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PRELIMINARY REPORT
ON THE
MINERAL PRODUCTION
OF
CANADA
1944



OTTAWA
1945

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PREFACE

This report is prepared for presentation at the Annual Meeting of the Canadian Institute of Mining and Metallurgy which is to be held at Quebec city on April 17-18-19, 1945. It contains final figures of Canada's mineral production for 1943 and a preliminary estimate for 1944, which is subject to revision as the final returns for each metal and mineral are compiled. Separate bulletins will be issued giving full details of 1944 data. This information is later published in the Annual Report on the Mineral Production of Canada.

Canada is now in her sixth year of war and it was therefore considered that it would be of interest if the past five years' production were shown for each item. Imports and exports for 1943 and 1944 are also shown.

The thanks of the Bureau are tendered to the officers of the Mines Departments of the various provinces and the Dominion Department of Mines and Resources, also to the Metals Controller and the Coal Controller, with all of whom this Bureau co-operates closely.

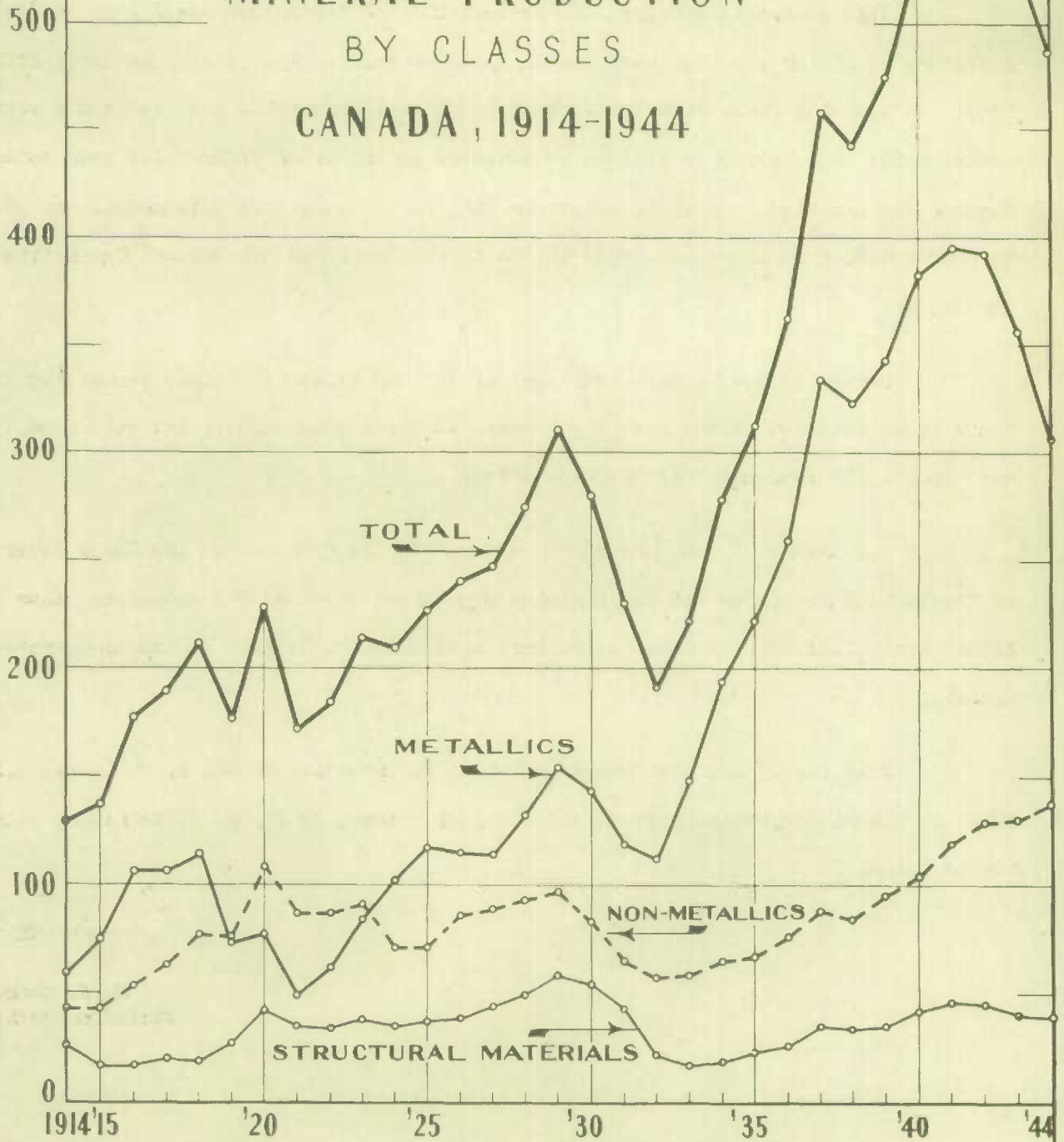
This report has been prepared under the direction of Mr. W. H. Losee, B.Sc., Chief of the Mining, Metallurgical and Chemical Branch, by Mr. R. J. McDowall, B.Sc., Mining Statistician.

S. A. Cudmore

S. A. Cudmore,
Dominion Statistician.

MILLION
DOLLARS

VALUE OF
MINERAL PRODUCTION
BY CLASSES
CANADA, 1914-1944



Dominion Statistician:
 Chief - Mining, Metallurgical and Chemical Branch:
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PRELIMINARY REPORT

on the

MINERAL PRODUCTION OF CANADA

DURING THE CALENDAR YEAR 1944

Canada's mineral production was valued at \$485,923,948 in 1944 as compared with \$530,053,966 in the preceding year. The reduction was principally in the metals group. The total value of all metals produced was \$307,572,217, a decrease of 14 per cent or \$49,240,543. On the other hand, the total value of fuels, which include coal, natural gas, crude petroleum and peat, increased 7 per cent to \$99,375,445. This was mainly accounted for by the increased price of coal. Industrial mineral production was valued at \$37,628,575 as compared with \$38,716,568 in 1943. Structural materials showed little overall change also, the estimated value in 1944 being \$41,347,711 as compared with \$42,010,254 in the previous year.

VALUES OF MINERAL PRODUCTION OF CANADA, BY CLASSES, 1932-1944

Year	Metallics	Coal, natural gas, peat and crude petroleum	Other non- metallics	Clay products and other structural materials	TOTAL
					\$
1932	112,041,763	49,047,342	7,740,837	22,398,283	191,228,225
1933	147,015,593	47,778,436	10,004,537	16,696,687	221,495,253
1934	194,110,968	54,262,099	10,501,762	19,286,761	278,161,590
1935	221,800,849	54,824,200	12,504,008	23,215,400	312,344,457
1936	259,425,194	59,983,320	16,740,117	25,770,741	361,919,372
1937	334,165,243	65,828,879	22,495,271	34,869,699	457,359,092
1938	323,075,154	64,803,294	20,066,123	33,878,666	441,823,237
1939	343,506,123	70,671,328	25,061,849	35,362,759	474,602,059
1940	382,503,012	78,837,874	26,011,498	42,472,651	529,825,035
1941	395,346,581	85,141,997	34,379,440	45,373,272	560,241,290
1942	392,192,452	92,169,291	36,677,122	45,729,807	566,768,672
1943	356,812,760	92,514,384	38,716,568	42,010,254	530,053,966
1944	307,572,217	99,375,445	37,628,575	41,347,711	485,923,948

MINERAL PRODUCTION OF CANADA, BY PROVINCES, 1941-1944

Province	1941		1942		1943		1944	
	\$	Per cent	\$	Per cent	\$	Per cent	\$	Per cent
Nova Scotia	32,569,867	5.8	32,783,165	5.9	29,979,837	5.6	35,313,438	7.3
New Brunswick ..	3,690,375	.7	3,609,158	.6	3,676,834	.7	3,428,966	.7
Quebec	99,651,044	17.8	104,300,010	18.4	101,610,678	19.2	90,844,295	18.7
Ontario	267,435,727	47.7	259,114,946	45.7	232,948,959	43.9	209,348,901	43.1
Manitoba	16,689,867	3.0	14,345,046	2.5	13,412,266	2.5	13,728,126	2.8
Saskatchewan ...	15,020,555	2.7	20,578,749	3.6	26,735,984	5.0	22,224,032	4.6
Alberta	41,364,385	7.4	47,359,831	8.4	48,941,210	9.2	51,376,959	10.6
British Columbia Northwest	76,841,180	13.7	77,247,932	13.6	68,442,386	12.9	56,592,096	11.6
Territories ...	3,860,298	.7	3,976,267(x)	.7	2,679,993(x)	.6	2,112,285(x)	.4
Yukon	3,117,992	.5	3,453,568	.6	1,625,819	.4	954,850	.2
TOTAL	560,241,290	100.0	566,768,672	100.0	530,053,966	100.0	485,923,948	100.0

(x) Excluding pitchblende products.

QUANTITIES AND VALUES OF MINERAL PRODUCTS FROM CANADIAN SOURCES, 1943 and 1944

		1 9 4 3		1 9 4 4	
		Quantity	Value	Quantity	Value
			\$		\$
<u>METALLICS</u>					
Antimony	lb.	1,114,166	189,408	1,937,900	280,996
Arsenic (As ₂ O ₃)	lb.	3,153,538	254,009	2,543,000	170,360
Bismuth	lb.	407,597	562,484	123,800	154,750
Cadmium	lb.	786,611	904,602	547,944	602,738
Chromite	ton	29,595	919,878	27,720	761,229
Cobalt	lb.	175,961	191,407	38,452	37,990
Copper	lb.	575,190,132	67,170,601	547,943,586	65,357,050
Gold	fine oz.	3,651,301	140,575,088	2,885,474	111,090,749
Iron ore	ton	641,294	2,032,240	549,922	1,910,716
Lead	lb.	444,060,769	16,670,041	301,073,919	13,548,327
Magnesium	lb.	7,155,974	2,074,652	10,659,335	2,597,921
Manganese ore	ton	48	985	...	...
Mercury	lb.	1,690,240	4,553,200	735,856	1,333,516
Molybdenite concentrates	lb.	784,715	543,515	2,062,700	821,750
Nickel	lb.	288,018,615	71,675,322	275,213,106	69,273,061
Palladium, rhodium, iridium, etc.	fine oz.	126,004	5,233,068	45,100	2,314,252
Platinum	fine oz.	219,713	8,458,951	155,700	5,994,450
Pitchblende products .....	...	...	(x)	...	(x)
Selenium	lb.	374,013	654,523	345,000	621,000
Silver	fine oz.	17,344,569	7,849,111	13,586,502	5,842,196
Tellurium	lb.	8,600	15,050	56,900	99,575
Thallium	lb.	...	...	128	1,690
Tin	lb.	776,937	450,623	516,600	299,628
Titanium ore	ton	69,437	308,290	33,963	84,154
Tungsten concentrates	lb.	1,508,621	1,083,538	881,152	242,000
Zinc	lb.	610,754,354	24,430,174	561,072,538	24,126,119
TOTAL METALLICS .....	...	...	356,312,760	...	307,572,217
<u>NON-METALLICS</u>					
<u>Fuels</u>					
Coal	ton	17,859,057	62,977,549	17,118,008	71,214,303
Natural gas	cu. ft.	44,276,216	13,159,418	45,956,800	11,905,600
Peat	ton	782	7,000	624	5,242
Petroleum	bbl.	10,052,302	16,470,417	10,071,100	16,250,300
TOTAL FUELS .....	...	...	92,514,384	...	99,375,445

(x) Not available for publication.

QUANTITIES AND VALUES OF MINERAL PRODUCTS FROM CANADIAN SOURCES, 1943 and 1944
(Concluded)

		1 9 4 3	Value	1 9 4 4	Value
		Quantity	↓	Quantity	↓
<u>OTHER NON-METALLICS</u>					
Asbestos	ton	467,196	23,169,505	420,880	21,599,787
Barite	ton	24,474	279,253	114,387	1,052,045
Corundum	ton	...	...	160	16,000
Diatomite	ton	98	3,331	87	2,590
Feldspar	ton	23,858	237,771	20,494	204,807
Fluorspar	ton	11,210	318,424	6,336	129,120
Graphite	ton	1,903	197,431	1,565	178,821
Grindstones	ton	164	6,225	225	9,675
Gypsum	ton	446,848	1,381,468	510,224	1,383,082
Iron oxides	ton	8,401	135,893	10,335	172,223
Magnesitic dolomite and brucite ...	...	...	1,260,056	...	1,125,433
Mica	lb.	8,050,692	553,856	6,087,627	788,166
Mineral waters	gal.	139,611	67,541	139,000	65,700
Nepheline syenite .....	...	...	292,010	...	279,701
Peat moss	ton	64,360	1,461,422	63,149	1,554,606
Phosphate	ton	1,451	18,385	389	5,819
Quartz	ton	1,776,749	1,608,448	1,637,876	1,756,690
Salt	ton	687,686	4,379,378	716,875	3,921,050
Silica brick	m	4,165	295,505	3,750	297,031
Soapstone (including talc) .....	...	...	266,685	...	336,261
Sodium carbonate	ton	468	5,148	44	484
Sodium sulphate	ton	107,121	1,025,151	98,188	1,004,054
Sulphur	ton	257,515	1,753,425	248,465	1,745,430
Volcanic dust	ton	50	257	...	...
TOTAL OTHER NON-METALLICS ....	...	...	38,716,568	...	37,628,575
<u>CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS</u>					
Clay products (brick, tile, etc.) .	...	...	6,608,193	...	6,915,475
Cement	bbf.	7,302,289	11,599,033	7,182,462	11,517,035
Lime	ton	907,768	6,832,992	893,120	6,760,262
Sand and gravel	ton	25,744,469	9,005,857	24,921,950	9,375,388
Stone	ton	7,222,950	7,964,179	6,360,775	6,779,551
TOTAL CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS .....	...	...	42,010,254	...	41,347,711
GRAND TOTAL .....	...	...	530,053,966	...	485,923,948

PRELIMINARY ESTIMATE OF MINERAL

		Nova Scotia	New Brunswick	Quebec	Ontario	Mani toba	Saskat- chewan
METALLICS							
Antimony	lb.	...	...	...	...	...	...
	\$
Arsenic (As ₂ O ₃)	lb.	...	...	2,184,000	359,000	...	...
	\$	...	...	145,360	25,000	...	...
Bismuth	lb.	...	...	...	...	...	...
	\$
Cadmium	lb.	...	...	...	...	20,647	118,297
	\$	...	...	...	...	22,711	130,127
Chromite	ton	...	...	27,720	...	...	...
	\$	...	...	761,229	...	...	...
Cobalt	lb.	...	...	...	38,452	...	...
	\$	...	...	...	37,990	...	...
Copper	lb.	...	...	110,588,297	283,722,873	43,608,400	73,858,154
	\$	...	...	13,270,596	33,650,564	5,233,008	8,862,980
Gold	fine oz.	5,859	...	740,744	1,704,457	74,665	123,230
	\$	225,571	...	28,518,644	65,621,595	2,874,602	4,744,355
Iron ore	ton	...	...	...	549,922	...	...
	\$	...	...	...	1,910,716	...	...
Lead	lb.	...	...	9,796,441	1,080,679	...	...
	\$	...	...	440,840	48,631	...	...
Magnesium	lb.	...	...	...	10,659,335	...	...
	\$	...	...	...	2,597,921	...	...
Mercury	lb.	...	...	...	...	...	...
	\$
Molybdenite concentrates	lb.	...	...	2,059,778	2,922	...	...
	\$	...	...	820,558	1,192	...	...
Nickel	lb.	...	...	...	275,213,106	...	...
	\$	...	...	...	69,279,061	...	...
Palladium, rhodium, etc.	fine oz.	...	...	...	45,100	...	...
	\$	...	...	...	2,314,252	...	...
Platinum	fine oz.	...	...	...	155,700	...	...
	\$	...	...	...	5,994,450	...	...
Selenium	lb.	...	...	205,000	62,000	28,080	49,920
	\$	...	...	369,000	111,600	50,544	89,856
Silver	fine oz.	190	...	2,558,308	2,986,479	661,893	1,741,227
	\$	82	...	1,100,072	1,284,186	284,614	748,728
Tellurium	lb.	...	...	37,000	9,900	3,600	6,400
	\$	...	...	64,750	17,325	6,300	11,200
Thallium	lb.	...	...	...	...	128	...
	\$	...	...	...	...	1,690	...
Tin	lb.	...	...	...	...	...	...
	\$
Titanium ore	ton	...	...	33,963	...	...	...
	\$	...	...	84,154	...	...	...
Tungsten concentrates ..	lb.	...	...	...	63,152	...	...
	\$	...	...	...	5,212	...	...
Zinc	lb.	...	...	137,575,527	2,285,816	44,330,408	86,728,189
	\$	...	...	5,915,748	98,290	1,906,208	3,729,312
TOTAL METALLICS	\$	225,653	...	51,490,951	182,997,985	10,379,677	18,316,558
NON-METALS							
Fuels							
Coal	ton	5,808,792	347,032	...	...	...	1,390,155
	\$	31,271,704	1,862,828	...	...	...	2,037,212
Natural gas	M cu.ft.	...	652,000	...	7,800,000	...	112,800
	\$	...	313,000	...	5,148,000	...	44,000
Peat	ton	...	...	424	200	...	...
	\$	...	...	3,442	1,800	...	...
Petroleum	bbl.	...	22,000	...	132,800	...	...
	\$	...	30,800	...	316,000	...	...
TOTAL FUELS	\$	31,271,704	2,206,628	3,442	5,465,800	...	2,061,212

Note: Pitchblende products not available for publication.

