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CANADA—DEPARTMENT OF TRADE AND COMMERCE  
DOMINION BUREAU OF STATISTICS  
MINING, METALLURGICAL AND CHEMICAL BRANCH

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PRELIMINARY REPORT

ON THE

MINERAL PRODUCTION OF  
CANADA

DURING THE CALENDAR YEAR

1933

Published by Authority of the Hon. H. H. Stevens, M.P.,  
Minister of Trade and Commerce



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# LIST OF PUBLICATIONS

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## MINING, METALLURGICAL AND CHEMICAL BRANCH DOMINION BUREAU OF STATISTICS.

### MINERAL PRODUCTION (Mining and Metallurgy).

#### GENERAL REPORTS

**Preliminary Reports (semi-annual) on the Mineral Production of Canada.**

**Monthly Reports on Canada's Leading Mineral Products.**

**Annual Report on the Mineral Production of Canada. (In one volume).**

A comprehensive record of the mining industry embodying historical and world data, detailed information on mineral production, imports and exports for Canada and general statistics relative to the mining industry on capital investment, employment, fuel consumption and power equipment arranged in 9 chapters each dealing with a particular branch of the industry. Statistics on production and trade in mineral products appear in detail in the appropriate chapters. Fully indexed. Chapter titles are: Canada—The Gold Mining Industry—The Silver Mining Industry—The Nickel-Copper Industry—Miscellaneous Metal Mining Industries—The Non-Ferrous Smelting and Refining Industry—The Coal Mining, Coke, Natural Gas, Peat and Petroleum Industries—Non-Metal Mining Industries (Other than Fuels)—The Clay Products and Other Structural Materials Industries—Notes on the Methods of Computing Values—Index.

#### COAL—

**Monthly and Quarterly Reports on Coal and Coke Statistics for Canada.**

A condensed report on production, imports and exports of coal and coke is issued monthly, publication being made about the twentieth of the next following month.

A more general review is published quarterly, showing statistics for each month, for the quarter, and for the year to date on the output by coal-mining districts and by provinces, imports and exports by ports and by kinds of coal, employment in coal-mining, and tonnage lost. There is also a section on coke showing production, imports, exports, distribution and consumption by months and by provincial groups.

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Text and tables showing for Canada, and for each of the coal-producing provinces, historical and current data on output, tonnage lost, disposition of coal from the mines, domestic and foreign shipments, exports and imports by ports, consumption of coal, prices, employment, salaries and wages paid, power equipment, capital investment, etc.

#### ANNUAL BULLETINS—

*Metals*—The Gold Mining Industry in Canada which includes Alluvial Gold Mining, Auriferous Quartz Mining, Copper-Gold-Silver Mining, and tables showing Canadian and world production of Gold.—The Silver Mining Industry in Canada, which includes Silver-Cobalt-Arsenic Mining, Silver-Lead-Zinc Mining, and tables showing Canadian and world production of Arsenic, Cobalt, Lead, Silver and Zinc.—The Nickel-Copper Mining, Smelting and Refining Industry, which includes Canadian and world production of Nickel.—The Canadian and World Production of Copper.—Metals of the Platinum Group.—The production of Miscellaneous Metals including Antimony, Beryl, Bismuth, Cadmium, Chromite, Lithium, Manganese, Mercury, Molybdenite, Radium, Selenium, Tin, Titanium, Tungsten.—The Non-Ferrous Smelting and Refining Industry.

*Non-Metals*.—Abrasives—Asbestos—Coal—Feldspar—Gypsum—Iron Oxides—Mica—Natural Gas—Petroleum—Quartz—Salt—Talc and Soapstone—Miscellaneous Non-Metallic Minerals including Actinolite, Barytes, Bituminous Sands, Fluorspar, Graphite, Magnesite, Bog Manganese, Mineral Waters, Phosphate, Silica Brick, Sodium Carbonate, Sodium Sulphate, Sulphur (Pyrites).

*Structural Materials*.—Cement—Clay and Clay Products—Lime—Sand and Gravel—Stone.

SEE BACK COVER FOR PUBLICATIONS ON MANUFACTURES BASED CHIEFLY ON MINERALS

## PREFACE

This report is designed to supplement the statistical figures of Canada's mineral production for 1933, which were released in bulletin form on January 1st, 1934. It contains production data of the various minerals by provinces, imports and exports of the principal minerals and mineral products and other related data, and is prepared in time for presentation before the Annual Meeting of the Canadian Institute of Mining and Metallurgy which is held annually during the first week of April.

Beginning about midsummer, 1933, and with the exception of the production of structural materials, Canada's mining industry began to show a distinct improvement over the corresponding period of the preceding year. Base metal prices improved, nickel output showed a monthly gain, the principal silver producing and silver consuming countries got together for the purpose of improving the world position of that metal, and the rapid increase in the price of gold served to stimulate the industry and brighten the mining horizon generally.

As in former years, the Bureau has continued to co-operate with the provinces of Nova Scotia, New Brunswick, Saskatchewan, Alberta and British Columbia in the collection of coal statistics.

Arrangements made several years ago, with the provinces of Quebec, Ontario, Manitoba, and British Columbia, whereby the Bureau and these provinces use joint forms for the collection of mineral statistics, are working satisfactorily. By this system the operators are now required to file only one form.

The cordial thanks of the Bureau are tendered mine and smelter operators, to the Department of the Interior, to the federal Department of Mines, and to the Royal Canadian Mint for assistance given and information made available. The railway and other transportation companies, as well as smelter operators outside of Canada, have also furnished data, the receipt of which is gratefully acknowledged.

