

CANADA  
DEPARTMENT OF MINES  
HON. MARTIN BURRELL, MINISTER; R. G. McCONNELL, DEPUTY MINISTER

MINES BRANCH  
EUGENE HAANEL, PH.D., DIRECTOR

---

A GENERAL SUMMARY  
OF THE  
MINERAL PRODUCTION  
OF  
CANADA

During the Calendar Year

1917

JOHN McLEISH, B.A.

*Chief of the Division of Mineral Resources and Statistics.*



OTTAWA

J. DE LABROQUERIE TACHÉ  
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY  
1919

## CONTENTS.

	PAGE.
Mineral production of Canada in 1916 and 1917, comparative table.....	6
Annual mineral production 1886 to 1917.....	9
Annual value of metallic and non-metallic production 1907-1917.....	10
Exports and imports of products of the mine and of manufactures of mine products.....	11
Production by provinces, 1915, 1916, and 1917.....	16
Production in Nova Scotia.....	16
"    New Brunswick.....	16
"    Quebec.....	17
"    Ontario.....	18
"    Manitoba.....	18
"    Saskatchewan.....	19
"    Alberta.....	19
"    British Columbia.....	20
"    Yukon.....	20
<b>Mine production.....</b>	<b>22</b>

ADVANCE CHAPTER OF THE ANNUAL REPORT ON THE MINERAL  
PRODUCTION OF CANADA, DURING THE CALENDAR  
YEAR, 1917.



THE  
MINERAL PRODUCTION OF CANADA

During the Calendar Year

1917

---

General Summary.

A preliminary report on the mineral production of Canada in 1917 was published on February 26, 1918, the statistical record being at that time partially estimated and therefore subject to revision.

According to the revised statement of mineral production now presented, the total value<sup>1</sup> of the mineral production in 1917 was \$189,646,821. This is less than the total value estimated in the preliminary report, the difference being due to over estimates on the value of coal production.

Compared with the total value of the production in 1916 which was \$177,201,534, that of 1917 shows an increase of 7.02 per cent and in point of value represents the largest output on record. In the preliminary report it was pointed out and may well be repeated that:—

"It must not be inferred, however, that because such a large increase is shown in the value of our mineral production, our mines and quarries have actually increased their tonnage output at the same average rate. In fact, an examination of the record will show that the quantities of many important products were considerably less in 1917 than in 1916, and over two-thirds of the increase in value is to be attributed to nickel, coal, graphite, gypsum, and cement, in which the quantities marketed were less than in the previous year."

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 1917 as compared with that of 1916.

---

<sup>1</sup>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, nickel, 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.

Comparative Statement of Mineral Production for Years 1916 and 1917.

Product.	1916.			1917.			Increase (+) or Decrease (-).		Increase (+) or Decrease (-).		
	Quantity.	Value (a).	Per Cent of Total.	Quantity.	Value (a).	Per Cent of Total.	Quantity.	%	Value.	%	
<i>Metallic.</i>											
		\$			\$				\$		
Antimony ore } .....	*Tons.	885	94,537	361	22,000	-	524	59.2	-	72,537	76.7
Antimony refined } .....	Lbs.	107,185	41,823			-	107,185	100.0	-	41,823	100.0
Cobalt metallic and contained in oxide, etc .....	"	840,536	924,590	1,079,572	1,727,315	+	239,036	28.4	+	802,725	86.8
Copper (b) .....	"	117,150,028	31,867,150	109,227,332	29,687,989	-	7,922,696	6.7	-	2,179,161	68.4
Gold .....	Ozs.	930,492	19,234,976	738,831	15,272,992	-	191,661	20.6	-	3,961,981	20.6
Iron, pig, from Canadian ore (c) .....	Tons.	115,691	1,328,605	46,022	768,783	+	69,669	60.2	-	559,822	42.1
Iron ore sold for export (k) .....	"	140,608	393,689	169,252	590,696	+	28,644	20.4	+	197,067	50.0
Lead (d) .....	Lbs.	41,497,615	3,532,692	32,576,281	3,628,020	-	8,921,334	21.5	+	95,328	2.7
Molybdenite .....	"	156,461	156,461	288,705	288,705	+	132,244	84.5	+	132,244	84.5
Nickel (e) .....	"	82,958,564	29,035,493	82,330,230	33,732,112	-	628,284	0.8	+	4,696,614	16.2
Platinum .....	Ozs.	15	600	57	3,823	+	42	280.0	+	3,223	537.0
Silver (f) .....	"	25,459,741	16,717,121	22,221,274	18,091,895	-	3,233,467	12.7	+	1,374,774	8.2
Zinc .....	Lbs.	23,364,760	2,991,623	29,668,764	2,640,817	+	6,304,004	27.0	-	350,806	11.7
Total .....		106,819,365	60.00	106,455,147	56.13				+	135,732	0.1
<i>Non-metallic.</i>											
Actinolite .....	Tons	250	2,750	120	1,320	-	130	52.0	-	1,430	52.0
Arsenic, white and in ore .....	"	2,186	262,349	2,936	669,431	+	750	34.3	+	407,082	155.2
Asbestos .....	"	133,439	5,199,797	135,502	7,183,099	+	2,063	1.5	+	1,983,302	38.1
Asbestic .....	"	20,710	29,072	18,279	47,284	+	2,431	11.7	+	18,212	62.6
Chromite .....	"	27,517	311,460	36,725	499,682	+	9,208	33.5	+	188,222	60.4
Coal .....	"	14,483,395	38,817,481	14,046,759	43,199,831	-	436,636	3.0	+	4,382,350	11.3
Corundum .....	"	67	10,307	188	32,153	+	121	180.7	+	21,846	211.9
Feldspar .....	"	19,488	71,407	19,462	39,826	-	26	0.1	+	18,419	25.8
Fluorspar .....	"	1,284	10,233	4,249	68,756	+	2,965	230.9	+	58,518	571.6
Graphite .....	"	3,955	325,362	3,714	402,892	+	241	6.1	+	77,530	23.8
Graphite, artificial .....	"	263		548		+	285	108.3			
Grindstones .....	"	3,478	52,782	2,523	45,754	-	955	27.5	-	7,028	13.3
Gypsum .....	"	342,915	738,593	336,332	881,984	+	6,583	1.9	+	143,391	19.4
Magnesite .....	"	55,413	563,829	53,090	728,275	+	2,677	4.8	+	164,446	29.2
Magnesium sulphate .....	"			929	4,645	+	929		+	4,645	
Manganese .....	"	957	89,544	158	14,836	-	799	83.5	-	74,708	83.4
Mica .....	"	(1,208)	255,239	1,166	358,851	-	42	3.5	+	103,612	40.6