PRODUCTION OF CANADA, 1944

		Alberta	British Columbia	Yukon	Northwest Territories(x)	CANADA
<u>METALLICS</u>						
Antimony	lb.	...	1,937,900	...	...	1,937,900
	\$	...	280,996	...	...	280,996
Arsenic (As ₂ O ₃)	lb.	...	...	...	...	2,543,000
	\$	...	...	...	...	170,360
Bismuth	lb.	...	123,800	...	...	123,800
	\$	...	154,750	...	...	154,750
Cadmium	lb.	...	409,000	...	...	547,944
	\$	...	449,900	...	...	602,738
Chromite	ton	...	...	...	...	27,720
	\$	...	...	...	...	761,229
Cobalt	lb.	...	...	...	...	38,452
	\$	...	...	...	...	37,990
Copper	lb.	...	36,165,352	...	...	547,943,586
	\$	...	4,339,902	...	...	65,357,050
Gold	fine oz.	51	191,423	24,306	20,739	2,385,474
	\$	1,964	7,369,786	935,781	798,451	111,090,749
Iron ore	ton	...	...	...	...	549,922
	\$	...	...	...	...	1,910,716
Lead	lb.	...	290,085,849	110,950	...	301,073,919
	\$	...	13,053,863	4,993	...	13,548,327
Magnesium	lb.	...	...	...	...	10,659,335
	\$	...	...	...	...	2,597,921
Mercury	lb.	...	735,856	...	...	735,856
	\$	...	1,333,516	...	...	1,333,516
Molybdenite concentrates	lb.	...	...	...	...	2,062,700
	\$	...	...	...	...	821,750
Nickel	lb.	...	...	...	...	275,213,106
	\$	...	...	...	...	69,279,061
Palladium, rhodium, etc.	fine oz.	...	...	...	...	45,100
	\$	...	...	...	...	2,314,252
Platinum	fine oz.	...	...	...	...	155,700
	\$	...	...	...	...	3,994,450
Selenium	lb.	...	...	...	...	345,000
	\$	...	...	...	...	621,000
Silver	fine oz.	...	5,600,242	32,735	5,428	13,586,502
	\$	...	2,408,104	14,076	2,334	5,842,136
Tellurium	lb.	...	...	...	...	56,300
	\$	...	...	...	...	99,575
Thallium	lb.	...	...	...	...	128
	\$	...	...	...	...	1,690
Tin	lb.	...	516,600	...	...	516,600
	\$	...	299,628	...	...	299,628
Titanium ore	ton	...	...	...	...	33,963
	\$	...	...	...	...	84,154
Tungsten concentrates ..	lb.	...	818,000	...	...	881,152
	\$	...	236,788	...	...	242,000
Zinc	lb.	...	290,152,598	...	...	561,072,538
	\$	...	12,476,561	...	...	24,126,119
TOTAL METALLICS	\$	1,964	42,403,794	954,850	800,785	307,572,217
<u>NON-METALS</u>						
<u>Fuels</u>						
Coal	ton	7,437,781	2,134,248	...	...	17,118,008
	\$	27,053,121	9,009,438	...	...	71,214,303
Natural gas	M cu.ft.	37,392,000	...	...	...	45,956,800
	\$	6,400,600	...	...	...	11,905,600
Peat	ton	...	...	...	...	624
	\$	...	...	...	...	5,242
Petroleum	bbl.	8,952,000	...	...	964,300	10,071,100
	\$	14,592,000	...	...	1,311,500	16,250,300
TOTAL FUELS	\$	48,025,721	9,009,438	...	1,311,500	99,375,445

		Nova Scotia	New Brunswick	Quebec	Ontario	Mani toba	Saskat- chewan
<u>NON-METALS (Concluded)</u>							
<u>Other Non-Metallics and</u>							
<u>Industrial Minerals</u>							
Asbestos	ton	...	...	420,880	...	...	...
	\$	...	...	21,599,787	...	...	...
Barite	ton	114,147	...	...	...	...	...
	\$	1,047,130	...	...	...	...	...
Corundum	ton	...	...	...	180	...	...
	\$	...	...	...	16,000	...	...
Diatomite	ton	80	...	...	...	...	...
	\$	2,400	...	...	...	...	...
Feldspar	ton	...	...	16,647	3,847	...	...
	\$	...	...	165,746	39,061	...	...
Fluorspar	ton	...	...	20	6,516	...	...
	\$	...	...	500	128,620	...	...
Graphite	ton	...	...	...	178,821	...	...
Grindstones, etc.	ton	...	225	...	...	...	...
	\$	...	9,675	...	...	...	...
Gypsum	ton	327,084	41,000	...	86,679	37,768	...
	\$	401,954	173,000	...	325,831	378,965	...
Iron oxides	ton	...	...	9,855	...	...	...
	\$	...	...	164,023	...	...	...
Magnesitic dolomite and brucite	ton	...	...	1,125,433	...	...	...
Mica	lb.	...	...	1,532,319	3,495,308	...	...
	\$	...	...	159,545	618,021	...	...
Mineral waters	gal.	...	...	125,000	14,000	...	...
	\$	...	...	60,000	5,700	...	...
Nepheline syenite	ton	...	...	...	279,701	...	...
Peat moss	ton	...	1,870	14,078	9,800	1,461	...
	\$	...	60,500	313,301	166,000	62,000	...
Phosphate	ton	...	...	389	...	...	...
	\$	...	...	5,819	...	...	...
Quartz	ton	9,500	...	187,261	1,275,026	...	142,000
	\$	23,750	...	555,332	1,055,641	...	49,700
Salt	ton	38,680	...	...	625,894	28,150	...
	\$	283,066	...	...	2,918,351	387,500	...
Silica brick	M	2,684	...	...	1,066	...	...
	\$	160,755	...	...	136,276	...	...
Soapstone (including talc)	ton	...	...	186,261	...	...	...
Sodium carbonate	ton	...	...	...	...	...	...
	\$
Sodium sulphate	ton	...	...	...	...	...	98,188
	\$	...	...	...	...	...	1,004,054
Sulphur	ton	...	...	118,000	18,093	...	...
	\$	...	...	447,700	180,930	...	...
Talc	ton	...	...	...	14,000	...	...
	\$	...	...	...	150,000	...	...
TOTAL OTHER NON-METALLICS AND							
INDUSTRIAL MINERALS	\$	1,899,055	243,175	24,783,447	6,198,955	828,465	1,055,754
<u>CLAY PRODUCTS AND OTHER</u>							
<u>STRUCTURAL MATERIALS</u>							
Clay products (brick, tile, etc.)	\$	405,307	209,500	1,855,140	2,376,597	189,115	290,732
Cement	bbi.	...	...	3,247,478	1,849,811	866,186	...
	\$	...	...	4,732,456	2,731,089	1,697,277	...
Lime	ton	3,382	18,346	365,778	414,067	28,844	...
	\$	42,810	198,411	2,538,564	3,168,784	289,578	...
Sand and gravel	ton	1,654,136	670,256	9,818,406	8,175,400	945,073	1,101,165
	\$	1,162,850	374,506	2,283,699	3,739,011	292,550	481,776
Stone	ton	158,453	70,175	2,484,297	3,379,463	33,796	...
	\$	308,059	196,746	3,156,596	2,670,682	51,464	...
TOTAL CLAY PRODUCTS AND OTHER							
STRUCTURAL MATERIALS	\$	1,917,026	979,163	14,566,455	14,686,163	2,519,984	772,508
GRAND TOTAL	\$	35,313,438	3,428,966	90,844,295	209,348,901	13,728,126	22,224,032

PRODUCTION OF CANADA, 1944 (Concluded)

		Alberta	British Columbia	Yukon	Northwest Territories	CANADA
<u>NON-METALS (Concluded)</u>						
<u>Other Non-Metallics and Industrial Minerals</u>						
Asbestos	ton	...	...	...	...	420,880
	\$	...	...	...	...	21,593,787
Barite	ton	...	240	...	...	114,387
	\$	...	4,915	...	...	1,052,045
Corundum	ton	...	...	...	...	160
	\$	...	...	...	...	16,000
Diatomite	ton	...	7	...	...	87
	\$	...	190	...	...	2,590
Feldspar	ton	...	...	...	...	20,494
	\$	...	...	...	...	204,807
Fluorspar	ton	...	...	...	...	6,336
	\$	...	...	...	...	129,120
Graphite .....	\$	...	...	...	...	178,821
Grindstones, etc.	ton	...	...	...	...	225
	\$	...	...	...	...	9,675
Gypsum	ton	...	17,693	...	...	510,224
	\$	...	103,332	...	...	1,383,082
Iron oxides	ton	...	480	...	...	10,335
	\$	...	8,200	...	...	172,223
Magnesitic dolomite and brucite.	\$	...	...	...	...	1,125,433
Mica	lb.	...	1,060,000	...	...	6,087,627
	\$	...	10,600	...	...	788,166
Mineral waters	gal.	...	...	...	...	139,000
	\$	...	...	...	...	65,700
Nepheline syenite .....	\$	...	...	...	...	279,701
Peat moss	ton	...	35,940	...	...	63,149
	\$	...	952,805	...	...	1,554,606
Phosphate	ton	...	...	...	...	389
	\$	...	...	...	...	5,819
Quartz	ton	...	24,089	...	...	1,637,876
	\$	...	72,267	...	...	1,756,690
Salt	ton	24,151	...	...	...	716,875
	\$	352,133	...	...	...	3,921,050
Silica brick	M	...	...	...	...	3,750
	\$	...	...	...	...	297,031
Soapstone (including talc) ....	\$	...	...	...	...	186,261
Sodium carbonate	ton	...	44	...	...	44
	\$	...	484	...	...	484
Sodium sulphate	ton	...	...	...	...	98,188
	\$	1,004,054
Sulphur	ton	...	112,372	248,465
	\$...	1,116,800	1,745,430
Talc	ton	14,000
	\$	150,000
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TOTAL OTHER NON-METALLICS AND INDUSTRIAL MINERALS	\$	352,133	2,269,593	37,628,575
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<u>CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS</u>						
Clay products (brick, tile, etc.)	\$	1,118,349	472,735	6,915,475
Cement	bbl.	706,393	512,594	...	...	7,182,462
	\$	1,382,284	973,929	...	...	11,517,035
Lime	ton	17,480	45,223	...	...	893,120
	\$	157,999	364,116	...	...	6,760,262
Sand and gravel	ton	590,634	1,966,880	...	...	24,921,950
	\$	291,409	749,587	9,375,388
Stone	ton	12,755	221,836	6,360,775
	\$	47,100	348,904	6,773,551
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TOTAL CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS	\$	2,997,141	2,909,271	41,347,711
<hr/>						
GRAND TOTAL	\$	51,376,959	56,592,096	954,850	2,112,285	485,923,948

MONTHLY PRODUCTION OF PRINCIPAL MINERALS IN CANADA, 1944 (x)

Month	Asbestos	Cement	Clay	Coal	Copper	Feldspar	Gold	Gypsum
	tons	barrels	products \$	tons	pounds	tons	fine oz.	tons
January	31,837	176,173	362,538	1,626,080	49,149,825	1,640	257,795	42,598
February	32,510	201,679	322,221	1,454,584	46,091,889	2,371	256,803	43,126
March	36,505	273,049	380,078	1,546,416	48,472,036	2,404	266,644	47,432
April	35,680	393,323	397,689	1,236,193	45,239,782	1,327	244,804	37,468
May	35,477	738,795	600,586	1,290,787	47,843,032	1,174	256,837	40,080
June	35,328	994,693	658,266	1,233,237	47,344,317	2,345	239,916	45,511
July	31,112	982,470	715,797	1,168,837	45,226,251	1,874	235,618	64,307
August	36,862	943,727	733,395	1,368,780	44,392,550	1,901	236,870	77,597
September ...	37,958	860,268	720,400	1,290,825	43,545,982	2,260	236,405	55,763
October	37,575	878,488	740,819	1,532,295	42,273,855	2,444	230,023	48,280
November	35,907	559,606	697,242	1,637,863	44,054,332	1,919	223,102	38,554
December	32,547	190,023	431,238	1,524,220	46,073,163	2,241	228,301	34,400
CALENDAR YEAR	417,296	7,192,894	6,760,269	17,010,117	550,114,214	24,400	2,913,716	575,116

Month	Lead	Lime	Natural gas	Nickel	Petroleum	Salt (A)	Silver	Zinc
	pounds	tons	cu. ft.	pounds	barrels	tons	fine oz.	pounds
January	31,710,332	73,138	5,443,453	23,545,474	837,432	25,025	1,205,125	47,509,864
February	29,753,389	74,355	5,334,351	22,382,065	793,869	23,631	1,273,329	44,735,515
March	24,264,103	77,505	5,259,839	25,283,828	877,650	27,549	1,367,155	46,049,214
April	25,270,297	73,706	4,259,082	23,160,550	843,376	26,706	1,423,738	43,359,215
May	20,491,362	75,478	3,278,079	24,023,396	858,403	30,834	1,029,674	45,646,454
June	19,744,120	72,947	2,827,485	20,373,599	824,507	27,649	1,160,245	39,759,143
July	24,523,164	67,109	2,560,267	23,410,619	812,083	27,541	1,371,550	40,877,039
August	18,313,445	63,953	2,527,506	23,346,740	833,495	27,538	830,189	43,094,382
September ...	18,908,755	70,379	2,781,918	22,708,937	858,331	29,130	905,410	45,124,020
October	18,369,547	78,983	3,224,311	21,817,881	884,333	24,556	1,054,463	41,416,761
November	35,676,054	74,396	4,643,821	22,257,332	861,845	30,236	1,192,007	42,373,652
December	35,139,468	66,144	5,435,031	21,766,969	885,383	22,844	1,226,960	46,738,447
CALENDAR YEAR	303,221,143	674,093	47,885,143	274,533,050	10,171,205	323,239	13,545,905	529,333,766

(x) This information was compiled from monthly reports received from the principal operators. The totals for the calendar year do not, therefore, necessarily agree with those shown in the first table of this report. (A) Commercial salt only.