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., and Mr. B. R. Hayden, of the mineral division staff.

R. H. COATS,

*Dominion Statistician.*

DOMINION BUREAU OF STATISTICS,

OTTAWA, March 8, 1934.

## Quantities and Values of Mineral Products from Canadian Sources, 1932 and 1933

	1932		1933		Per cent Increase (+) or Decrease (-)	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>METALLICS</b>						
Arsenic (As <sub>2</sub> O <sub>3</sub> )..... lb.	2,424,342	\$ 98,714	1,468,022	\$ 56,534	- 39.4	- 42.7
Bismuth..... lb.	16,855	7,340	78,303	81,442	+ 364.6	-
Cadmium.....	-	26,824	-	78,733	-	+ 193.5
Chromite..... tons	78	1,113	30	343	- 61.5	- 69.2
Cobalt..... lb.	490,631	587,957	450,247	594,944	- 6.4	+ 1.2
Copper..... lb.	247,679,070	15,294,058	299,936,892	21,631,457	+ 21.1	+ 41.4
Gold valued at standard rate..... fine oz.	3,044,387	62,933,063	2,947,618	60,932,670	- 3.2	- 3.2
Estimated exchange equalization on gold produced.....	-	8,546,310	-	23,369,205	-	+ 173.4
Lead..... lb.	255,947,378	5,409,704	264,330,537	6,321,729	+ 3.3	+ 16.9
Nickel..... lb.	30,327,968	7,179,862	83,264,658	20,130,480	+ 174.5	+ 180.4
Palladium, rhodium, iridium, etc..... fine oz.	37,613	901,890	31,009	645,044	- 17.0	- 28.5
Platinum..... fine oz.	27,343	1,099,393	24,786	857,590	- 9.4	- 22.0
Selenium..... lb.	-	-	26,096	53,745	-	-
Silver..... fine oz.	18,347,907	5,811,081	15,201,265	5,751,064	- 17.1	- 1.0
Zinc..... lb.	172,283,558	4,144,454	197,685,169	6,346,682	+ 14.7	+ 53.1
<b>Total</b> .....	-	<b>112,641,763</b>	-	<b>146,451,662</b>	-	+ <b>31.1</b>
<b>NON-METALLICS</b>						
<b>Fuels</b>						
Coal..... tons	11,738,913	37,117,695	11,885,078	35,881,187	+ 1.2	- 3.3
Natural gas..... M cu. ft.	23,420,174	8,809,462	22,706,125	8,283,944	- 3.0	- 6.9
Peat..... tons	3,248	7,593	1,131	3,410	- 65.2	- 54.6
Petroleum, crude..... brls.	1,044,412	3,022,592	1,148,916	3,083,995	+ 10.0	+ 2.0
<b>Total</b> .....	-	<b>49,647,342</b>	-	<b>47,252,573</b>	-	- <b>3.7</b>
<b>Other Non-Metallics</b>						
Asbestos..... tons	122,977	3,030,721	158,367	5,211,177	+ 28.8	+ 71.4
Barytes..... tons	-	-	20	60	-	-
Bituminous sands..... tons	343	1,372	466	1,662	+ 35.9	+ 21.1
Diatomite..... tons	1,496	29,509	1,789	36,648	+ 10.6	+ 24.2
Feldspar..... tons	7,047	81,982	10,569	104,633	+ 50.0	+ 27.6
Fluorspar..... tons	32	464	73	1,064	+ 128.1	+ 129.3
Graphite..... tons	346	18,483	405	18,367	+ 17.1	- 0.6
Grindstones..... tons	328	15,735	76	6,522	- 76.8	- 58.0
Gypsum..... tons	438,629	1,080,379	376,885	611,846	- 14.1	- 43.4
Iron oxides (ochre)..... tons	5,240	46,101	4,327	52,250	- 17.4	+ 13.2
Magnesian-dolomite..... tons	-	262,860	-	360,128	-	+ 37.0
Magnesium sulphate..... tons	-	-	80	2,000	-	-
Mica..... tons	309	6,828	855	48,082	+ 176.7	+ 604.2
Mineral waters..... Imp. gals.	78,714	7,170	38,818	5,441	- 49.4	- 24.1
Phosphate (See page 34)..... tons	1,316	12,333	105	805	- 92.6	- 93.5
Quartz..... tons	189,132	276,147	185,807	298,497	- 1.8	+ 8.1
Salt..... tons	263,543	1,947,551	280,114	1,939,873	+ 6.3	- 0.4
Silica brick..... M	93	4,304	923	29,139	+ 892.5	+ 577.0
Soapstone.....	-	46,751	-	43,593	-	- 6.8
Sodium carbonate..... tons	495	5,450	253	2,471	- 48.9	- 54.7
Sodium sulphate.....	-	271,736	-	485,416	-	+ 78.6
Sulphur*..... tons	53,172	470,014	57,373	510,299	+ 7.9	+ 8.6
Talc..... tons	12,103	113,287	15,169	143,014	+ 25.3	+ 27.4
Volcanic dust..... tons	180	3,600	-	-	-	-
<b>Total</b> .....	-	<b>7,749,837</b>	-	<b>9,912,987</b>	-	+ <b>28.1</b>
<b>CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS</b>						
<b>Clay Products</b>						
Brick-Soft mud process (Face..... M	6,188	108,582	2,482	41,743	- 59.9	- 61.6
(Common..... M	12,801	182,372	11,920	152,335	- 6.9	- 16.5
Stiff mud process (Face..... M	30,197	664,756	19,060	403,218	- 36.9	- 39.3
(wire cut) (Common..... M	40,753	638,022	23,782	358,700	- 41.6	- 43.0
Dry press..... (Face..... M	5,522	119,547	4,555	101,342	- 17.5	- 15.2
(Common..... M	4,248	46,762	4,541	51,814	+ 6.9	+ 10.8
Fancy or ornamental brick..... M	125	6,237	6	387	- 95.2	- 93.8
Sewer brick..... M	643	12,156	243	3,698	- 62.2	- 69.6
Paving brick..... M	6	155	1	42	- 83.3	- 72.9
Firebrick..... M	1,580	71,757	1,547	73,226	- 2.1	+ 2.0
Fireclay..... tons	990	11,626	1,420	11,272	+ 43.4	+ 4.7
Fireclay blocks and shapes.....	-	75,209	-	80,625	-	+ 7.2
Structural Tile-Hollow blocks..... tons	48,118	421,672	21,395	175,773	- 55.5	- 58.3
Roofing tile..... No.	48,939	3,900	20,469	1,136	- 58.2	- 70.9
Floor tile (quarries)..... sq. ft.	94,316	21,502	91,495	14,297	- 3.0	- 33.5
Drain tile..... M	7,385	186,670	9,771	219,180	+ 32.3	+ 17.4
Sewer pipe, copings, flue linings, etc.....	-	813,224	-	346,970	-	- 57.3
Pottery, glazed or unglazed.....	-	244,861	-	203,032	-	- 17.1
Bentonite..... tons	7	176	55	1,363	+ 685.7	+ 674.4
Other clay products.....	-	10,932	-	16,430	-	+ 17.6
<b>Total</b> .....	-	<b>3,650,218</b>	-	<b>2,256,588</b>	-	- <b>38.2</b>
<b>Other Structural Materials</b>						
Cement..... brls.	4,498,721	6,930,721	3,007,432	4,536,935	- 33.1	- 34.5
Lime..... tons	320,050	2,394,537	310,472	2,331,370	- 0.4	- 2.6
Sand and gravel..... tons	14,469,942	1,480,506	12,909,451	4,369,494	- 10.8	- 2.5
Slate..... tons	250	3,750	-	-	-	-
Stone..... tons	4,690,922	4,938,461	2,037,935	2,990,485	- 37.4	- 39.4
<b>Total</b> .....	-	<b>18,748,065</b>	-	<b>11,228,284</b>	-	- <b>24.1</b>
<b>Grand Total in Canadian Funds</b> .....	-	<b>191,228,225</b>	-	<b>226,562,696</b>	-	+ <b>16.3</b>