<b>Mineral pigments—</b>													
Barytes.....	Tons	1,368	19,393	.....	3,490	54,027	.....	+	2,122	155.1	+	34,634	178.5
Oxides.....	"	8,811	58,711	.....	9,409	87,605	.....	+	598	6.8	+	28,894	49.2
Mineral water.....			127,806	.....		145,814	.....				+	18,008	14.1
Natural gas (g).....	M. cu. ft.	25,467,458	3,953,029	2.23	27,408,940	5,045,298	2.66	+1,941,482	7.7	+1,087,269	27.5		
Peat.....	Tons	300	1,500	.....			.....	-	300	100.0	-	1,500	100.0
Petroleum.....	Bls.	198,123	392,284	0.22	213,832	542,239	0.28	+	15,709	7.9	+	149,955	38.2
Phosphate.....	Tons	203	2,514	.....	149	1,486	.....	-	54	26.6	-	1,028	40.9
Pyrites.....	"	309,251	1,084,095	0.61	416,649	1,610,762	0.85	+	107,398	34.7	+	526,667	48.6
Quartz.....	"	136,745	251,226	0.14	216,288	496,182	0.26	+	79,343	58.2	+	244,956	97.5
Salt.....	"	132,903	717,653	0.40	138,909	1,047,792	0.55	+	6,006	4.5	+	330,139	46.0
Talc.....	"	13,104	49,423	.....	15,803	76,539	.....	+	2,699	20.6	+	27,116	54.9
Tripolite.....	"	620	12,139	.....	600	18,000	.....	-	20	3.2	+	5,861	48.3
<b>Total.....</b>			<b>53,414,983</b>	<b>30.14</b>		<b>63,354,363</b>	<b>33.41</b>					<b>+9,939,380</b>	<b>18.6</b>
<i>Structural Materials and Clay Products.</i>													
Cement, portland.....	Brls.	5,369,560	6,547,728	3.70	4,768,488	7,724,246	4.08	-	601,072	11.2	+	1,176,518	18.0
<b>Clay products—</b>													
Brick, common.....	No.	237,034,675	1,826,844	1.03	210,630,576	1,999,465	1.06	-	26,404,099	11.1	+	172,621	9.4
Brick, pressed.....	"	44,947,089	492,355	0.28	46,408,946	653,153	0.34	+	1,461,857	3.3	+	160,793	32.7
Brick, paving.....	"	1,589,893	30,144	.....			.....	-	1,589,893	100.0	-	30,144	100.0
Brick, moulded and ornamental.....	"		21,102	.....		54,234	.....				+	33,132	157.0
Fireclay, and fireclay products.....			234,562	0.13		326,511	0.17				+	91,949	39.2
Fireproofing architectural terra-cotta.....			361,565	0.20		394,733	0.21				+	33,178	9.2
Kaolin.....	Tons	1,750	17,500	.....	533	9,594	.....	-	1,217	69.5	-	7,906	45.2
Pottery.....			61,069	.....		122,378	.....				+	61,809	101.2
Sewerpipe.....			716,287	0.40		783,762	0.41				+	67,475	9.4
Tile, drain.....	No.		359,387	0.20		434,708	0.23				+	75,321	21.0
Lime.....	Bus.	5,493,250	1,091,463	0.62	6,567,170	1,558,487	0.82	+	1,073,920	19.5	+	467,024	42.3
Sand-lime brick.....	No.	16,540,747	126,235	.....	18,001,990	201,355	0.11	+	1,461,243	8.8	+	75,120	59.5
Sand and gravel.....		8,156,207	1,838,320	1.04	9,182,417	2,326,249	1.23	+	1,026,210	12.6	+	437,929	26.5
Slate.....	Squares	1,262	6,223	.....	1,422	7,739	.....	+	160	12.7	+	1,566	25.2

\*Short tons throughout. (a) The metals, copper, lead, nickel, silver and zinc are for statistical and comparative purposes valued at the final average value of the refined metal. Pig-iron, zinc ore, and cobalt oxides are 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 27.180 cents per pound, in 1917, and 27.202 cents per pound in 1916. (c) The total production of pig-iron in Canada in 1917 was 1,156,739 tons valued at \$24,290,101, of which it is estimated 1,110,767 tons valued at \$23,521,318 should be credited to imported ores; in 1916 the total production was 1,169,257 tons valued at \$16,750,898, of which 1,053,566 tons valued at \$15,422,293 are credited to imported ores. (d) Refined lead and lead contained in base bullion exported at 11.137 cents per pound in 1917, and 8.513 cents in 1916, the average prices in Montreal. (e) Nickel content of matte produced and nickel recovered from silver-cobalt-nickel ores valued at 40 cents in 1917 and 35 cents in 1916. The value of the nickel contained in matte, as returned by the operators, was from 10 to 15 cents per pound for both years. (f) Silver recovered in bullion and recoverable from ores and smelter products exported at 81.417 cents per ounce in 1917, and at 65.661 cents in 1916. (g) Gross returns of sale of gas. (h) In 1917 and 1916 figures as reported by the producers, which differ from those of the Trade and Navigation reports.

**Comparative Statement of Mineral Production for Years 1916 and 1917—Concluded.**

Product.	1916.			1917.			Increase (+) or Decrease (-).		Increase (+) or Decrease (-).	
	Quantity.	Value (a).	Per Cent of Total.	Quantity	Value (a).	Per Cent of Total.	Quantity.	%	Value.	%
<i>Structural Materials and Clay Products.—Con.</i>		\$			\$				\$	
Stone—										
Granite.....		1,247,267	0·70		639,412	0·34			- 607,855	48·7
Limestone.....		2,224,091	1·26		2,283,659	1·20			+ 59,568	2·7
Marble.....		118,810	0·07		55,820	0·03			- 62,990	53·0
Sandstone.....		146,244	0·08		261,256	0·14			+ 115,012	78·6
Total.....		17,467,186	9·86		19,837,311	10·46			+ 2,370,125	13·6
Grand total.....		177,201,534	100·00		189,646,821	100·00			+12,445,287	7·02



The total value of the metallic production in 1917 was \$106,455,147 as against a value of \$106,319,365 in 1916, and \$75,814,841 in 1915. While the net change in 1917 was a small increase amounting to only one-tenth of one per cent it will be noted that decreases in the value of production of fine metals aggregating over \$7,170,000 were offset by increases in seven metals aggregating over \$7,300,000.

The total value of the production of non-metallic products in 1917 was \$83,191,674, as against \$70,882,169 in 1916; \$61,294,330 in 1915 and \$79,273,461 in 1914. Thus, while the value of non-metallic products in 1916 was less than the value in 1912 and 1913, that of 1917 was greater than 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 certain war minerals produced including asbestos, chromite, graphite and pyrites.

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 3½ times the production in 1886. From 1906 to 1917 the total production has shown an increase of over 139 per cent.

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:—

#### 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	1902.....	63,231,836	11.36
1887.....	10,321,331	2.23	1903.....	61,740,513	10.83
1888.....	12,518,894	2.67	1904.....	60,082,771	10.27
1889.....	14,013,113	2.96	1905.....	69,078,999	11.49
1890.....	16,763,353	3.50	1906.....	79,286,697	12.81
1891.....	18,976,616	3.92	1907.....	86,865,202	13.75
1892.....	16,623,416	3.39	1908.....	85,557,101	13.16
1893.....	20,035,082	4.04	1909.....	91,831,441	13.70
1894.....	19,931,158	3.98	1910.....	106,823,623	14.93
1895.....	20,505,917	4.05	1911.....	103,220,994	14.42
1896.....	22,474,256	4.38	1912.....	135,048,296	18.27
1897.....	28,485,023	5.49	1913.....	145,634,812	18.77
1898.....	38,412,431	7.32	1914.....	128,863,075	15.96
1899.....	49,234,005	9.27	1915.....	137,109,171	.....
1900.....	64,420,877	12.04	1916.....	177,201,534	.....
1901.....	65,797,911	12.16	1917.....	189,646,821	.....

