Quantity not recorded but estimated at the rate of 75 cents per cwt. or $2.62½ per barrel.
(*b*) Including puzzolan.

CLAYS AND CLAY PRODUCTS

For a number of years a small quantity of fireclay has been produced and sold as such, and during the past few years there has been a small production of kaolin, or china-clay, from a deposit in the province of Quebec. With these exceptions, the clay production in Canada consists almost altogether of the manufactured product.

The clay products made in Canada comprise brick of various kinds, including common and pressed, ornamental and fancy building brick, firebrick, silica brick, magnesite brick, porous fireproofing brick and blocks, sewerpipe and drain tile, pottery and sanitary ware, the last two products chiefly from imported clays.

The total value of the clay products sold or marketed in 1920 was $10,664,929, as compared with a value of $7,906,366 in 1919, $4,583,489 in 1918, and $4,779,038 in 1917. The value of the production in 1920 shows an increase of $2,758,563 as compared with the previous year.

The average number of men employed in 1920 was 5,232, as compared with 4,613 in the previous year, and the total wages paid were $5,071,645, as against $3,356,464.

Of the total value of the sales in 1920, building brick and fireproofing contributed $7,854,881, or about 73·5 per cent. Sewerpipe and tile production $2,111,742, or 19·8 per cent. The total value of the production of pottery was $1,317,193, of which $209,171 only is estimated as attributable to Canadian clays, the balance being credited to imported clays.

The value of the production of fireclays, firebrick, silica brick, and magnesite brick from domestic clays was $474,113, and the production of kaolin was 683 tons, valued at $15,022.

Detailed statistics of production of the several classes of clay products by provinces in 1920, are shown in the following table:—

Province	Per cent of total value	No. of active firms reporting	No. of men employed	Wages	Common brick				Pressed brick			
					No. manufactured	No. sold	Value of sales	Per M	No. manufactured	No. sold	Value of sales	Per M
				$			$	$			$	$
Nova Scotia	5·07	12	296	228,728	17,633,400	16,426,985	208,837	12 71	25,000	25,000	625	25 00
New Brunswick	0·69	6	75	49,700	2,700,000	2,273,000	36,713	16 15	.....	.....	.....	.....
Quebec	22·28	20	1,033	1,065,795	123,489,041	110,689,797	1,611,169	14 56	17,148,511	13,045,215	251,693	19 29
Ontario	52·64	151	2,598	2,613,487	148,656,605	129,839,203	2,323,563	17 90	69,732,552	58,882,431	1,352,819	22 98
Manitoba	1·94	6	410	685,288	14,589,858	10,812,328	180,876	16 73	1,786,000	771,000	25,888	33 58
Saskatchewan	4·42	8	124	125,392	11,006,000	8,318,000	121,332	14 59	3,105,000	3,356,000	119,344	35 56
Alberta	7·37	11	428	496,669	23,249,030	19,818,350	272,373	13 74	9,738,714	7,725,480	200,979	26 02
British Columbia	5·59	9	248	288,778	5,692,060	5,165,365	81,133	15 71	1,331,999	1,331,999	53,189	39 93
Total	100·00	223	5,212	5,053,837	347,015,994	303,343,028	4,835,996	15 94	102,867,776	85,137,125	2,004,537	23 54

Province	Fireproofing		Ornamental brick and terra-cotta lumber		Refractories	Hollow building blocks		Pottery	Sewerpipe		Tiles, drain		Kaolin	Total
	Tons	Value	No. sold	Value	Value	No. sold	Value	Value	Tons	Value	M	Value	Value	Value
	$			$	$		$	$		$		$	$	$
Nova Scotia	.....	.....	.....	.....	60,629	32,480	4,161	.....	14,442	265,112	70	1,750	.....	541,114
New Brunswick	.....	.....	.....	.....	.....	.....	.....	36,771	.....	.....	.....	.....	.....	73,484
Quebec	10,931	130,246	2,839,000	59,188	1,659	400,000	35,449	10,000	9,706	254,914	92	6,689	15,022	2,376,029
Ontario	22,124	301,856	.....	61,521	85,582	1,406,028	107,524	56,857	28,635	860,811	13,295	462,995	.....	5,613,488
Manitoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	206,764
Saskatchewan	.....	.....	.....	.....	33,058	.....	.....	.....	4,868	129,214	650	68,500	.....	471,448
Alberta	16,036	159,316	.....	.....	.....	.....	39,371	105,543	.....	.....	132	8,848	.....	786,430
Br. Columbia	.....	.....	.....	.....	293,185	.....	115,756	.....	1,236	39,039	288	13,870	.....	596,172
Total	49,091	591,418	.....	(c) 120,669	(a) 474,113	.....	302,261	(b)209,171	58,887	1,549,090	14,527	562,652	15,022	10,664,929

a There was also a production of $211,289 from imported clays. *b* There was also a production of $1,108,022 from imported clays. *c* Of which $46,743 is credited to terra-cotta lumber.