\*Sulphur content of pyrites shipped and estimated sulphur contained in sulphuric acid made from waste smelter gases.

DOMINION BUREAU OF STATISTICS

R. H. COATS, B.A., F.S.S., (Hon.), F.R.S.C., Dominion Statistician

W. H. LOSEE, B.Sc., Chief of the Mining, Metallurgical and Chemical Branch

PRELIMINARY REPORT  
ON THE  
MINERAL PRODUCTION OF CANADA  
DURING THE CALENDAR YEAR, 1933

**General Review.**—Canada's mineral production in 1933 was valued at \$220,502,096 as against \$191,228,225 in 1932, an increase of 15.3 per cent, and marked the turn from the downward trend which has been experienced in this country, as in many others, since 1929. These total production values include the estimated difference between the value of gold computed at the standard price and the value of gold computed at the average price for gold in Canadian funds.

In the metals group, more copper, lead, zinc, nickel, cadmium and bismuth were produced than in 1932, and in the non-metallics increases in output over the previous year were recorded for coal, crude petroleum, asbestos, bituminous sands, diatomite, feldspar, fluor spar, graphite, mica, magnesian-dolomite, salt, silica brick, sodium sulphate, sulphur (in sulphuric acid and in pyrites) and talc.

Considered by groups and compared with corresponding data for 1932, metals showed an advance of 31 per cent to a total of \$146,851,662; fuels, including coal, natural gas, crude petroleum and peat, amounted in value to \$47,252,575, or a decrease of 3.7 per cent; non-metallics, exclusive of the fuels, increased 28 per cent in value to \$9,912,987. The structural materials group reflected the conditions in the building and construction industries and marked a decrease of 26 per cent.

Values of Mineral Production of Canada by Classes, 1924-1933

Year	Metallics	Coal, natural gas, peat and crude petroleum	Other non-metallics	Clay products and other structural materials	Total
	\$	\$	\$	\$	\$
1924.....	102,406,528	59,770,024	12,025,985	35,380,869	209,583,406
1925.....	117,082,298	57,351,055	14,497,746	37,649,234	226,580,333
1926.....	115,237,581	68,743,933	16,496,211	39,959,398	240,437,123
1927.....	113,561,030	71,426,516	17,559,730	44,809,419	247,356,695
1928.....	132,012,454	74,413,100	18,826,692	49,737,181	274,989,427
1929.....	154,454,056	76,787,397	21,073,959	58,534,834	310,850,246
1930.....	142,743,764	68,184,485	15,217,864	53,727,465	279,873,578
1931.....	118,524,430	54,453,143	10,893,141	44,158,265	228,029,018
1932.....	*112,041,763	49,047,342	7,740,837	22,398,283	*191,228,225
1933.....	†146,851,662	47,252,575	9,912,987	10,484,872	220,502,096

\*Including estimated exchange equalization on gold, \$8,546,310.