## 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

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

The production of pig-iron given in the general table includes only that proportion of the output of Canadian blast furnaces credited to Canadian ores. There is an important production of pig-iron from imported ores (shown in the footnotes to the general table and in the chapter on iron and steel) and the total value thereof in 1917 was exceeded only by the production of coal, copper, and nickel. There is also a large production of aluminium from imported ores for which no value is included, in the general table of production.

## 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 subjected 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 1917 was \$167,805,318 compared with \$171,178,533 in 1916. This value includes for 1917 mine products to the value of \$77,069,667 and manufactures valued at \$90,736,151, as against mine products valued at \$80,755,461 and manufactures valued at \$90,423,122 in 1916.

Practically the whole of the Canadian production of copper, nickel, and silver is exported, also a very large proportion of the production of gold, asbestos, and mica. There are, as well, considerable exports of coal. These products alone contribute about 90 per cent of the value of the mine products exported. Manufactured products exported consist chiefly of iron and steel goods, agricultural implements, aluminium, calcium carbide, acetate of lime, fertilizers, and coke.

The United States is the chief destination of Canada's mine exports, about 77 per cent having been exported to that country during the fiscal year 1916-17 and about 20 per cent to the United Kingdom.

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 1917 has greatly exceeded those of any previous year and amounted to \$353,660,555, as compared with a value of \$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 1917 over one-half was comprised in iron and steel goods and nearly 30 per cent in coal, coke, and petroleum.

Exports of Products of the Mine and Manufactures of Mine Products, Calendar Year, 1916 and 1917.

Products.	1916.		1917.	
	Quantity.	Value.	Quantity.	Value.
		\$		\$
Arsenic..... Cwt.	39,505	197,458	45,724	507,898
Asbestos..... Tons.	96,775	3,872,463	93,932	4,903,326
Asbestos sand and waste..... "	33,564	241,272	52,088	430,956
Coal..... "	2,135,359	7,099,387	1,733,156	7,387,192
Cobalt (nine months only)..... "		712,880		1,542,945
Chromite (Chromic ore)..... Tons.	12,633	152,534	19,229	342,523
Corundum..... "	56	8,583	142	22,573
Feldspar, magnesite, talc, etc..... "		329,215		410,007
Gold-bearing quartz, dust, nuggets, etc..... "		18,382,903		15,929,051
Gypsum or plaster, crude..... Tons.	221,156	252,476	224,423	245,182
Metals, viz:—				
Copper, fine, contained in ore, matte, regulus, etc..... Cwt.	1,249,424	20,776,536	865,569	14,183,264
Lead, metallic, contained in ore, etc..... "	90,484	558,180	134,104	925,056
Molybdenite..... "			647	81,173
Nickel, fine, contained in ore, matte, or speiss..... "	804,417	8,662,179	812,724	8,708,650
Platinum, contained in concentrates or other forms..... Ozs.	532	41,945	136	11,309
Silver, metallic, contained in ore concentrates, etc..... "	25,279,359	15,637,885	21,718,784	17,621,398
Mica..... Lbs.	1,308,793	379,720	1,271,460	451,345
Mineral pigments, iron oxides, ochres..... Cwt.	33,917	25,312	29,022	30,052
Mineral water, natural, not in bottles..... Gals.	229	22	75	20
Mineral wax..... Cwt.	80,987	201,653	72,337	401,331
Oil:—				
Mineral, coal and kerosene, crude... Gals.	137,647	11,439	2,130	183
Mineral, coal and kerosene, refined.. "	446,595	48,137	23,212	6,558
Gasoline and naphtha..... "	54,806	14,194	24,304	7,419
Ores:—				
Antimony..... Tons.	794	48,158	774	50,476
Iron..... "	161,260	541,779	164,004	660,673
Manganese..... "	957	89,544	185	16,031
Other..... "	69,331	1,348,540	60,863	633,380
Phosphates..... "	103	1,543	14	200
Plumbago, crude ore and concentrates..... Cwt.	6,223	13,114	2,232	7,455
Pyrites..... Tons.	156,722	557,024	279,646	974,200
Salt..... Cwt.	3,059	2,223	172,850	94,364
Sand and gravel..... Tons.	1,114,913	388,309	1,075,374	290,964
Stone, ornamental, granite, marble, etc., unwrought..... "	15,967	7,989	330	359
Stone, building, freestone, limestone etc., unwrought..... "	123,453	103,796	139,153	122,430
Stone, crushed..... "	26,754	27,611	2,308	2,277
Stone, for manufacture of grindstones, rough..... "	356	1,764	310	2,062
Other articles of the mine..... "		17,694		15,375
Total mine products.....		80,755,461		77,069,667
MANUFACTURES.				
Abrasives, artificial (9 months).....				1,249,513
Agricultural implements and machines, viz:				
Mowing machines..... No.	6,672	233,024	12,149	486,593
Cultivators..... "	4,219	142,028	6,336	170,611
Reapers..... "	1,115	65,011	2,771	188,397
Drills..... "	4,713	317,831	6,240	314,435
Harvesters and binders..... "	7,495	814,517	9,502	1,158,757
Ploughs..... "	17,760	433,650	25,354	1,150,386
Harrows..... "	6,691	97,214	4,093	93,609
Hay rakes..... "	2,011	43,746	4,704	116,395
Seeders..... "	2	123	26	2,621
Thrashing machines..... "	1,522	465,209	1,172	274,764
All others..... "		292,603		297,640
Parts.....		750,966		1,025,275

Exports of Products of the Mine and Manufactures of Mine Products, Calendar Year, 1916 and 1917—Concluded.

