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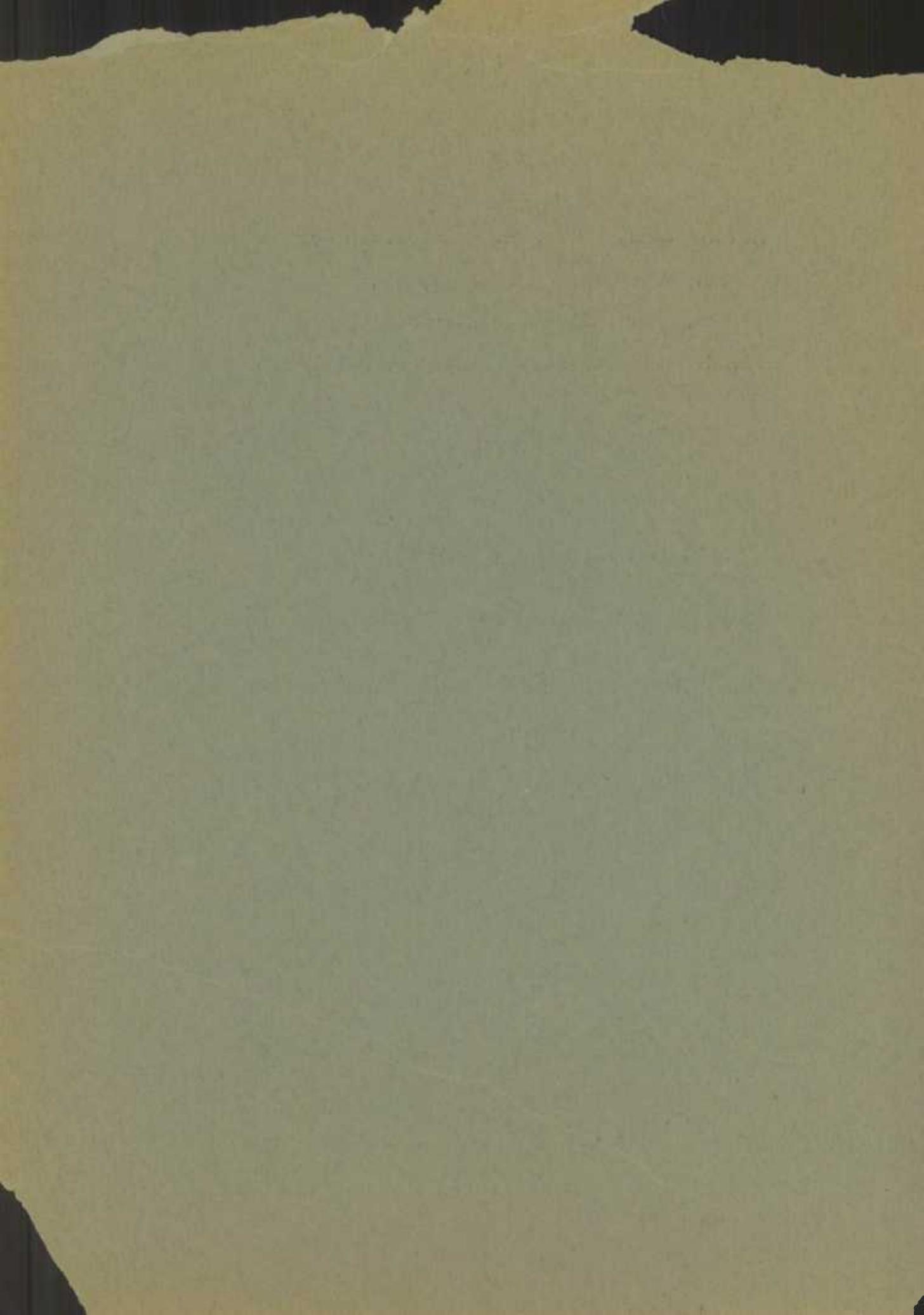
CANADA
DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
CENSUS OF INDUSTRY
MINING, METALLURGICAL & CHEMICAL BRANCH

PRELIMINARY REPORT
ON THE
MINERAL PRODUCTION
OF
CANADA
1943



OTTAWA
1944

Price 25 cents



CANADIAN SOURCES, 1940-1943 (Concluded)

		1 9 4 2		1 9 4 3	
		Quantity	Value	Quantity	Value
			\$		\$
<u>OTHER NON-METALLICS -</u>					
Asbestos	ton	439,459	22,663,283	427,141	21,738,686
Barite	ton	19,667	188,144	24,474	255,525
Bituminous sands	ton	(a)	(a)	...	...
Brucite concentrates	ton	...	...	...	...
Diatomite	ton	365	9,088	108	3,220
Feldspar	ton	22,270	213,941	25,903	236,991
Fluorspar	ton	6,199	146,039	12,087	332,067
Garnet rock	ton	17	176	...	...
Graphite .....	...	...	117,904	...	204,894
Grindstones	ton	216	10,000	...	(b)
Gypsum	ton	566,166	1,254,182	429,968	1,176,269
Iron oxides	ton	9,304	151,653	7,879	126,195
Magnesitic dolomite .....	...	...	1,059,374	...	1,298,775
Magnesium sulphate	ton	1,140	38,760	...	...
Mica	lb.	6,019,671	383,567	(c)	539,595
Mineral waters	gal.	157,085	74,505	156,000	74,000
Nepheline syenite .....	...	...	246,893	...	213,197
Peat moss	ton	53,506	1,069,372	63,635	1,352,183
Phosphate	ton	1,264	17,431	1,435	19,460
Quartz	ton	1,738,174	1,538,162	1,750,744	1,692,302
Salt	ton	653,672	3,844,187	699,858	4,040,918
Silica brick	M	4,273	263,006	13,208	272,463
Soapstone .....	...	...	136,529	...	110,049
Sodium carbonate	ton	256	2,048	427	3,629
Sodium sulphate	ton	131,258	1,079,692	87,297	854,152
Strontium minerals .....	...	...	...	...	...
Sulphur	ton	303,714	1,994,891	261,372	1,758,538
Talc	ton	15,499	174,295	12,182	134,550
TOTAL OTHER NON-METALLICS...	...	...	36,677,122	...	36,437,658
<u>CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS -</u>					
Clay products (brick, tile, etc.) .....	...	...	7,081,723	...	6,391,621
Cement	bbl.	9,126,041	14,365,237	7,299,210	11,619,092
Lime	ton	834,330	6,530,839	938,143	6,750,093
Sand and gravel	ton	26,349,907	9,005,414	26,425,694	9,065,533
Stone	ton	7,973,066	8,746,594	5,962,952	6,610,372
TOTAL CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS .....	...	...	45,729,307	...	40,436,711
GRAND TOTAL .....	...	...	563,768,672	...	523,940,810

		Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan
METALS -							
Antimony	lb.	...	...	...	...	...	...
	\$
Arsenic	lb.	...	...	2,644,400	579,000	...	...
	\$	...	...	203,806	29,370	...	...
Bismuth	lb.	...	...	...	...	...	...
	\$
Cadmium	lb.	...	...	...	...	20,261	165,181
	\$	...	...	...	...	23,300	189,958
Chromite	Ton	...	...	30,085	...	...	...
	\$	...	...	1,043,500	...	...	...
Cobalt	lb.	...	...	...	169,687	...	...
	\$	...	...	...	186,655	...	...
Copper	lb.	...	...	136,240,125	278,789,182	36,744,622	85,465,958
	\$	...	...	16,008,215	32,349,189	4,317,493	10,042,250
Gold	oz.	3,531	...	925,120	2,111,807	92,642	174,881
	\$	135,944	...	35,617,120	81,304,570	3,566,717	6,732,919
Iron ore	ton	...	143,062	...	498,232	...	...
	\$	...	579,990	...	1,526,344	...	...
Lead	lb.	...	...	2,531,271	2,216,756	...	...
	\$	...	...	95,024	83,217	...	...
Magnesium	lb.	...	...	...	7,149,525	...	...
	\$	...	...	...	2,166,370	...	...
Mercury	lb.	...	...	...	...	...	...
	\$
Molybdenite (concentrates) ..	lb.	...	...	813,268	...	...	...
	\$	...	...	585,538	...	...	...
Nickel	lb.	...	...	...	287,763,825	...	...
	\$	...	...	...	71,626,014	...	...
Other precious metals .....	\$	...	...	...	13,548,700	...	...
Selenium	lb.	...	...	222,700	79,000	26,166	52,334
	\$	...	...	389,725	138,250	45,790	91,585
Silver	oz.	144	...	2,259,442	2,651,777	567,141	2,657,315
	\$	65	...	1,022,488	1,200,035	256,654	1,202,541
Tellurium	lb.	...	...	42,600	8,600	3,367	6,733
	\$	...	...	74,550	15,050	5,892	11,783
Titanium ore	Ton	...	...	73,723	...	...	...
	\$	...	...	312,032	...	...	...
Tungsten (concentrates) ..	lb.	4,091	...	6,359	446,383	1,399	...
	\$	4,028	...	6,174	346,488	1,378	...
Zinc	lb.	...	...	128,806,121	3,123,913	44,763,340	96,915,595
	\$	...	...	5,152,245	124,957	1,790,534	3,876,624
TOTAL METALS ...	\$	140,037	579,990	60,510,417	204,645,209	10,007,758	22,147,660
FUELS -							
Coal	Ton	6,086,733	380,001	...	...	999	1,777,833
	\$	27,172,655	1,672,361	...	...	2,964	2,602,752
Natural gas ...	M cu.ft.	...	670,000	...	8,005,000	...	111,000
	\$	...	324,280	...	5,200,000	...	43,179
Peta for fuel	Ton	...	...	325	109	...	...
	\$	...	...	3,250	1,217	...	...
Petroleum, crude..	bbl.	...	25,000	...	133,000	...	...
	\$	...	35,120	...	313,880	...	...
TOTAL FUELS ,...	\$	27,172,655	2,031,761	3,250	5,515,097	2,964	2,645,931

(a) Not available for publication.

QUANTITIES AND VALUES OF MINERAL PRODUCTS FROM

	1 9 4 0		1 9 4 1		
	Quantity	Value	Quantity	Value	
		\$		\$	
<u>OTHER NON-METALLICS -</u>					
Asbestos	ton	346,805	15,619,865	477,846	21,468,840
Barite	ton	558	4,819	6,890	74,416
Bituminous sands	ton	...	...	...	...
Brucite concentrates	ton	...	...	...	...
Diatomite	ton	248	7,957	344	9,935
Feldspar	ton	21,455	187,623	26,040	244,284
Fluorspar	ton	4,454	59,317	5,534	97,767
Garnet rock	ton	...	...	16	160
Graphite .....	...	...	94,038	...	132,924
Grindstones	ton	341	14,543	188	11,500
Gypsum	ton	1,448,788	2,065,933	1,593,406	2,248,428
Iron oxides	ton	9,979	111,374	10,045	142,069
Magnesitic dolomite .....	...	...	897,016	...	831,041
Magnesium sulphate	ton	...	...	265	7,343
Mica	lb.	1,806,219	237,145	3,437,991	335,233
Mineral waters	gal.	140,663	20,892	181,064	72,531
Nepheline syenite .....	...	...	117,849	...	227,583
Peat moss	ton	...	...	27,803	644,253
Phosphate	ton	358	4,039	2,487	33,376
Quartz	ton	1,858,302	1,203,527	2,052,378	1,366,137
Salt	ton	464,714	2,823,269	560,845	3,196,165
Silica brick	M	3,438	182,786	4,111	238,433
Soapstone .....	...	...	74,905	...	155,925
Sodium carbonate	ton	220	1,760	186	1,488
Sodium sulphate	ton	94,260	829,589	115,608	931,554
Strontium minerals	ton	...	...	27	280
Sulphur	ton	170,630	1,298,018	260,023	1,702,786
Talc	ton	15,166	154,734	18,171	204,684
TOTAL OTHER NON-METALLICS...	...	...	26,011,498	...	34,379,440
<u>CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS -</u>					
Clay products (brick, tile, etc.) .....	...	...	6,344,547	...	7,575,336
Cement	bbl.	7,559,648	11,775,345	8,368,711	13,063,588
Lime	ton	716,730	5,194,555	860,885	6,357,941
Sand and gravel	ton	31,375,415	11,759,245	31,604,806	10,375,723
Stone	ton	7,447,665	7,393,959	7,940,801	8,000,684
TOTAL CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS .....	...	...	42,472,651	...	45,373,272
GRAND TOTAL .....	...	...	529,325,035	...	560,241,290

No sand sold as such; crude petroleum recovered included under Fuels.
 No reports received.
 Not compiled.