†Including estimated exchange equalization on gold, \$23,369,205.

Possibly in no other year in modern mining history have such peculiar conditions been experienced as have occurred during the year just passed. At the beginning of 1933 prices of base metals and silver were almost at an all-time low, but the price of gold was considerably above the standard value and before the year ended the price had risen to a point far in excess of any previous quotations. Canada continued to ship gold to New York until April 19th, receiving payment in United States funds. On that date the United States went off the gold standard, and for the remainder of the year the fine gold was shipped to London instead and sold at the market price. Adding to the standard rate the exchange which Canada paid for

United States dollars until April 19th, and for the remainder of the year using the average daily price of gold in London, transposed to Canadian funds, the average price of gold for the whole year, in Canadian funds, was \$28.60 per fine ounce. By applying this average price to the Canadian production the total value of gold production in Canadian funds was \$84,301,875, as against \$71,479,373 in 1932.

This exchange on gold, which really began in 1931, resulted in a new set of conditions in Canada and elsewhere where gold is to be found. The profitable mining of lower grade ores was initiated at some of the larger and well-established properties, with the result that at the end of the year less gold was actually produced than in 1932. Properties which were under development were brought to the producing stage as rapidly as possible, plans were laid for enlargement of existing mills and the search for new properties has been intensified. An equally important feature is the beneficial effect this increased activity has and will have on other Canadian industries which must supply the many necessary commodities that go into the search for and the development and production of auriferous ore.

Lead and zinc output showed considerable improvement during the latter months of the year. Average zinc prices on the London market were somewhat better, while average lead prices on the same market were slightly lower. In the early fall the Base Metal Mining Corporation, Ltd., resumed the export of lead and zinc concentrates from the Monarch mine. The officials of the Britannia mine, when faced with the difficulty of marketing their copper at a profit, turned their attention to another body of ore in the mine which was known to be low in copper but relatively high in zinc content with considerably better values in gold than the average, in the hope that a process for the recovery of these metals could be evolved. The problem was successfully solved and the Britannia mine entered the lists for the first time as a producer of zinc concentrates.

Copper output was 21 per cent higher than in 1932. Canada has two copper refineries, one at Copper Cliff, Ontario, and the other at Montreal East, Quebec; these refineries have built up a universal reputation for their product and are retaining a solid footing in many copper-consuming countries.

Nickel, of which Canada produces the great bulk of the world's supply, also showed remarkable recovery. Through intensive research many new uses are constantly being developed for this metal. The enlarged mine development, new smelter and refinery construction carried out a few years ago by the International Nickel Company, Ltd., places that organization in a position to respond to any reasonable demand which might arise. The Falconbridge Nickel Mines, the only other important Canadian producer, which ships nickel-copper matte to Norway for refining, operated its smelter at capacity during the past year.

Silver production in Canada was less than in 1932. Owing to the low prices existing during recent year, many mines found it necessary to mine as much of the best grade ore as was economically possible, and then close down. The famous silver camp at Cobalt has only one main producer; there is one in Gowganda producing at present, and the mines in South Lorraine have all discontinued operations. Small amounts are being recovered by lessors from some of the older properties in this area. Generally speaking, silver is produced in association with other metals and its recent increase in price is bound to have a beneficial effect on Canadian mining operations.

Canada's production of the platinum metals, and cobalt was slightly less than in 1932. Selenium was produced by the Ontario Refining Co., Ltd., and the Canadian Copper Refiners, Limited produced a quantity of selenium in the refinery sludge which will be treated at a future date. Cadmium was produced at Trail, British Columbia.

Canada's coal output increased 1.2 per cent in 1933. Considerable progress was made in extending the market for Canadian coal in areas previously supplied, to a large extent, by imported coal. Continued assistance given by the Dominion government was mainly responsible for the increased sales of Canadian coal in these highly competitive markets. During the year under review, 1,937,867 tons of Canadian coal were moved under Dominion government-assisted rates, as compared with 1,122,474 tons in 1932.

Imports of coal during the year totalled 11,485,224 tons, a 1.7 per cent decline from the tonnage imported in the corresponding period of 1932. In 1933 receipts from the United States declined 3.2 per cent, while imports from Great Britain increased 10.4 per cent. Importations of anthracite coal from Great Britain totalled 1,605,776 tons in 1933 as against 1,399,086 tons in 1932, and imports of anthracite from the United States amounted to 1,429,829 tons as against 1,685,532 tons in the preceding year.

Crude petroleum output in 1933 showed a slight increase over 1932. The completion of a new absorption plant in the Turner Valley field of Alberta was an interesting development during the year. This plant materially increased the naphtha recovery from Turner Valley wet gas.

Canada is endowed with many non-metallic minerals of economic importance. Some of these are exported in large quantities, while others find a ready market in the Dominion. Asbestos, gypsum, mica, talc, graphite and pyrites are the chief minerals exported, while salt, feldspar, sodium sulphate, quartz and sulphur in the form of sulphuric acid, are marketed to a large extent in Canada.

Owing to the decline in construction work, sales of products included in the structural materials group were considerably less than during 1932. Canada has cement mills situated strategically across the country ready to meet any reasonable demand upon the revival of general construction. Clay products plants capable of making high-grade building brick, tile and sewer pipe are well equipped. Building stone of the highest grade is available in many localities; and sand and gravel, because of its wide distribution and general usefulness for road-making, or as an aggregate for concrete, constitutes a considerable item in the total value of the Canadian production of minerals.