Products.	1916.		1917.	
	Quantity.	Value.	Quantity.	Value.
<b>MANUFACTURES.—Con.</b>				
		\$		\$
Asbestos, manufactures of.....		4,741		55,666
Bricks..... M.	1,746	13,942	4,464	40,039
Cement.....		2,424		16,857
Clay, manufactures of.....		58,530		83,600
Coke..... Tons.	48,539	221,334	23,595	137,318
Cream separators.....		34,567		150,923
Drugs, chemicals and medicines, viz:—				
Acetate of lime..... Cwt.	73,589	216,397	67,607	246,042
Acid sulphuric.....	31,517	74,527	189,551	197,888
Ammonium sulphate (9 months).....			160,947	693,377
Calcium carbide.....	1,469,663	4,369,085	1,629,827	4,027,894
Cyanide (9 mos.).....			749,955	1,837,959
Phosphorus..... Lbs.	834,950	122,823	1,121,835	185,767
Earthenware and manufactures of.....		7,620		14,504
Fertilizers.....		3,338,413		1,253,667
Gasoline engines..... No.	529	86,310	800	152,275
Grindstones, manufactured.....		43,178		29,242
Gypsum or plaster, ground.....		154,630		146,384
Iron and steel and manufactures of, viz:—				
Stoves of all kinds.....		29,956		50,451
Gas buoys and parts of.....		2,484		85
Castings, n.o.p.....		167,881		583,297
Ferro-silicon and ferro compounds..... Tons.	22,802	1,352,013	33,212	2,616,924
Pig-iron.....	23,304	374,383	12,081	423,814
Linotype machines and parts of.....		35,465		6,977
Machinery, n.o.p.....		1,206,863		2,499,581
Sewing machines, and parts of..... No.		82,032		157,809
Washing machines, domestic and wringers.....		5,783		6,400
Typewriters..... No.	3,597	246,761	1,883	97,904
Scrap iron or steel..... Cwt.	2,285,991	1,357,018	3,531,826	2,300,022
Bars and rods (9 mos.)..... Tons.		41,321		3,633,787
Billets, blooms, ingots (9 mos.).....			41,558	1,831,917
Rails (9 mos.).....			26,402	1,605,742
Hardware, viz:—				
Wire and wire nails..... Cwt.	2,450,517	8,597,320	2,109,637	9,823,700
Tools, hand or machine.....		376,549		940,347
Hardware, n.o.p.....		515,613		917,177
All other, n.o.p.....		38,974,154		7,000,678
Lime.....		66,406		74,523
Metals:—				
Aluminium in bars, blocks, etc..... Cwt.	184,253	5,201,066	223,246	7,620,953
Aluminium, manufactures of.....		26,780		17,165
Brass, old and scrap..... Cwt.	375,037	6,064,779	595,000	9,615,627
Copper in pigs, bars, sheets, etc.....	24,304	581,268	175,706	4,776,025
Copper, old and scrap.....	58,466	1,284,895	159,939	4,296,989
Lead in pigs, etc.....	1,121	7,710	10,045	62,453
Metallic shingles and laths and corrugated roofing.....		30,563		41,084
Plated ware, n.o.p.....		15,050		23,164
Platinum, old and scrap (9 mos.)..... Ozs.			195	18,290
N.o.p.....		3,143,135		5,611,556
Mineral and aerated waters in bottles.....		1,676		10,745
Oil, n.o.p..... Gals.	3,391,857	1,038,025	4,264,160	1,041,467
Plumbago, manufactures of.....		304,919		384,505
Stone of all kinds, dressed.....		4,592		1,816
Tar.....		50,352		43,547
Tin, manufactures of.....		16,284		88,844
Vehicles:—				
Automobiles..... No.	12,579	6,078,668	9,492	4,561,875
" parts of.....		672,060		2,035,769
Bicycles..... No.	580	50,894	454	61,984
" parts of.....		5,877		52,260
Total Manufactures.....		90,423,122		90,736,151
Grand Total.....		171,173,583		167,805,818

## EXPORTS.

Showing Destination of Mine Products during the Fiscal Years, 1914-15, 1915-16,  
and 1916-17.

Destination.	1914-15. Value.	1915-16. Value.	1916-17. Value.
<i>British Empire.</i>			
	\$	\$	\$
United Kingdom .....	12,219,937	12,425,248	15,545,227
Australia .....	125,903	122,409	53,297
Bermuda .....		5	210
British South Africa .....	8,092	43,397	27,151
"    Guiana .....		28,812	109,590
"    India .....	612		119,559
"    E. Indies, other .....	4,404		37,567
"    W. Indies .....	1,552	9,170	60
Gibraltar .....	1,974	3,301	55,828
Hong Kong .....	213,254	498,991	263,812
Newfoundland .....	516,756	806,726	919,300
New Zealand .....	130	695	12,639
Total British Empire .....	13,092,614	13,943,754	17,144,240
<i>Other Countries.</i>			
Alaska .....	243,231	295,169	347,124
Argentina .....	3,447	102	132
Austria Hungary .....	37,124		
Belgium .....	45,668		
Brazil .....	3,159		135
Chili .....			6,991
China .....	94,203	368,199	135,483
Cuba .....	1,461	7,304	5,194
Denmark .....	611		7,646
Egypt .....			3,312
France .....	91,857	186,868	555,589
French W. Indies .....			900
Germany .....	290,276		
Greece .....		914	4,644
Greenland, Iceland, etc .....		4,957	
Hawaii .....	26,262	1,804	
Holland .....	87,207	5,130	17,923
Italy .....	41,353	154,733	212,938
Japan .....	69,483	61,016	146,440
Mexico .....	1,928	9,393	
Miquelon and St. Pierre .....	36,519	40,919	22,107
Norway .....	2,662		
Panama .....	3,891		
Peru .....		237	
Philippines .....	5,257		
Porto Rico .....		2,016	
Portugal .....	633		
Russia .....	2,678	62,637	24,885
San Domingo .....			6,456
Spain .....	911	9,900	
Sweden .....	345	9,001	
United States .....	37,553,209	51,425,708	66,974,768
Total other countries .....	38,648,375	52,646,107	68,472,667
Grand total .....	51,740,989	66,589,861	85,616,907

## IMPORTS.

## Imports of Products of the Mine and Manufactures of Mine Products—Calendar Years, 1915, 1916, and 1917.

Products	1915. Value.	1916. Value.	1917. Value.
	\$	\$	\$
Alumina.....	892,634	1,114,061	1,866,240
Alum, alum cake and chloralum.....	196,685	471,836	423,903
Aluminium and manufactures.....	722,235	671,096	560,481
Ammonia, nitrate of.....	202,153	202,153	283,853
Ammonia, sulphate of.....	14,637	9,672	26,062
Antimony regulus.....	344,918	208,450	61,732
Antimony salts.....	10,320	13,891	6,295
Arsenic, oxide and sulphide of.....	6,072	18,925	54,136
Asbestos.....	168,894	334,670	537,431
Asphaltum.....	570,295	563,446	454,403
Bells and gongs.....	43,205	72,420	84,021
Bismuth.....	9,004	8,608	12,922
Blanc fixe and satin white.....	59,471	86,306	90,482
Blast furnace slag.....	14,067	4,602	7,106
Borax.....	164,180	265,933	381,294
Brick and tile.....	488,288	390,467	442,455
Brick, fire, of a kind not made in Canada, and n.o.p.....	813,071	1,657,792	3,156,591
Bromine and bromides.....	530	413	530
Burrstones.....	314	648	910
Cement, portland, and manufactures.....	47,836	43,747	28,356
Chalk, Cornwall stone, feldspar, flintspar, magnesite, mica, schist.....	100,012	170,498	264,220
Clays: china, fire, pipe and all other.....	237,096	325,494	416,209
Coal: anthracite, bituminous, slack and run-of-mine.....	28,345,605	38,289,666	70,562,357
Coke.....	1,608,464	2,229,078	6,517,260
Coke, ground for electric batteries.....	12,266	8,119	15,239
Copper and manufactures of.....	3,957,770	7,566,080	10,015,561
Cryolite.....	61,312	78,916	101,141
Crucibles, clay or plumbago.....	106,761	520,341	798,044
Chloride of lime.....	112,142	158,546	100,834
Cyanides of potassium, sodium, cyanogen, or cpd. of bromine.....	367,329	507,021	505,294
Diamonds, unset, and bort.....	709,154	1,332,957	1,363,887
Earthenware.....	1,460,010	2,180,414	2,595,582
Earths, crude.....	1,811	4,074	3,917
Electric carbons.....	40,635	58,676	65,225
Emery.....	206,732	367,719	632,336
Fertilizers, compound or manufactured.....	734,952	639,884	1,043,140
Flint, quartz, silex, etc.....	54,493	90,280	77,104
Foundry facings.....	9,855	27,638	47,416
Fullers earth.....	12,321	13,072	17,004
Fossils.....	4,000	2,699	6,943
Gannister.....	2,462	2,833	23,954
Gold and silver and manufactures of.....	1,829,953	20,016,288	2,921,018
Graphite and manufactures of.....	45,117	103,150	171,209
Grindstones.....	79,391	122,291	185,607
Gypsum and plaster of Paris.....	25,819	43,291	35,460
Hydrofluosilicic acid.....	36,085	28,611	97
Iron and steel—Total, 1915, 74,308,983			
1916, 129,040,248			
1917, 186,538,538			
Pig-iron.....	624,200	1,145,150	2,704,165
Ferro products and chrome steel.....	820,976	1,893,879	2,045,595
Ingots, blooms, billets, puddled bars, etc.....	1,270,637	895,446	1,401,782
Scrap iron and scrap steel.....	127,614	179,751	454,079
Plates and sheets.....	7,647,560	12,806,896	17,582,700
Tin plates and sheets.....	2,833,951	5,221,163	9,985,631
Bars, rods, hoops, bands, etc.....	5,829,088	13,362,807	22,567,187
Structural iron and steel.....	3,615,333	8,042,127	16,282,012
Rails and connexions.....	379,218	470,023	944,595
Pipes and fittings.....	110,978	165,576	143,124
Nails and spikes.....	86,876	233,007	892,021
Wire.....	2,175,834	4,305,674	4,409,376
Forging castings and manufactures.....	1,932,370	3,343,559	5,976,313
Other iron and steel products.....	46,804,298	76,975,990	102,089,953
Iron ore.....	2,331,755	4,419,013	5,124,889