ANTIMONY

Production

Year	Pounds	\$
1940	2,594,432	396,468
1941	3,134,077	445,911
1942	3,041,193	516,988
1943	1,114,166	189,406
1944	1,337,300	280,996

The Consolidated Mining & Smelting Company of Canada Ltd. is the only producer of antimony metal in Canada. From time to time small quantities of antimony ores are exported for treatment by foreign smelters or refineries. It has also been exported in the form of silver-lead-bismuth dross made from coal-tar ores.

Antimony is used chiefly in alloys for storage battery plates, bearing and babbitt metals, solder, rubber goods and paints. The principal compound is the oxide of antimony which is employed extensively as a pigment in sanitary enamelware and nitrocellulose enamels.

Imports of antimony or regulus of, not ground, into Canada in 1944 totalled 1,558,198 pounds valued at \$237,334, as compared with 240,700 pounds valued at \$38,755 in 1943. Imports of antimony salts, namely, tartar emetic, chloride and lactate (antimonine), totalled 68,765 pounds valued at \$28,749, as compared with 10,990 pounds valued at \$6,066 in 1943.

ARSENICProduction

Year	Pounds	\$
1940	2,093,275	62,798
1941	3,538,000	153,195
1942	14,967,874	652,041
1943	3,153,538	254,009
1944	2,543,000	170,360

Imports

	1 9 4 3		1 9 4 4	
	Pounds	\$	Pounds	\$
White arsenic (arsenious oxide)	400	124	2,405	1,749
Soda, arseniate, biarseniate and stannate of	83,329	18,712	86,475	24,488
Arsenate of lead	4,432	484	...	...
Arsenate of lime	9,664	665	...	...

The Deloro Smelting and Refining Co. Ltd., Deloro, Ontario, produces refined arsenic. This plant was established to recover arsenic from the silver-cobalt ores of Ontario. Bag houses to extract arsenic from the fumes of roasting plants used in the recovery of gold from arsenical concentrates have been installed at the Beattie and O'Brien gold mines in western Quebec. Crude arsenic from the O'Brien mine was refined at the Deloro smelter in 1944. Beattie Gold Mines Ltd. produces refined arsenic. Arsenical gold concentrates are exported by British Columbia mines but no payment is made for the arsenic and the quantities are not included in the above totals.

BISMUTHProduction

Year	Pounds	\$
1940	58,529	81,004
1941	7,511	10,396
1942	347,556	479,627
1943	407,597	562,484
1944	123,800	154,750

The Canadian production of bismuth in 1944 represented the metal recovered by the Consolidated Mining and Smelting Company of Canada Ltd. in the treatment of the silver-lead ores of British Columbia. In 1940, 1941 and 1942 there was also a production from Ontario sources. This was contained in silver-lead-bismuth bullion recovered in the treatment of silver-cobalt ores at Deloro, Ontario, and exported for refining.

Imports of bismuth salts were appraised at \$2,667 compared with \$15,675 in the previous year.

CADMIUMProduction

Year	Pounds	\$
1940	908,127	1,056,152
1941	1,251,291	1,469,016
1942	1,148,963	1,355,776
1943	786,611	904,602
1944	547,944	602,738

Cadmium production in Canada represents the recovery of the metal as a by-product in the electrolytic refining of zinc. Production in 1944 came entirely from the treatment of zinc-bearing ores by the Consolidated Mining and Smelting Company of Canada Ltd. at Trail, British Columbia, and by the Hudson Bay Mining & Smelting Company at Flin Flon, Manitoba. Production at Flin Flon, Manitoba did not commence until 1936; prior to that time the total Canadian output was from Trail.

Cadmium is consumed largely in the manufacture of alloys and for plating, also in the making of such pigments as cadmium lithopone, cadmium yellows, etc. A relatively large quantity of the metal is used in the production of bearing metals for high-speed internal combustion engines.

Exports of cadmium in 1944 amounted to 383,324 pounds worth \$412,332 compared with 572,215 pounds worth \$626,379 in 1943.

CHROMITEProduction

Year	Tons	\$
1940	355	5,780
1941	2,372	42,679
1942	11,456	343,568
1943	29,595	919,878
1944	27,720	761,229

Canadian production of chromite is relatively small and is far short of domestic requirements. The world production just prior to the present war was about 1,500,000 tons. Russia, Turkey and Southern Rhodesia were each producing 200,000 tons or more a year, while South Africa, the Philippines, Cuba, New Caledonia, Yugoslavia, Greece and India were each producing 50,000 tons or more.

When it was evident that shipping difficulties might impede the imports of chromite into Canada, steps were taken to encourage production from the known deposits in Quebec, and the total output for the past five years has come from that province. In 1944 chrome concentrates production declined and with the improved supply position the Chromeraine property in Quebec, which had been operated for the Crown by Wartime Metals, closed down in September.

Chromite is used in the manufacture of refractory brick, as ferro-chrome in the manufacture of certain ferrous alloys, and in the metallic form in certain non-ferrous alloys.

COBALTProduction

Year	Pounds	\$
1940	794,559	1,255,220
1941	263,257	255,904
1942	83,871	88,444
1943	175,961	191,407
1944	58,452	57,990

Imports and Exports

	1 9 4 3		1 9 4 4	
	Pounds	\$	Pounds	\$
<u>Imports -</u>				
Cobalt ore	2,236,300	785,721	3,676,400	1,527,775
Cobalt oxides	55	130	1,720	2,595
<u>Exports -</u>				
Cobalt contained in ores	163,100	188,510	25,900	24,579
Cobalt, metallic	911,707	1,507,635	1,009,068	1,665,984
Cobalt alloys	214,202	1,021,663	176,589	789,202
Cobalt oxide and salts	67,040	135,630	462,656	829,469
Total Exports .....	...	2,853,438	...	3,309,054

Production of cobalt from Canadian ores, as computed by the Dominion Bureau of Statistics, represents the cobalt contained in ores exported plus the sales in 1944 of cobalt metal and cobalt in oxides and salts, which had been extracted from Canadian ores by the Deloro Smelting and Refining Company Ltd. at Deloro, Ontario.

Cobalt, as a metal, enters into the composition in a range of useful tool and magnetic alloys. Consequently, with the outbreak of war the demand for the metal greatly increased and resulted in new treating plants being erected in the United States and England for handling African cobalt residues, a by-product of copper refining. In past years, a principal source of Canadian supply has been from the treatment of ores produced in the old cobalt-silver camp of Ontario. The supply of these ores at the beginning of the war was found to be inadequate to keep the Canadian smelter and treatment plant supplied, but material is being made available from Africa. The Deloro Smelting and Refining Company, at Deloro, Ontario, tried out some of the African material in 1938, and at the request of the British Ministry of Supply, entered into an agreement with the Rhokana Corporation to treat the African material on a toll basis.

After the Metals Controller was appointed, steps were taken to keep alive the production of Canadian cobalt ores as the situation in the south Atlantic at that time was not very secure. The Metals Controller was authorized to purchase and stock pile Canadian ores as of April 1, 1942, but soon after the Metals Reserve Company entered the picture, took over the stock, and entered into a contract to purchase all production of Canadian cobalt ores on a basis which was effective until February 22, 1944.

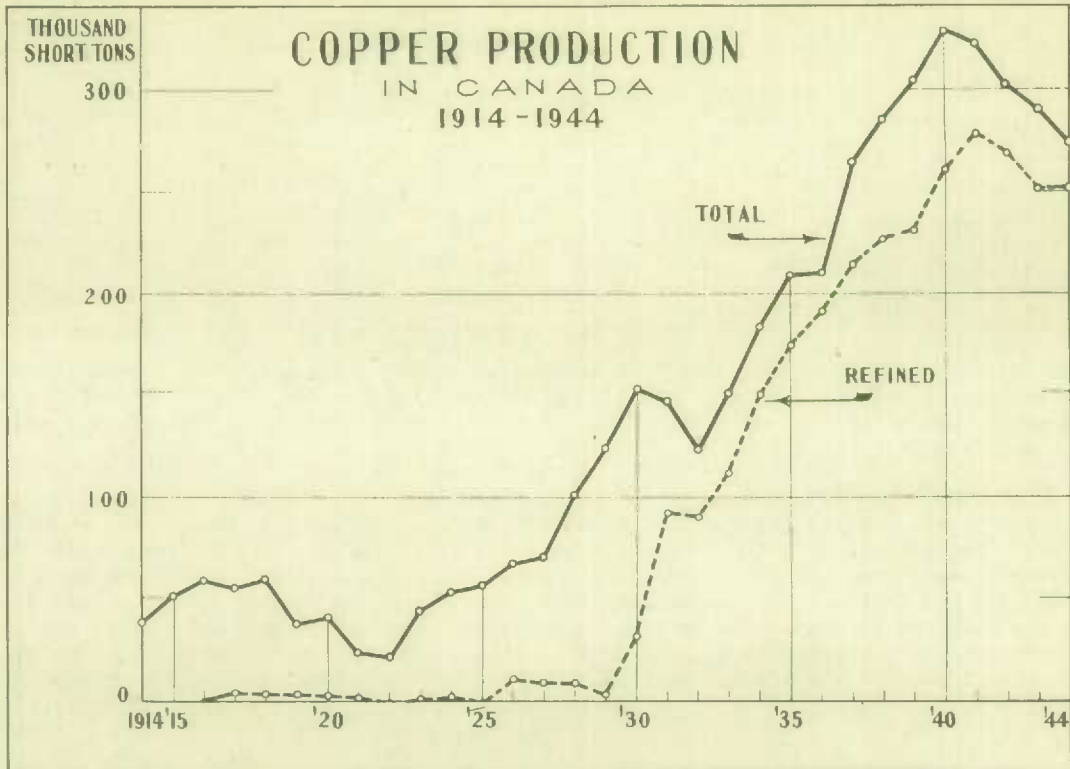
The Deloro Smelting & Refining Company contributed their services free by acting as buying agents. All the ore purchased was stock piled at Deloro, except some 640 tons which was stock piled at three U.S.A. plants. Cobalt in the ore stock at Deloro on the above account has not been included in Canadian production but same will be shown when the material is either processed in Canada or is exported.

COPPERProduction

Year	Quebec		Ontario		Manitoba	
	Pounds	\$	Pounds	\$	Pounds	\$
1940	134,166,955	13,532,079	347,931,013	34,742,229	75,267,937	7,591,524
1941	143,783,978	14,502,052	333,829,767	33,192,644	67,018,563	6,759,492
1942	140,911,876	14,212,372	308,282,414	30,625,404	47,595,586	4,800,491
1943	131,163,776	15,411,744	277,840,560	32,232,027	38,014,872	4,466,747
1944	110,588,297	13,270,596	283,722,873	33,650,564	43,608,400	5,233,008
	Saskatchewan		British Columbia		C A N A D A	
1940	20,484,954	2,066,112	77,742,582	7,841,117	655,593,441	65,773,061
1941	32,324,512	3,260,250	66,327,166	6,689,758	643,316,713(x)	64,407,497(x)
1942	56,781,466	5,726,979	50,015,521	5,044,565	603,661,826(x)	60,417,372(x)
1943	85,948,719	10,098,974	42,222,205	4,961,109	575,190,132	67,170,601
1944	73,858,164	8,862,980	36,165,852	4,339,902	547,943,586	65,357,050

(x) Includes: Northwest Territories

1941	32,727	3,301
1942	74,963	7,561



Imports

	1945		1944	
	Pounds	\$	Pounds	\$
Copper, precipitate of .....	...	22,801	...	...
Copper in blocks, pigs and ingots .....	...	...	4,500	762
Copper, scrap	3,500	177	26,700	2,604
Copper in bars or rods for the manufacture of trolley, telegraph and telephone wires, electric wires and electric cables	1,545,600	206,864	578,400	87,525
Copper bars or rods, n.o.p.	330,300	76,062	193,300	41,581
Copper in strips, sheets or plates	64,000	16,416	165,400	49,657
Copper tubing, not manufactured	320,759	107,501	375,731	133,802
Copper rollers .....	...	176	...	1,289
Copper wire, n.o.p.	32,116	13,760	90,248	49,850
Copper wire cloth, woven .....	...	745	...	475
Copper manufactures, n.o.p. ....	...	489,807	...	274,771
Copper sub-acetate	420	132	440	140
Copper sulphate (blue vitriol)	6,448,817	365,695	8,259,600	491,473
TOTAL .....	...	1,300,136	...	1,133,728

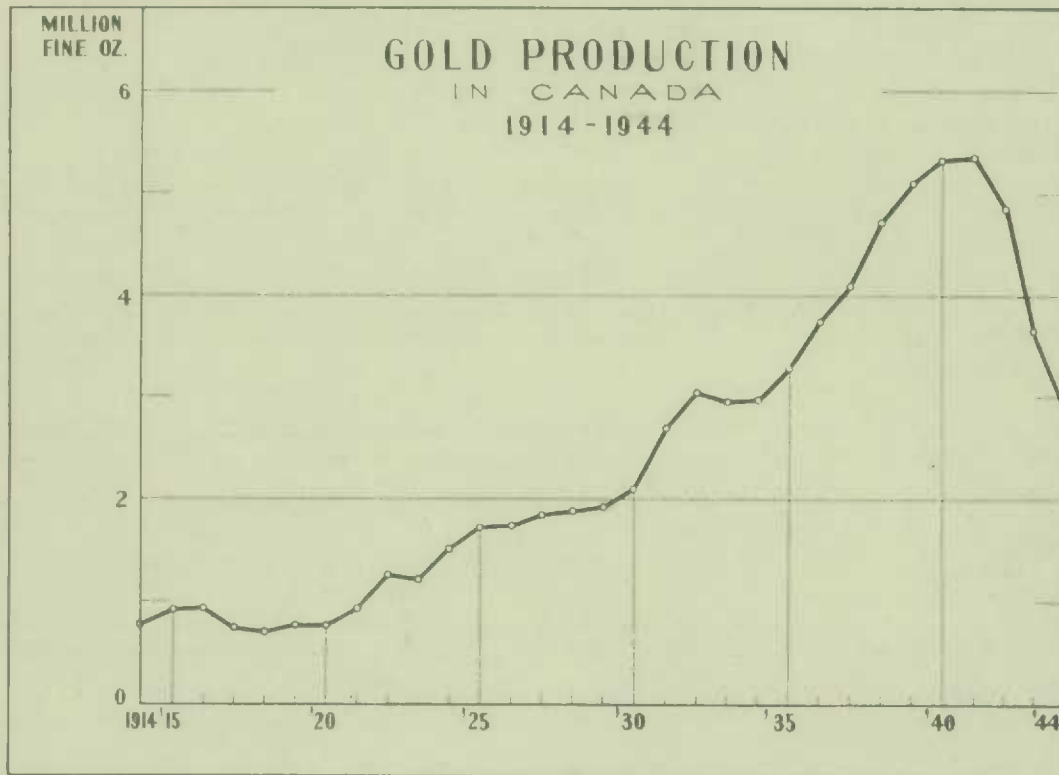
Exports

	1945		1944	
	Pounds	\$	Pounds	\$
Copper, fine, contained in ore, matte, regulus, etc.	72,419,400	5,069,358	55,978,500	3,918,495
Copper, blister	8,548,600	846,896	...	...
Copper, old and scrap	1,133,500	48,844	1,927,400	116,899
Copper in ingots, bars, cakes, slabs and billets ...	128,665,800	12,731,158	270,466,200	29,049,257
Copper in rods, strips, sheets, plates and tubing ..	49,133,800	5,329,685	36,126,900	4,193,044
Copper wire and cable, insulated .....	...	1,438,161	...	2,200,550
Copper wire, bare	19,038,500	5,317,169	...	1,018,940
Copper wire, screen .....	...	8,668	...	8,552
Copper manufactures, n.o.p. ....	...	26,510	...	38,426
TOTAL .....	...	30,816,449	...	40,545,943

The principal sources of Canadian copper are Noranda, Normetal and Waite Amulet mines in Quebec; the nickel-copper mines of Ontario; the Flin Flon on the Manitoba-Saskatchewan boundary; the Sherritt-Gordon in Manitoba; and the Britannia and Granby mines in British Columbia. The Aldermac copper mine in northwestern Quebec ceased operations in October, 1945, but the company had a property under development in the Eastern Townships of the same province and began exporting a copper-lead concentrate in August, 1944.