Clay Paving Brick.—Paving brick was formerly made in Canada, chiefly at West Toronto, Ont., from shale obtained from the banks of the Humber river, and more recently during the years 1915 and 1916 there was a small production reported from Clayburn, B.C. There was no production reported for the past four years. The annual production for a number of years varied from 3,000,000 to over 5,000,000 per season.

Drain Tile.—The total sales of drain tile in Canada as reported to this branch were 14,527 thousand, valued at $562,652. The greater part of this production is from Ontario, the sales in this province as reported by the producers being 13,295 thousand, valued at $462,995.

Kaolin.—The shipments of Kaolin in 1920 were 683 tons, valued at $15,022, as compared with 759 tons, valued at $13,744, in 1919.

The production was obtained from the deposits in the township of Amherst, Ottawa county, Quebec, operated by the Canadian China Clay Company of Toronto.

The plant for refining the clay is situated two miles from St. Remi d'Amherst, and seven miles from Huberdeau, the terminus of the Montfort branch of the Canadian National Railway, forty-six miles northwest of Montreal.

Pottery.—Sanitary porcelain is made at St. Johns, Que., and electrical porcelain is made at Hamilton and Peterborough, Ont. These are the only firms in Canada at present making white wares. The raw materials, including clays, ground quartz and feldspar are all imported.

Stoneware pottery, such as crocks, jars, churns, and jardinieres, is made at Medicine Hat, Alta., from Saskatchewan clay; at Hamilton, Ont., from imported clays; and at St. John, N.B., partly from Nova Scotia clay.

Flower pots are made at a few localities from the red-burning and tile clays of the vicinity.

Refractories.—The total value of the sales of fireclay, firebrick, fireclay brick, silica and magnesite brick in 1920 was $474,113. There was in addition a production of fireclay products, valued at $211,289, reported as being made from imported clays. The production in 1920 included: fireclay, or refractory clay sold as such, 8,321 tons, valued at $44,091; firebrick, including silica brick and magnesite brick in addition to fireclay brick, 7,293 thousand, valued at $375,230; and other fireclay products valued at $54,792.

Sewerpipe.—The total sales of sewerpipe in 1920 were 58,887 tons, valued at $1,549,090. About 55·6 per cent of the value of the production is credited to Ontario.