Though the mining industry generally may be passing through a very difficult period and though stocks of metals and available supplies may be greater than are at present in demand, yet this industry appears to be in a better condition than most other primary industries. The over-supply of metals must necessarily be only temporary in character because of the ever-widening uses to which they may be put and because of the wasting character of all mines. The mining industry has at least one bright spot—gold, and Canada is fortunate in that geological formations favouring the deposition of this metal cover an immense area and hold great possibilities for those who care to venture their time or means in the search.

#### Mineral Production in Canada by Provinces, 1932-1933

Province	1932		1933	
	Value of production	Per cent of total	Value of production	Per cent of total
	\$		\$	
Nova Scotia .....	16,201,279	8.47	16,875,412	7.65
New Brunswick .....	2,223,505	1.16	2,069,437	0.94
Quebec .....	25,638,466	13.41	28,258,341	12.82
Ontario .....	85,910,030	44.92	109,821,565	49.81
Manitoba .....	9,058,365	4.74	9,070,568	4.11
Saskatchewan .....	1,681,728	0.88	2,477,386	1.12
Alberta .....	21,183,312	11.06	19,284,808	8.75
British Columbia .....	27,326,173	14.29	30,564,405	13.86
Yukon and Northwest Territories .....	2,005,367	1.05	2,080,174	0.94
<b>Total .....</b>	<b>191,228,225</b>	<b>100.00</b>	<b>220,502,098</b>	<b>100.00</b>

## Mineral Production in Canada, by Provinces, 1933

	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and North West Territories
<b>METALLICS</b>									
Arsenic (As <sub>2</sub> O <sub>3</sub> )..... lb.				1,468,022					
..... \$				56,534					
Bismuth..... lb.				7,580				70,723	
..... \$				3,647				77,795	
Cadmium..... \$								78,733	
Chromite..... tons			30						
..... \$			343						
Cobalt..... lb.				459,247					
..... \$				594,944					
Copper..... lb.			60,943,882	145,504,720	38,163,181	3,223,941		43,101,168	
..... \$			5,214,177	10,118,847	2,844,980	240,338		3,213,106	
Gold..... fine oz.	1,382		382,886	2,155,972	125,017	5,400	324	237,143	39,494
..... \$	28,568		7,914,956	44,567,895	2,584,331	111,828	6,698	4,902,181	816,413
Estimated exchange equalization on gold produced..... \$	10,957		3,035,583	17,092,904	991,156	42,812	2,569	1,880,109	313,115
Lead..... lb.				29,910				261,159,802	3,140,825
..... \$				715				6,245,898	75,116
Nickel..... lb.				83,264,658					
..... \$				20,130,480					
Palladium, Rhodium, Iridium, etc... fine oz				31,009					
..... \$				645,044					
Platinum..... fine oz				24,746				40	
..... \$				856,100				1,400	
Selenium..... lb.				26,090					
..... \$				53,745					
Silver..... fine oz.	104		471,419	4,537,143	1,101,554	114,604	32	6,732,792	2,243,617
..... \$	39		178,351	1,716,528	416,749	43,358	12	2,547,204	848,823
Zinc..... lb.				43,516,937		2,789,683		151,379,440	
..... \$				1,397,082		89,503		4,860,037	
<b>Total..... \$</b>	<b>39,564</b>		<b>16,343,410</b>	<b>95,837,473</b>	<b>8,231,307</b>	<b>527,699</b>	<b>9,279</b>	<b>23,806,463</b>	<b>2,053,467</b>
<b>NON-METALLICS</b>									
<b>Fuels</b>									
Coal..... tons	4,547,123	311,972			3,400	922,022	4,716,537	1,382,262	862
..... \$	15,936,563	1,037,034			8,315	1,289,101	12,300,242	5,306,262	3,670
Natural gas..... M cu. ft.		618,133		7,163,895	600		14,923,597		
..... \$		302,706		4,475,260	180		3,505,808		
Peat..... tons			681	450					
..... \$			2,549	900					
Petroleum, crude..... bbls.		8,835		136,058			990,415		4,608
..... \$		18,111		253,486			2,789,361		23,037
<b>Total..... \$</b>	<b>15,936,563</b>	<b>1,357,851</b>	<b>2,549</b>	<b>4,729,626</b>	<b>8,495</b>	<b>1,289,101</b>	<b>18,585,411</b>	<b>5,306,262</b>	<b>26,707</b>
<b>Other Non-Metals</b>									
Actinolite..... tons									
..... \$									
Asbestos..... tons			158,367						
..... \$			5,211,177						
Barytes..... tons				20					
..... \$				60					
Bituminous sands..... tons							466		
..... \$							1,062		
Diatomite..... tons	1,747			28				14	
..... \$	34,940			1,208				410	
Feldspar..... tons			6,182	4,387					
..... \$			59,283	45,350					
Fluorspar..... tons				73					
..... \$				1,064					
Graphite..... tons			43	362					
..... \$			2,222	16,145					
Grindstones..... tons	21	55							
..... \$	868	5,654							
Gypsum..... tons	315,948	27,899		21,111	6,830			5,107	
..... \$	363,528	52,100		84,743	65,471			48,004	
Iron oxides (ochre)..... tons				4,162				165	
..... \$				50,705				1,485	
Magnesian dolomite..... tons			360,126					80	
..... \$								2,000	
Magnesium Sulphate..... tons									
..... \$									
Mica..... tons			248	584				23	
..... \$			38,650	8,579				853	
Mineral waters Imp. gal.			9,024	29,794					
..... \$			3,094	2,347					
Phosphate..... tons			105						
..... \$			805						
Quartz..... tons	1,017		28,443	68,472	67,207			22,668	
..... \$	1,447		110,305	86,020	82,954			17,681	
Salt..... tons	34,278			244,106	1,499	231			
..... \$	161,890			1,755,087	18,387	4,510			

†See page 34.