The peak Canadian production for all time was in 1940. Since that year there has been a gradual reduction, due, in large part, to the shortage of labour.

Canada has two copper refineries, one at Copper Cliff, Ontario, owned by the International Nickel Company, and one at Montreal East, owned by Noranda Mines Limited. Refined copper production totalled 503,741,000 pounds in 1944 as compared with 502,990,000 pounds in 1943.



Production

Year	Fine ounces	\$
1940	5,511,145	204,479,083
1941	5,345,179	205,789,392
1942	4,841,308	186,390,281
1943	3,651,301	140,575,088
1944	2,885,474	111,090,749

Production of Gold in Canada, by Provinces, 1943 and 1944

	1 9 4 3		1 9 4 4	
	Fine ounces	\$	Fine ounces	\$
<u>Nova Scotia -</u>				
Gold mines	4,129	158,967	5,859	225,571
<u>Quebec -</u>				
Gold mines	637,975	24,562,037	522,404	20,112,554
Base metal mines	284,558	10,955,484	218,340	8,406,090
Total Quebec	922,533	35,517,521	740,744	28,518,644
<u>Ontario -</u>				
Gold mines -				
Porcupine District	1,020,977	39,307,615	849,455	32,704,018
Kirkland Lake District	466,112	17,945,312	398,324	15,335,474
Larder Lake District	169,281	6,517,318	98,307	3,784,820
Matachewan District	38,722	1,490,797	28,263	1,088,125
Sudbury District	18,646	717,871	...	...
Algoma District	425	16,363	...	...
Thunder Bay District	141,666	5,454,141	99,531	3,831,944
Kenora and Rainy River Districts	1,545	59,482	...	...
Patricia District	203,962	7,852,537	174,004	6,699,154
Other mines	55,879	2,151,341	56,573	2,178,060
Total Ontario	2,117,215	81,512,777	1,704,457	65,621,595
<u>Manitoba -</u>				
Gold mines	62,254	2,396,779	41,200	1,586,200
Other mines	29,521	1,136,558	33,465	1,288,402
Total Manitoba	91,775	3,533,337	74,665	2,874,602
<u>Saskatchewan -</u>				
Gold mines .....	...	...	...	...
Other mines	174,090	6,702,465	123,230	4,744,355
Total Saskatchewan	174,090	6,702,465	123,230	4,744,355
<u>Alberta (Placer)</u>	21	808	51	1,964
<u>British Columbia -</u>				
Gold mines (lode)	204,387	7,868,900	165,517	6,372,405
Gold mines (placer)	11,680	449,680	8,362	321,937
Other mines	25,279	973,241	17,544	675,444
Total British Columbia	241,346	9,291,821	191,423	7,369,786
<u>Northwest Territories -</u>				
Gold mines	59,032	2,272,732	20,739	798,451
<u>Yukon (chiefly placer)</u>	41,160	1,584,660	24,306	935,781
TOTAL CANADA	3,651,301	140,575,088	2,885,474	111,090,749

Employees in Gold Mines and in Base Metal Mines and Smelters, 1942-1944

Month	Gold mines (x)			Non-ferrous metal mines, smelters and refineries (x)		
	1942	1943	1944	1942	1943	1944
	No.	No.	No.	No.	No.	No.
January	27,020	21,097	16,444	34,577	46,323	45,835
February	27,450	20,626	17,116	35,033	46,621	44,837
March	27,527	20,405	17,788	35,217	46,968	44,255
April	27,059	19,711	16,969	35,817	46,137	42,030
May	26,948	19,197	16,705	37,017	45,499	41,467
June	26,492	18,774	16,494	39,077	46,754	41,239
July	25,617	18,037	16,164	40,112	46,888	41,181
August	23,957	17,428	15,904	39,858	46,471	38,782
September	22,841	16,511	15,526	40,109	45,354	37,855
October	21,622	16,058	15,067	42,234	45,168	36,871
November	20,960	15,889	15,314	43,364	46,231	37,454
December	20,716	16,057	15,405	44,611	45,783	35,570

(x) Includes only firms employing 15 or more persons.

Owing to shortage of labour and restrictions placed on supplies and equipment, gold production continued to decrease, the output in 1944 being 21 per cent below the previous year, and was the lowest since 1931. Notwithstanding this reduction in output, considerable prospecting activity was evidenced. Much new ground was staked and diamond drilling was very active. All signs point to the fact that when hostilities cease Canada can look forward to a wider geographical range and an uptrend in gold production.

IRON ORE

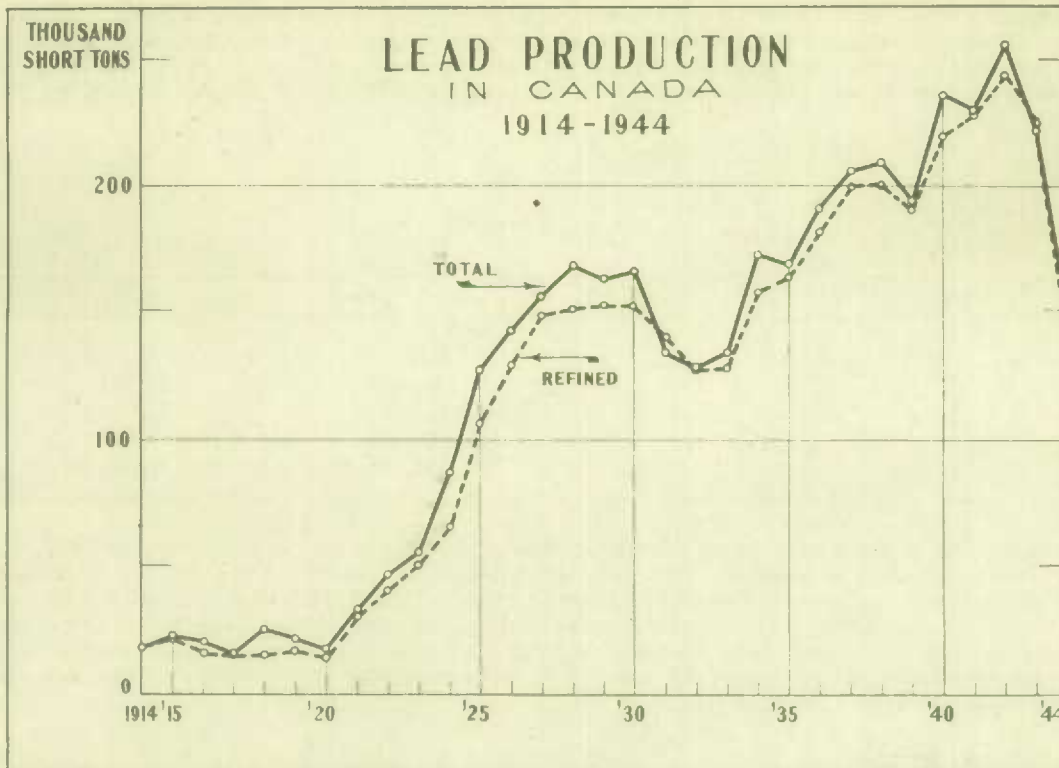
Production

Year	Short tons	\$
1940	414,603	1,211,305
1941	516,037	1,426,057
1942	545,306	1,517,077
1943	641,294	2,032,240
1944	549,922	1,910,716

Shipments of iron ore, beneficiated siderite, by the Algoma Ore Properties Ltd., a subsidiary of the Algoma Steel Corporation Limited, continued in 1944. Also, one of the outstanding mining events of the year under review was the commencement of shipments of iron ore by the Steep Rock Iron Mines Ltd., near Atikokan, Ontario. Shortly after shipments commenced, mining operations were curtailed owing to the caving of the south bank of Steep Rock Lake some distance from mining operations, but causing a "ripple" in the ooze or slime which carried northward to the "B" orebody excavation. Removal of this material is going on during the winter months.

Pig iron is produced in Canada by the Dominion Steel and Coal Corporation Ltd. at Sydney, Nova Scotia, the Steel Company of Canada Limited, Hamilton, Ontario, the Canadian Furnace Co. Ltd., Port Colborne, Ontario, and the Algoma Steel Corporation at Sault Ste. Marie, Ontario. Consumption of iron ore totalled 3,478,803 short tons in 1944, of which 266,149 tons came from Canadian mines.

Month	Production of Pig Iron			Production of Steel Ingots and Castings		
	1942	1943	1944	1942	1943	1944
	(short tons)					
January	163,156	116,327	132,128	259,016	207,008	242,166
February	143,973	138,240	141,878	242,921	245,588	229,852
March	167,116	160,101	168,047	265,903	270,962	275,539
April	160,408	150,486	170,364	264,988	264,357	260,825
May	171,338	154,746	175,207	272,247	271,737	263,431
June	167,961	147,889	161,899	254,163	239,501	240,750
July	172,153	151,363	166,004	256,560	250,508	234,418
August	162,578	164,906	151,452	248,868	246,820	246,755
September	155,900	147,902	145,406	244,922	241,255	242,725
October	175,424	146,794	154,119	271,127	271,976	275,524
November	170,578	142,249	146,972	270,812	259,444	268,923
December	164,382	137,256	139,152	269,834	227,822	243,482
TOTAL	1,975,015	1,758,265	1,852,628	3,121,361	2,996,978	3,024,410



Production

Year	Pounds	\$
1940	471,850,256	15,863,605
1941	460,167,005	15,470,815
1942	512,142,562	17,218,233
1943	444,060,769	16,670,041
1944	301,073,919	13,548,327

Imports

	1 9 4 3		1 9 4 4	
	Pounds	\$	Pounds	\$
Old and scrap, pig and block	21,664	5,648	26,521	3,150
Bars and sheets	8,862	1,379	10,156	1,504
Litharge	2,397,300	203,677	3,155,100	266,530
Acetate of lead	62,307	8,013	151,876	16,998
Nitrate of lead	123,163	15,453	303,265	36,658
Other manufactures, n.o.p. ....	...	229,644	...	382,455
Pipe lead	59	10	2,533	528
Shots and bullets	141,484	22,176	15,721	2,479
Lead arsenate	4,432	484	...	...
Lead tetraethyl, compounds of	10,556,057	3,568,496	10,033,373	3,378,702
Lead capsules for bottles .....	...	25,465	...	16,019
Lead pigments -				
Dry white lead	435,835	37,606	336,000	29,890
White lead, ground in oil .....	...	...	180	25
Dry red lead and orange mineral	114,122	11,936	400,392	59,175
TOTAL .....	...	4,128,077	...	4,174,111

Exports

	1943		1944	
	Pounds	\$	Pounds	\$
Lead, metallic, contained in ore	11,470,200	425,306	19,000,300	650,433
Pig lead	308,695,300	9,222,104	205,759,600	6,394,550
TOTAL .....	...	9,647,410	...	7,044,983

The mines of British Columbia account for a large part of Canada's lead output, the Sullivan mine, owned by the Consolidated Mining & Smelting Co. Ltd. being by far the largest producer. In addition to the lead produced by this company, certain mines in British Columbia export lead concentrates, and concentrates are also exported from mines in Quebec, Ontario, and to a small extent from the Mayo camp of Yukon.

MAGNESIUMProduction

Year	Pounds	\$
1941	10,905	2,944
1942	808,718	355,836
1943	7,153,974	2,074,652
1944	10,659,335	2,597,921

The first commercial production of magnesium in Canada since 1918 occurred in 1941. The metal was produced at Trail, British Columbia, and was in the form of magnesium powder. Magnesite used in the production of this powder was obtained from deposits located at Marysville in the Fort Steele mining district of the province.

Magnesium, one of the lightest of metals, is in great demand for the construction of aeroplanes and aeroplane engine parts. Research done in the laboratories of the National Research Council at Ottawa resulted in the development of a process for the extraction of magnesium from dolomite rock. Suitable rock was found near Renfrew, Ontario, and a plant was built using this process where production began in September, 1942. The plant is presently producing 15 tons of magnesium per day.

MANGANESE ORE

Canada has never been an important producer of manganese ore. Geological investigations have been carried on in various parts of the country where manganese-bearing ores are known to exist, but without very satisfactory results. Canada must import her requirements, which amounted to 85,795 tons valued at \$2,370,109 in 1944 and 51,234 tons valued at \$1,445,252 in 1943.

MERCURYProduction

Year	Pounds	\$
1940	153,830	369,317
1941	536,304	1,335,697
1942	1,035,914	2,943,807
1943	1,690,240	4,559,200
1944	735,856	1,333,516

Prior to the outbreak of the war there was practically no production of mercury in Canada. Fortunately, as a result of the work of the Canadian Geological Survey in 1937, a cinnabar-bearing deposit was discovered about 40 miles north of Vanderhoof Station, British Columbia, on the Canadian National

Railway. The claims were optioned to the Consolidated Mining and Smelting Company Ltd., who proceeded to develop them. The successful operation of this mine has brought about a complete change in the Canadian situation with respect to this metal. The output was far in excess of Canadian requirements and due to a world oversupply, production ceased during 1944. Early in 1945 the demand for mercury increased with a consequent rise in price.

Imports of mercury in 1944 totalled 35,428 pounds valued at \$44,182, as compared with 2,047 pounds worth \$6,981 in 1943.