FROM CANADIAN SOURCES, 1940-1943

		1 9 4 2		1 9 4 3 (x)	
		Quantity	Value	Quantity	Value
			\$		\$
METALLICS -					
Antimony	lb.	3,041,108	516,988	1,086,000	184,620
Arsenic (As ₂ O ₃) (x)	lb.	14,967,874	652,041	5,523,400	258,176
Bismuth	lb.	347,556	479,627	397,600	548,688
Cadmium	lb.	1,148,963	1,355,776	776,442	892,908
Chromite	lb.	11,456	343,568	30,085	1,043,500
Cobalt	lb.	83,871(a)	88,444	169,687	186,655
Copper	lb.	603,661,826	60,417,372	578,981,467	67,621,783
Gold	fine oz.	4,841,306	186,390,281	3,649,671	140,512,334
Indium	oz.	471	4,710	...	...
Iron ore	ton	545,306	1,517,077	641,294	2,106,334
Lead	lb.	512,142,562	17,218,233	444,354,772	16,681,078
Magnesium	lb.	808,718	355,836	7,149,525	2,166,370
Manganese metal	lb.	...	...	...	...
Manganese ore	ton	435	8,932	...	...
Mercury	lb.	1,035,914	2,943,807	1,709,000	4,609,835
Molybdenite concentrates ...	lb.	227,586	134,963	813,268	585,538
Nickel	lb.	285,211,803	69,998,427	287,763,825	71,626,014
Other precious metals .....	...	...	19,177,782	...	13,549,470
Pitchblende products .....	...	...	(b)	...	(b)
Selenium	lb.	495,369	951,108	380,200	665,350
Silver	fine oz.	20,695,101	8,726,296	17,230,939	7,797,689
Tellurium	lb.	11,084	17,735	61,300	107,275
Tin	lb.	1,237,863	643,689	(b)	(b)
Titanium ore	ton	10,031	50,906	73,723	312,032
Tungsten concentrates	lb.	520,981	406,275	1,353,089	985,031
Zinc	lb.	580,257,373	19,792,579	608,568,434	24,342,738
TOTAL METALLICS .....	...	...	392,192,452	...	356,783,418

NON-METALLICS -

<u>Fuels</u>					
Coal	ton	18,865,030	62,897,581	17,878,778	62,429,662
Natural gas	M cu.ft.	45,697,359	13,301,655	43,237,500	11,699,894
Peat	ton	172	1,204	434	4,467
Petroleum	bbl.	10,364,796	15,968,851	9,958,000	16,149,000
TOTAL FUELS .....	...	...	92,169,291	...	90,283,023

MILLION
DOLLARS

VALUE OF
MINERAL PRODUCTION
BY CLASSES
CANADA, 1914-1943

500

400

300

200

100

0

1914'15

'20

'25

'30

'35

'40

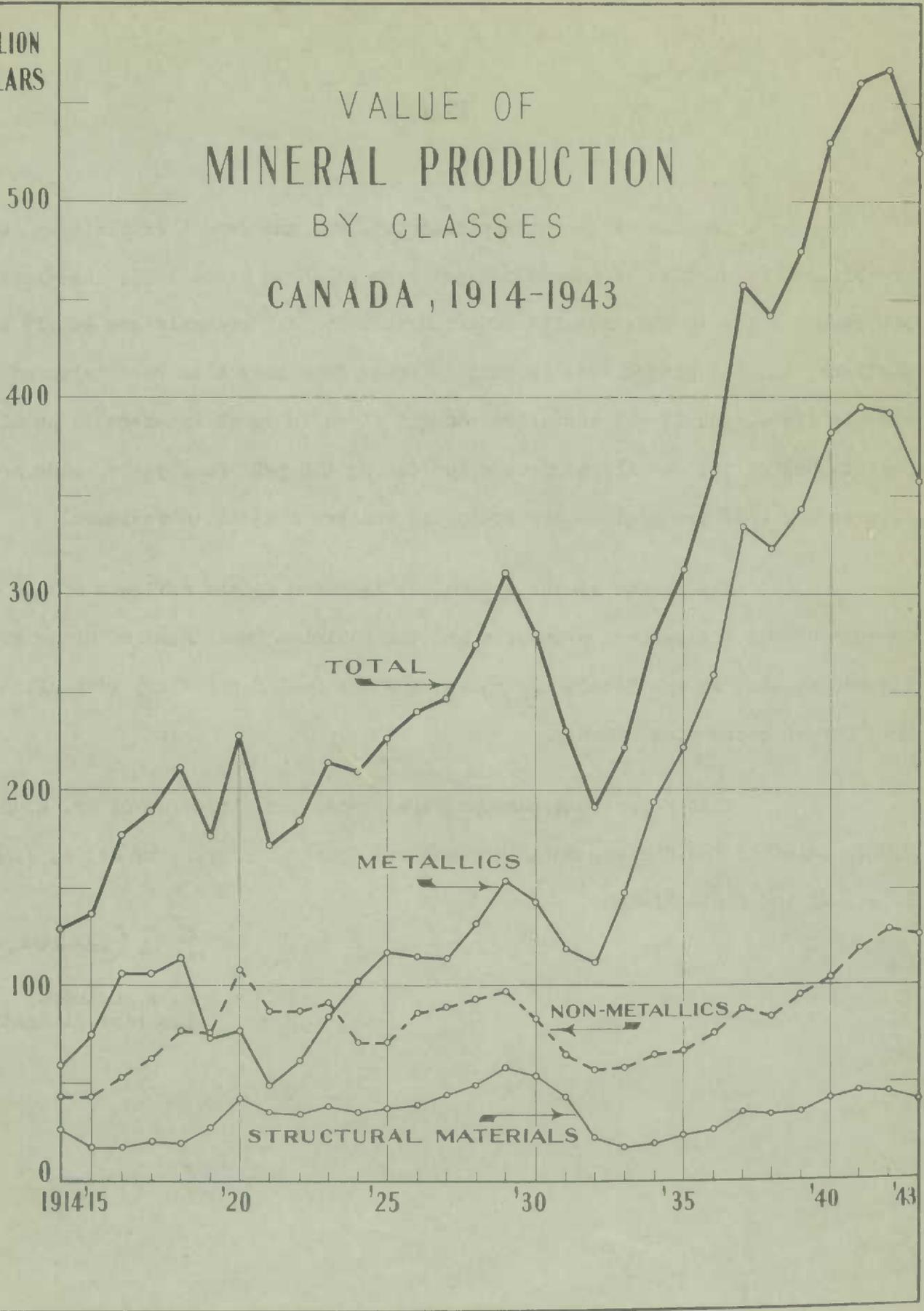
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TOTAL

METALLICS

NON-METALLICS

STRUCTURAL MATERIALS



PREFACE

Because of censorship restrictions, the Annual Preliminary Report of the Mineral Production of Canada has not been released since 1939. Permission has now been granted to show details of production for all minerals and metals except platinum, tin and pitchblende products. Trade data have also been released for certain items, and it was therefore thought it would be of interest to publish a report showing the details of production during the past four years. The production figures for 1943 are preliminary estimates and are subject to revision.

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 cooperates 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.

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

S. A. Cudmore, M.A. (Oxon.), F.S.S., F.R.S.C.
 W. H. Losee, B.Sc.
 R. J. McDowall, B.Sc.

PRELIMINARY REPORT

on the

MINERAL PRODUCTION OF CANADA

DURING THE CALENDAR YEAR 1943

Canada's mineral production was valued at \$523,940,810 in 1943 as compared with \$566,768,672 in the previous year. This is lower than any year since 1939, the decrease being caused principally by a large reduction in the output of gold.

Metals as a group were valued at \$356,783,418, a decrease of 9 per cent from the previous year and 10 per cent from the all-time high in 1941. Fuels, including coal, natural gas, crude petroleum and peat, were valued at \$90,283,023, a drop of 2 per cent from the record established in 1942. Industrial minerals totalled \$36,437,658, which was slightly under the peak year of 1942 for this group, and the clay products and structural materials aggregated \$40,436,711, a 11.5 per cent drop from the all-time high established last year.

VALUES OF MINERAL PRODUCTION OF CANADA, BY CLASSES, 1932-1943

Year	Metallics	Coal, natural gas, peat and crude petroleum	Other non- metallics	Clay products and other structural materials	T O T A L
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	85,141,297	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 (x) ..	356,783,418	90,283,023	36,437,658	40,436,711	523,940,810

(x) Estimated.

MINERAL PRODUCTION OF CANADA, BY PROVINCES, 1940-1943

Province	1 9 4 0		1 9 4 1		1 9 4 2		1 9 4 3	
	\$	Per cent	\$	Per cent	\$	Per cent	\$	Per cent
Nova Scotia	33,318,587	6.3	32,569,867	5.8	32,783,165	5.9	30,154,332	5.8
New Brunswick ..	3,435,916	.6	3,690,375	.7	3,609,158	.6	3,703,275	.7
Quebec	86,313,491	16.3	99,651,044	17.8	104,300,010	18.4	100,830,007	19.2
Ontario	261,483,349	49.3	267,435,727	47.7	259,114,946	45.7	229,760,526	43.8
Manitoba	17,828,522	3.5	16,689,867	3.0	14,345,046	2.5	13,149,775	2.5
Saskatchewan ...	11,505,858	2.2	15,020,555	2.7	20,578,749	3.6	26,531,213	5.1
Alberta	35,092,337	6.6	41,364,385	7.4	47,359,831	8.4	48,578,388	9.3
British Columbia	74,134,485	13.9	76,841,180	13.7	77,247,932	13.6	67,291,028	12.9
Northwest Territories ...	2,594,157	.5	3,860,298	.7	3,976,267 ^(x)	.7	2,283,015 ^(x)	.4
Yukon	4,118,333	.8	3,117,992	.5	3,453,568	.6	1,659,251	.3
TOTAL	529,825,035	100.0	560,241,290	100.0	566,768,672	100.0	523,940,810	100.0

(x) Pitchblende products not included in 1942.

Pitchblende products and crude petroleum not included for 1943.

QUANTITIES AND VALUES OF MINERAL PRODUCTS

		1 9 4 0		1 9 4 1	
		Quantity	Value \$	Quantity	Value \$
METALLICS -					
Antimony	lb.	2,594,492	396,468	3,185,077	445,911
Arsenic (As ₂ O ₃)	lb.	2,093,275	62,798	3,538,000	153,195
Bismuth	lb.	58,529	81,004	7,511	10,396
Cadmium	lb.	908,127	1,056,152	1,251,291	1,469,016
Chromite	lb.	335	5,780	2,372	42,679
Cobalt	lb.	794,359	1,235,220	263,257	255,904
Copper	lb.	655,593,441	65,773,061	643,316,713	64,407,497
Gold	fine oz.	5,311,145	204,479,083	5,345,179	205,789,392
Indium	oz.	...	...	...	...
Iron ore	ton	414,603	1,211,305	516,037	1,426,057
Lead	lb.	471,850,256	15,863,605	460,167,005	15,470,815
Magnesium	lb.	...	...	10,905	2,944
Manganese metal	lb.	...	...	7,500	2,250
Manganese ore	ton	152	4,315	...	...
Mercury	lb.	153,930	369,317	536,304	1,335,697
Molybdenite concentrates ...	lb.	22,251	10,280	196,600	88,470
Nickel	lb.	245,557,871	59,822,591	282,258,235	68,656,795
Other precious metals .....	...	...	7,761,108	...	8,146,457
Pitchblende products .....	...	...	410,176	...	325,196
Selenium	lb.	179,860	343,533	406,930	777,236
Silver	fine oz.	23,833,752	9,116,172	21,754,408	8,323,454
Tellurium	lb.	3,491	5,607	11,453	18,334
Tin	lb.	...	...	64,744	33,667
Titanium ore	ton	4,535	24,510	12,651	49,110
Tungsten concentrates	lb.	12,002	7,303	82,846	33,712
Zinc	lb.	424,028,862	14,463,624	512,381,636	17,477,337
TOTAL METALLICS .....	...	...	382,503,012	...	395,346,581
NON-METALLICS -					
<u>Fuels</u>					
Coal	ton	17,566,884	54,676,993	18,225,921	58,059,630
Natural gas	M cu.ft.	41,232,125	13,000,593	43,495,353	12,665,116
Peat	ton	30	75	355	2,155
Petroleum	dbl.	8,590,978	11,160,213	10,133,838	14,415,096
TOTAL FUELS .....	...	...	78,837,874	...	85,141,997

(x) Preliminary.

(x) Refined arsenic produced in Canada plus As₂O₃ content of crude arsenic in ores exported.

(a) Exclusive of metal in ore placed on Government stock pile at Deloro, Ont.

(b) Not available for publication.

PRODUCTION OF CANADA, 1943

		Alberta	British Columbia	Northwest Territories	Yukon	CANADA
METALS -						
Antimony	lb.	...	1,086,000	...	...	1,086,000
	\$	...	184,620	...	...	184,620
Arsenic	lb.	...	2,500,000	...	...	5,523,400
	\$	...	25,000	...	...	258,176
Bismuth	lb.	...	397,600	...	...	397,300
	\$	...	548,688	...	...	548,688
Cadmium	lb.	...	591,000	...	...	776,442
	\$	...	679,650	...	...	892,908
Chromite	Ton	...	...	...	...	30,085
	\$	...	...	...	...	1,043,500
Cobalt	lb.	...	...	...	...	169,687
	\$	...	...	...	...	186,655
Copper	lb.	...	41,741,580	...	...	578,981,467
	\$	...	4,904,636	...	...	67,621,783
Gold	oz.	21	240,530	59,136	42,003	3,649,671
	\$	808	9,260,405	2,276,736	1,617,115	140,512,334
Iron ore	Ton	...	...	...	...	641,294
	\$	...	...	...	...	2,106,354
Lead	lb.	...	439,400,797	...	205,948	444,354,772
	\$	...	16,495,106	...	7,731	16,681,078
Magnesium	lb.	...	...	...	...	7,149,525
	\$	...	...	...	...	2,166,370
Mercury	lb.	...	1,709,000	...	...	1,709,000
	\$	...	4,609,835	...	...	4,609,835
Molybdenite (concentrates) ..	lb.	...	...	...	...	813,268
	\$	...	...	...	...	585,538
Nickel	lb.	...	...	...	...	287,763,825
	\$	...	...	...	...	71,626,014
Other precious metals .....	\$	...	770	...	...	13,549,470
Selenium	lb.	...	...	...	...	380,200
	\$	...	...	...	...	665,350
Silver	oz.	1	9,023,912	13,134	53,073	17,230,939
	\$	1	4,085,344	5,944	24,017	7,797,689
Tellurium	lb.	...	...	...	...	61,300
	\$	...	...	...	...	107,275
Titanium ore	Ton	...	...	...	...	73,723
	\$	...	...	...	...	312,032
Tungsten (concentrates)	lb.	...	982,774	...	12,083	1,353,089
	\$	...	616,575	...	10,388	985,031
Zinc	lb.	...	334,959,465	...	...	608,568,434
	\$	...	13,398,378	...	...	24,342,738
TOTAL METALS ...	\$	809	54,809,607	2,282,680	1,659,251	356,783,418
FUELS -						
Coal	Ton	7,631,803	2,001,409	...	...	17,878,778
	\$	23,579,845	7,399,085	...	...	62,429,662
Natural gas ... M cu.ft.		34,450,000	...	1,500	...	43,237,500
	\$	6,132,100	...	335	...	11,699,894
Peat for fuel	Ton	...	...	...	...	434
	\$	...	...	...	...	4,467
Petroleum, crude..	bbl.	9,800,000	...	(a)	...	9,958,000
	\$	15,800,000	...	(a)	...	16,149,000
TOTAL FUELS	\$	45,511,945	7,399,085	335	...	90,283,023