## IMPORTS.

Imports of Products of the Mine and Manufactures of Mine Products—Calendar Years 1915, 1916, and 1917—Continued.

Products.	1915.	1916.	1917.
	Value.	Value.	Value.
	\$	\$	\$
Iron sand.....	3,263	15,641	36,737
Kainite.....	146	5,016	38,828
Lead and manufactures; litharge.....	2,482,916	2,077,896	1,732,428
Lime.....	98,040	96,332	78,251
Lithographic stone.....	1,316	2,768	3,921
Manganese, oxide of.....	46,678	63,786	92,616
Magnesia.....	9,695	20,651	16,186
Meerschäum.....	73		
Mercury or quicksilver.....	159,284	74,461	76,322
Metallic alloys:—			
Babbitt metal.....	16,703	20,524	36,444
Brass and manufactures of.....	3,177,942	4,676,374	5,328,659
Britannia metal and manufactures.....	11,198	25,192	20,513
German silver, nickel, and nickel silver.....	274,706	414,410	519,064
Type metal.....	1,838	2,126	1,198
Mineral and bituminous substances.....	123,726	344,743	647,444
Mineral water, including aerated water.....	126,569	130,933	108,444
Nickel anodes.....	9,571	6,019	8,348
Ochres, etc.....	284,749	409,258	417,502
Ores of metals, n.o.p.....	962,999	2,844,277	3,221,267
Paraffin wax.....	40,965	70,308	140,722
Paraffin candles.....	27,552	30,539	75,257
Petroleum and products of.....	7,979,264	14,604,476	22,741,709
Phosphate (fertilizer).....	14,148	16,182	62,543
Platinum and manufactures of.....	84,087	88,543	114,279
Potash and manufactures of.....	206,575	150,735	135,836
Precious stones.....	132,173	207,621	192,748
Pumice.....	18,314	34,654	34,162
Salt.....	517,526	694,835	1,083,205
Saltpetre.....	279,692	101,103	163,556
Sand and gravel.....	120,756	133,894	312,403
Slate and manufactures of.....	108,676	96,776	106,893
Sand paper.....	133,677	247,317	331,776
Soda products: barilla, bichromate, caustic, salt, and salt cake.....	858,364	2,079,859	3,096,578
Stone and manufactures of (including marble).....	539,173	587,304	764,658
Soda, nitrate of.....	1,050,648	2,973,473	1,935,698
Sulphate of iron (copperas).....	5,302	11,549	9,952
Sulphur and phosphorus.....	509,839	1,229,356	1,549,828
Sulphuric acid.....	4,872	115,173	15,680
Talc.....	1,866	(a)	(a)
Tar, coal and pine.....	151,377	184,286	208,065
Tin and manufactures of (including tinware).....	1,634,796	2,999,675	5,656,665
Whiting and prepared chalk.....	109,551	181,349	261,812
Zinc and manufactures of.....	2,775,358	3,690,577	3,641,272
	146,465,510	256,346,726	353,660,555

(a) Not separately recorded.

## Production by Provinces.

A summary of the mineral production by provinces in 1916 and 1917 is shown in the accompanying tables in the first of which the total production in the several provinces and the percentages of each are given for the past three years.

In comparing the relative productions 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, 1915, 1916, and 1917.

Province.	1915.		1916.		1917.	
	Value of production.	Per cent of total.	Value of production.	Per cent of total.	Value of production.	Per cent of total.
	\$		\$		\$	
*Nova Scotia .....	18,088,342	13.19	20,042,262	11.31	21,104,542	11.13
New Brunswick .....	903,467	0.66	1,118,187	0.63	1,435,024	0.76
Quebec .....	11,619,275	8.48	14,406,598	8.13	17,400,077	9.18
Ontario .....	61,071,287	44.54	80,461,323	45.41	89,066,600	46.96
Manitoba .....	1,318,387	0.96	1,823,576	1.03	2,628,264	1.39
Saskatchewan .....	451,933	0.33	590,473	0.33	860,651	0.45
Alberta .....	9,909,347	7.23	13,297,543	7.50	16,527,535	8.71
British Columbia .....	28,689,425	20.92	39,969,962	22.56	36,141,926	19.06
Yukon .....	5,057,708	3.69	5,491,610	3.10	4,482,202	2.26
Dominion .....	137,109,171	100.00	177,201,534	100.00	189,646,821	100.00

\*Includes a small production of lime from Prince Edward Island in 1916.

### Mineral Production of Nova Scotia, 1916 and 1917.

Product.	1916.		1917.		
	Quantity.	Value.	Quantity.	Value.	
		\$		\$	
Gold .....	Ozs.	4,562	94,305	2,210	45,685
Barytes .....	Tons	1,368	19,393	3,490	54,027
Coal .....	"	6,912,140	18,514,662	6,327,091	19,410,737
Grindstones .....	"	273	5,800	375	9,875
Gypsum .....	"	238,212	278,100	215,472	301,261
Manganese .....	"	646	70,371	158	14,836
Molybdenite .....	Lbs.			94	94
Tripolite .....	Tons	620	12,139	600	18,000
Clay products .....	"		238,470		331,542
Lime .....	Bus.	911,534	182,506	986,106	197,344
Stone .....	"		459,298		569,521
Other products .....	"		167,458		151,620
Total .....			20,042,262		21,104,542

The total production of pig-iron in Nova Scotia in 1917 was 472,147 tons valued at \$10,387,234, and in 1916, 470,055 tons valued at \$7,050,825.

### Mineral Production of New Brunswick, 1916 and 1917.

Product.	1916.		1917.		
	Quantity.	Value.	Quantity.	Value.	
		\$		\$	
Silver .....	Ozs.		400	326	
Copper .....	Lbs.		33,920	9,219	
Coal .....	Tons	143,540	386,016	189,095	708,010
Grindstones .....	"	3,205	46,982	2,148	35,879
Gypsum .....	"	39,546	153,064	38,556	191,631
Manganese ore .....	"	(a)			
Natural gas .....	M. cu. ft.	610,118	79,628	796,775	103,735
Petroleum .....	Bls.	1,345	2,663	2,341	5,460
Clay products .....	"		42,881		51,304
Lime .....	Bus.	424,113	104,635	532,251	171,248
Stone .....	"		112,257		111,150
Other products .....	"		190,061		47,062
Total .....			1,118,187		1,435,024

(a) Included in "Other products."