## Mineral Production in Canada, by Provinces, 1933—Concluded

	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and North West Territories
<b>Other Non-Metallies—</b>									
Concluded.									
Silica brick..... M	453			470					
..... \$	15,834			13,305					
Soapstone..... tons			43,593						
Sodium carbonate... tons								253	
..... \$								2,471	
Sodium sulphate... \$						485,416			
Sulphur*..... tons			19,167	8,196				30,010	
..... \$			146,261	81,960				282,078	
Talc..... tons				15,114				55	
..... \$				142,134				880	
<b>Total..... \$</b>	<b>578,506</b>	<b>57,754</b>	<b>6,026,373</b>	<b>2,238,092</b>	<b>166,812</b>	<b>489,926</b>	<b>1,662</b>	<b>353,962</b>	
<b>CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS</b>									
<b>Clay Products</b>									
<b>Brick—Soft mud process—</b>									
Face..... M	60			2,292			11	119	
..... \$	900			38,366			333	2,144	
Common..... M	490	678	1,101	6,792	1,091		23	1,755	
..... \$	5,680	9,992	8,624	87,590	16,035		369	24,045	
Stiff mud process (wire cut) Face. M	422	118	7,099	11,255	70		17	64	15
..... \$	10,233	3,676	149,281	236,336	1,683		624	1,078	307
Common..... M	1,671	411	17,343	3,220			62	701	365
..... \$	20,046	6,972	271,719	47,203			641	6,542	5,577
Dry press—									
Face..... M			601	3,313			8	476	157
..... \$			18,166	72,284			185	4,557	6,150
Common..... M				1,835				2,706	
..... \$				29,357				22,457	
Fancy or ornamental brick... M				6					
..... \$				387					
Sewer brick..... M				242					1
..... \$				3,683					10
Paving brick..... M									1
..... \$									42
Firebrick..... M							391	12	1,144
..... \$							19,706	506	53,015
Fireclay..... tons	22	3					371		1,024
..... \$	220	157					2,902		7,993
Fireclay blocks and shapes..... \$	75			90			64,381		16,079
Structural tile—									
Hollow blocks..... tons	1,759	65	8,859	8,336	44	1,001	628	703	
..... \$	17,590	631	75,387	60,509	532	9,010	5,637	6,477	
Roofing tile..... No				20,409					
..... \$				1,136					
Floor tile (quarries) Sq. ft.				81,808			9,687		
..... \$				12,490			1,807		
Drain tile..... M	107	1	534	8,467	45		22	595	
..... \$	3,237	64	15,420	175,665	2,716		1,249	20,839	
Sewer pipe, copings, flue linings, etc... \$	67,519		45,890	177,560			35,793	20,208	
Pottery, glazed or unglazed..... \$		25,425		52,650			118,747	6,210	
Bentonite..... tons								55	
..... \$								1,363	
Other clay products..... \$				15,012		857		561	
<b>Total..... \$</b>	<b>125,506</b>	<b>16,917</b>	<b>584,487</b>	<b>1,010,318</b>	<b>20,966</b>	<b>99,007</b>	<b>198,373</b>	<b>171,020</b>	
<b>Other Structural Materials</b>									
Cement..... brls.			1,517,555	1,095,815	129,540		149,206	115,286	
..... \$			2,128,900	1,587,812	295,351		299,530	225,342	
Lime..... tons	3,914	16,849	109,301	143,676	18,032		6,983	20,717	
..... \$	30,180	134,786	640,731	1,135,098	167,640		60,037	162,928	
Sands and gravel..... tons	230,858	498,081	4,299,693	5,989,122	276,023	370,906	310,262	934,506	
..... \$	93,459	329,322	1,051,145	2,318,711	105,757	71,653	96,199	303,248	
Stone..... tons	31,492	18,202	1,371,850	1,237,435	32,858		2,172	243,926	
..... \$	71,600	142,807	1,480,756	964,425	71,240		24,317	235,280	
<b>Total..... \$</b>	<b>195,279</b>	<b>606,915</b>	<b>5,361,522</b>	<b>6,006,046</b>	<b>639,888</b>	<b>71,653</b>	<b>480,083</b>	<b>926,788</b>	
<b>Grand Total in Canadian Funds</b>	<b>16,875,412</b>	<b>2,069,437</b>	<b>28,258,341</b>	<b>109,821,565</b>	<b>9,070,568</b>	<b>2,477,396</b>	<b>19,284,804</b>	<b>30,564,465</b>	<b>2,080,174</b>

\* Sulphur content of pyrites shipped and estimated sulphur contained in sulphuric acid made from waste smelter gases.