	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	
OTHER NON-METALLICS -							
Asbestos	Ton	...	427,141	...	...	...
	\$	...	21,738,686	...	...	...
Asphalt	Ton	...	...	...	...	...
	\$	
Barite	Ton	22,550	...	...	...	...
	\$	259,691	...	...	...	...
Diatomite	Ton	102	...	...	...	...
	\$	3,060	...	...	...	...
Feldspar	Ton	...	19,273	6,630	...	...
	\$	...	172,953	64,038	...	...
Fluorspar	Ton	825	...	11,262	...	...
	\$	18,000	...	314,067	...	...
Garnet rock	Ton	...	...	(a)	...	...
	\$	...	...	(a)	...	...
Graphite .....	\$	...	...	204,894	...	...
Grindstones	Ton	...	(a)	...	...	...
	\$	...	(a)	...	...	...
Gypsum	Ton	250,913	33,100	88,775	35,180	...	
	\$	359,505	122,404	319,010	236,710	...	
Iron oxides	Ton	...	7,479	...	...	...
	\$	...	122,195	...	...	...
Magnesitic dolomite and brucite .....	\$	...	1,298,775	...	...	...
Magnesium sulphate	Ton	...	...	...	...	...
	\$	
Mica	lb.	...	2,563,976	(Not compiled)	...	...
	\$	...	273,434	258,516	...	...
Mineral waters	gals.	...	128,000	28,000	...	...
	\$	...	60,000	14,000	...	...
Nepheline syenite .....	\$	...	...	213,197	...	...
Peat moss	Ton	...	780	19,568	8,448	2,437	
	\$	...	23,400	252,512	152,786	62,674
Phosphate	Ton	...	1,118	317	...	...
	\$	...	15,636	3,824	...	...
Quartz	Ton	9,500	...	201,902	1,342,276	160,000	
	\$	16,150	...	670,058	838,894	56,000	
Salt	Ton	45,650	...	...	608,233	27,275
	\$	242,900	...	...	2,987,871	486,000
Silica brick	M	2,719	...	...	10,439	...
	\$	146,812	...	...	125,651	...
Soapstone	Ton	...	...	12,963	...	...
	\$	...	...	110,049	...	...
Sodium carbonate	Ton	...	...	...	...	...
	\$	
Sodium sulphate	Ton	...	...	...	...	87,297
	\$	...	...	...	...	854,152
Sulphur	Ton	...	141,400	16,799	...	...
	\$	...	565,552	167,990	...	...
Talc	Ton	...	...	12,182	...	...
	\$	...	...	134,550	...	...
TOTAL OTHER NON-METALS	\$	1,026,118	145,804	25,279,850	5,799,288	785,384	910,152

(a) Not available for publication.

PRODUCTION OF CANADA, 1943 (Continued)

	Alberta	British Columbia	Northwest Territories	Yukon	CANADA
OTHER NON-METALLICS -					
Asbestos	Ton	...	...	...	427,141
	\$	...	...	...	21,738,686
Asphalt	Ton	(a)	...	...	(a)
	\$	(a)	...	...	(a)
Barite	Ton	...	1,924	...	24,474
	\$	...	15,854	...	255,525
Diatomite	Ton	...	6	...	108
	\$	...	160	...	5,220
Feldspar	Ton	...	...	...	25,903
	\$	...	...	...	256,991
Fluorspar	Ton	...	...	...	12,087
	\$	...	...	...	332,067
Garnet rock	Ton	...	...	...	(a)
	\$	...	...	...	(a)
Graphite .....	\$	...	...	...	204,894
Grindstones	Ton	...	...	...	(a)
	\$	...	...	...	(a)
Gypsum	Ton	...	22,000	...	429,968
	\$	...	138,640	...	1,176,269
Iron oxides	Ton	...	400	...	7,879
	\$	...	4,000	...	126,195
Magnesitic dolomite and brucite .....	\$	...	...	...	1,298,775
Magnesium sulphate.	Ton	...	...	...	nil
	\$
Mica	lb.	...	664,000	...	...
	\$	...	7,645	...	539,595
Mineral waters	gals.	...	...	...	156,000
	\$	...	...	...	74,000
Nepheline syenite..	\$	...	...	...	213,197
Peat moss	Ton	58	32,344	...	63,635
	\$	1,380	859,451	...	1,352,183
Phosphate	Ton	...	...	...	1,435
	\$	...	...	...	19,460
Quartz	Ton	...	37,066	...	1,750,744
	\$	...	111,200	...	1,692,302
Salt	Ton	18,700	...	...	699,858
	\$	324,147	...	...	4,040,918
Silica brick	M	...	...	...	13,208
	\$	...	...	...	272,463
Soapstone	Ton	...	...	...	12,963
	\$	...	...	...	110,049
Sodium carbonate ..	Ton	...	427	...	427
	\$	...	3,629	...	3,629
Sodium sulphate ...	Ton	...	...	...	87,297
	\$	...	...	...	854,152
Sulphur	Ton	...	103,173	...	261,372
	\$	...	1,024,996	...	1,758,538
Talc	Ton	...	...	...	12,182
	\$	...	...	...	134,550
TOTAL OTHER NON-METALS	\$	325,527	2,165,535	...	36,437,658

PRELIMINARY ESTIMATE OF MINERAL

	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan
CLAY PRODUCTS AND OTHER STRUCTURAL OR INDUSTRIAL MATERIALS -						
Clay products (brick, tile, etc.)	\$ 493,485	207,615	1,535,319	2,167,651	132,452	293,050
Cement	bbl. ...	...	3,389,902	1,963,742	792,392	...
	\$ ...	...	4,931,477	2,974,611	1,497,445	...
Lime	ton 28,122	17,276	391,675	420,760	27,634	...
	\$ 301,586	169,804	2,517,931	3,049,395	263,960	...
Sand and gravel	Ton 760,902	715,481	12,615,625	7,573,187	1,256,371	956,197
	\$ 338,261	404,761	2,955,730	3,331,739	413,680	534,420
Stone	Ton 209,126	76,498	3,018,636	2,383,107	36,887	...
	\$ 682,190	163,540	3,096,033	2,277,536	46,132	...
TOTAL	\$ 1,815,522	945,720	15,036,490	13,800,932	2,353,669	827,470
GRAND TOTAL	\$ 30,154,332	3,703,275	100,830,007	229,760,526	13,149,775	26,531,213

MONTHLY PRODUCTION OF PRINCIPAL

	Asbestos tons	Cement barrels	Clay products \$	Coal tons	Copper pounds	Feldspar tons	Gold fine oz.	Gypsum tons
January	32,304	294,135	356,837	1,559,304	46,297,564	1,292	334,510	27,439
February	35,897	277,766	377,833	1,578,734	47,766,017	1,546	327,404	23,517
March	39,982	437,333	417,613	1,688,328	53,336,834	1,902	347,683	34,558
April	33,116	459,575	454,606	1,386,905	53,355,184	1,396	323,126	24,447
May	48,512	705,544	528,948	1,318,046	50,013,307	1,540	313,572	22,278
June	43,171	826,008	602,203	1,365,924	46,647,568	3,336	326,925	22,741
July	43,449	935,465	636,347	1,387,519	47,747,630	2,093	292,740	35,856
August	39,768	952,500	664,593	1,441,038	46,606,940	2,962	293,358	49,379
September ...	38,967	877,339	688,451	1,458,956	42,828,104	2,722	282,204	50,551
October	33,665	812,808	661,674	1,547,234	48,916,739	2,236	280,062	59,640
November	33,706	496,928	604,912	1,445,309	47,647,460	2,221	267,797	45,519
December	36,264	217,381	420,598	1,609,349	47,860,752	2,243	262,995	39,940
CALENDAR YEAR	463,801	7,292,782	6,414,615	17,786,646	579,024,099	25,489	3,652,376	435,865

(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.

(/) Commercial salt only.

(//) Exclusive of Northwest Territories from July to December, inclusive.

PRODUCTION OF CANADA, 1943 (Concluded)

	Alberta	British Columbia	Northwest Territories	Yukon	CANADA
CLAY PRODUCTS AND OTHER STRUCTURAL OR INDUSTRIAL MATERIALS -					
Clay products (brick, tile, etc.)	\$ 1,010,094	551,955	...	...	6,591,621
Cement	bbl. 618,405	534,769	...	...	7,299,210
Lime	\$ 1,199,497	1,016,062	...	...	11,619,092
	Ton 17,115	35,561	...	...	938,143
	\$ 166,260	281,157	...	...	6,750,093
Sand and gravel	Ton 661,697	1,866,234	...	...	26,425,694
	\$ 316,766	770,176	...	...	9,065,533
Stone	Ton 13,032	225,666	...	...	5,962,952
	\$ 47,490	297,451	...	...	6,610,372
TOTAL	\$ 2,740,107	2,916,801	...	...	40,436,711
GRAND TOTAL	\$ 48,578,388	67,291,028	2,283,015	1,659,251	523,940,810

MINERALS IN CANADA, 1943 (x)

	Lead pounds	Lime tons	Natural gas M cu.ft.	Nickel pounds	Petroleum barrels	Salt(✓) tons	Silver fine oz.	Zinc pounds
January	38,537,857	70,754	5,476,191	25,333,823	860,790	23,613	1,605,991	52,510,636
February	38,539,984	72,408	4,489,386	23,152,539	779,998	23,408	1,622,658	48,043,616
March	46,612,314	83,859	5,020,213	26,101,903	861,079	24,465	1,771,156	54,031,602
April	36,519,951	86,448	3,659,984	25,607,297	837,072	26,049	1,672,918	50,640,783
May	40,321,245	77,328	3,115,270	24,512,685	872,812	29,604	1,462,502	53,598,421
June	39,306,495	70,228	2,513,464	25,734,494	826,119	30,572	1,379,834	53,266,795
July	35,851,147	75,516	2,293,086	23,581,659	(✓) 831,412	32,859	1,336,537	52,517,712
August	31,891,825	80,643	2,313,329	21,330,089	(✓) 840,823	30,428	1,286,973	51,986,129
September	32,657,434	84,353	2,711,820	22,520,336	(✓) 811,864	30,929	1,162,062	48,067,244
October	35,029,303	85,069	3,401,401	22,920,152	(✓) 836,080	30,299	1,279,776	46,776,067
November	34,396,778	90,336	4,154,053	23,171,580	(✓) 789,430	31,042	1,355,205	46,928,818
December	31,533,792	75,839	4,844,503	23,999,140	(✓) 779,854	26,399	1,251,457	51,595,307
CALENDAR YEAR	440,998,125	952,781	43,992,700	287,965,697	9,927,333	339,667	17,187,069	609,963,130

ANTIMONYProduction

Year	Pounds	\$
1940	2,594,492	396,466
1941	3,185,077	445,911
1942	3,041,108	516,938
1943	1,086,000	184,620

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 bullion made from cobalt 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 1943 totalled 240,700 pounds valued at \$36,755 as compared with 100 pounds valued at \$21 in 1942. Imports of antimony salts, namely, tartar emetic, chloride and lactate (antimonine) totalled 10,990 pounds valued at \$6,066 as compared with 31,927 pounds worth \$12,331 in 1942.

ARSENICProduction

Year	Pounds	\$
1940	2,093,275	62,798
1941	3,538,000	153,195
1942	14,967,874	652,041
1943	5,523,400	258,176

Imports

	1 9 4 2		1 9 4 3	
	Pounds	\$	Pounds	\$
White arsenic (arsenious oxide)	2,082	203	400	124
Sulphide of arsenic	3,716	1,541	3,373	1,123
Soda, arseniate, biarseniate and stannate of	96,450	28,986	83,329	18,712
Arsenate of lead	18,000	1,993	4,432	484
Arsenate of lime	10,576	795	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, and at the Little Long Lac in Ontario. Crude arsenic from the O'Brien and Beattie mines was refined at the Deloro smelter in 1943. Crude arsenic was also exported. Arsenical gold concentrates are exported by British Columbia mines but no payment is made for the arsenic.

BISMUTHProduction

Year	Pounds	\$
1940	58,529	81,004
1941	7,511	10,396
1942	347,556	479,627
1943	397,600	548,688

The Canadian production of bismuth in 1943 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 \$15,675 compared with \$11,758 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	776,442	892,908

Cadmium production in Canada represents the recovery of the metal as a by-product in the electrolytic refining of zinc. Production in 1943 came entirely from the treatment of zinc-bearing ores by the Consolidated Mining and Smelting Company of Canada Ltd. at Trail, B.C. 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 1943 amounted to 572,215 pounds worth \$626,579 compared with 800,710 pounds worth \$855,618 in 1942.

CHROMITEProduction

Year	Tons	\$
1940	335	5,780
1941	2,372	42,679
1942	11,456	343,568
1943	30,085	1,043,500

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 1,300,000 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 four years has come from that province.

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.