## Mineral Production of Quebec, 1916 and 1917.

Product.	1916.		1917.	
	Quantity.	Value.	Quantity.	Value.
		\$		\$
Molybdenite.....	Lbs.		216,693	216,693
Copper.....	"	5,703,347	1,551,424	5,015,560
Gold.....	Ozs.	1,034	21,375	1,511
Iron ore, sold for export.....	Tons.	3,209	8,308	16,488
Lead.....	Lbs.	698,760	59,485	1,378,001
Silver.....	Ozs.	98,610	64,748	136,194
Zinc ore.....	Lbs.	1,663,200	212,956	1,736,740
Asbestos and asbestic.....	Tons.	154,149	5,228,869	153,771
Chromite.....	"	27,517	311,460	36,725
Feldspar.....	"	4,610	18,075	1,188
Graphite (α).....	"	479	75,776	541
Magnesite.....	"	54,778	554,304	58,090
Mica.....	"		192,343	
Mineral water.....	Gall.	93,782	16,223	
Iron oxides.....	Tons.	8,811	58,711	9,409
Phosphate.....	"	190	2,340	123
Pyrites.....	"	130,639	523,272	122,882
Quartz.....	"	1,149	1,436	550
Cement.....	Bls.	2,150,475	2,525,863	2,079,625
Clay products.....			976,164	973,716
Kaolin.....	Tons.	1,750	17,500	533
Lime.....	Bus.	1,498,845	267,119	1,470,486
Slate.....	Squares.	1,262	6,223	1,422
Stone.....			1,370,465	991,593
Other products.....			342,159	265,633
Total.....			14,406,598	17,400,007

There was also in this Province an important production of aluminium from imported ores.

## Mineral Production of Ontario, 1916 and 1917.

Product.	1916.		1917.	
	Quantity.	Value.	Quantity.	Value.
		\$		\$
Asbestos.....	Tons		10	2,150
Cobalt, metallic and in oxide, etc.....	Lbs.	840,536	924,590	1,079,572
Copper.....	"	44,997,035	12,240,094	42,867,774
Gold.....	Ozs.	492,481	10,180,485	423,261
Iron ore, sold for export.....	Tons	137,399	385,381	162,764
Iron, pig, from Canadian ore (a).....	"	115,691	1,328,605	46,022
Lead.....	Lbs.	685,932	58,393	1,586,711
Molybdenite.....	"	(b)	68,213	68,213
Nickel.....	"	82,958,564	29,035,498	84,330,280
Silver.....	Ozs.	21,608,158	14,188,133	19,301,835
Actinolite.....	Tons	250	2,750	120
Arsenious oxide.....	"	2,186	262,349	2,656
Corundum.....	"	67	10,307	188
Feldspar.....	"	14,878	53,332	18,274
Fluorspar.....	"	1,284	10,238	4,249
Graphite.....	"	3,476	249,586	3,173
Gypsum.....	"	30,668	116,086	48,947
Mica.....	"		62,896	
Mineral water.....	"		110,333	
Natural gas.....	M. cu. ft.	17,953,109	2,765,105	19,868,036
Peat.....	Tons	300	1,500	
Petroleum.....	Bls.	196,778	389,621	202,991
Phosphate.....	Tons	13	174	26
Pyrites.....	"	177,552	555,523	288,058
Quartz.....	"	84,519	167,636	177,983
Salt.....	"	132,903	717,653	138,909
Talc.....	"	13,051	48,575	15,778
Cement.....	Bls.	2,230,386	2,312,677	1,676,904
Clay products.....	"		2,145,036	
Lime.....	Bus.	2,031,396	367,115	2,846,850
Sand-lime brick.....	No.	11,638,150	77,726	10,667,600
Stone.....	"		857,023	
Other products.....	"		836,903	
Total.....			80,461,323	89,066,600

(a) The total production of pig-iron in Ontario in 1917 was 698,333 tons, valued at \$14,638,726; in 1916 699,202 tons, valued at \$9,700,073.

(b) Included under "Other products."

## Mineral Production of Manitoba, 1916 and 1917.

Product.	1916.		1917.	
	Quantity.	Value.	Quantity.	Value.
		\$		\$
Copper.....	Lbs.		1,116,000	303,329
Gold.....	Ozs.		440	9,095
Silver.....	"		7,201	5,863
Calcined gypsum.....	Tons	28,489	191,283	33,347
Clay products.....	"		104,248	
Lime.....	Bus.	355,301	83,754	393,932
Cement.....	Bls.	427,293	794,897	544,949
Sand-lime brick.....	No.	3,215,097	33,048	5,070,500
Stone.....	"		372,894	
Other products.....	"		243,452	
Total.....			1,823,576	2,628,264

## Mineral Production of Saskatchewan, 1916 and 1917.

Product.	1916.		1917.	
	Quantity.	Value.	Quantity.	Value.
		\$		\$
Coal..... Tons	281,300	441,836	355,445	662,451
Clay products.....		78,668		78,251
Sand-lime brick..... No.	990,000	9,890	674,500	7,674
Other products.....		60,079		112,275
Total.....		590,473		860,651

## Mineral Production of Alberta, 1916 and 1917.

Product.	1916.		1917.	
	Quantity.	Value.	Quantity.	Value.
		\$		\$
Gold..... Ozs.	82	1,695		
Coal..... Tons.	4,559,054	11,386,577	4,736,363	14,153,685
Natural gas..... M. cu. ft.	6,904,231	1,113,296	6,744,130	1,299,976
Petroleum..... Bls.			8,500	63,302
Cement..... "	275,727	477,832	259,423	567,969
Clay products.....		225,140		309,991
Lime..... Bus.	78,019	20,033	104,540	35,516
Sand-lime brick..... No.	697,500	5,571	1,547,590	15,703
Stone.....		257		7,482
Other products (a).....		67,142		73,911
Total.....		13,297,543		16,527,535

(a) Includes in 1917 a small value in copper, zinc and silver, in addition to sand and gravel.

## Mineral Production of British Columbia, 1916 and 1917.

Product.	1916.		1917.	
	Quantity.	Value.	Quantity.	Value.
		\$		\$
Antimony and Molybdenite..... Lbs.		13,003	3,705	3,705
Copper (a) ..... Lbs.	63,642,550	17,312,046	57,730,959	15,691,275
Gold..... Ozs.	219,633	4,540,216	133,742	2,764,693
Lead..... Lbs.	39,157,701	3,333,496	29,483,725	3,283,602
Platinum..... Ozs.	15	600	57	3,823
Silver..... "	3,392,872	2,227,794	2,655,994	2,162,430
Zinc ore..... Lbs.	21,701,560	2,778,667	27,861,441	2,479,947
Ar-enic..... Tons.			280	11,200
Coal..... "	2,584,061	8,075,190	2,433,888	8,235,716
Gypsum..... "			10	20
Magnesite..... "	635	9,525		
Magnesium sulphate..... "			929	4,645
Mineral water..... "		1,250		1,382
Pyrites..... Tons.	1,060	5,300	5,709	28,545
Quartz..... "	41,077	82,154	37,755	132,143
Talc..... "	53	848	25	400
Cement..... Bls.	285,679	436,459	207,537	438,009
Clay products..... "		292,698		334,685
Lime..... Bus.	194,042	66,301	232,955	58,067
Stone..... "		564,218		265,978
Other products..... "		230,197		241,661
Total.....		39,969,962		36,141,926

(a) Smelter recoveries of copper.