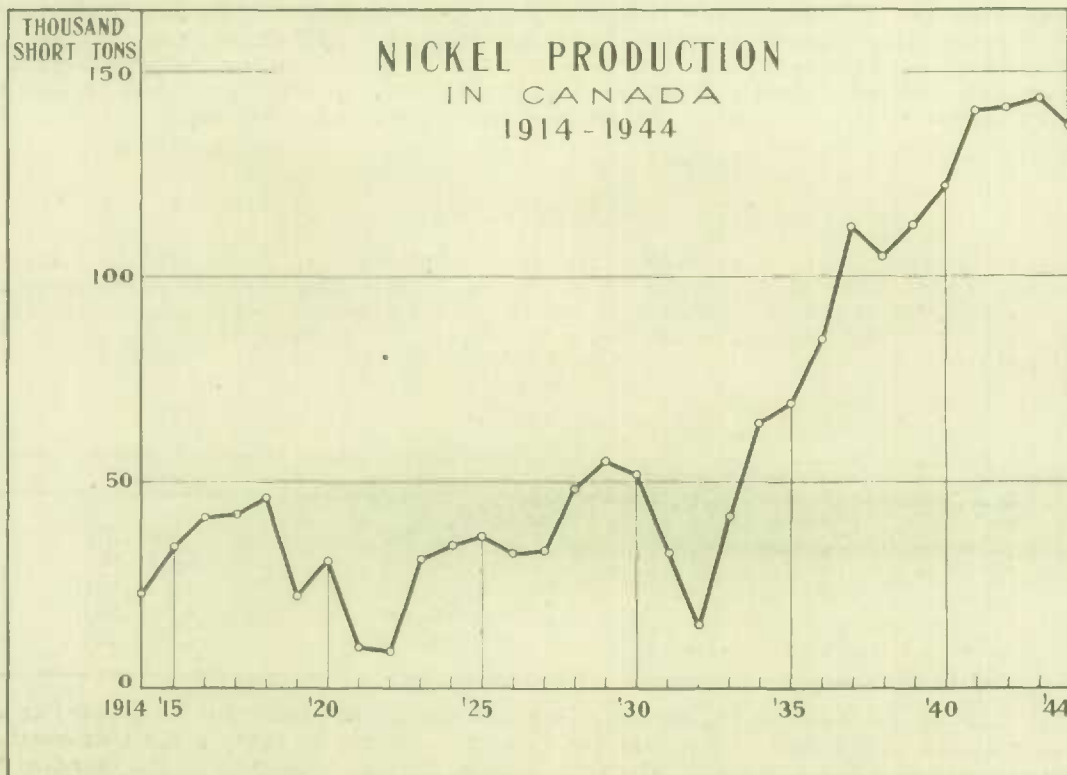
MOLYBDENITE

Production (Molybdenite concentrates)

Year	Concentrates Shipped	
	Tons	\$
1940	11.1	10,280
1941	98.5	88,470
1942	114.0	134,963
1943	392.5	549,515
1944	1031.4	821,750

The mining of molybdenite ores in Canada previous to 1942 was irregular, owing chiefly to the rather erratic nature of the mineralization in the known ore deposits. Molybdenite, the principal ore of molybdenum, is usually found in Eastern Canada in pegmatite dykes. In northern and western Ontario and in British Columbia, molybdenite is usually associated in quartz veins, intruding granites or diorites.

The molybdenite mine in Pressiac township, Quebec, owned by The Indian Molybdenite Limited, a subsidiary of Dome Mines Ltd., was closed down in April, 1944. The La Corne Project, operated by Wartime Metals Corporation, is now the only producer. Molybdenite concentrates from this mine are shipped to the United States for roasting and the oxide is returned to Canada.



NICKELProduction

Year	Pounds	\$
1940	245,557,871	59,822,591
1941	282,258,235	68,656,795
1942	285,211,803	69,998,427
1943	288,018,615	71,675,322
1944	275,213,106	69,279,061

Canada has two major nickel producing companies—The International Nickel Company of Canada Ltd. and the Falconbridge Nickel Mines Ltd. There are several other nickel companies doing development and some production from these was reported for 1943. They are all situated in the Sudbury area of Ontario. The International Nickel Company operates a smelter and copper refinery at Copper Cliff and a nickel refinery at Port Colborne. It also has works at Huntington, West Virginia, U.S.A. and at Glydach, Wales. Prior to the war the Falconbridge Mines operated a smelter in Canada and shipped the matte to Kristiansand, Norway, for refining. This plant fell into the hands of the enemy when Norway was overrun, and the matte now made by the Falconbridge Company is treated by the International Nickel Company.

METALS OF THE PLATINUM GROUPProduction

Year	Platinum		Palladium, Rhodium, Iridium, etc.	
	Fine ounces	\$	Fine ounces	\$
1940	108,488	4,240,362	91,522	3,520,746
1941	124,317	4,750,153	97,432	3,396,304
1942	285,228	10,898,561	222,573	8,279,221
1943	219,713	8,458,951	126,004	5,233,068
1944	155,700	5,994,450	45,100	2,314,252

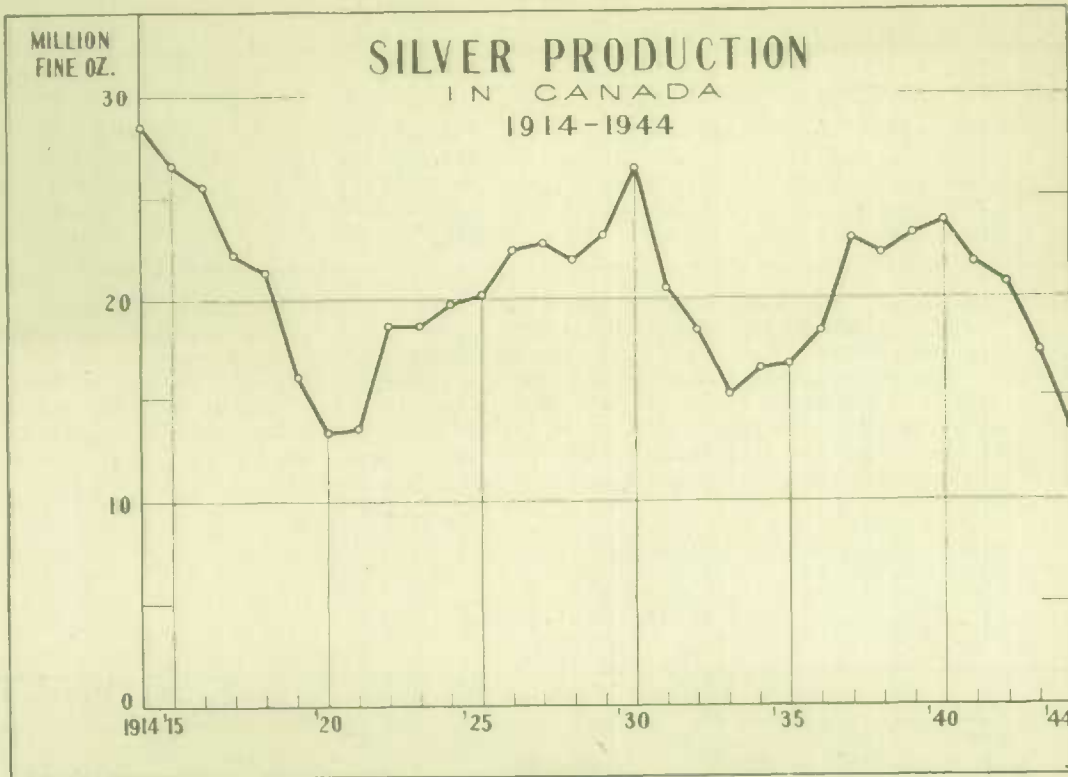
Canada is one of the world's largest producers of the metals of the platinum group. They occur in association with the nickel-copper ores of the Sudbury district of Ontario. Residues containing these metals are treated at Acton, England, and Newark, New Jersey.

The data given above are the actual production at the refinery regardless of the year in which the ore was mined.

SELENIUMProduction

Year	Pounds	\$
1940	179,860	343,533
1941	406,930	777,236
1942	495,369	951,108
1943	374,013	654,523
1944	345,000	621,000

Selenium production in Canada represents a by-product in the electrolytic refining of blister copper made from Quebec, Ontario, Manitoba and Saskatchewan ores. It is recovered at Copper Cliff, Ontario by the International Nickel Company Limited, and at Montreal East, Quebec, by the Canadian Copper Refiners Ltd. The United States and Canada are the principal sources of supply, though small quantities are produced by several other countries, including Russia, Japan, Rhodesia, Mexico and Sweden. The chief uses of selenium are in the glass and pottery industries, both as a colouring agent (as in ruby glass), and to neutralize the effect of objectionable oxides.



Production

Year	Fine ounces	\$
1940	23,833,752	9,116,172
1941	21,754,408	8,323,454
1942	20,695,101	8,726,296
1943	17,344,569	7,849,111
1944	13,586,502	5,842,196

Imports

	1 9 4 3		1 9 4 4	
	Fine ounces	\$	Fine ounces	\$
Silver, manufactures of, n.o.p., and articles consisting wholly or in part of sterling or other silverware	31,427	...	36,296
Toilet articles of which the most important component, in value, is sterling silver	254	...	53
TOTAL	31,681	...	36,349

Exports

	1 9 4 3		1 9 4 4	
	Fine ounces	\$	Fine ounces	\$
Silver contained in ore, concentrates, etc.	2,253,018	1,040,297	2,389,739	1,170,475
Silver bullion (Canadian)	9,198,617	4,517,756	3,577,243	1,762,944
TOTAL	11,441,635	5,558,053	5,966,982	2,933,419

Silver is produced in every province of Canada except Prince Edward Island and New Brunswick. It is recovered in the treatment of various ores. The Nova Scotia production is small and is derived entirely from gold ores. The principal Quebec source is from the copper-gold-silver ores treated by the Noranda smelter, but it is also recovered from the crude gold bullion of the gold mines and it is also

contained in the silver-lead ores exported. In Ontario, the chief source is the copper-nickel ores of the Sudbury district, which far outdistances the production of the once famous cobalt-silver camp. Silver from gold ores makes up the remainder for the province. The Flin Flon and Sherritt-Gordon mines are the principal sources in Manitoba and Saskatchewan. Over half of the total production for Canada comes from British Columbia ores and the Sullivan silver-lead-zinc mine at Kimberley, British Columbia, is by far the greatest Canadian producer. Silver is also recovered from ores produced in the Northwest Territories and in the Yukon.

TELLURIUM

Production	Year	Pounds	\$
	1940	3,491	5,607
	1941	11,453	18,394
	1942	11,084	17,735
	1943	8,600	15,050
	1944	56,900	99,575

Tellurium was recovered as a by-product in the treatment of blister copper by the Canadian Copper Refiners at Montreal East, and by the Ontario Refining Co. Ltd. at Copper Cliff, Ontario. Tellurium is used as a hardening and strengthening agent in lead and its alloys. It is also employed in the manufacture of rubber products, its function being to increase tensile strength and resistance to abrasion.

TIN

Production	Year	Pounds	\$
	1941	64,744	35,667
	1942	1,257,863	643,689
	1943	776,957	450,623
	1944	516,600	299,628

Imports

	1 9 4 3		1 9 4 4	
	Pounds	\$	Pounds	\$
Tin in blocks	2,631,100	1,504,438	2,682,300	1,767,779
Tin foil	829,394	106,174	1,625,265	217,978
Collapsible tubes .....	...	155,722	...	192,361

Cassiterite occurs with the silver-lead-zinc ores of the Sullivan mine, Kimberley, British Columbia, and is recovered from the zinc tailings. Cassiterite occurs also in many other places in Canada, but no commercial deposits have so far been found.

The tin concentration plant of the Consolidated Mining and Smelting Company Ltd., at Kimberley commenced operations on March 1, 1941. The plant for the production of refined tin was in commercial operation in April, 1942. The tin content of the ore is small and the recovery is proportionately small.

TITANIUM ORE

Production

Year	Pounds	\$
1940	4,535	24,510
1941	12,651	49,110
1942	10,031	50,906
1943	69,437	308,290
1944	33,963	84,154

Ilmenite or titanite iron in commercial quantities and carrying from 18 to 25 per cent of titanium is found at St. Urbain in Charlevoix county, and at Ivry in Terrebonne county, Quebec. Rutile, which usually contains 54 to 59 per cent titanium, is found mixed with the ilmenite in parts of the St. Urbain occurrences and in sufficient quantities to make it of possible importance for the rutile alone, this being the only known workable deposit of rutile in Canada.

The chief use of ilmenite is in the manufacture of white pigment, and it is used also to a smaller extent for making ferro-alloys. Titanium is not only an effective deoxidizer and cleansing agent, but also an alloying element. Rutile is used chiefly in welding rod coatings, and in the ceramic industry.

TUNGSTEN (Concentrates)

Production

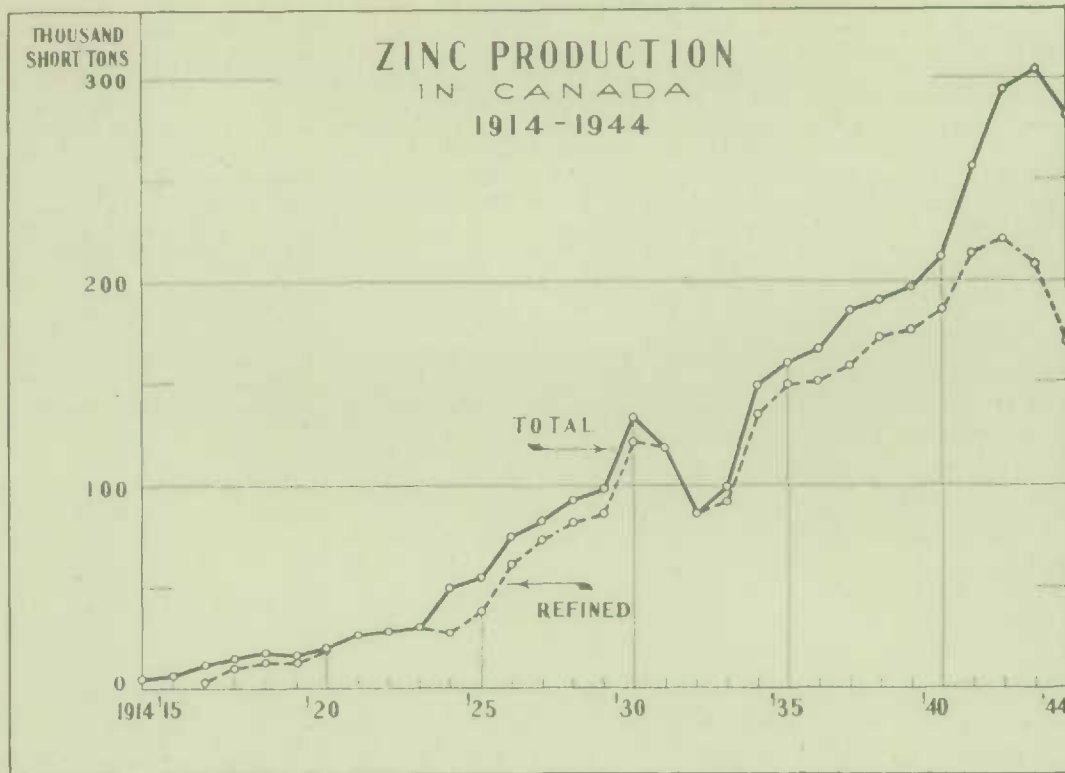
Year	Pounds	\$
1940	12,002	7,303
1941	82,846	38,712
1942	520,981	406,275
1943	1,508,621	1,083,538
1944	881,152	242,000

Imports

	1 9 4 3		1 9 4 4	
	Cwt.	\$	Cwt.	\$
Tungsten-bearing ores	1,213	98,412	...	...
Tungsten carbide, in tubes .....	...	7,364	...	2,782

Tungsten is one of the most important of the war metals. For many years the chief source of supply was China and Burma, but shortly after war broke out, and later when Burma was taken by the Japanese, the tungsten situation in Canada became serious. Tungsten ore was known to occur in some gold mines, and steps were taken to recover wherever possible the tungsten from this source. Hand sorted ore was shipped to the Bureau of Mines, Ottawa, for treatment, and a concentrate of 70 per cent WO_3 or better, was made. In addition, a small treatment plant was built at the Hollinger mine, to which other mines could ship their ore. Sheelite ores were also treated at Val d'Or, Quebec, and at Little Long Lac mine in Ontario.

Intensive efforts were made to recover tungsten ore in all parts of Canada, and the ultra-violet lamp was brought into use by mine managements and prospectors. The Emerald mine, near Nelson, British Columbia, was developed and a considerable quantity of concentrates was produced. Operations at this property ceased in September, 1943. Concentrates amounting to 818,000 pounds were shipped from this property in 1944. In addition, 63,152 tons of concentrates were shipped from the Hollinger mine during the year under review.