In 1942 an important discovery of chromiferous deposits was made in the Bird River area of eastern Manitoba. The chrome-iron ratio in this ore prevented it from being immediately marketable, but experiments are being conducted to improve the grade.

COBALT

Production				
Year	Pounds		\$	
1940	794,359		1,235,220	
1941	263,257		255,904	
1942	83,871		88,444	
1943	169,637		186,655	

Imports				
	1 9 4 2		1 9 4 3	
	Pounds	\$	Pounds	\$
Cobalt ore	4,336,200	1,485,370	2,236,300	785,721
Cobalt oxides	164	433	55	130

Exports -				
Cobalt contained in ores	161,700	97,266	163,100	183,510
Cobalt, metallic	943,632	1,471,024	911,107	1,507,635
Cobalt alloys	226,963	1,253,264	214,202	1,021,663
Cobalt oxide and salts	232,808	285,424	67,040	135,630
Total Exports .....	...	3,106,978	...	2,853,438

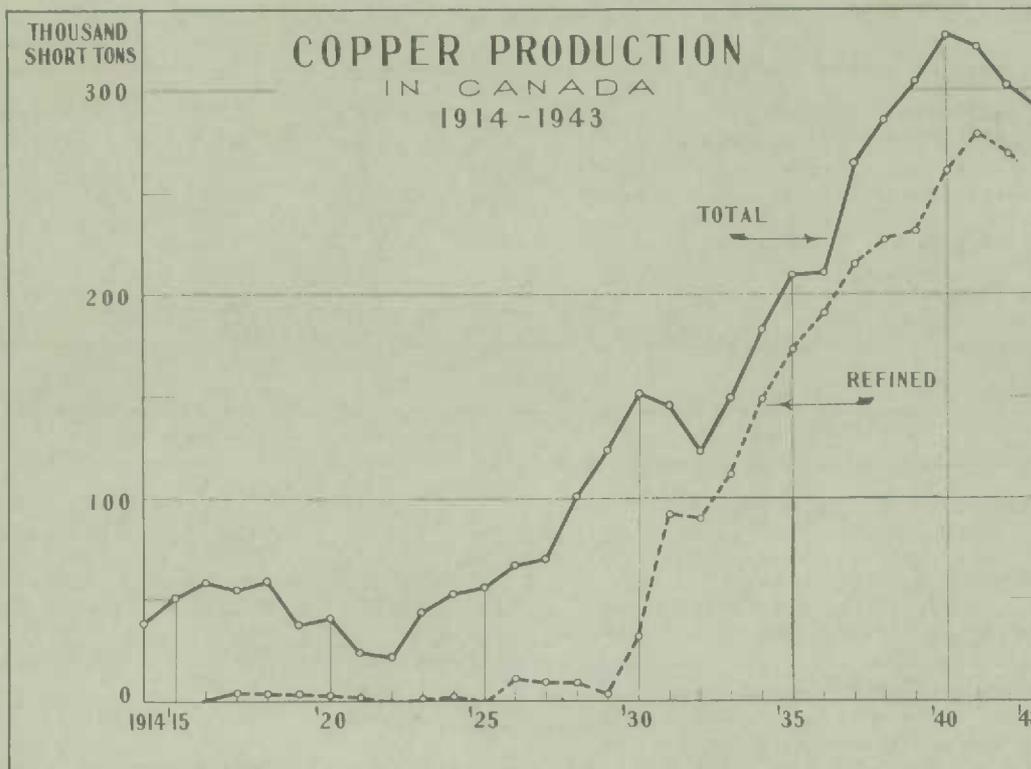
Production of cobalt from Canadian ores, as computed by the Dominion Bureau of Statistics, represents the cobalt contained in ores exported plus the cobalt metal, and cobalt in oxides and salts sold by the Deloro Smelting and Refining Co. Ltd., at Deloro, Ontario.

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, Ont., 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, the output to be allocated by the British Ministry of Supply before the metals control was established in Ottawa under the Department of Munitions and Supply.

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.

An interesting showing of cobalt ores has been worked at Werner Lake, about 60 miles north of Kenora in Ontario. Hand-sorted ore was shipped out to railway by plane, for export to the United States, and in 1943 a small mill was installed.



Production

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	136,240,125	16,008,215	278,789,182	32,349,189	36,744,622	4,317,493

Year	Saskatchewan		British Columbia		C A N A D A	
	Pounds	\$	Pounds	\$	Pounds	\$
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	*64,407,497
1942	56,781,466	5,726,979	50,015,521	5,044,565	*603,661,826	*60,417,372
1943	85,465,958	10,042,250	41,741,580	4,904,636	578,981,467	67,621,783

* Includes:

	Northwest Territories	
	Pounds	\$
1941	32,727	3,301
1942	74,963	7,561

Imports

	1 9 4 2		1 9 4 3	
	Pounds	\$	Pounds	\$
Copper, precipitate of .....	...	...	...	22,801
Copper in blocks, pigs and ingots	1	24	...	...
Copper, scrap	36,900	3,825	3,500	177
Copper in bars or rods for the manufacture of trolley, telegraph and telephone wires, electric wires and electric cables	697,400	104,038	1,336,300	205,738
Copper bars and rods for the manufacture of electrical conductors	9,300	1,251	9,300	1,126
Copper bars or rods, n.o.p.	372,900	74,476	330,300	76,062

Imports (Copper) - Concluded

	1 9 4 2		1 9 4 3	
	Pounds	\$	Pounds	\$
Copper in strips, sheets or plates	181,100	59,699	64,000	16,416
Copper tubing, not manufactured	355,773	103,699	320,759	107,501
Copper rollers .....	...	28,457	...	176
Copper wire, n.o.p.	119,027	22,822	32,116	13,760
Copper wire cloth, woven .....	...	837	...	745
Copper manufactures, n.o.p. ....	...	395,951	...	489,307
Copper sub-acetate	825	256	420	132
Copper sulphate (blue vitriol)	5,795,446	347,333	6,448,817	365,695
TOTAL .....	...	1,148,668	...	1,300,136

Exports

	1 9 4 2		1 9 4 3	
	Pounds	\$	Pounds	\$
Copper, fine, contained in ore, matte, regulus, etc.	68,093,400	4,766,438	72,419,400	5,069,353
Copper, blister	12,909,600	1,290,939	8,548,600	846,896
Copper, old and scrap	1,347,100	69,222	1,133,500	48,844
Copper in ingots, bars, cakes, slabs and billets	197,233,300	19,490,785	128,665,800	12,731,158
Copper in rods, strips, sheets, plates and tub- ing	53,642,100	5,783,098	49,133,800	5,329,685
Copper wire and cable, insulated .....	...	2,355,885	...	1,433,161
Copper wire, bare .....	...	780,666	19,033,500	5,317,169
Copper wire, screen .....	...	21,540	...	8,663
Copper manufactures, n.o.p. ....	...	23,631	...	26,510
TOTAL .....	...	35,082,204	...	30,816,449

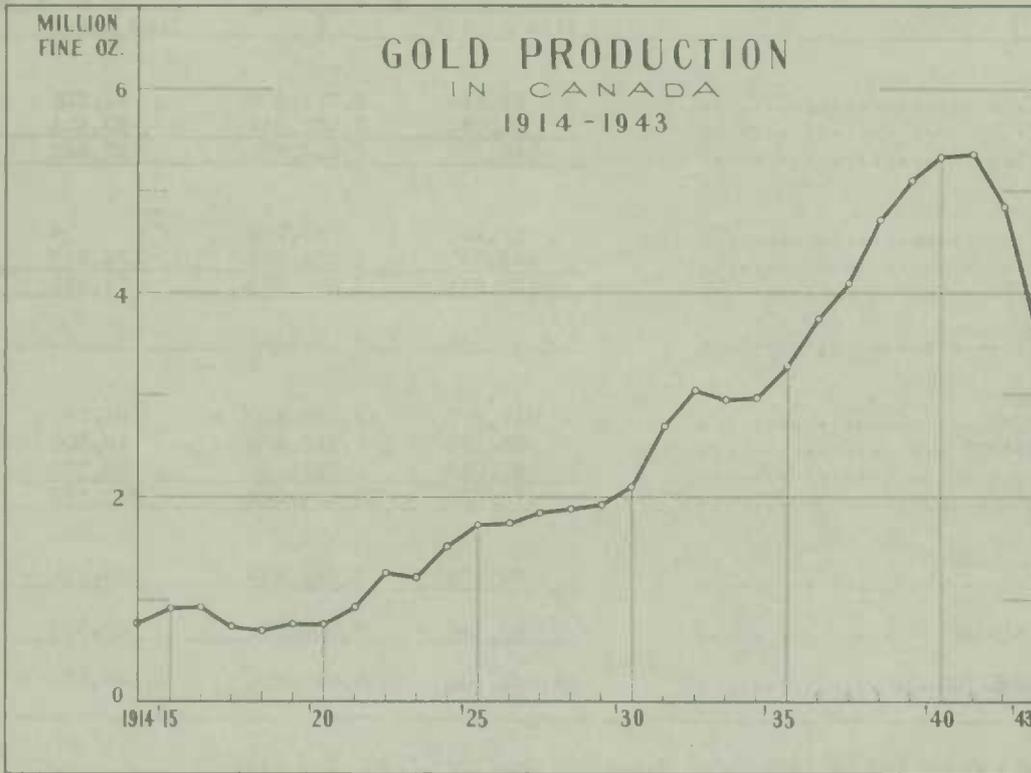
The peak Canadian production of copper for all time was in 1940, when the output stood at 643,316,713 pounds. Since that year, all provinces have shown a reduction in output with the exception of Saskatchewan, which has shown a steady rise. The Saskatchewan-Manitoba production is unique in mining history in that the ore body lies across the boundary of the two provinces, and while the output for Manitoba is decreasing, that for Saskatchewan is in the opposite direction.

The main ore bodies, of course, are the Noranda and Waite-Amulet, in Quebec, the nickel-copper mines of Ontario, the Sherritt-Gordon in Manitoba, the Flin Flon on the Manitoba-Saskatchewan boundary, and the Britannia and Granby in British Columbia. The Mandy mine, a producer in Manitoba during the first world war, was reopened and made a considerable contribution to the output in that province during 1943.

Canada has two copper refineries, one at Copper Cliff, Ontario, owned by the International Nickel Company, and one at Montreal East, owned by the Noranda Mines Ltd. At the beginning of the first world war Canada had no copper refinery, whereas this time she is in excellent shape in the matter of copper refinery facilities and with large well-developed copper orebodies and smelters.

Curtalement in brass and copper was instituted by the Metals Controller through the surveillance of export licenses and through informal understanding with principal producers and fabricators. More formal methods were adopted so that consumption of brass and copper for non-essential purposes would be reduced. Control was effected through primary fabricators.

Perhaps the most interesting development during the year was the uncovering, by the Aldermac Copper Corporation, of a complex ore body containing gold, silver, copper, lead and zinc, which was not exposed at the surface but which had been discovered by a combination of geological and geophysical methods in one of the oldest mining sections of Canada, on the south side of the St. Lawrence River in Quebec. This discovery points to the possibilities in those areas of Canada where favourable geological conditions are known but where prospecting is difficult because of the overburden.



Production

Year	Fine ounces	\$
1940	5,311,145	204,479,083
1941	5,345,179	205,789,392
1942	4,841,306	186,390,281
1943	3,649,671	140,512,334

Production of Gold in Canada, by Provinces, 1942 and 1943

	1942		1943	
	Fine ounces	\$	Fine ounces	\$
NOVA SCOTIA -				
Gold mines	12,989	500,076	3,531	135,944
QUEBEC -				
Gold mines	809,389	31,161,477	634,962	24,446,037
Other mines	282,999	10,895,461	290,153	11,171,083
Total	1,092,388	42,056,938	925,120	35,617,120
ONTARIO -				
Gold mines -				
Porcupine district	1,308,590	50,380,715	1,019,175	39,238,238
Kirkland Lake district	541,528	20,848,828	469,036	18,057,886
Larder Lake district	214,860	8,272,110	168,031	6,469,193
Matachewan district	59,085	2,274,772	38,062	1,465,387
Sudbury district	33,415	1,286,478	18,632	717,332
Algoma district	8,904	342,804	90	3,465
Thunder Bay district	219,078	8,434,503	140,309	5,401,897
Kenora and Rainy River districts	12,845	494,533	1,128	43,428
Patricia district	294,103	11,322,965	201,982	7,776,307
Other mines	71,411	2,749,324	55,362	2,131,437
Total	2,763,819	106,407,032	2,111,807	81,304,570

Mineral Production

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Production of Gold in Canada, by Provinces, 1942 and 1943 (Concluded)

	1942		1943	
	Fine ounces	\$	Fine ounces	\$
<u>MANITOBA -</u>				
Gold mines	85,134	3,277,659	62,228	2,395,778
Other mines	51,092	1,967,042	30,414	1,170,939
Total	136,226	5,244,701	92,642	3,566,717
<u>SASKATCHEWAN -</u>				
Gold mines	15,150	583,275	4	154
Other mines	163,721	6,303,258	174,877	6,732,765
Total	178,871	6,886,533	174,881	6,732,919
<u>ALBERTA (Placer)</u>				
	34	1,309	21	808
<u>BRITISH COLUMBIA -</u>				
Gold mines (lode)	412,973	15,899,460	204,160	7,860,160
Gold mines (placer)	26,323	1,013,436	12,000	462,000
Other mines	35,043	1,349,156	24,370	938,245
Total	474,339	18,262,052	240,530	9,260,405
<u>NORTHWEST TERRITORIES -</u>				
Gold mines	99,394	3,826,669	59,136	2,276,736
<u>YUKON (Chiefly placer) -</u>				
	83,246	3,204,971	42,003	1,617,115
TOTAL CANADA	4,841,306	186,390,281	3,649,671	140,512,334

Employees in Gold Mines and in Base Metal Mines and Smelters, 1942 and 1943

Month	Gold mines (x)		Non-ferrous metal mines, smelters and refineries (x)	
	1942	1943	1942	1943
	No.	No.	No.	No.
January	27,020	21,097	34,577	46,323
February	27,450	20,626	35,033	46,621
March	27,527	20,405	35,217	46,968
April	27,059	19,711	35,817	46,137
May	26,948	19,197	37,017	45,499
June	26,492	18,774	39,077	46,754
July	25,617	18,087	40,112	46,888
August	23,957	17,428	39,858	46,471
September	22,841	16,511	40,109	45,354
October	21,622	16,058	42,234	45,168
November	20,960	15,389	43,364	46,231
December	20,716	16,057	44,611	45,783

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

Canada's gold mines yielded 3,649,671 fine ounces, the lowest output since 1935, and a decrease of 24.5 per cent from 1942 and 31.7 per cent below the record year of 1941. Gold is still by far the most important item on the mineral production list from point of value. At the beginning of the present war, gold mining companies were encouraged to maintain or increase their production, since gold was of great assistance in making needed purchases in foreign countries. As the war progressed and the need of the Allied Nations for base metals and other materials of war increased, the production of gold became relatively less important. When the United States placed gold mining in that country in a non-essential category and ordered the closing of the mines, the influence was immediately felt in Canada. Canadian gold mines soon found it difficult to obtain supplies from the United States, gold mining was placed low on priority lists to receive Canadian process supplies and equipment, and the mines were placed in a low category for labour. Also, many left the mines to enlist in the armed forces and others left to work in plants. Employment fell off from 27,000 in January, 1942 to 21,097 in January, 1943, and then to 16,057 in December, 1943. This explains the drop in gold output. Nevertheless, several promising gold prospects were uncovered during the year and only await the turn of events to begin development.