	1917		1918		1919		1920	
	Quant'y	Value	Quant'y	Value	Quant'	Value	Quant'	Value
Manufactured—		$		$		$		$
Common brick.... M	216,596	.....	163,960	.....	302,278	.....	347,016	.....
Pressed brick..... M	51,472	.....	38,171	.....	81,146	.....	102,868	.....
Stocks, Dec. 31—								
Common..... M	57,596	.....	57,419	.....	51,110	.....	84,023	.....
Pressed..... M	17,273	.....	11,665	.....	18,458	.....	28,668	.....
Production—								
Common..... M	210,631	1,999,465	164,970	1,879,811	291,470	3,850,219	303,343	4,835,996
Pressed..... M	46,409	653,153	40,147	639,083	74,424	1,301,162	85,137	2,004,537
Fire proofing.....Tons.		299,645	28,087	226,798	41,406	345,382	49,091	591,418
Hollow building blocks..... M	.....	95,088	1,402	40,876	1,985	76,673	.....	302,261
Kaolin.....Tons.	533	9,594	863	19,299	759	13,744	683	15,022
Ornamental..... M	.....	32,854	358	28,296	365	10,175	3,515	73,926
Terra-cotta lumber M	.....	21,380	175	15,146	.....	40,527	.....	46,743
Pottery.....	.....	122,878	.....	130,242	.....	185,474	.....	209,171
Refractories—								
Fireclay.....Tons.	10,534	49,455	8,732	44,351	4,600	24,163	8,321	44,091
Firebrick..... M	8,192	199,171	7,192	248,884	5,610	268,756	7,293	375,230
Other products..Tons.	.....	77,885	.....	111,589	2,946	96,435	.....	54,792
Sewerpipe.....Tons.	.....	783,762	36,574	692,774	62,821	1,074,146	58,887	1,549,090
Tile, drain..... M	.....	434,708	19,762	499,340	20,078	616,510	14,527	562,652
	.....	4,779,038	.....	4,583,489	.....	7,906,366	.....	10,664,929
Imports—								
Bath brick.....	.....	2,299	.....	2,134	.....	1,135	.....	1,793
Building brick..... M	4,111	61,511	3,232	55,976	7,394	128,876	2,944	94,314
Bldg. blocks.....	.....	151,765	.....	64,622	.....	102,107	.....	153,250
Clays—								
China.....Tons.	11,596	97,856	10,538	116,699	8,643	129,652	13,445	234,668
Fire.....	.....	283,746	.....	401,357	30,777	185,156	50,611	267,180
Pipe.....	.....	2,427	.....	2,167	.....	922	.....	2,804
Other clays.....	.....	32,180	.....	34,130	.....	46,420	.....	145,988
Drain tile, unglazed.....	.....	2,289	.....	481	.....	481	.....	5,744
Drain and sewerpipe.....	.....	42,864	.....	24,763	.....	66,727	.....	30,111
Earthen and chinaware..	.....	2,595,582	.....	2,163,455	.....	2,925,295	.....	5,380,462
a Firebrick.....	.....	1,994,212	.....	2,852,233	.....	906,481	.....	1,388,390
Firebrick, n.o.p.....	.....	691,578	.....	650,341	.....	434,505	.....	579,365
Magnesite brick.....	.....	b 470,801	.....	210,103	.....	120,189	.....	446,445
Silica brick.....	.....	.....	.....	.....	.....	b 157,374	.....	378,759
Paving brick..... M	2,190	37,814	798	17,534	3,552	77,374	2,269	74,515
Other clay mfrs.....	.....	143,913	.....	138,086	.....	144,008	.....	230,995
	.....	6,610,837	.....	6,734,081	.....	5,426,702	.....	9,414,783
Exports—								
Bldg. brick..... M	4,464	40,039	3,277	34,593	4,770	52,050	8,073	115,627
Clay—								
Unmanufactured Cwt.	.....	83,600	.....	129,691	5,901	3,672	4,738	2,175
Manufactures.....					.....	84,953	.....	196,222
Earthenware.....	.....	14,504	.....	10,633	.....	23,579	.....	44,127
	.....	138,143	.....	174,917	.....	164,254	.....	358,151
Consumption.....	.....	11,251,732	.....	11,142,653	.....	13,168,814	.....	19,721,561

a Duty free; of a kind not made in Canada. *b* Last 9 months.

LIME

The production of lime in 1920 was reported as 9,427,334 bushels, valued at $3,818,553, or an average of 40½ cents per bushel. Fifty-eight firms reported with 1,069 men employed, and wages paid $1,314,186.

The average price per bushel of lime sold in 1920 varied from a minimum of 20 cents in Nova Scotia to a maximum of 61 cents in British Columbia. Over 86 per cent of the total production was derived from Ontario, Quebec, and the Maritime Provinces. The production of hydrated lime was 35,595 tons, valued at $481,286.

The exports during 1920 were 23,016 tons, valued at $381,899, while the imports were 2,739 tons, valued at $48,790.

—	1917		1918		1919		1920	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	Bush.	$	Bush.	$	Bush.	$	Bush.	$
Production—								
Nova Scotia....	985,286	197,057	748,314	149,663	366,543	73,309	201,500	40,300
P. E. Island.....	820	287	.....	.....	.....	.....	.....	.....
New Brunswick.	532,251	171,248	482,548	221,935	468,533	223,193	701,859	365,030
Quebec.....	1,470,486	335,012	1,527,784	418,888	1,796,822	493,762	2,108,203	826,044
Ontario.....	2,846,850	668,368	2,660,791	762,976	3,578,834	1,143,973	5,109,635	1,962,086
Manitoba.....	393,982	92,932	462,544	134,725	476,452	147,131	605,399	210,984
Alberta.....	104,540	35,516	80,408	44,141	109,067	41,276	139,433	72,477
Br. Columbia...	232,955	58,067	401,562	143,697	351,253	187,963	561,305	341,632
	6,567,170	1,558,487	6,363,951	1,876,025	7,147,504	2,310,607	9,427,334	3,818,553
Hydrated lime produced[1].....	Tons 16,339	126,268	Tons 18,133	167,250	Tons 27,950	295,164	Tons 35,595	481,286
Imports.....	12,150	78,254	4,987	53,745	3,977	53,190	2,739	48,790
Exports.....	.....	74,523	7,483	70,930	9,654	128,810	23,016	381,899

[1]Included in total production of lime.