Production

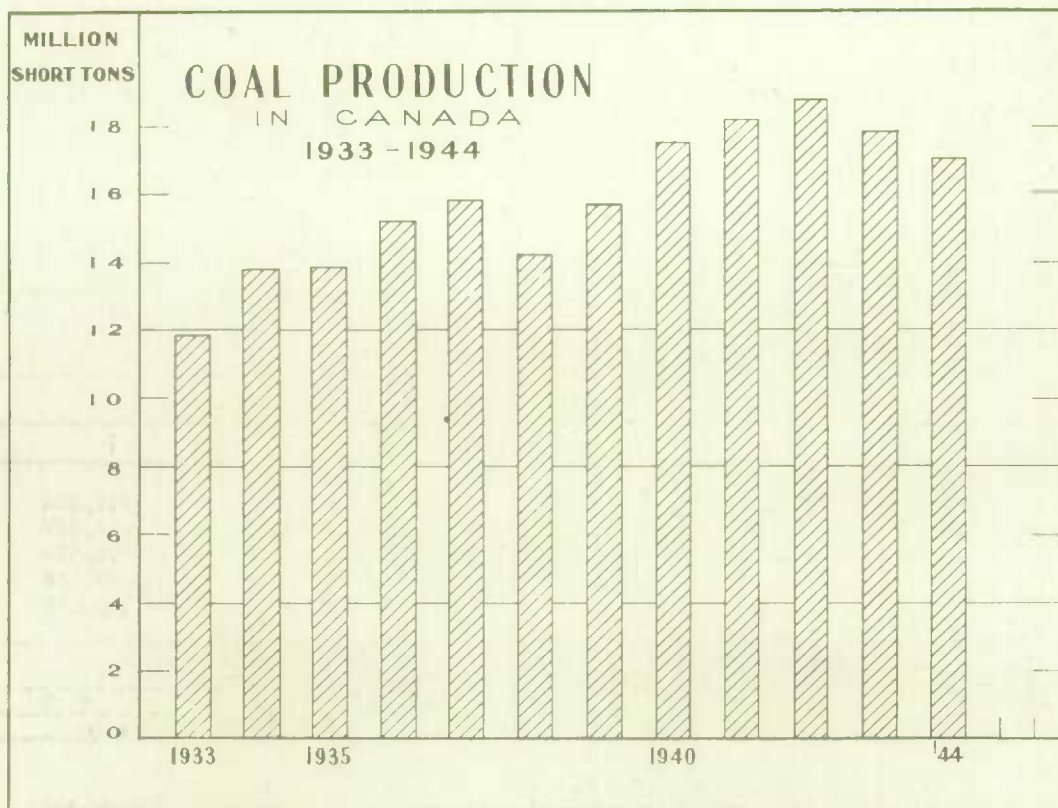
Year	Pounds	£
1940	424,028,862	14,463,624
1941	512,381,636	17,477,537
1942	580,257,373	19,792,579
1943	610,754,354	24,430,174
1944	561,072,538	24,126,119

Imports and Exports

	1 9 4 3		1 9 4 4	
	Pounds	£	Pounds	£
Imports -				
Zinc dust	7,500	1,014	40,200	4,089
Zinc in blocks, pigs, bars and rods, and zinc plates, n.o.p.	138,400	26,257	156,900	26,722
Zinc in sheets and strips, and zinc plates for marine boilers	987,300	141,997	991,600	153,954
Zinc spelter	27,076,400	2,429,945	8,883,000	794,865
Zinc slugs for dry batteries .....	...	64,385	...	86
Zinc white (zinc oxide)	2,218,564	174,075	1,745,535	137,612
Zinc sulphate	708,869	31,743	986,136	41,278
Zinc, chloride of	189,305	11,745	192,935	11,928
Zinc, manufactures of, n.o.p. ....	...	377,486	...	351,218
Lithopone	17,754,879	857,509	18,999,905	932,787
Total .....	...	4,116,156	...	2,454,539
Exports -				
Zinc, contained in ore	222,550,300	6,097,117	226,606,900	7,046,844
Zinc, scrap, dross and ashes	4,291,000	159,218	9,144,200	301,941
Zinc spelter	258,629,700	10,260,030	191,970,000	7,666,731
Total	485,471,000	16,516,365	427,721,100	15,015,516

Canadian zinc production data represents the refined zinc made at Trail, British Columbia, by the Consolidated Mining & Smelting Company of Canada, Ltd., and at Flin Flon, Manitoba, by the Hudson Bay Mining & Smelting Company, plus the recoverable zinc in ores exported. Zinc is a very important war metal and strict control is maintained by the Metals Controller. More than half of the Canadian output is from British Columbia, and the Sullivan mine at Kimberley is the chief source. The Flin Flon mine, owned by the Hudson Bay Mining & Smelting Company, is another important producer. Zinc concentrates were exported for treatment to the United States by Lake Geneva Mining Company Ltd. and Berens River Mines Ltd., Ontario; Emergency Metals Ltd. and Sherritt-Gordon Mines Ltd., Manitoba; Base Metals Mining Corp. Ltd., Kootenay Florence Project, Zincton Mines Ltd., Retallic Mines Ltd. Project, Western Exploration Company, Twin "J" mines and Reco Mountain mine in British Columbia; and in Quebec by Golden Manitou Mines Ltd., New Calumet Mines Ltd., Siscoe Metals Ltd., Normetal Mining Corp., Waite Amulet Mines Ltd., and Aldermac Copper Corporation.

FUELS



Production

Year	Short tons	\$
1940	17,566,884	54,675,844
1941	18,225,921	58,059,630
1942	18,865,030	62,897,581
1943	17,859,057	62,877,549
1944	17,118,008	71,214,303

The coal situation in Canada in 1944 was marked by a further drop in production and by a decrease in the number of plants. Coal mine labour continued to be the determining factor in production and the wastage due to age and mortality was not made up by young men entering the industry. The assistance given the industry by the release of some 2,000 soldier coal miners on leave has been the only factor that has enabled the mines to hold production at present levels.

Though production decreased, the total value of the output was higher. This was due to the O'Connor wage award in Western Canada and a subsequent award by the National War Labour Board in Eastern

Canada. Coal miners received an additional wage of \$1.00 per day plus paid holidays as from November 1, 1944. To enable the mine owners to recover this increase in costs, the Wartime Prices and Trade Board, under direction of Government, directed increases in the price of coal. The price of coal imported for use as "consumers' goods" was protected by subsidy payments where necessary.

Coal Production, by Provinces, 1943 and 1944

Province	1 9 4 3		1 9 4 4	
	Output	\$	Output	\$
Nova Scotia	6,103,085	27,121,861	5,808,792	31,271,704
New Brunswick	372,873	1,641,069	347,032	1,862,828
Manitoba	999	2,964	...	...
Saskatchewan	1,665,972	2,432,249	1,390,155	2,037,212
Alberta -				
Bituminous	3,469,893	10,942,203	3,548,419	13,344,238
Sub-bituminous	792,252	2,399,289	729,207	2,552,535
Lignite	3,414,581	10,689,194	3,160,155	11,136,348
Total Alberta	7,676,726	24,030,686	7,437,781	27,033,121
British Columbia	2,039,402	7,648,720	2,134,248	9,009,438
CANADA	17,859,057	62,877,549	17,118,008	71,214,303

Coal Production, by Months, 1943 and 1944, and Number of Employees

Month	1 9 4 3		1 9 4 4	
	Tons	Number of employees	Tons	Number of employees
January	1,559,304	25,571	1,626,068	27,689
February	1,578,404	25,348	1,454,596	27,077
March	1,688,463	24,958	1,546,416	26,181
April	1,387,020	23,513	1,236,193	24,971
May	1,318,099	22,954	1,290,787	24,363
June	1,365,993	23,244	1,231,925	24,040
July	1,387,654	23,592	1,168,815	23,612
August	1,441,577	24,066	1,378,819	23,690
September	1,463,498	25,041	1,391,142	24,386
October	1,569,411	25,841	1,517,521	24,653
November	1,472,424	26,951	1,637,863	25,881
December	1,627,210	27,315	1,637,863	25,890
CANADA	17,859,057	...	17,118,008	...

Imports of Coal, by Kinds, 1943 and 1944

	1 9 4 3		1 9 4 4	
	tons		tons	
Anthracite	4,458,519		4,413,227	
Bituminous	24,393,798		24,513,527	
Lignite	337		171	
TOTAL CANADA	28,852,654		28,926,925	

Exports of Coal, 1943 and 1944

	1 9 4 3		1 9 4 4	
	tons		tons	
Bituminous	1,101,514		999,407	
Lignite	8,587		10,833	
TOTAL CANADA	1,110,101		1,010,240	

NATURAL GAS

Production

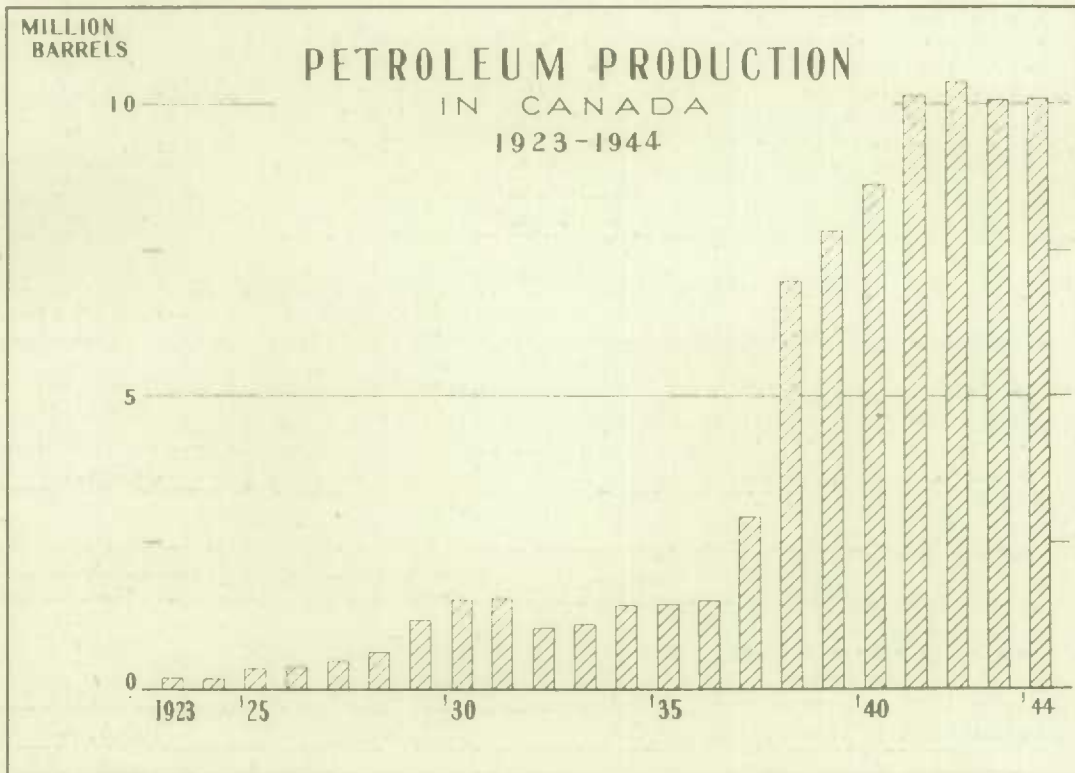
Year	M cu. ft.	\$
1940	41,232,125	13,000,593
1941	43,495,353	12,665,116
1942	45,697,359	13,301,655
1943	44,198,005	11,813,629
1944	45,956,800	11,905,600

Natural gas has been found in most of the provinces of Canada. It is produced commercially in abundance in Alberta, to a lesser extent in Ontario, and in smaller quantities in New Brunswick and Saskatchewan. In Alberta, most of the production comes from the Turner Valley field, which supplies fuel for the field itself and then feeds the pipe line to the cities and districts of Calgary and Lethbridge. The Edmonton area is supplied from the gas field at Viking, about 80 miles southeast of the city, supplemented by that at Kinsella, farther east. Medicine Hat and the adjacent town of Redcliff, are supplied from the Medicine Hat field. The Vermilion field became an important producer of natural gas in 1942, the quantity produced being about the same as that of the Fabyan field which supplies Wainwright. The output from the Brooks and Foremost fields is obtained from several small producers.

In Saskatchewan, the eastern part of the Lloydminster field supplies the town of the same name.

In Ontario, natural gas is produced only in the southwestern part of the province and is piped to several cities and towns for industrial and domestic consumption.

In New Brunswick, the Stoney Creek field supplies Moncton and Hillsborough with natural gas.



CRUDE PETROLEUM

Production

Year	Barrels	\$
1940	8,590,978	11,160,213
1941	10,133,838	14,415,096
1942	10,364,796	15,968,851
1943	10,052,302	16,470,417
1944	10,071,100	16,250,300

Production of Crude Petroleum, by Provinces, 1943 and 1944

Province	1943		1944	
	Barrels	\$	Barrels	\$
New Brunswick	24,530	34,342	22,000	30,800
Ontario	132,492	311,356	132,800	316,000
Alberta	9,601,530	15,724,518	8,952,000	14,592,000
Northwest Territories	293,750	400,201	964,300	1,311,500
TOTAL	10,052,302	16,470,417	10,071,100	16,250,300

The Stoney Creek field supplies the output from New Brunswick. In Ontario, crude oil continues to be produced at Petrolia, Oil Springs, Bothwell, and in the townships of Dawn, Warwick, West Dover and Mosa in the southwestern part of the province.

The following summary was contributed by Dr. G. S. Hume of the Canadian Geological Survey:

Oil Development in Canada in 1944

"In 1944 there was a record amount of exploration and drilling in Alberta and Saskatchewan in the search for new supplies of petroleum. No discoveries were made in Saskatchewan, but in Alberta new producing areas include:

1. Jumpingpound, 20 miles west of Calgary where at a depth of 9,947 feet, a well found gas and oil production in the same producing limestone as at Turner Valley.
2. The Princess area, 125 miles east of Calgary, where oil 34.5 degrees was obtained in Devonian limestone at less than 5,000 feet in depth.
3. Conrad, 20 miles southeast of Taber, where oil of about 25 degrees was obtained in a sand of Jurassic age at a depth of less than 3,000 feet.
4. West Taber or Barnwell, where oil comparable to that at Taber (18° A.P.I.) was found in the Taber sand horizon of Lower Cretaceous age.
5. Important extensions of the Lloydminster field to the south and west and the continued expansion of the Vermilion field which in 1944 yielded 234,600 barrels of heavy oil for use as fuel for Canadian National Railways.
6. Further extension of Turner Valley to the west at the north end of the field.