IRON OREProduction

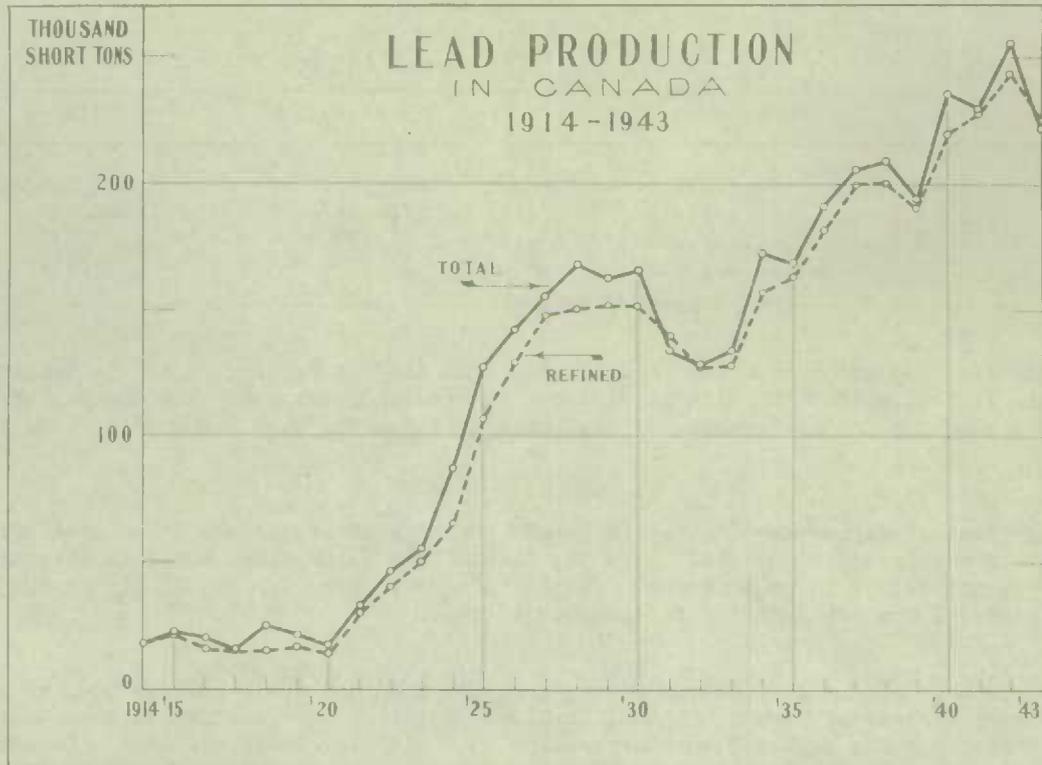
Year	Short tons	\$
1940	414,603	1,211,305
1941	516,037	1,426,057
1942	545,306	1,517,077
1943	641,294	2,106,334

Canadian iron ore production in 1943 came from the New Helen mine in the Michipicoten area of Ontario. This is a siderite ore which is sintered before being shipped. The old Bathurst mine in New Brunswick furnished ore to the furnaces of the Dominion Steel and Coal Corporation Ltd. at Sydney, Nova Scotia.

The greatest mining development in Canada during 1943 was at the Steep Rock iron ore deposit, near Atikoken in northwestern Ontario. Here the flow of the Seine River has been diverted by an elaborate engineering project in order to expose for mining a very large deposit of high-grade hematite. Commercial shipments of ore are expected to commence in 1944.

Pig iron is produced in Canada by the Dominion Iron and Steel Company 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 3,274,595 short tons in 1943, of which 303,042 tons came from Canadian mines.

	<u>Production of Pig Iron</u>		<u>Production of Steel Ingots and Castings</u>	
	1942	1943	1942	1943
	(Short tons)			
January	163,156	116,327	259,016	207,008
February	143,973	138,240	242,921	245,588
March	167,116	160,101	265,903	270,962
April	160,408	150,436	264,988	264,357
May	171,386	154,746	272,247	271,737
June	167,961	147,889	254,163	239,501
July	172,153	151,369	256,560	250,508
August	162,578	164,906	248,868	246,820
September	155,900	147,902	244,922	241,255
October	175,424	146,794	271,127	271,976
November	170,578	142,249	270,812	259,444
December	164,382	137,256	269,834	227,822
TOTAL	1,975,015	1,758,265	3,121,361	2,996,978



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	444,354,772	16,681,078

Imports

	1 9 4 2		1 9 4 3	
	Pounds	\$	Pounds	\$
Old and scrap, pig and block	23,217	2,390	21,664	3,648
Bars and sheets	7,546	1,100	8,862	1,379
Litharge	1,904,900	169,117	2,397,300	203,677
Acetate of lead	215,574	26,338	62,307	8,013
Nitrate of lead	246,484	23,178	123,163	15,453
Other manufactures .....	...	81,393	...	229,644
Pipe lead .....	...	...	59	10
Shots and bullets	1,373	249	141,484	22,176
Tea lead .....	...	...	...	...
Lead arsenate	18,000	1,993	4,432	484
Lead tetraethyl, compounds of	8,795,358	3,063,295	10,556,057	3,563,496
Lead capsules for bottles .....	...	7,892	...	25,465
Lead pigments -				
Dry white lead	25,508	2,428	435,835	37,606
White lead, ground in oil	2,674	697	...	...
Dry red lead and orange mineral	163,517	16,597	114,122	11,936
Total .....	...	3,396,667	...	4,128,077

Exports

	1 9 4 2		1 9 4 3	
	Pounds	\$	Pounds	\$
Lead, metallic, contained in ore	11,859,000	409,193	11,470,200	425,306
Pig lead	421,565,000	15,245,454	308,695,300	9,222,104
White lead	472,900	38,693	205,500	20,380
Total .....	...	15,691,340	...	9,667,790

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 the Yukon Territory.

MAGNESIUMProduction

Year	Pounds	\$
1941	10,905	2,944
1942	808,718	355,836
1943	7,149,525	2,166,370

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. Operation was continuous throughout 1943, and thus assisted greatly in relieving the shortage.

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 51,234 tons valued at \$1,445,252 in 1943 and 57,388 tons valued at \$860,248 in 1942.

MERCURYProduction

Year	Pounds	\$
1940	153,830	369,317
1941	536,304	1,335,697
1942	1,035,914	2,943,807
1943	1,709,000	4,609,835

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. It is known as the Pinchi Lake deposit and the plant capacity has been periodically increased. The successful operation of this mine has brought about a complete change in the Canadian situation with respect to this metal. The output is far in excess of Canadian requirements.

Imports of mercury in 1943 totalled 2,047 pounds valued at \$6,981, as compared with 1,971 pounds worth \$6,378 in 1942.

MOLYBDENITE

Production (Molybdenite concentrates)

Year	Concentrates shipped	
	Tons	\$
1940	11.1	10,280
1941	98.3	88,470
1942	114.0	134,963
1943 (x)	407.0	585,538

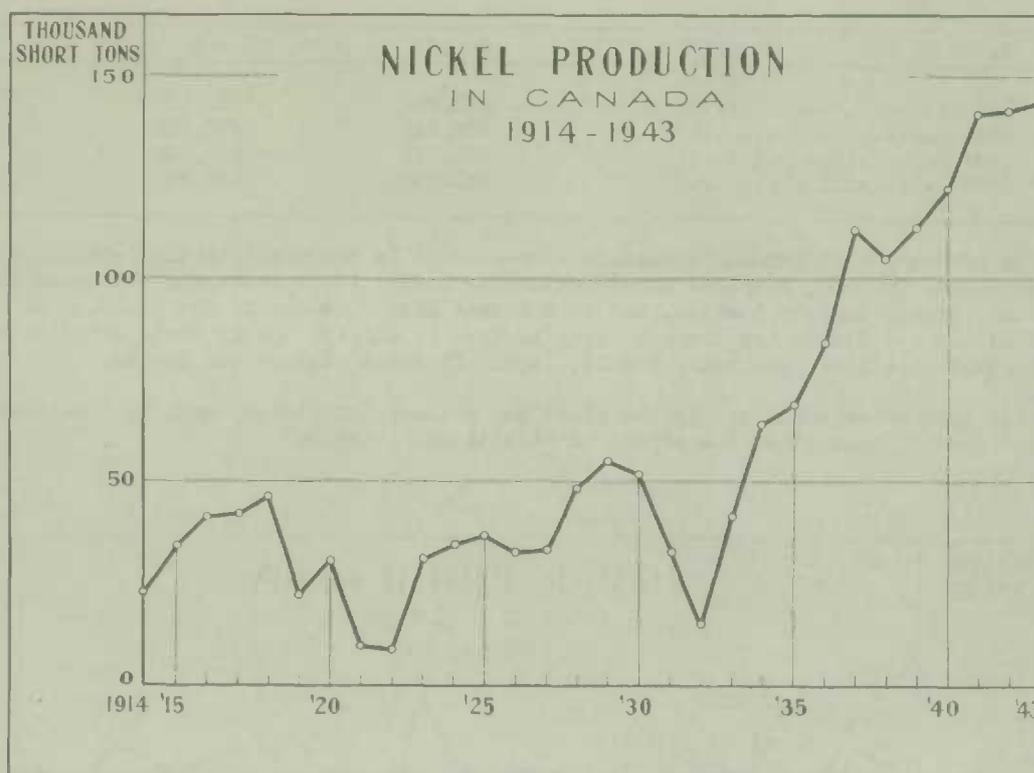
(x) Estimate.

The mining of molybdenite ores in Canada previous to 1943 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 outstanding development in 1943 was the bringing into production of the recently discovered molybdenite deposit located on the Indian Peninsula, Kewagama Lake, Preissac township, in the Abitibi district, Quebec. This deposit is considered to be the most important of its kind known in Canada and is operated by Indian Molybdenum Ltd., a subsidiary of Dome Mines Ltd. During the year under review, molybdenite concentrates were also produced at Quyon, Quebec, by the Quyon Molybdenite Company. The concentrates produced by this company are converted into molybdenum trioxide at Quyon.

A considerable quantity of molybdenite concentrates was also shipped in 1943 from the mill at the La Corne mine, Val d'Or, Quebec. Part of this was from customs ore.

Glimax Molybdenum Company, at Climax, Colorado, U.S.A., is the world's largest producer of molybdenite.



Production

Year	Pounds	\$
1940	245,557,871	59,822,591
1941	282,258,235	68,656,795
1942	285,211,803	69,998,427
1943	287,763,825	71,626,014

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 Clydach, 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.

Tremendous demands were made on these companies to increase the output of the metal, as nickel has very wide war-time uses, and the companies have done everything in their power to meet them, as indicated by the annual reports of their managements.

METALS OF THE PLATINUM GROUP

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. Production in 1943 was valued at \$13,549,470.