## Mineral Production of Yukon, 1916 and 1917.

Product.	1916.		1917.	
	Quantity.	Value.	Quantity.	Value.
		\$		\$
Antimony ore..... Tons.	20	160		
Copper..... Lbs.	2,807,096	763,586	2,460,079	668,650
Gold..... Ozs.	212,760	4,396,900	177,667	3,672,703
Lead..... Lbs.	955,222	81,318	127,844	14,238
Silver..... Ozs.	360,101	236,446	119,605	97,379
Coal..... Tons.	3,300	13,200	4,872	29,232
Total.....		5,491,610		4,482,202

Mineral Production by Provinces, 1899-1917.

Calendar Year.	Nova Scotia*.	New Brunswick.	Quebec.	Ontario.	Manitoba.	Alberta.	Saskatche- wan.	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	499,060	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				17,443,031	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				23,299,600	79,286,697
1907.....	14,522,040	664,467	6,205,553	30,381,638	\$ 898,775	\$ 4,657,524	\$ 533,251	\$ 3,385,898	25,656,056	\$ 86,865,202
1908.....	14,487,108	579,816	6,372,949	30,623,312	584,374	5,122,505	413,212	3,669,290	23,704,035	85,557,101
1909.....	12,504,810	657,035	7,086,265	37,374,577	1,193,377	6,047,447	456,246	4,032,678	22,479,006	91,831,441
1910.....	14,195,730	581,942	8,270,136	43,533,078	1,500,359	8,996,210	498,122	4,764,474	24,478,572	106,823,623
1911.....	15,409,397	612,830	9,304,717	42,796,162	1,791,772	6,662,673	636,706	4,707,432	21,299,305	103,220,994
1912.....	13,922,236	771,004	11,656,998	51,985,876	2,463,074	12,073,589	1,165,642	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	15,054,046	881,142	6,276,737	28,086,312	145,634,312
1914.....	17,584,639	1,014,570	11,836,929	53,034,677	2,413,489	12,634,234	712,313	5,418,185	24,164,039	128,863,075
1915.....	18,088,342	903,467	11,619,275	61,071,287	1,318,387	9,909,347	451,933	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	13,297,543	590,473	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	16,527,535	860,651	4,482,202	36,141,926	189,646,821

\* 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 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, 1914.

	No. of mines or works	Men employed.		Wages paid.	Ores or minerals mined.	Metals, ores, concentrates or minerals shipped.	Net value of shipments.
		Under-ground.	Surface.				
METALLIFEROUS ORES.	No.	No.		\$	Tons.	Tons.	\$
Iron ores.....	5	598		364,489	345,410	244,854	542,041
Milling gold ore—							
Bullion shipped.....						13	6,101,463
Concentrates.....	44	1,070	1,206	2,603,414	754,732	6,974	860,379
Silver-cobalt ores—							
Mine bullion shipped.....						354	5,665,006
Ore and concentrate.....	29	1,412	1,883	3,207,116	733,174	16,917	7,827,140
Nickel-copper ores.....	9	736	1,286	1,693,997	1,000,364	999,908	5,020,003
Copper ores.....	4	113	180	177,721	119,292	117,762	502,637
Silver-lead and zinc ores.....	76	394	817	1,110,876	186,646	70,207	2,652,802
Zinc products.....						10,893	262,563
Gold-copper-silver ores.....	20	823	1,746	2,512,241	1,857,788	1,647,973	9,530,537
Placer mining—							
Yukon.....						10	5,132,616
British Columbia.....						1	565,000
Alberta.....							992
Total metalliferous.....	187	11,994		11,669,854	4,997,406	3,115,855	44,763,179
Total non-metalliferous.....	451	33,732		22,058,526	17,078,300	14,708,307	43,467,229
Total structural materials.....	1,023	21,129		9,881,316			26,009,227
	1,661	66,855		43,609,696			114,239,635

## Mine Production 1914—Content of Shipments.

	Gold.	Silver.	Nickel.	Copper.	Lead.	Zinc.
	Ozs.	Ozs.	Lbs.	Lbs.	Lbs.	Lbs.
Milling gold ore—						
Bullion.....	289,860	85,110				
Concentrates.....	38,717	64,218		90	15,141	
Silver-cobalt ores—						
Mine bullion shipped.....		10,335,527				
Ore and concentrate.....		15,523,608				
Nickel-copper ores.....			60,800,799	36,300,532		
Copper ores.....	1,059	51,440		6,450,899		
Silver-lead, zinc-ores.....	334	2,501,820			50,527,130	
Zinc products.....		376,420				9,101,460
Gold-copper-silver ores.....	182,784	761,890		53,771,126		
Placer mining—						
Yukon.....	247,753	55,744				
British Columbia.....	27,332					
Alberta.....	48					
Total.....	787,887	29,755,777	60,800,799	96,522,647	50,542,271	9,101,460

## 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.
		Under-ground.	Surface.				
METALLIFEROUS ORES.							
	No.	No.		\$	Tons.	Tons.	\$
Antimony ore.....	7	157		55,038	15,318	1,491	83,971
Molybdenite.....	4	52		16,090		37	28,450
Iron ores.....	5	399		230,346	251,742	398,112	774,427
Milling gold ore—							
Bullion shipped.....						18	8,953,130
Concentrates.....	50	1,324	1,555	2,893,187	1,180,477	8,335	711,947
Silver-cobalt ores—							
Mine bullion shipped.....						232	3,410,936
Ore and concentrate.....	25	1,008	1,531	2,363,414	588,404	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	323	784	960,894	215,694	73,752	2,958,394
Zinc products.....						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

## Mine Production, 1915—Content of Shipments.

—	Gold.	Silver.	Nickel.	Copper.	Lead.	Zinc.	Antimony
	Ozs.	Ozs.	Tons.	Tons.	Tons.	Tons.	Tons.
Antimony ore.....							540
Milling gold ore—							
Bullion.....	130,981	87,116					
Concentrates.....	35,779	37,507					
Silver-cobalt ores—							
Mine bullion shipped.....		6,752,183					
Ore and concentrate.....		17,603,943					
Nickel-copper ores.....			43,891	23,318			
Copper ore.....	1,151	64,965		3,538			
Silver-lead-zinc ores.....	459	2,637,144			24,354		
Zinc products.....		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.....	196						
<b>Total.....</b>	<b>937,744</b>	<b>28,375,362</b>	<b>43,891</b>	<b>61,614</b>	<b>24,354</b>	<b>6,116</b>	<b>540</b>

## 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.
		Under-ground.	Sur-face.				
METALLIFEROUS ORES.	No.	No.		\$	Tons.	Tons.	\$
Antimony ore.....	5		116	59,957	14,947 <sup>(a)</sup>	938	136,360
Molybdenite.....	9		262	122,072	13,522 <sup>(b)</sup>	78	166,461
Iron ores.....	4		530	376,716	331,822	275,176	715,107
Milling gold ore—							
Bullion shipped.....						21	10,418,052
Concentrates.....	49	1,304	1,709	3,540,899	1,502,336	9,340	522,409
Silver-cobalt ores—							
Mine bullion shipped.....						171	3,444,736
Ore and concentrate.....	32	1,034	1,561	2,450,614	547,882	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.....		573	1,070	1,803,633	395,802	84,516	4,568,500
Zinc products.....	84					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
<b>Total metalliferous.....</b>	<b>260</b>	<b>14,598</b>	<b>15,867,748</b>	<b>15,867,748</b>	<b>7,450,654</b>	<b>4,684,041</b>	<b>67,536,166</b>
<b>Total non-metalliferous.....</b>	<b>532</b>	<b>30,541</b>	<b>24,937,562</b>	<b>24,937,562</b>	<b>18,170,207</b>	<b>15,699,930</b>	<b>53,414,983</b>
<b>Total structural materials.....</b>	<b>816</b>	<b>12,465</b>	<b>6,237,168</b>	<b>6,237,168</b>			<b>17,467,186</b>
<b>Total.....</b>	<b>1,608</b>	<b>57,604</b>	<b>47,092,478</b>	<b>47,092,478</b>			<b>138,418,335</b>

(a) Includes refined antimony.