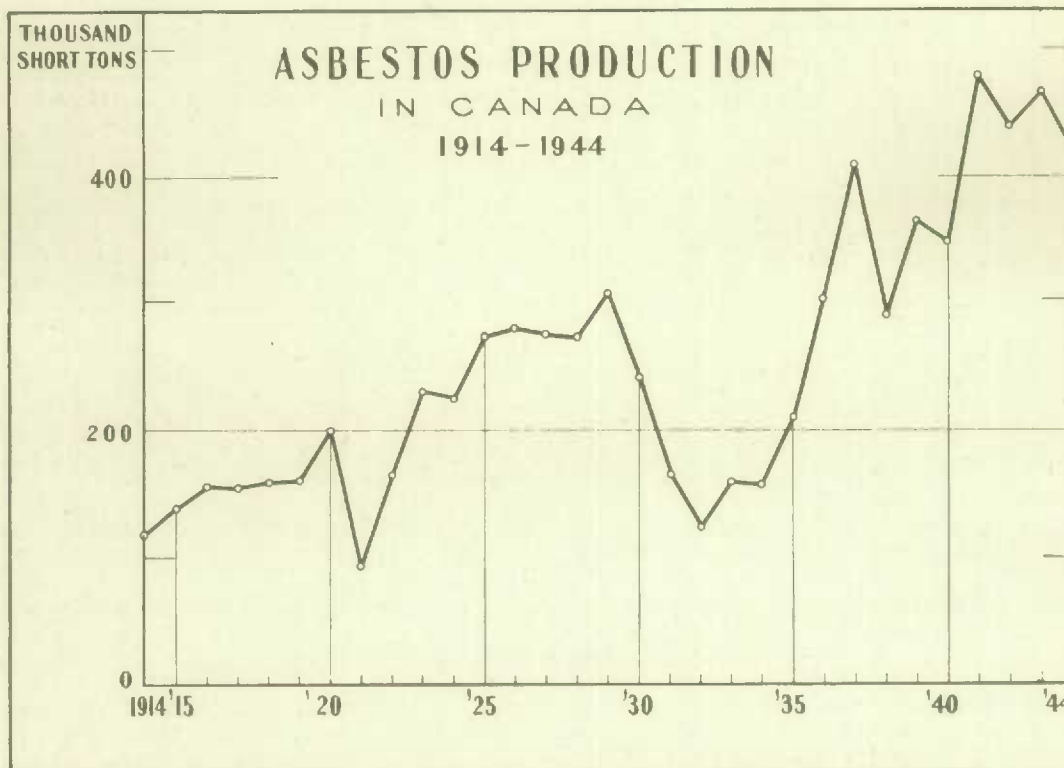
"There was a decline in production of Turner Valley but an increase in production from other fields. This yield from new areas is likely to become more important in 1945.

"In the McMurray bituminous sand area the test plant of Abasand Oils Ltd., sponsored by the Dominion Government, was built and put in operation. For the first time continuous operations are being carried out through the winter to determine operating conditions and costs.

"At Norman Wells in the MacKenzie River area, Northwest Territories, the Canol pipe line has operated throughout the whole year. At the end of 1944 there were 58 wells in the Norman Wells field capable of producing oil. The size of the field has been determined by drilling with recoverable reserves estimated to be 30 to 60 million barrels.

"During 1944, two wells were drilled on Cape Breton, Nova Scotia, and one well was continued to a depth of more than 11,600 feet in Prince Edward Island. It is expected this well will be further deepened in 1945. In Gaspé, Continental Petroleum Ltd. has continued operations with shows of oil found in a well drilled in 1944, but not yet completed."

INDUSTRIAL MINERALS



Production

Year	Tons	\$
1940	346,805	15,619,865
1941	477,846	21,468,840
1942	459,459	22,665,285
1943	476,196	23,169,505
1944	420,880	21,599,787

Canada is the world's greatest producer of asbestos. The mines are situated in the Eastern Townships of Quebec and have been in operation since 1878. Because of its fire-resisting qualities, asbestos has many wide uses and has been very definitely a strategic war mineral.

Most of the Canadian production of asbestos is exported in the unmanufactured state. The bulk of the exports go to the United States, but substantial quantities are exported to the United Kingdom. Since September 20, 1939, the Dominion Government has controlled the export of asbestos.

Some of the principal uses are in the manufacture of brake linings, boiler and pipe covering, clutch facings, gaskets, packings, asbestos gloves, suits, and in many other ways that would act as a protection against fire.

BARITE

Production

Year	Tons	\$
1940	358	4,819
1941	6,890	74,418
1942	19,667	188,144
1943	24,474	279,253
1944	114,387	1,052,045

Canada has been a producer of barite for many years, but not in large quantities. In 1940, however, a large deposit was discovered near Walton, Hants county, Nova Scotia, which was brought into production in 1941. A 150-ton mill was erected on tidewater $2\frac{1}{2}$ miles distant, which came into operation in June, 1941. It turns out a product designed primarily for use in oil drilling for shipment to Trinidad and South America. In 1944 the grinding capacity of the mill was increased to 400 tons daily.

In addition to the Nova Scotia output, a mine in British Columbia also contributed to the total Canadian output.

Imports of barite totalled 3,372,500 pounds valued at \$45,239 in 1943, and 3,648,600 pounds worth \$47,913 in 1944.

CORUNDUM

Corundum is found in an area embracing several townships in Renfrew and Hastings counties in the province of Ontario. Corundum mining as an industry made its appearance there in 1900 and production reached its maximum in 1906. In 1944, tailings from the old mill near Craigmont, Renfrew county, were being re-run and some 160 tons of corundum were shipped.

FELDSPAR

Production

Year	Tons	\$
1940	21,455	187,625
1941	26,040	244,284
1942	22,270	213,941
1943	25,858	237,771
1944	20,494	204,807

Imports and Exports

	1 9 4 3		1 9 4 4	
	Tons	\$	Tons	\$
Imports -				
Feldspar, crude only .....	...	...	...	...
Feldspar, not further manufactured than ground	526	12,866	546	10,658
Exports -				
Feldspar	12,724	96,453	13,081	102,918

Canadian feldspar production comes from the provinces of Ontario and Quebec. A certain amount is exported in the crushed state and the remainder is ground into powder for export or for consumption in Canada in the ceramic trade, for use in scouring compounds or for the manufacture of tile. Grinding mills are in operation at Buckingham, Quebec, and Kingston, Ontario.

FLUORSPARProduction

Year	Tons	\$
1940	4,454	59,517
1941	5,534	97,767
1942	6,199	146,039
1943	11,210	318,424
1944	6,336	129,120

Production of fluorspar in Canada has been relatively small. The chief commercial deposits are in the vicinity of Madoc, Hastings county, Ontario, and the Rock Candy mine near Grand Forks, British Columbia, owned by the Consolidated Mining & Smelting Company of Canada, Ltd. During recent years production has also been reported from Nova Scotia, but the Madoc area of Ontario has contributed the major proportion.

The aluminum and steel industries are the larger consumers of fluorspar; during the war years the Dominion Government, through the office of the Metals Controller, furnished funds for expanding the output.

Imports totalled 37,101 tons worth \$840,309 in 1944 as compared with 77,436 tons valued at \$1,738,669 in 1943.

GRAPHITEProduction

Year	Tons	\$
1940 .....	...	94,038
1941 .....	...	132,924
1942 .....	...	117,904
1943	1,905	197,451
1944	1,565	178,821

Imports

	1 9 4 3	1 9 4 4
	\$	\$
Plumbago, not ground or otherwise manufactured	25,773	48,095
Crucibles, plumbago	191,296	128,758
Plumbago, ground, and manufactures of, n.o.p.	286,583	261,205

Exports -

Graphite or plumbago, crude and refined	80,961	87,774
---	--------	--------

The Black Donald mine in Renfrew county, Ontario, is the only producer of graphite in Canada. This mine has been in operation for over 30 years. The size of the flake produced is too small for crucible use but is well adapted for foundry facings and lubricants. In 1942 a geological investigation of the deposit was undertaken by the Frobisher Exploration Company (Ventures Ltd.), and a substantial tonnage of new ore was proven.

GYP SUMProduction

Year	Tons	\$
1940	1,448,738	2,065,933
1941	1,593,406	2,248,428
1942	566,166	1,254,182
1943	446,848	1,381,468
1944	510,224	1,383,082

Imports and Exports

	1 9 4 3		1 9 4 4	
	Tons	\$	Tons	\$
Imports -				
Gypsum	5,489	29,318	560	17,223
Plaster of Paris or gypsum calcined and prepared wall plaster	1,202	47,532	1,550	65,180
Exports -				
Gypsum or plaster, crude	185,210	213,022	386,949	434,123
Plaster of Paris, ground, and prepared wall plaster	478	8,844	443	9,262

Nova Scotia is the largest gypsum producing province. Production from deposits in that province is generally exported in the crushed form. New Brunswick gypsum deposits are at Hillsborough. Part of the production is shipped in the crushed state, while large quantities are calcined to be used in the production of wallboard and various other gypsum products.

Ontario gypsum is mined at Caledonia by Gypsum, Lime & Alabastine, Canada, Ltd., and at Hagersville by the Canadian Gypsum Co. Ltd. Manufacturing plants are operated by these firms for the production of a wide range of gypsum products.

In Manitoba, Western Gypsum Products operate a mine at Amaranth, Manitoba, and manufacturing plant in Winnipeg. Gypsum, Lime & Alabastine, Canada, Ltd. operate a mine at Gypsumville and a manufacturing plant in Winnipeg.

In British Columbia, the Gypsum, Lime & Alabastine, Canada, Ltd. operate a mine at Falkland and a mill and manufacturing plant at New Westminster.

IRON OXIDESProduction

Year	Tons	\$
1940	9,979	111,874
1941	10,045	142,069
1942	9,304	151,653
1943	8,401	135,893
1944	10,335	172,223

Iron oxides are produced in Quebec and British Columbia. Ochreous iron oxide is sold uncalcined and is used chiefly in the purification of illuminating gas. Calcined iron oxides produced at Red Mill, Quebec, are used by the paint trade.

MAGNESITIC-DOLOMITE AND BRUCITEProduction

Year	⌘	
1940	897,016	
1941	851,041	
1942	1,059,574	Note: Includes brucite
1943	1,260,056	in 1942, 1943 and
1944	1,125,455	1944 only.

Imports and Exports

	1 9 4 5		1 9 4 4	
	Tons	⌘	Tons	⌘
Imports -				
Magnesia pipe covering .....	...	249,654	...	71,158
Magnesite, dead burned, sintered, caustic, calcined or plastic magnesia	8,566	405,616	7,790	466,314
Brick, fire, magnesite .....	...	1,111,754	...	718,481
Exports -				
Refractories, dead burned, etc.	396	16,598	1,015	31,585

Magnesitic dolomite, an intimate mixture of magnesite and dolomite, is quarried and processed at Kilmar and Harrington East, in Argenteuil county, Quebec. It is marketed in the caustic and dead-burned states; in the form of bricks; as finely ground refractory cement; and also in combination with chrome as an ingredient in certain types of refractories. Caustic-calcined magnesia is used for fettling the bottoms of basic open hearth furnaces and for the construction of floors and floor tiles. The deposits of magnesitic dolomite in Argenteuil county, Quebec, are ample to supply magnesia products for domestic requirements for many years, and also to support a large export trade.

During 1941 a plant was erected by the Aluminum Company of Canada Ltd. near Wakefield, Quebec, for the production of brucite concentrates from crystalline limestone. Magnesia obtained from this source is suitable for high-grade basic refractories. It was also used as a source of magnesium metal at the plant of Dominion Magnesium Ltd. in Ontario before the local deposit of dolomite was opened up.

M I C AProduction

Year	Pounds	⌘
1940	1,806,219	237,145
1941	3,487,891	335,288
1942	6,019,671	383,567
1943	8,050,692	553,856
1944	6,087,627	788,166

Imports

	1 9 4 5		1 9 4 4	
		⌘		⌘
Mica and manufactures of, n.o.p. — Total	220,356		185,986	

Exports

	Pounds	\$
1943 - Rough cobbled and thumb trimmed	963,100	422,710
Mica splittings	65,900	47,108
Mica, scrap and waste	279,500	34,660
Mica, plate, and manufactures of (micanite) ..	...	16,540
TOTAL .....	...	521,018
1944 - Mica, rough	191,120	133,149
Mica, trimmed, sheet or block	56,420	272,541
Mica, scrap and waste	975,840	36,072
Mica, ground	120,180	18,340
Mica, splittings	15,160	56,211
Mica, manufactures .....	...	994
TOTAL .....	...	517,307

Mica is produced in Quebec and Ontario, and a mica schist, produced in British Columbia, is included with the Canadian output. Up until the past three years, most of the Canadian production has been of the phlogopite variety.

There are many known occurrences of muscovite or white mica in Canada, but prior to the discovery of important deposits in the Eau Claire area, near Mattawa, Ontario, in the winter of 1941-42, production was negligible as in general, the quantity of mica and the yield proved too low for profitable mining. In 1943 and 1944 there was a large production from deposits in the Eau Claire area, chiefly from the Purdy property, a conspicuous feature of the mica being the phenomenal size of the crystals, or books, some of which measured up to 5 x 8 feet across. The average size of trimmed sheet produced here is far above that of most mica mines.

MINERAL WATERSProduction

Year	Imperial gallons	\$
1940	140,663	20,892
1941	181,064	72,531
1942	157,085	74,505
1943	139,611	67,541
1944	139,000	65,700

Production originates in the provinces of Quebec and Ontario. Some of the more prominent Canadian mineral waters possessing special therapeutic or hygienic properties include the following: in Quebec, the Abenakis springs on the St. Francois River, in Yamaska county; Potton springs in Brome county, and the Coulombia spring at L'Epiphanie. In Ontario, saline, sulphur and gas springs occur at Caledonia Springs and Carlsbad Springs, near Ottawa. St. Catharines, near Niagara, is one of the oldest Canadian mineral water resorts, and sulphur waters are found at the Preston mineral springs in Waterloo county. There are also the hot sulphur springs at Banff, Alberta, the Harrison Hot Springs and the Halcyon Hot Springs in British Columbia.

NEPHELINE SYENITEProduction

Year	\$
1940	117,849
1941	227,583
1942	246,893
1943	292,010
1944	279,701

Canadian production of nepheline syenite comes from Peterborough and Hastings counties of Ontario. It is used in the ceramic trade, mainly in the glass industry as a substitute for straight lead-spar. The first production was in 1936 when a mill was erected at Lakefield to crush the rock for market. Exports in 1943 totalled 36,240 tons valued at \$129,826, and 35,310 tons in 1944 worth \$123,905.

PEAT MOSS

Production	Year	Tons	\$
	1940 .....	...	...
	1941	27,803	644,253
	1942	53,506	1,069,372
	1943	64,360	1,461,422
	1944	63,149	1,554,606

Peat moss is produced in several provinces in Canada, and though perhaps not properly a mineral, it has been included with the mineral industry of Canada in order that the production will be regularly recorded. The industry has had a very rapid growth during the past two years, as will be noted from the production statistics given above. It has high absorptive qualities and for that reason it is widely used as litter. It makes an excellent packing material. Peat moss is used as a reagent in the extraction of magnesium. This use is a very recent and valuable discovery. It is also used in surgical dressing where it serves as an absorbent and deodorizer.

PHOSPHATE

Production	Year	Tons	\$
	1940	358	4,039
	1941	2,487	33,376
	1942	1,264	17,431
	1943	1,451	18,385
	1944	389	5,819

Production of phosphate is principally in the province of Quebec, though production from Ontario is reported from time to time. In 1944 some diamond drilling on phosphate occurrences was done in the vicinity of Westport. The Quebec output has generally resulted as a by-product in the production of phlogopite mica with which it is associated, as apatite, in irregular bodies of Precambrian crystalline pyroxenite rocks. The clean cobbled material contains about 80 per cent of tricalcium phosphate and it is mostly sold to the Electric Reduction Company of Buckingham, Quebec, for use in the production of phosphorus and phosphorus compounds. Imported phosphate rock for fertilizer purposes totalled 260,846 tons valued at \$1,085,080 in 1943 and 388,247 tons valued at \$1,710,378 in 1944.

PYRITES (Sulphur)

Production	Year	Tons	\$
	1940	170,630	1,298,018
	1941	260,023	1,702,736
	1942	303,714	1,994,891
	1943	257,515	1,753,425
	1944	248,465	1,745,430

Canadian sulphur production is computed as the sulphur in iron pyrites shipped plus the sulphur recovered from non-ferrous smelter gases. Pyrites is produced in Canada as a by-product in the treatment of copper-pyrites at the Aldermac and Noranda mines in Quebec, and at the Britannia mine in British Columbia. No lump pyrites has been produced in Canada for several years. Sulphur is recovered from the waste smelter gases at Trail, British Columbia, in the form of elemental sulphur, and sulphuric acid. At Copper Cliff, Ontario, the Canadian Industries Limited manufacture sulphuric acid from the waste gases of the International Nickel Company's nickel-copper smelter. The Aldermac copper mine ceased operations in northern Quebec in 1943.