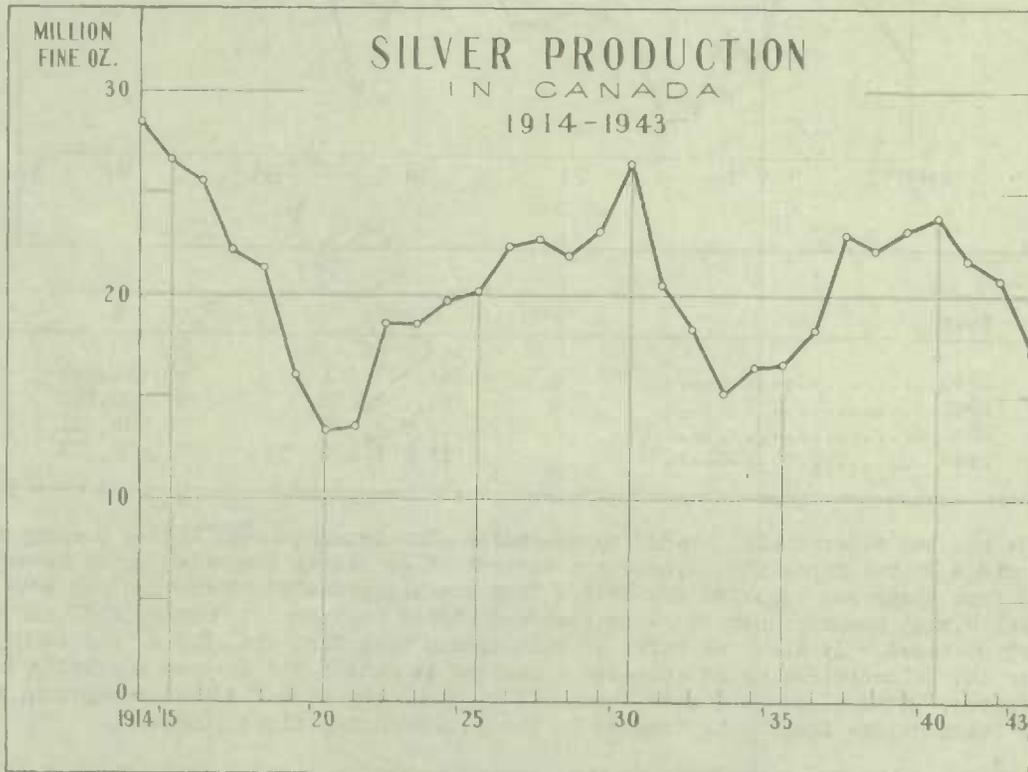
SELENIUM

Production

Year	Pounds	⌘
1940	179,860	343,533
1941	406,930	777,236
1942	495,369	951,108
1943	380,200	665,350

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	17,230,939	7,797,689

Mineral Production

Imports

	1 9 4 2		1 9 4 3	
	Fine ounces	\$	Fine ounces	\$
Silver in bars, etc., unmanufactured	30,797	12,568	...	...
Silver, manufactures of, n.o.p., and articles consisting wholly or in part of sterling or other silverware .....	...	146,830	...	31,427
Toilet articles of which the most important component, in value, is sterling silver .....	...	14,355	...	254
Total .....	...	173,753	...	31,681

Exports -

Silver contained in ore, concentrates, etc. ...	3,534,947	1,487,045	2,253,018	1,040,297
Silver bullion (Canadian)	10,645,539	4,465,595	9,198,617	4,517,756
Total	14,180,486	5,952,640	11,441,635	5,558,053

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 from British Columbia ores and the Sullivan silver-lead-zinc mine at Kimberly, 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	61,500	107,275

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.

TITANIUM ORE

Production

Year	Pounds	\$
1940	4,535	24,510
1941	12,651	49,110
1942	10,031	50,906
1943	73,723	312,032

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.

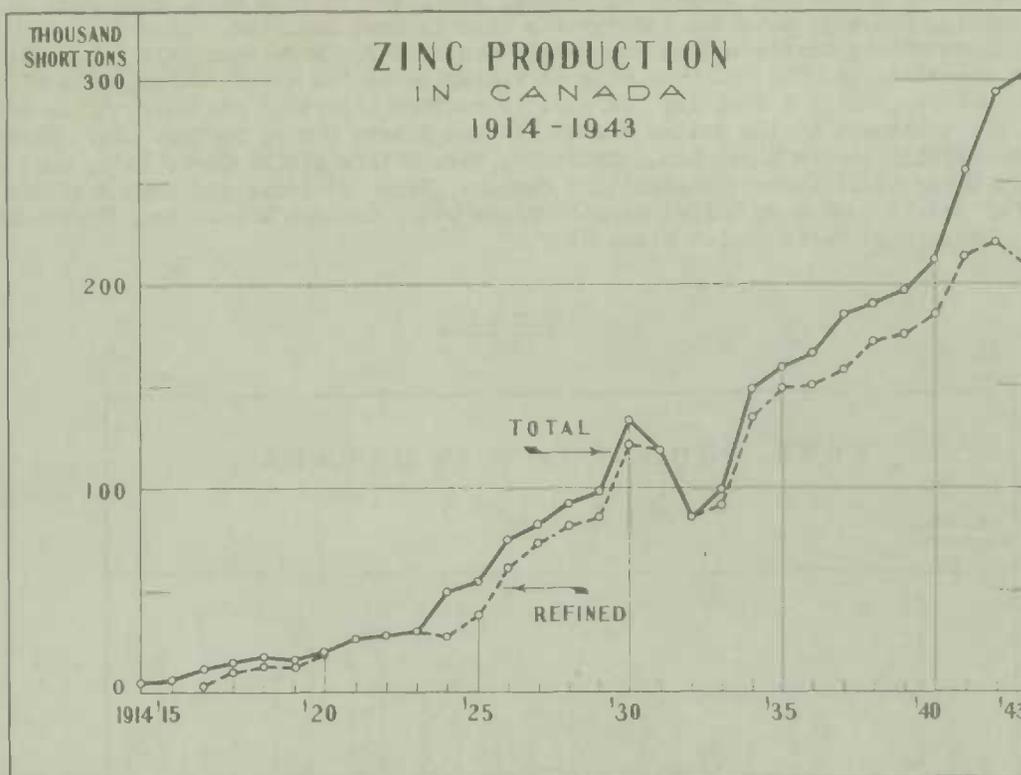
TUNGSTEN (Concentrates)

Production		Pounds		\$	
Year					
1940	.....	12,002		7,303	
1941	.....	82,846		38,712	
1942	.....	520,981		406,275	
1943	.....	1,353,089		985,031	

Imports -	1 9 4 2		1 9 4 3	
	Cwt.	\$	Cwt.	\$
Tungsten-bearing ores (from May 15, 1942)	11,578	1,071,605	1,213	98,412
Tungsten carbide, in tubes .....	...	760	...	7,364

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 WO₃ or better, was made. In addition, a small treatment plant was built at the Hollinger mine, to which other mines could ship their ore. Scheelite 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. No concentrates were shipped in 1943. Operations at this property ceased in September, 1943.



Production

Year	Pounds	\$
1940	424,028,862	14,463,624
1941	512,381,636	17,477,337
1942	580,257,373	19,792,579
1943	608,568,434	24,342,738

Imports

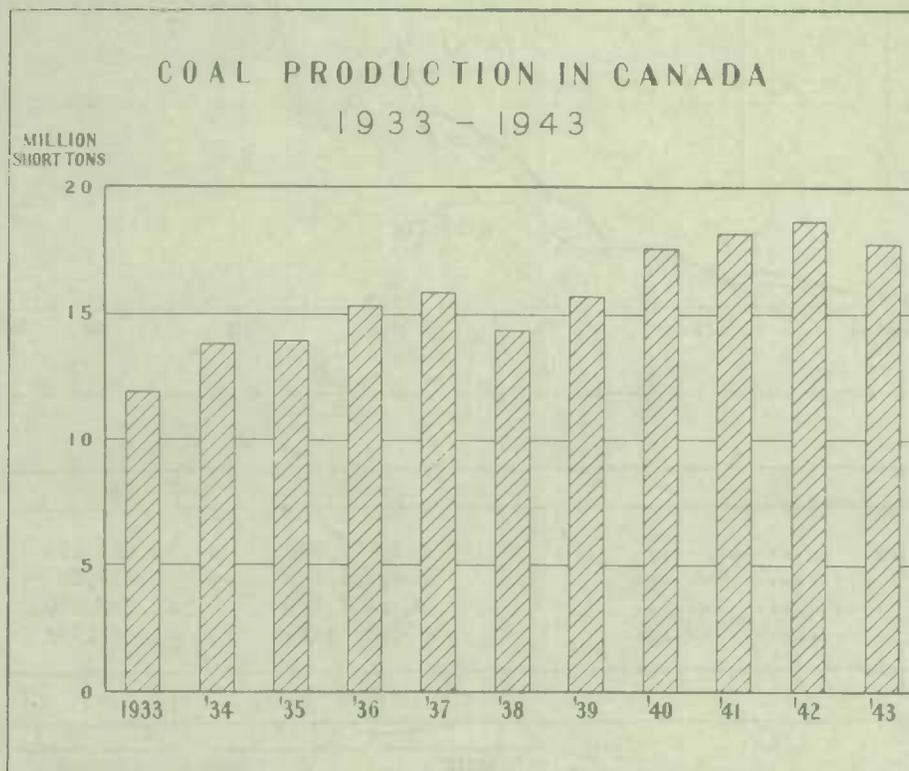
	1 9 4 2		1 9 4 3	
	Pounds	\$	Pounds	\$
Zinc dust	7,500	920	7,500	1,014
Zinc in blocks, pigs, bars and rods, and zinc plates, n.o.p.	171,400	20,923	138,400	26,257
Zinc in sheets and strips, and zinc plates for marine boilers	833,300	105,903	987,300	141,997
Zinc spelter	11,658,200	1,043,041	27,076,400	2,429,945
Zinc slugs for dry batteries .....	...	109,386	...	64,385
Zinc white (zinc oxide)	2,072,403	156,484	2,218,564	174,075
Zinc sulphate	1,364,999	45,554	708,869	31,743
Zinc, chloride of	342,933	18,762	189,305	11,745
Zinc, manufactures of, n.o.p. ....	...	361,708	...	377,486
Lithopone	19,996,324	948,244	17,754,879	857,509
Total .....	...	2,810,925	...	4,116,156

Exports -

Zinc, contained in ore	152,227,700	4,070,803	222,550,300	6,097,117
Zinc, scrap, dross and ashes	7,086,900	202,609	4,291,000	159,218
Zinc, spelter	304,317,100	10,783,049	258,629,700	10,260,030
Total	463,631,700	15,056,461	485,471,000	16,516,365

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 are exported also, for treatment to the United States by Lake Geneva Mining Company Ltd., Ontario; Emergency Metals Ltd. and Sherritt-Gordon Mines Ltd., Manitoba; Base Metals Mining Corp. Ltd., Kootenay Florence Project, Zintcon Mines Ltd., Western Exploration Company, Twin "J" mines and Reco Mountain mine in British Columbia, and in Quebec by Golden Manitou Mines Ltd., Calumet Mines Ltd., Siscoe Metals Ltd., Normetal Mining Corp., and Waite Amulet Mines Ltd.

FUELS



Production

Year	Short tons	\$
1940	17,566,884	54,675,844
1941	18,225,921	58,059,630
1942	18,865,050	62,897,581
1943	17,878,778	62,429,662

Production of coal in Canada was 5 per cent less in 1943 than in 1942. At the beginning of the year there was a serious labour shortage in the coal mines; steps were taken to improve this situation, and during the last half year the monthly output showed an upward trend. Compared with 1942, Nova Scotia mines produced 15 per cent less coal, New Brunswick mines 13 per cent less, Alberta 2 per cent less, British Columbia 8 per cent less, but Saskatchewan mines increased their output by 37 per cent.

Mineral Production

Coal Production, by Provinces, 1942 and 1943

Provinces	1 9 4 2		1 9 4 3	
	Output	Value	Output	Value
	Net tons	\$	Net tons	\$
Nova Scotia	7,204,852	29,116,118	6,086,733	27,172,655
New Brunswick	435,203	1,826,403	380,001	1,672,361
Manitoba	1,265	3,763	999	2,964
Saskatchewan	1,301,116	1,760,065	1,777,833	2,602,752
Alberta -				
Bituminous	3,807,619	11,221,161	3,496,385	10,866,544
Sub-bituminous	733,547	2,100,889	789,495	2,374,519
Lignite	3,212,887	9,302,360	3,345,923	10,338,782
Total Alberta	7,754,053	22,624,410	7,631,803	23,579,845
British Columbia	2,168,541	7,566,822	2,001,409	7,399,085
Yukon .....	...	...	...	...
CANADA	18,865,030	62,897,581	17,878,778	62,429,662

Coal Production, by Months, 1942 and 1943, and Number of Employees

Month	1 9 4 2		1 9 4 3	
	Tons	Number of employees	Tons	Number of employees
January	1,919,264	27,631	1,559,220	25,513
February	1,712,029	27,116	1,578,734	25,011
March	1,610,242	25,854	1,688,328	24,935
April	1,523,885	25,554	1,386,905	23,582
May	1,316,863	23,562	1,318,046	22,972
June	1,386,453	24,196	1,365,924	23,229
July	1,497,197	24,088	1,387,509	23,509
August	1,468,448	23,415	1,441,004	23,938
September	1,469,691	23,099	1,459,712	24,916
October	1,574,871	23,406	1,549,706	25,835
November	1,646,387	24,741	1,447,952	26,738
December	1,739,700	25,487	1,695,738	27,284
CANADA	18,865,030	...	17,878,778	...