## Monthly Production of Principal Minerals in Canada, 1933\*

	Asbestos	Cement	Clay Products	Coal	Copper	Feldspar	Gold	Gypsum
	tons	barrels	\$	tons	pounds	tons	fine oz.	tons
January	5,961	64,750	111,056	1,038,528	22,950,527	400	233,456	2,728
February	5,482	45,307	75,138	1,049,616	17,165,922	212	228,224	2,426
March	5,455	95,205	67,462	824,952	21,708,287	159	260,154	4,160
April	8,168	172,498	124,445	670,733	19,776,008	359	237,017	4,241
May	11,121	309,717	223,916	677,802	21,056,268	528	237,661	33,400
June	12,455	401,060	226,892	688,951	25,265,798	864	261,411	50,070
July	14,531	414,827	245,023	674,216	29,468,497	647	255,656	61,457
August	16,393	449,305	263,736	893,870	28,099,702	913	256,561	69,034
September	18,564	424,710	253,433	1,138,791	30,554,881	1,436	235,596	35,018
October	19,524	348,639	231,526	1,576,799	29,740,400	1,233	243,264	30,059
November	20,463	182,144	205,038	1,342,410	26,280,342	1,083	240,069	70,181
December	17,326	190,288	111,779	1,298,510	26,464,909	1,020	247,649	29,146
<b>Calendar year</b>	<b>155,433</b>	<b>3,008,450</b>	<b>2,169,438</b>	<b>11,885,078</b>	<b>298,540,541</b>	<b>8,854</b>	<b>2,937,618</b>	<b>392,520</b>
	Lead	Lime	Natural Gas	Nickel	Petroleum	Salt †	Silver	Zinc
	pounds	tons	M cu. ft.	pounds	barrels	tons	fine oz.	pounds
January	20,782,296	18,224	2,945,452	1,780,899	82,778	9,884	1,383,776	13,892,630
February	18,626,329	17,750	2,826,995	1,990,102	73,087	9,223	1,307,154	12,649,370
March	19,223,069	15,482	2,407,762	3,279,230	87,218	12,670	1,285,888	13,806,497
April	23,614,659	21,752	2,222,556	2,135,850	84,974	13,654	1,350,974	13,416,286
May	25,850,858	25,599	1,689,071	5,480,554	89,754	17,342	1,176,487	13,920,963
June	20,705,505	26,872	1,131,376	8,050,726	113,447	18,419	882,035	15,619,628
July	20,153,596	29,443	1,002,429	9,237,576	99,510	16,011	1,174,662	14,345,809
August	24,263,984	30,598	945,161	10,197,430	100,602	17,130	1,425,643	16,299,969
September	23,404,964	28,601	1,153,714	10,625,853	97,342	17,498	1,239,508	18,309,672
October	23,751,022	33,686	1,655,910	10,714,021	107,045	14,964	1,347,608	20,394,759
November	25,277,522	30,152	2,141,597	10,826,957	108,304	18,292	1,270,235	21,378,940
December	19,883,504	27,570	2,990,544	8,788,408	113,677	8,542	1,086,434	21,868,002
<b>Calendar year</b>	<b>265,537,398</b>	<b>305,729</b>	<b>23,202,567</b>	<b>83,167,606</b>	<b>1,157,738</b>	<b>173,619</b>	<b>14,939,404</b>	<b>195,817,525</b>

\*This information was compiled from monthly reports received from 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.

## World Production of Gold, Silver, Lead and Zinc, by Countries, during 1933

(SOURCE—American Bureau of Metal Statistics)

	Gold	Silver	Lead (Refined)	Zinc (Refined)
	(Thousands of fine ounces)	(Thousands of fine ounces)	(short tons)	(short tons)
United States	(a) 2,537	20,955	309,570	324,687
Canada	2,947	14,843	128,783	91,787
Mexico	648	68,710	132,923	30,712
Colombia	386	—	—	—
Peru	—	6,523	—	—
Other South America	477	9,720	—	—
British India	335	(c) 6,054	(e) 80,694	—
Japan	436	—	—	—
Other Asia	—	7,903	—	—
Australia	—	(refined)	—	—
Other Australia and New Zealand	—	7,599	242,815	—
Queensland	90	3,443	—	—
Western Australia	637	—	—	—
Anglo-Australian	—	—	—	105,844
Other Australasia	(b) 419	—	—	—
South Africa	11,025	1,063	—	—
Rhodesia	642	—	—	20,767
Belgian Congo	250	—	—	—
British West Africa	335	—	—	—
Tunisia	—	—	16,410	—
Other Africa	—	578	—	—
Belgium	—	—	—	(g) 151,449
France	—	—	—	61,457
Germany	—	—	128,463	55,680
Italy	—	—	26,666	24,504
Netherlands	—	—	—	20,368
Poland	—	—	—	92,069
Russia	(c) 1,920	—	—	—
Spain	—	—	97,694	9,409
Other Europe	—	13,969	(f) 138,000	—
Elsewhere	(d) 1,200	—	(f) 24,600	(h) 109,200
<b>Total</b>	<b>24,384</b>	<b>161,360</b>	<b>1,326,618</b>	<b>1,697,933</b>

(a) Includes Philippines.

(b) Includes New Zealand and New Guinea.

(c) Chiefly Siberia. Estimated at average rate of 1932.

(d) Includes West Indies, Central America, Europe and Asiatic and African lands not separately reported.

(e) From Burma.

(f) Partly estimated.

(g) Includes soluble zinc dust.

(h) Partly estimated; includes Norway, Jugoslavia, Czechoslovakia, Russia, Indo-China and Japan.