SAND-LIME BRICK

The first record of the production of sand-lime brick in Canada was obtained for the year 1907, when there was a production by ten firms amounting to 16,492,971 brick, valued at $167,795.

In 1920 the sales were reported as 45,459,022 brick, valued at $724,918, or an average of $15.95 per thousand, as compared with sales in 1919 of 33,553,699 brick, valued at $484,854.

	1917		1918		1919		1920	
	M.	Value	M.	Value	M.	Value	M.	Value
		$		$		$		$
Manufactured.....	17,080	.....	15,256	.....	36,111	.....	48,926	.....
Sold or used.....	18,002	201,355	14,589	186,066	33,554	484,854	45,459	724,918
Stocks, Dec. 31....	3,259	.....	2,610	.....	2,244	.....	6,086	.....

SAND AND GRAVEL

The total sales of sand and gravel produced in Canada during 1920 amounted to 11,530,795 tons, valued at $4,291,067. This production included: building sand and gravel for concrete and road building, 1,375,812 tons, valued at $935,107; gravel, including sand and gravel and crushed gravel, 2,103,418 tons, valued at $1,354,912; railway ballast, 7,940,700 tons, valued at $1,883,333; moulding sand, 44,353 tons, valued at $59,271; and other sands, core sands, engine sands, etc., 66,512 tons, valued at $57,944.

—	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production—								
Sand.....	1,505,907	614,272	1,019,770	412,357	1,100,827	602,138	1,375,812	935,107
Sand and gravel	2,214,369	904,584	1,477,851	750,010	1,039,104	606,486	2,103,418	1,354,912
Ballast.....	5,312,218	718,801	8,633,917	1,087,207	8,119,387	1,373,704	7,940,700	1,883,333
Moulding sand...	46,790	46,018	62,835	71,488	55,451	71,249	44,353	59,271
All other.....	103,133	42,574	67,909	45,956	49,712	26,883	66,512	57,944
	9,182,417	2,326,249	11,262,282	2,367,018	10,364,481	2,680,460	11,530,795	4,291,067
Imports.....	328,520	312,403	310,610	435,992	200,830	200,428	219,398	267,950
Exports.....	1,075,374	290,964	902,750	229,957	1,074,341	131,140	1,491,786	193,503

SLATE

There is a small annual production of slate in Canada, obtained from the New Rockland quarries, Melbourne township, Richmond county, Quebec, operated by the New Rockland Slate Co., Limited. During 1920 shipments were also made from a deposit at St. Joseph de Beauce, Beauce county.

The production in 1920 was 1,532 squares, valued at $12,362; and 240 tons of crushed material, valued at $1,838. The production in 1919 was 1,632 squares, valued at $10,853.

Exports have not been recorded since 1909. The imports of slate during the past twelve years have ranged in value from $90,000 to over $200,000 per annum. During the year 1920 they were valued at $259,173.

	1917		1918		1919		1920	
	Squares	Value	Squares	Value	Squares	Value	Squares	Value
		$		$		$		$
Production	1,422	7,789	933	5,124	1,632	10,853	(a)	14,200
Imports—								
Roofing	3,909	20,785	8,296	47,975	4,036	27,623	7,114	73,651
School-writing	.....	40,603	.....	41,122	.....	46,342	.....	76,594
Pencils	.....	8,717	.....	10,361	.....	10,059	.....	19,161
All other	.....	36,788	.....	33,596	.....	58,953	.....	89,767
	.....	106,893	.....	133,054	.....	142,977	.....	259,173

(a) 1,532 squares valued at $12,362 and 240 tons crushed slate valued at $1,838.

STONE

Statistics of stone production given herewith include the sales of all classes of stone used for building, monumental, and ornamental purposes, stone for paving purposes, curbstone and flagstone, rubble, riprap and crushed stone, limestone for furnace flux, sugar factories, etc., but stone used for burning lime or manufacturing cement is not included.