Imports of Coal, by Kinds, 1942 and 1943

	1 9 4 2		1 9 4 3	
	tons		tons	
Anthracite	4,802,023		4,458,519	
Bituminous	20,807,005		24,393,798	
Lignite	239		337	
TOTAL CANADA	25,609,267		28,852,654	

Exports of Coal, 1942 and 1943

	1 9 4 2		1 9 4 3	
	(tons)		(tons)	
Bituminous	805,717		1,101,514	
Lignite	9,868		8,587	
TOTAL CANADA	815,585		1,110,101	

NATURAL GAS

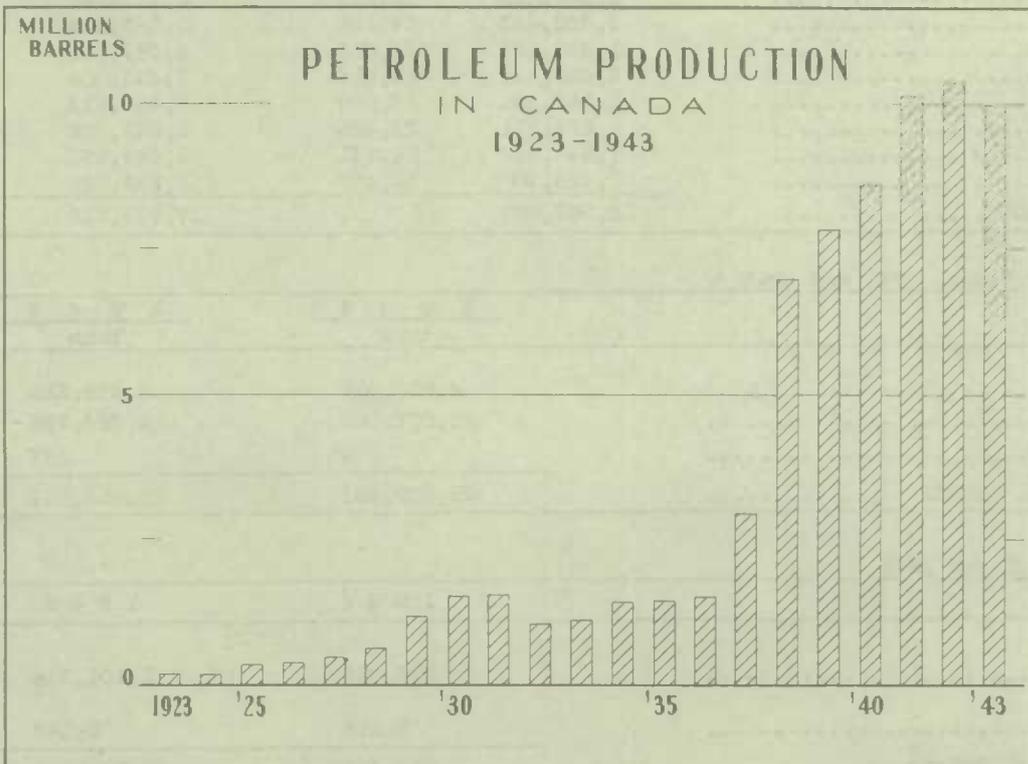
Production	Year	M cu.ft.	\$
	1940	41,232,125	13,000,593
	1941	43,495,353	12,665,116
	1942	45,697,359	13,301,655
	1943	43,237,500	16,699,894

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	9,958,000(x)	16,149,000

(x) Does not include production from the Northwest Territories.

Crude petroleum is produced in New Brunswick, Ontario, Alberta and the Northwest Territories. 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. Output from Ontario wells at 133,000 barrels, was down 7 per cent from 1942.

Production of oil in Alberta was estimated at 9,800,000 barrels as compared with 10,117,073 barrels in 1942. This is the first decline in the output from Alberta wells over a period of eight years. A reason given for the decline by J. L. Irwin, Statistician for the Department of Lands and Mines for Alberta was "that oil recovered from successful completion of wells drilled in the proven zone of Turner Valley in 1943 was not heavy enough in volume to offset, and certainly not heavy enough in volume to surpass, the total decline of older wells in that particular area".

Other fields in Alberta include the Taber, Vermilion, Wainwright, Red Coulee, Princess, Tilley, Dina, Del Bonita, Lloydminster and Moose Dome. Production from wells in these fields showed an increase of over 82,000 barrels as compared with 1942.

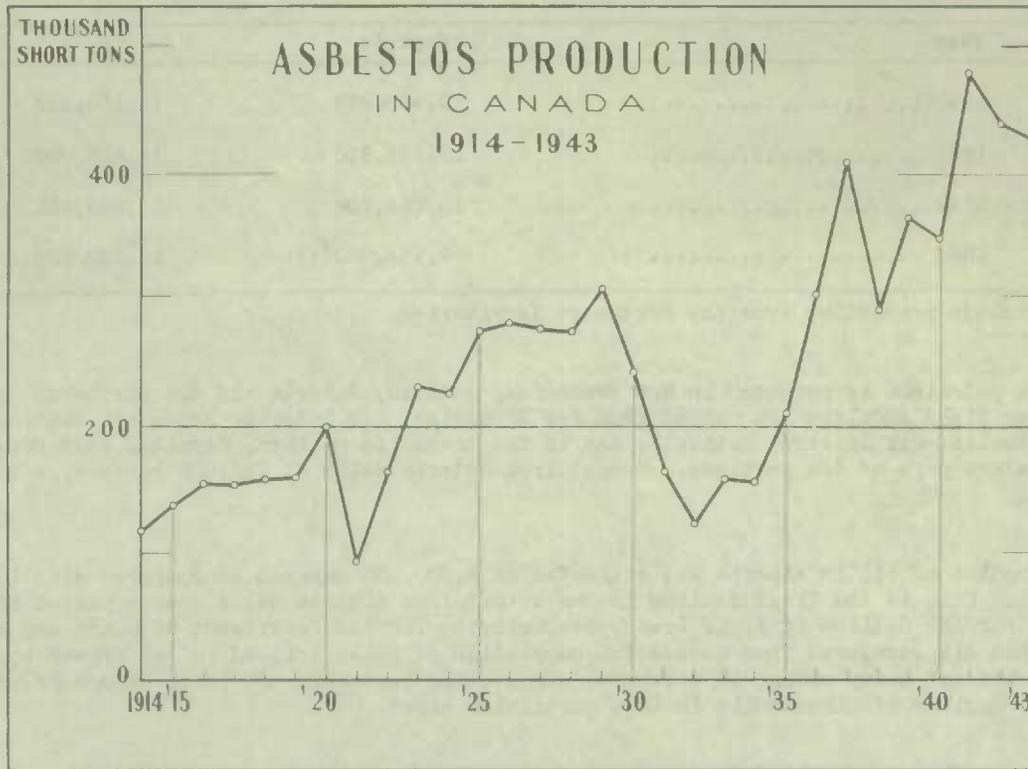
The most interesting Canadian development in 1943 was the new drilling which took place at Fort Norman in the Northwest Territories. Production for the first six months of 1943 totalled 89,929 barrels as compared with 9,674 barrels during the same period of 1942. Owing to a strict censorship, no figures on the total production for the year are published. A pipe line from Fort Norman to Whitehorse in the Yukon was under construction to transport the oil; its completion has recently been announced. (February 17, 1944).

The following, which is extracted from a report of Dr. G. S. Hume, "Petroleum Geology of Canada", is of interest:

"The Canol project came about through military necessity. The object was threefold, namely, to drill wells for oil in the Fort Norman and adjoining areas, to transport the oil by pipeline 600 miles from Norman Wells to Whitehorse, and to build a refinery at Whitehorse to make petroleum products. Imperial Oil Company, Limited, was concerned only with the first of these objectives, namely oil production, and, accordingly, an arrangement was entered into between the United States Government and the Imperial Oil Company for the drilling of the wells, and between Imperial Oil Company and the Dominion Government for the securing of mineral rights and other necessary concessions. The pipeline and the Whitehorse refinery is a United States army project.

"Work on the Canol project was started in the early summer of 1942, and in that year sixteen wells were drilled, of which two were dry. Up to November 1, 1943, fourteen more wells were drilled, bringing the total to thirty. Of these twenty-three found oil in commercial quantity and seven either were dry or obtained only a very small yield. These are in addition to the four producing wells of the Imperial Oil Company drilled prior to 1942."

INDUSTRIAL MINERALS



Production

Year	Tons	\$
1940	346,805	15,619,865
1941	477,846	21,468,840
1942	439,459	22,663,283
1943	427,141	21,738,686

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	338	4,819
1941	6,890	74,416
1942	19,667	188,144
1943	24,474	255,525

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

Imports of barite totalled 5,072,300 pounds valued at \$68,196 in 1942, and 3,372,500 pounds worth \$43,239 in 1943.

FELDSPAR

Production

Year	Tons	\$
1940	21,455	187,623
1941	26,040	244,284
1942	22,270	213,941
1943	25,903	236,991

Imports

	1 9 4 2		1 9 4 3	
	Tons	\$	Tons	\$
Feldspar, crude only	1	66	...	...
Feldspar, not further manufactured than ground.	563	12,021	526	12,866

Exports -

Feldspar	11,016	85,360	12,724	96,453
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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.

FLUORSPAR

Production

Year	Tons	\$
1940	4,454	59,317
1941	5,534	97,767
1942	6,199	146,039
1943	12,087	332,067

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, has furnished funds for expanding

output because of increased demand and the possible shortage in supply. Steps have also been taken to increase the production in Newfoundland, an important source of supply for the Canadian market.

Imports totalled 47,783 tons valued at \$1,046,526 in 1942 and 77,436 tons worth \$1,738,669 in 1943.

GRAPHITEProduction

Year	\$
1940	94,038
1941	132,924
1942	117,904
1943	204,894

Imports

	1 9 4 2	1 9 4 3
	\$	\$
Plumbago, not ground or otherwise manufactured	39,361	23,773
Crucibles, plumbago	340,761	191,296
Plumbago, ground, and manufactures of, n.o.p.	273,301	286,583
<u>Exports -</u>		
Graphite or plumbago, crude and refined	58,572	42,987

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.

GYPSUMProduction

Year	Tons	\$
1940	1,448,788	2,065,933
1941	1,593,406	2,248,428
1942	566,166	1,254,182
1943	429,968	1,176,269

Imports

	1 9 4 2		1 9 4 3	
	Tons	\$	Tons	\$
Gypsum, crude (sulphate of lime) .....	...	...	5,000	12,490
Gypsum ground, not calcined	716	22,692	489	16,828
Plaster of Paris or gypsum calcined and prepared wall plaster	1,404	49,120	1,202	47,532
<u>Exports -</u>				
Gypsum or plaster, crude	489,842	544,094	185,210	213,022
Gypsum, ground	25	260	...	...
Plaster of Paris, ground, and prepared wall plaster	213	4,902	478	8,844

Nova Scotia is the largest gypsum producing province. Production from deposits in that province are 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 OXIDES

Production		
Year	Tons	\$
1940	9,979	111,874
1941	10,045	142,069
1942	9,304	151,653
1943	7,879	126,195

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.

MAGNETITIC-DOLONITE AND BRUCITE

Production	
Year	\$
1940	897,016
1941	831,041
1942	1,059,374
1943	1,298,775

Note: Includes brucite in 1942 and 1943 only.

Imports	1 9 4 2		1 9 4 3	
	Tons	\$	Tons	\$
Magnesia pipe covering .....	...	200,530	...	249,634
Magnesite, crude rock	14	1,137	41	1,583
Magnesite, dead burned, sintered, caustic, calcined or plastic magnesia	6,096	276,535	7,948	365,080
Magnesite, calcined, not further manufactured than ground, when imported by manufacturers of insulating materials for use exclusively in the manufacture of such insulating materials in their own factories	367	32,386	618	40,536
Brick, fire, magnesite .....	...	1,175,015	...	1,111,754
<u>Exports -</u>				
Magnesite, calcined, dead burned, etc.	537	25,108	396	16,398

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 A

Production

Year	Pounds	\$
1940	1,806,219	237,145
1941	3,487,891	535,288
1942	6,019,671	383,567
1943 .....	...	539,595

Imports

	1 9 4 2		1 9 4 3	
	Pounds	\$	Pounds	\$
Mica and manufactures of, n.o.p.—Total	177,695	...	220,358

Exports -

	1942	1943	1944	1945
Rough cobbled and thumb trimmed	484,700	224,481	863,100	422,710
Mica splittings	148,300	112,756	65,900	47,108
Mica, scrap and waste	4,323,800	27,167	279,500	34,660
Mica, plate, and manufactures of (micanite) ...	...	18,091	...	16,540
Total .....	...	382,495	...	521,018

Mica is produced in Quebec, Ontario, and a mica schist, produced in British Columbia, is included with the Canadian output. Up until the past two years, most of the Canadian production has been of the phlogopite variety. In 1940 and 1941, as a result of curtailment of mica exports from Madagascar, a strong export market developed for Canadian phlogopite.

Canadian mica is exported in the form of block mica, knife-trimmed, splittings, and in the ground form.

In 1941 a very important discovery of muscovite mica was made by J. Purdy in Mattawan township, district of Nipissing, Ontario. This has been rapidly developed and a mica trimming shop has been opened in North Bay to prepare the product for market.

MINERAL WATERS

Production

Year	Imperial gallons	\$
1940	140,663	20,892
1941	181,064	72,531
1942	157,035	74,505
1943	156,000	74,000

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. François River, in Yamaska county; Pottou springs in Bromé county, and the Coulombia spring at L'Épiphanie. 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 SYENITE

Production

Year	\$
1940	117,849
1941	227,583
1942	246,893
1943	213,197

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 feldspar. The first production was in 1936 when a mill was erected at Lakefield to crush the rock for market. Exports in 1942 totalled 32,840 tons valued at \$89,520, and 36,240 tons in 1943 worth \$129,826.

PEAT MOSS

Production

Year	Tons	\$
1940 .....	...	...
1941	27,803	644,255
1942	53,506	1,069,372
1943	63,635	1,352,185

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	1,435	19,460

Production of phosphate is principally in the province of Quebec, though in 1943 there was a production in Ontario. 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 271,372 tons valued at \$1,053,229 in 1942 and 260,846 tons valued at \$1,085,080 in 1943.

PYRITES (Sulphur)

Production

Year	Tons	\$
1940	170,630	1,298,018
1941	260,023	1,702,786
1942	303,714	1,994,891
1943 (x)	261,372	1,758,538

(x) Estimate.

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 1943 totalled 218,527 tons valued at \$3,524,006, compared with 1942 totals of 290,121 tons at \$4,680,672. Exports of sulphur in pyrites in 1943 totalled 104,509 tons worth \$409,597, against 166,451 tons valued at \$700,918 in 1942.