(b) MoS<sub>2</sub> contents of concentrates produced.



## Mine Production, 1916—Content of Shipments.

	Gold.	Silver.	Nickel.	Copper.	Lead.	Zinc.	Antimony.
	Ozs.	Ozs.	Tons.	Tons.	Tons.	Tons.	Tons.
Antimony ore.....							429
Milling gold ore—							
Bullion.....	519,202	102,349					
Concentrates.....	30,138	54,136					
Silver-cobalt ores—							
Mine bullion shipped.....		4,982,702					
Ore and concentrate.....		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						
<b>Total.....</b>	<b>954,477</b>	<b>24,794,943</b>	<b>51,127</b>	<b>72,030</b>	<b>27,062</b>	<b>24,249</b>	<b>429</b>

## 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.		\$	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 ore—							
Bullion shipped.....						18	9,312,424
Concentrates.....	45	1,388	1,633	3,687,392	1,303,410	8,874	365,375
Silver-cobalt ores—							
Mines bullion shipped.....						318	7,623,740
Ore and concentrates.....	32	1,079	1,369	2,667,607	527,850	72,719	10,123,338
Nickel-copper ores.....	6	907	1,737	2,981,896	1,518,733	1,509,841	11,323,808
Silver-lead and zinc ores.....	87	716	1,198	2,295,090	445,663	46,799	3,866,862
Zinc products.....						116,489	1,323,985
Gold-copper-silver ores.....	33	1,730	2,253	4,667,578	2,554,738	1,878,911	16,048,186
Placer mining							
Yukon.....	69	890		1,337,063			3,310,268
British Columbia.....	34	275		203,589		8	495,000
<b>Total metalliferous.....</b>	<b>389</b>	<b>16,250</b>		<b>18,650,309</b>	<b>6,690,827</b>	<b>3,851,194</b>	<b>64,900,113</b>
<b>Total non-metalliferous....</b>	<b>763</b>	<b>32,088</b>		<b>31,393,570</b>	<b>18,438,815</b>	<b>15,468,048</b>	<b>63,354,363</b>
<b>Total structural materials</b>	<b>739</b>	<b>10,814</b>		<b>6,609,372</b>			<b>19,337,311</b>
	<b>1,891</b>	<b>59,152</b>		<b>56,659,251</b>	<b>25,129,642</b>	<b>19,319,242</b>	<b>148,091,787</b>

## Mine Production, 1917—Content of Shipments.

	Gold.	Silver.	Nickel.	Copper.	Lead.	Zinc.	Anti- mony.	Molyb- denite.
	Ozs.	Ozs.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Antimony ore.....							144	165
Molybdenum ore.....								
Milling gold ore—								
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.....	1,033	1,070,064			19,348			
Zinc products.....		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

## Labour and Wages Statistics Covering Non-Metalliferous Mines during 1915, 1916, and 1917.

	1915.			1916.			1917.		
	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.
			\$			\$			\$
<b>NON-METALLIC-</b>									
Asbestos and asbestic.....	9	2,394	1,091,076	13	2,821	1,659,913	15	3,114	2,312,110
Chromite.....	6	204	116,339	12	229	109,146	9	253	211,105
Coal.....	255	24,574	17,385,200	277	23,611	20,884,236	329	24,596	25,963,320
Feldspar.....	6	87	21,173	7	119	42,980	8	101	55,742
Fluorspar.....				3	36	8,449	7	59	28,810
Graphite.....	5	110	40,643	6	344	191,376	5	282	191,307
Grindstones, pulpstones and scythestones.....	4	110	18,996	5	128	24,330	5	92	25,052
Gypsum.....	16	1,152	468,612	15	919	467,262	12	774	445,128
Magnesite.....	4	110	23,607	3	183	144,987	2	296	194,864
Mica and phosphate.....	23	138	47,372	33	241	86,101	28	283	119,440
Mineral pigments: barytes, and ochres.....	4	61	24,197	4	125	42,169	7	109	56,185
Mineral water.....	17	50	23,066	20	60	30,507	22	53	22,246
Natural gas.....	(a) 88	619	511,967	94	750	532,913	105	597	520,290
Peat.....	1	18	3,200		(b)				
Petroleum.....	(c) 1			(c)			168	270	167,205
Pyrites.....	7	207	172,986	(d) 11	375	310,656	11	454	451,940
Quartz.....	6	122	78,747	8	167	164,763	12	289	287,817
Salt.....	11	254	186,059	9	262	219,595	10	309	249,073
All others.....	10	182	43,886	12	171	67,879	8	157	96,736
<b>Total non-metallic.....</b>	<b>472</b>	<b>30,392</b>	<b>20,257,126</b>	<b>532</b>	<b>30,541</b>	<b>24,987,562</b>	<b>763</b>	<b>32,088</b>	<b>31,398,570</b>
<b>STRUCTURAL.</b>									
Cement.....	20	1,686	1,184,459	15	1,695	1,307,224	9	1,396	1,424,215
Clay products.....	349	4,405	1,452,828	290	4,164	1,740,900	276	3,915	2,174,167
Lime.....	78	633	298,735	76	758	381,365	67	770	554,617
Sand-lime brick.....	18	177	41,043	15	139	50,079	13	150	65,175
Sand and gravel.....	241	1,721	491,830	221	1,667	631,195	208	1,562	770,167
Slate.....	1	20	5,520	1	22	11,085	1	19	10,933
Stone.....	236	5,144	2,188,302	198	4,020	2,115,320	165	3,002	1,610,598
<b>Total structural.....</b>	<b>943</b>	<b>13,786</b>	<b>5,657,717</b>	<b>816</b>	<b>12,465</b>	<b>6,237,163</b>	<b>739</b>	<b>10,814</b>	<b>6,609,872</b>
<b>Total non-metalliferous.....</b>	<b>1,415</b>	<b>44,178</b>	<b>25,874,670</b>	<b>1,348</b>	<b>43,006</b>	<b>31,224,730</b>	<b>1,502</b>	<b>42,902</b>	<b>38,008,442</b>

†Includes in 1915—actinolite, corundum, manganese, talc, and tripolite.  
 " 1916—actinolite, corundum, manganese, peat, tripolite and talc.  
 " 1917—corundum, manganese, magnesium sulphate, tripolite and talc.  
 (a) Estimated for 1915. (b) Included in "All other." (c) Not collected. (d) Partial.