Imports of sulphur and brimstone in 1944 totalled 235,355 tons valued at \$3,375,649, compared with 1943 totals of 218,527 tons at \$3,524,006. Exports of sulphur in pyrites in 1944 totalled 90,836 tons worth \$393,431, against 104,309 tons valued at \$409,527 in 1943.

QUARTZ

Production

Year	Tons	\$
1940	1,858,302	1,203,527
1941	2,052,878	1,366,187
1942	1,738,174	1,538,162
1943	1,776,749	1,608,448
1944	1,637,876	1,756,690

Imports and Exports

	1 9 4 3		1 9 4 4	
	Tons	\$	Tons	\$
Imports -				
Ganister	484	3,970	347	2,463
Silica or crystallized quartz, ground or unground	11,410	945,967	8,774	530,200
Flint and ground flint stones	884	17,617	1,480	30,487
Silica sand	509,043	1,011,117	457,603	914,390
TOTAL	1,978,671	...	1,477,540

Exports -

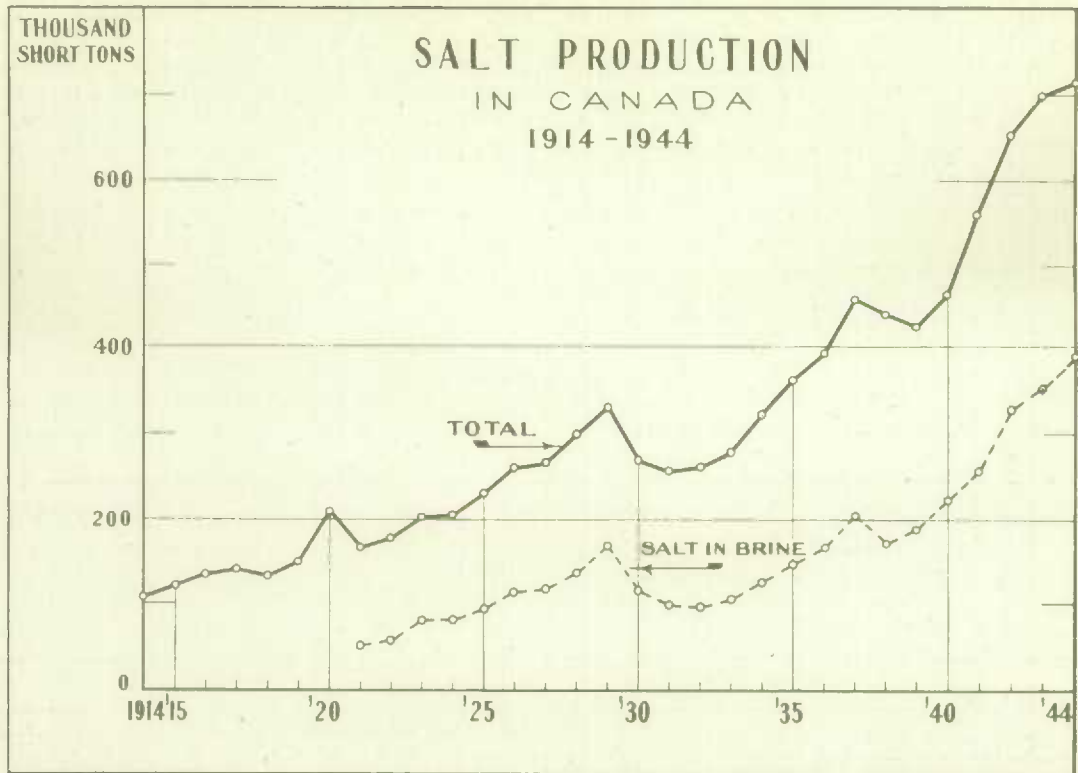
Quartzite	68,555	124,345	126,608	260,181
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Production of quartz was reported in 1944 in Nova Scotia, Quebec, Ontario, Saskatchewan and British Columbia. Quartz is used for various purposes, such as a flux in metallurgical operations, for the manufacture of glass and chemicals, silicon carbide, ferro-silicon, and for sand blasting. The price varies depending on its purity and the purpose for which it is to be used. It is, generally speaking, a low-priced commodity, and therefore the location of the deposit with respect to markets is of great importance.

S A L T

Production

Year	Commercial Salt		Salt in Brine		TOTAL	
	Tons	\$	Tons	\$	Tons	\$
1940	240,705	2,464,297	224,009	358,972	464,714	2,823,269
1941	302,134	2,765,512	258,711	430,653	560,845	3,196,165
1942	326,124	3,263,406	327,548	580,781	653,672	3,844,187
1943	341,541	3,495,036	346,145	984,342	687,686	4,379,378
1944	328,843	3,324,552	398,032	596,498	716,875	3,921,050



Imports and Exports

	1943		1944	
	Tons	\$	Tons	\$
Imports -				
Salt, for use of the sea or gulf fisheries ...	21,037	161,255	31,458	173,123
Salt, in bulk, n.o.p.	47,687	245,915	91,558	461,953
Salt, n.o.p., in bags, barrels, etc.	16,064	181,940	24,466	211,981
TOTAL	84,788	589,108	147,282	846,057
Exports -- Total	8,061	118,174	3,182	80,672

Salt is one of Canada's most important non-metallic minerals and in addition to its use for ordinary purposes, large quantities of the mineral in the form of brine from Ontario wells are consumed annually in the manufacture of caustic soda, chlorine, calcium chloride, soda ash, and hydrochloric acid, and other chemicals.

In Nova Scotia, at the Malagash mine, the salt is recovered by mining methods and by leaching. In Ontario, Manitoba, Saskatchewan and Alberta, salt is obtained from brine wells. Production from Ontario comes entirely from wells in the southern part of the Province. The Neepawa Salt Ltd. is the only producer in Manitoba and at Fort McMurray, Alberta, Industrial Minerals Ltd. completed in December, 1937, the erection of a plant for the production of salt from brines obtained from rock salt deposits.

SODIUM CARBONATE

<u>Production</u>			
	<u>Year</u>	<u>Tons</u>	<u>\$</u>
	1940	220	1,760
	1941	186	1,488
	1942	256	2,048
	1943	468	5,148
	1944	44	484

Sodium carbonate comes entirely from deposits located on or near the line of the Pacific and Great Eastern Railway in British Columbia. As the present known Canadian deposits are far from the main markets, the output is restricted to the requirements of consumers within economic rail haul from the deposits. Eastern consumers of soda ash obtain their supplies from the chemically-prepared material made from salt by the Solvay or ammonia process in Ontario and the United States.

Imports of soda ash or barilla during 1943 totalled 70,556 tons valued at \$1,213,818, and 20,141 tons valued at \$583,653 in 1944.

SODIUM SULPHATE

<u>Production</u>			
	<u>Year</u>	<u>Tons</u>	<u>\$</u>
	1940	94,260	829,589
	1941	115,608	931,554
	1942	131,258	1,079,692
	1943	107,121	1,025,151
	1944	98,188	1,004,054

The entire Canadian production came from deposits in the province of Saskatchewan. Sodium sulphate is used extensively in the pulp and paper, glass, dye and textile industries, and to a lesser extent for medicinal and tanning purposes. It is also used extensively in the copper-nickel smelting industry for the separation of the two metals.

Imports of salt cake in 1943 amounted to 11,904 tons valued at \$150,496 and 20,459 tons valued at \$195,105 in 1944. Glauber's salt imports totalled 566 tons valued at \$16,399 in 1943 and 777 tons worth \$21,960 in 1944.

TALC AND SOAPSTONE

<u>Production</u>				
	<u>Year</u>	<u>Talc</u>		<u>Soapstone (x)</u>
		<u>Tons</u>	<u>\$</u>	<u>\$</u>
	1940	15,168	154,734	74,905
	1941	18,171	204,884	155,925
	1942	15,499	174,295	136,529
	1943	11,959	131,216	135,469
	1944	14,000	150,000	186,261

(x) Includes some low grade talc.

Canadian production of talc comes chiefly from important deposits of foliated white talc located near Madoc, Ontario. Preparations of the mineral for the market includes crushing, drying, grinding and bolting.

Soapstone products are produced from deposits of the mineral occurring in the Eastern Townships, Quebec. The mineral is mainly used, in the shape of blocks, as a refractory lining in alkali recovery furnaces in paper mills using the sulphite process. Powdered soapstone finds a good market as a filler in various industries. Mixed with Portland cement it has been used successfully for interior plastering purposes giving a very white velvet finish. It is now used in the manufacture of fireless cookers, fireplaces, stoves, wood or coal burners and electrical heaters. Soapstone is easily carved and when polished takes a soft marble-streaked appearance. Various objects, such as tobacco jars, candlesticks, clock cases and book-ends made of carved and polished soapstone have lately been put on the market.

Imports of talc or soapstone, ground or unground, totalled 6,450 tons valued at \$130,813 in 1943 and 6,093 tons worth \$130,603 in 1944. Exports of talc totalled 11,364 tons worth \$146,516 in 1943 and 11,920 tons worth \$157,178 in 1944.

CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS

CLAY PRODUCTS

Production

Year	\$
1940	6,344,547
1941	7,575,336
1942	7,081,723
1943	6,608,193
1944	6,915,475

Production (Sales) of Domestic Clay and Clay Products in Canada, 1942 and 1943

Product	Unit of measure	Sales or Shipments			
		1942		1943	
		Quantity	\$	Quantity	\$
Clay—Fireclay	ton	5,601	40,722	5,653	42,122
Kaolin	ton	408	6,130	93	1,531
Other clay .....	...	...	116,030	...	218,083
Fireclay blocks and shapes .....	...	...	210,246	...	256,655
Firebrick	M	3,816	197,830	3,844	192,618
brick—Soft mud process—Face	M	11,385	233,251	9,260	206,826
Common	M	20,387	325,762	14,195	209,508
Stiff mud process—Face	M	39,104	872,287	34,623	867,630
(wire cut) —Common	M	59,901	893,488	51,000	829,365
Brick—Dry process - Face	M	12,871	278,701	10,504	256,362
Common	M	25,145	404,730	15,681	243,446
Fancy or ornamental brick (including special shapes, embossed and enamelled brick)	M	11	676	3,190	191,424
Sewer brick	M	513	9,480	225	4,203
Paving brick	M	153	9,353	151	8,967
Structural tile -					
Hollow blocks (including fireproofing and load-bearing tile)	ton	109,905	1,082,573	84,469	819,535
Roofing tile .....	...	...	32	...	827
Floor tile (quarries) .....	...	...	23,705	...	26,949
Drain tile	M	11,659	329,035	13,001	390,377
Sewer pipe (including copings, blue linings, conduits, etc.) .....	...	...	1,392,545	...	1,116,846
Pottery, glazed or unglazed (including coarse earthenware, sanitary ware, stoneware, flower pots, and all other pottery).	...	...	646,088	...	701,144
Other products .....	...	...	9,059	...	23,775
TOTAL .....	...	...	7,081,723	...	6,608,193

Production, Sales and Stocks of Certain Clay Products in Canada, 1944, Based on Monthly Returns

	Maritimes	Quebec	Ontario	Prairie Provinces	British Columbia	CANADA
Building Brick -						
Production	M 12,426	62,712	56,533	17,748	3,844	153,263
Sales	M 12,509	65,492	56,187	18,041	3,106	155,535
Stocks, December 31, 1944	M 497	6,726	7,833	2,381	949	18,386
Structural Tile -						
Production	tons 15,175	24,320	23,862	10,819	3,304	77,480
Sales	tons 14,810	28,692	24,710	10,119	2,888	81,219
Stocks, December 31, 1944	tons 623	6,010	4,566	1,839	1,182	14,220
Drain Tile -						
Production	M 193	686	9,254	2,151 (x)		12,264
Sales	M 210	776	10,344	2,129 (x)		15,459
Stocks, December 31, 1944	M 6	12	417	272 (x)		707

(x) Includes the Prairie Provinces and British Columbia.

CEMENT

Production (sold or used)

Year	Barrels	\$
1940	7,559,648	11,775,345
1941	8,368,711	13,063,588
1942	9,126,041	14,365,237
1943	7,302,289	11,599,033
1944	7,182,462	11,517,035

Imports and Exports

	1 9 4 3		1 9 4 4	
	Barrels	\$	Barrels	\$
Imports -				
Portland	18,577	83,975	14,000	76,838
Manufactures .....	...	27,723	...	21,128
Exports - Total				
	172,575	344,004	210,448	377,434

Cement is produced in Canada by the Canada Cement Co. Ltd. with plants at Montreal East and at Hull, Quebec, Port Colborne and Point Anne, near Belleville, Ontario, Fort Whyte, Manitoba, and Exshaw, Alberta. Other companies producing cement were the St. Mary's Cement Company, St. Mary's, Ontario, and the British Columbia Cement Company, Humberton, British Columbia.

L I M E

Production

Year	Quicklime		Hydrated Lime		T O T A L	
	Tons	\$	Tons	\$	Tons	\$
1940	625,803	4,421,758	92,927	772,797	716,730	5,194,555
1941	723,864	5,287,711	137,021	1,070,250	860,885	6,357,941
1942	749,282	5,646,049	135,548	884,790	884,830	6,530,839
1943	766,147	5,990,088	141,621	842,904	907,768	6,832,992
1944 .....	...	...	...	...	895,120	6,760,262

Lime is marketed in the form of quicklime and in the hydrated state, the latter being a specially prepared slaked lime in the form of a fine powder that is usually marketed in 50-pound multi-wall paper bags.

Quicklime is marketed in the lump, pebble, crushed and pulverized forms; lump lime and pebble lime are sold either in bulk or packed in barrels; crushed lime (1 inch and under) and pulverized lime (ground to minus 20 mesh, and in some plants to minus 50 mesh) are sold in airtight multi-wall paper bags.

As the preliminary figures of production for 1944 are not available by uses, it is thought that the following tables for 1942 and 1943 may be of interest.

Production of Lime in Canada, 1942 and 1943, Showing Purposes for Which Sold or Used

	1942		1943	
	Quicklime tons	Hydrated Lime tons	Quicklime tons	Hydrated Lime tons
Building trades -				
Finishing lime	5,045	21,987	4,021	20,714
Masons' lime	17,699	11,617	14,741	12,214
Sand-lime brick	5,873	...	5,275	27
Agriculture	305	8,311	328	11,504
Chemical -				
Smelters (non-ferrous)	20,537	60,073	36,500	79,881
Iron and steel furnaces	54,937	50	46,205	98
Cyanide and flotation mills	21,552	6,388	24,239	1,745
Pulp and paper mills	155,623	9,945	147,796	7,643
Glass works	15,796	8	14,206	...
Sugar refineries	16,699	152	16,856	125
Tanneries	4,911	1,002	5,095	800
Fertilizer plants	349	286	762	705
Insecticide plants	1,832	456	1,663	185
Other chemical works	420,071	10,892	437,177	3,042
Uses unspecified	8,053	4,381	11,283	2,938
TOTAL	749,282	135,548	766,147	141,621

SAND AND GRAVEL

Production

Year	tons	\$
1940	31,375,415	11,759,245
1941	31,604,806	10,375,723
1942	26,349,907	9,005,414
1943	25,744,469	9,005,857
1944	24,921,950	9,375,388

STONE

Production

Year	Tons	\$
1940	7,447,665	7,398,959
1941	7,940,801	8,000,684
1942	7,978,066	8,746,594
1943	7,222,950	7,964,179
1944	6,360,775	6,779,551

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