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	1,750,744	1,692,302

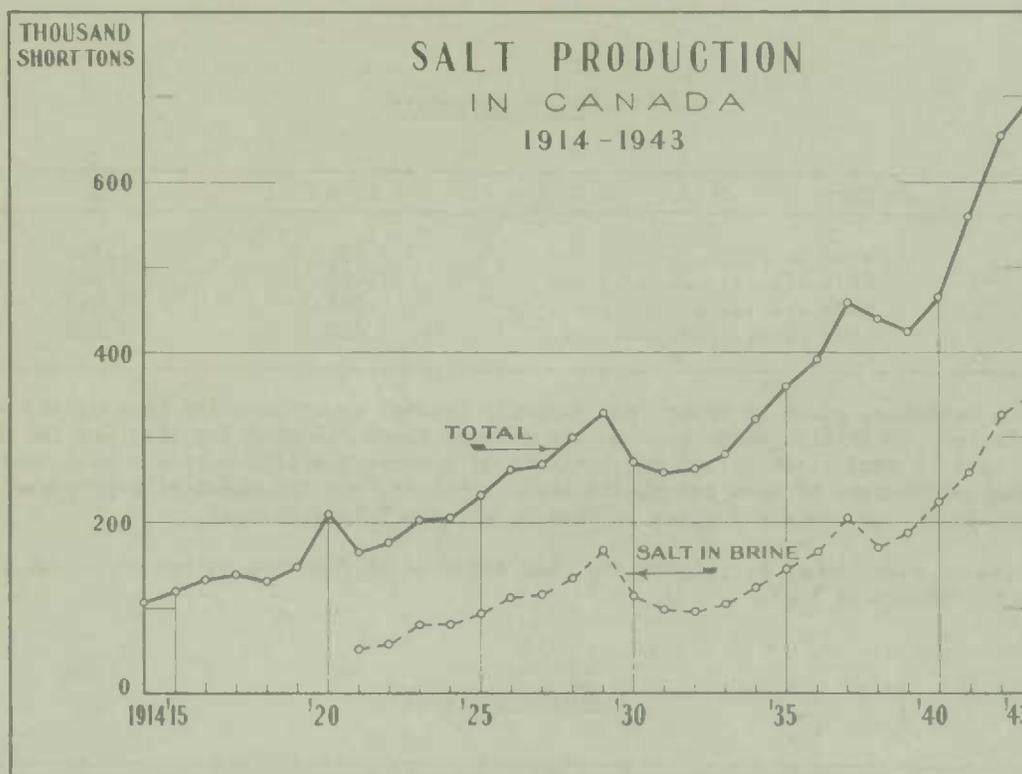
Imports

	1 9 4 2		1 9 4 3	
	Tons	\$	Tons	\$
Ganister	949	8,865	484	3,970
Silex or crystallized quartz, ground or unground	9,791	442,233	11,410	945,967
Flint and ground flint stones	936	18,645	884	17,617
Silica sand	540,904	1,011,476	509,043	1,011,117
Total	1,559,830	...	1,978,671

Exports -

Quartzite	82,570	147,172	68,555	124,345
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Production of quartz was reported in 1943 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.



Production

Year	Commercial Salt		Salt in Brine		T O T A L	
	Tons	\$	Tons	\$	Tons	\$
1940	240,705	2,464,297	224,099	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 (x)	347,941	3,515,800	351,917	525,118	699,858	4,040,918

(x) Estimate.

Imports

	1 9 4 2		1 9 4 3	
	Tons	\$	Tons	\$
Salt, for use of the sea or gulf fisheries	20,865	141,050	21,037	161,255
Salt, in bulk, n.o.p.	35,295	165,762	47,687	245,913
Salt, n.o.p., in bags, barrels, etc.	13,082	133,895	16,064	181,940
Salt, table, made by an admixture of other ingredients, when containing not less than 90 per cent of pure salt	2	141
Total	69,244	440,848	84,788	589,108

Exports -	Total	9,326	128,832	8,061	118,174
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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.

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 Port 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.

It is interesting to note that certain sections of the Malagash deposit contain appreciable quantities of potash.

SODIUM CARBONATEProduction

Year	Tons	\$
1940	220	1,760
1941	186	1,488
1942	256	2,048
1943	427	3,629

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 1942 totalled 65,588 tons valued at \$1,540,247, and 70,556 tons valued at \$1,213,218 in 1943.

SODIUM SULPHATEProduction

Year	Tons	\$
1940	94,260	829,569
1941	115,608	951,554
1942	151,258	1,079,692
1943	87,297	854,152

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 1942 amounted to 7,070 tons valued at \$85,479 and 11,904 tons valued at \$150,496 in 1943. Glauber's salt imports totalled 75 tons valued at \$4,664 in 1942 and 566 tons worth \$16,399 in 1943.

TALC AND SOAPSTONEProduction

Year	Talc		Soapstone
	Tons	\$	\$
1940	15,166	154,734	74,905
1941	18,171	204,884	155,925
1942	15,499	174,295	136,529
1943	12,182	134,550	110,049

Canadian production of talc comes chiefly from important deposits of foliated white talc located near Madoc, Ontario. Preparation 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 5,441 tons valued at \$114,852 in 1942 and 6,450 tons worth \$130,813 in 1943. Exports of talc totalled 16,055 tons worth \$214,033 in 1942 and 11,364 tons worth \$146,516 in 1943.

CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS

Clay Products

Production

Year	\$
1940	6,344,547
1941	7,575,336
1942	7,081,723
1943	6,391,621

Operators in the clay products industry report for 1943 an increasing difficulty in securing fuel and labour. Many report that their plants have operated very little during the year and that they are making shipments from stocks on hand, at times augmenting their stocks by purchases from other operators so as to be able to fill orders when they come in.

Production (Sales) of Domestic Clay and Clay Products in Canada, 1941 and 1942

Product	Unit of measure	Sales or Shipments			
		1 9 4 1		1 9 4 2	
		Quantity	\$	Quantity	\$
Clay—Fireclay	ton	5,431	35,475	5,601	40,722
Kaolin	ton	2	50	408	6,150
Other clay	ton	23,792	42,637	26,419	116,030
Fireclay blocks and shapes .....	...	...	190,497	...	210,246
Firebrick	M	3,643	183,897	3,816	197,830
Brick—Soft mud process - Face	M	14,288	285,260	11,385	233,251
Common	M	30,664	455,385	20,387	325,762
Stiff mud process- Face	M	52,419	1,218,632	39,104	872,287
(wire cut) - Common	M	69,750	1,043,852	59,901	893,488
Brick—Dry press - Face	M	15,621	363,908	12,871	278,701
Common	M	25,449	386,097	25,145	404,730
Fancy or ornamental brick (including special shapes, embossed and enamelled brick)	M	36	2,100	11	676
Sewer brick	M	644	10,279	513	9,480
Paving brick	M	120	7,312	153	9,353
Structural tile -					
Hollow blocks (including fireproofing and load-bearing tile)	ton	117,530	1,063,120	109,905	1,082,573
Roofing tile .....	...	...	750	...	32
Floor tile (quarries) .....	...	...	21,349	...	23,705
Drain tile	M	12,319	333,364	11,659	329,035
Sewer pipe (including copings, flue linings, conduits, etc.) .....	...	...	1,422,389	...	1,592,545
Pottery, glazed or unglazed (including coarse earthenware, sanitary ware, stoneware, flower pots, and all other pottery) .....	...	...	502,212	...	646,088
Other products .....	...	...	6,811	...	9,059
TOTAL .....	...	...	7,575,336	...	7,081,723

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	7,299,210	11,619,092

Imports

	1 9 4 2		1 9 4 3	
	Barrels	\$	Barrels	\$
Portland	26,320	116,126	18,577	83,975
Manufactures .....	...	26,807	...	27,723
Exports - Total	273,880	476,284	172,575	344,004

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, Bamberton, British Columbia.

The Annual Report for 1943 of the Board of Directors of the Canada Cement Company Ltd. states the following:

"The volume of business during the year was on the whole somewhat better than was anticipated due to certain developments in Alberta and British Columbia in connection with war contracts. In Ontario, Quebec and the Maritimes, where the bulk of our business is usually done, the volume dropped 29.4% from the previous year. Total business including export was down 21.5%.

"The demand for your product is still downward and it is not anticipated that any material change in this trend will take place during the period of hostilities unless the present building restrictions should be lifted. The Company's estimates show that less cement will be consumed in Canada in 1944 than in 1943."

LIME

Production

Year	Quicklime		Hydrated Lime		T O T A L	
	Tons	\$	Tons	\$	Tons	\$
1940	623,803	4,421,758	92,927	772,797	716,730	5,194,555
1941	723,864	5,287,711	137,021	1,070,230	860,885	6,357,941
1942	749,282	5,646,049	135,548	884,790	884,830	6,530,839
1943 .....	...	...	...	...	938,143	6,750,093

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 1943 are not available by uses, it is thought that the following tables for 1941 and 1942 may be of interest.

Production of Lime in Canada, 1941 and 1942, Showing Purposes for Which Sold or Used

	1 9 4 1		1 9 4 2	
	Quicklime tons	Hydrated Lime tons	Quicklime tons	Hydrated Lime tons
Building trades -				
Finishing lime	8,308	26,263	5,045	21,987
Masons' lime	21,478	11,813	17,699	11,617
Sand-lime brick	8,274	...	5,873	...
Agriculture	569	8,407	305	8,311
Chemical -				
Smelters (non-ferrous)	10,511	58,098	20,537	60,073
Iron and steel furnaces	61,740	104	54,937	50
Cyanide and flotation mills ...	28,507	5,623	21,552	6,588
Pulp and paper mills	153,522	11,831	155,623	9,945
Glass works	12,084	...	15,796	8
Sugar refineries	16,124	355	16,699	152
Tanneries	4,484	930	4,911	1,002
Fertilizer plants	350	5,818	349	286
Insecticide plants	1,714	188	1,852	456
Other chemical works	376,283	3,255	420,071	10,892
Uses unspecified	19,916	4,336	8,053	4,381
TOTAL	723,864	137,021	749,282	135,548

SAND AND GRAVELProduction

Year	Tons	⌘
1940	31,375,415	11,759,245
1941	31,604,806	10,375,723
1942	26,349,907	9,005,414
1943	26,425,694	9,065,533

Sand and gravel production in 1943, as indicated by preliminary reports, maintained about the same level as in 1942 when an appreciable falling off in road-building and other construction began to be apparent in many parts of the country.

Production of Sand and Gravel in Canada, by Grades, 1942

	Tons	⌘
Sand -		
Moulding sand	35,807	41,825
Building sand and sand for concrete, roadwork, etc. ..	2,535,366	934,777
Core sand	2,694	3,670
Mine filling	836,757	147,602
Other sand (including blast sands, engine sands, etc.)	54,029	12,534
Sand and gravel -		
Sand and gravel for railway ballast	4,610,323	957,781
Sand and gravel for concrete, road-building, etc.	16,139,859	6,010,412
Crushed gravel	2,135,072	896,813
TOTAL	26,349,907	9,005,414

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	5,962,952	6,610,372

Stone production for 1943 shows the decrease which curtailed construction would lead one to expect. Operators have also encountered the difficulty of securing labour. Economies in regard to labour and power have been effected by certain dressing works operators who have practically closed their own quarries and have been buying their rough stone from other quarries which were producing for various purposes. There continues to be a demand for agricultural limestone. Crushed stone for highway construction was estimated at approximately the same as in the preceding year.

Production (Sales) of Stone from Canadian Quarries, by Kinds, Showing Purposes for Which Used, 1942

	Granite Tons	Limestone Tons	Marble Tons	Sandstone Tons	Slate Tons	CANADA Tons
Building stone--Rough	2,354	11,818	214	1,298	...	15,684
Dressed	2,497	6,230	146	340	...	9,213
Monumental and ornamental stone -						
Rough	6,858	...	53	...	...	6,911
Dressed	3,827	218	...	...	...	4,045
Flagstone .....	...	223	...	1,042	...	1,265
Curbstone	5,571	...	...	...	...	5,571
Paving blocks	2,008	...	...	25	...	2,033
Lining open-hearth furnaces .....	...	20,311	...	...	...	20,311
Chemical -						
Flux in iron and steel furnaces.	...	581,373	...	...	...	581,373
Flux in non-ferrous smelters ...	...	178,037	...	...	...	178,037
Glass factories .....	...	3,358	1,177	...	...	4,535
Manufacture of magnesium .....	...	5,267	...	...	...	5,267
Pulp and paper mills .....	...	207,994	...	...	...	207,994
Sugar refineries .....	...	19,956	...	...	...	19,956
Other chemical uses .....	...	236,812	1	7,336	...	244,149
Pulverized stone -						
Whiting (substitute) .....	...	3,942	...	...	...	3,942
Asphalt filler .....	...	13,494	...	...	51	13,545
Dusting coal mines .....	...	1,698	...	...	...	1,698
Agricultural purposes and fertilizer plants .....	...	285,924	20	...	240	286,194
Other uses .....	...	9,570	250	...	...	9,820
Crushed stone for artificial stone	...	239	127	...	...	366
Roofing granules	35,204	310	...	...	840	36,354
Poultry grit	3	5,326	3,445	...	27	8,801
Stucco dash	6	814	953	...	53	1,826
Terrazzo chips .....	...	443	2,513	...	...	2,956
Rock wool .....	...	9,942	...	...	...	9,942
Rubble and riprap	83,966	289,138	4,925	34,291	158	412,528
Crushed stone -						
Concrete aggregate	1,051,168	1,818,625	...	54,944	...	2,924,737
Road metal	171,228	2,063,819	...	40,659	...	2,275,706
Railroad ballast	1,735	667,652	...	13,930	...	683,317
TOTAL	1,366,425	6,442,583	13,924	153,865	1,369	7,978,066

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