The kinds of stone quarried have been classed as granite (including trap rock, syenite and other igneous rocks), limestone, sandstone, and marble.

The records are practically confined to quarry operations, and to the production of sawn or polished stone when these operations are carried on by quarry operators. In addition to this production of stone by regular operators, there is no doubt a large stone production by individuals, such as farmers, and others, for house or barn foundations, concrete work, etc., of which it would be impracticable to obtain any satisfactory record. Much stone is also used in railway construction work and in road building, of which the record is probably very incomplete.

The total value of the production of stone during 1920, according to returns received, was $7,580,351, as compared with a value of $4,225,937 in 1919, showing an increase of $3,354,414.

The number of active firms reporting in 1920 was 168, the total number of men employed 3,487, and total wages paid $3,302,253.

Production of Stone by Kinds and by Provinces, Showing Purposes for which Used, 1920

By kinds	Building	Ornamental and monumental	Paving and curbstone	Rubble		Crushed		Furnace Flux		Total value	Percent of total
				Short tons	Value	Short tons	Value	Short tons	Value		
	$	$	$		$		$		$	$	%
Granite	393,511	402,870	229,644	842	1,041	336,577	463,850	.....	.....	1,508,916	19·9
Limestone	445,548	21,606	3,068	557,229	647,742	3,406,689	3,863,613	637,999	684,116	5,665,693	74·7
Marble	228,353	.....	.....	270	540	4,850	11,700	.....	.....	240,593	3·2
Sandstone	88,721	.....	6,677	11,363	19,034	20,872	50,717	.....	.....	165,149	2·2
By Provinces											
Nova Scotia	12,840	20,110	7,900	7,081	12,810	17,762	39,481	292,467	327,034	420,175	5·54
New Brunswick	27,550	(1) 138,623	70,114	.....	.....	9,486	27,158	6,081	16,722	280,167	3·69
Quebec	702,740	233,418	139,458	22,893	26,776	777,981	1,086,858	75	75	2,189,325	28·88
Ontario	63,073	40,571	21,917	528,257	610,001	2,801,105	3,026,167	267,913	273,749	4,035,478	53·24
Manitoba	275,661	6,804	.....	11,323	16,196	63,305	75,625	.....	.....	374,286	4·94
Alberta	1,476	.....	.....	1,308	1,533	.....	.....	937	1,406	4,415	0·06
British Columbia	72,793	2,950	.....	842	1,041	99,349	134,591	70,526	65,130	276,505	3·65
Total	1,156,133	442,476	239,389	571,704	668,357	3,768,988	4,389,880	637,999	684,116	7,580,351	.....
Per cent	15·3	5·8	3·2	.....	8·8	.....	57·9	.....	9·0	.....	100·0

(1) Finished stone valued at $241,555.

Production of Stone by Kinds and by Provinces, showing purposes for which used, 1920

	1917		1918		1919		1920	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
		$		$		$		$
Production—								
Granite		639,412		590,871		850,563		1,508,916
Limestone		2,283,659		2,342,403		3,074,815		5,665,693
Marble		55,820		550		213,982		240,593
Sandstone		261,256		102,750		86,577		165,149
Production—								
Nova Scotia		569,521		478,721		413,194		420,175
New Brunswick		111,150		99,044		125,294		280,167
Quebec		991,593		952,402		1,441,919		2,189,325
Ontario		992,455		1,079,745		1,936,268		4,035,478
Manitoba		301,968		238,251		89,057		374,286
Alberta		7,482		569		3,189		4,415
British Columbia		265,978		187,842		217,006		276,505
		3,240,147		3,036,574		4,225,037		7,580,351
Exports								
Crushed	2,308	2,277	1,526	1,983	13,176	12,990	41,072	55,994
Ornamental, rough *a*	330	359	1,042	5,059	846	7,118	1,729	16,941
Building, rough *b*	139,153	122,430	62,683	107,690	16,859	23,893	9,612	16,246
Dressed		1,816		4,598		10,108		13,807
		126,882		119,330		54,115		102,988
Imports—								
Building stone		176,134		125,132		212,191		346,082
Granite		132,645		85,652		110,583		161,024
Marble		199,697		284,862		438,623		475,030
Refuse stone		256,182		236,516	416,220	199,528	461,813	235,078
		764,658		732,162		960,925		1,217,216

a Granite, marble, etc., unwrought. *b* Freestone, limestone, etc., unwrought.