Exports of Principal Non-Ferrous Metals, Except Gold and Silver, from Canada during the Calendar Years, 1932 and 1933

(In short tons)

Countries	Copper in ingots, bars, cakes, slabs, billets, rods, strips, sheets, plate and tubing		Pig lead		Nickel in matte, in oxide and refined nickel		Refined zinc	
	1932	1933	1932	1933	1932	1933	1932	1933
<b>British Empire—</b>								
United Kingdom .....	42,587	62,087	60,739	86,159	3,426	13,149	51,243	58,910
Irish Free State .....	-	-	224	-	-	-	-	-
British South Africa .....	-	-	290	1,096	-	-	-	42
British India .....	-	339	-	-	-	-	4,346	2,081
Hong Kong .....	-	-	681	129	-	-	62	39
Newfoundland .....	2	6	-	-	-	-	-	-
Australia .....	-	1	-	-	-	3	-	-
New Zealand .....	10	48	-	-	-	-	-	-
<b>Total British Empire</b>	<b>42,599</b>	<b>62,481</b>	<b>61,943</b>	<b>87,384</b>	<b>3,426</b>	<b>13,152</b>	<b>55,651</b>	<b>61,072</b>
<b>Foreign Countries—</b>								
Argentina .....	-	-	218	1,702	-	-	1,059	1,177
Belgium .....	2,053	6,004	1,232	1,735	-	139	3,332	6,105
Brazil .....	620	550	2,324	2,049	-	-	398	174
Chile .....	-	-	27	-	-	-	-	33
China .....	-	-	2,684	3,880	-	-	683	1,470
Colombia .....	1	3	-	6	-	-	-	-
Denmark .....	207	1,932	543	1,702	-	-	146	90
France .....	7,020	8,175	3,324	-	32	23	4,071	840
Germany .....	2,098	7,591	1,429	3,734	107	277	2,431	4,433
Italy .....	1,615	538	-	-	163	123	560	560
Japan .....	-	1,065	27,314	36,478	185	318	15,237	12,881
Mexico .....	1	-	-	-	-	-	-	-
Netherlands .....	2,546	6,704	5,341	2,492	920	4,460	2,834	846
Dutch East Indies .....	-	-	22	6	-	-	-	-
Norway .....	-	-	-	112	2,919	4,598	-	-
Peru .....	-	5	18	18	-	-	-	-
Poland and Danzig .....	-	118	-	-	-	-	-	-
Portuguese Africa .....	-	-	38	284	-	-	-	11
Siam .....	-	-	-	-	-	-	22	-
Spain .....	-	6	-	-	16	-	-	-
Sweden .....	1,092	852	476	39	-	-	336	-
United States .....	40,009	-	-	165	8,267	20,051	-	28
Uruguay .....	-	-	62	286	-	-	-	-
<b>Total Foreign Countries</b>	<b>57,862</b>	<b>33,543</b>	<b>45,052</b>	<b>54,781</b>	<b>12,609</b>	<b>36,883</b>	<b>32,005</b>	<b>25,654</b>
<b>Total British Empire and Foreign Countries</b>	<b>100,461</b>	<b>96,024</b>	<b>106,995</b>	<b>142,165</b>	<b>16,035</b>	<b>44,041</b>	<b>87,656</b>	<b>86,726</b>

## Metal Prices, 1929-1933

Metal	Market	Unit	1929	1930	1931	1932	1933
			\$	\$	\$	\$	\$
Antimony (ordinaries) .....	New York .....	Pound .....	0-08956	0-07667	0-06720	0-05592	0-06528
Arsenic, white .....	New York .....	Pound .....	0-04	0-04	0-045	0-04	0-04
Cobalt .....	New York .....	Pound .....	2-52	2-50	2-50	2-50	2-80
Cobalt Oxide .....	New York .....	Pound .....	2-10	2-00	1-75	1-35	1-35
Copper .....	New York .....	Pound .....	0-18107	0-12982	0-08114	0-05555	0-07025
	Montreal .....	Pound .....	0-19978	0-1498	0-10006	0-07516	0-08084
	London .....	Long ton .....	84-921	61-529	42-093	35-962	36-359
	New York .....	Pound .....	0-06833	0-05517	0-04243	0-03180	0-03869
Lead .....	Montreal .....	Pound .....	0-06678	0-05496	0-04168	0-03511	0-03705
	London .....	Long ton .....	23-246	18-077	12-958	11-913	11-670
Nickel .....	New York .....	Pound .....	0-35	0-36	0-36	0-35	0-35
Platinum .....	New York .....	Fine oz .....	67-655	45-358	35-665	10-104	7-630
Silver .....	New York .....	Fine oz .....	0-52993	0-38154	0-287	0-27892	0-34727
Tin .....	New York .....	Pound .....	0-45155	0-31694	0-24467	0-22017	0-39110
	St. Louis .....	Pound .....	0-061512	0-04556	0-0364	0-02876	0-04029
Zinc .....	Montreal .....	Pound .....	0-0687	0-05084	0-03061	0-03724	0-04488
	London .....	Long ton .....	24-793	16-570	12-215	13-545	15-666

NOTE.—All prices in dollars per unit excepting London copper, lead and zinc prices which are quoted in pounds sterling per long ton, and the 1932 and 1933 prices for platinum which is quoted in pounds sterling per fine ounce.

## Metal Prices by Months, 1932-1933

Month	Copper (Electrolytic)				Pig Lead					
	New York (In cents per pound)		London (In £ sterling per long ton)		Montreal (In cents per pound)		New York (In cents per pound)		London (In £ sterling per long ton)	
	1932	1933	1932	1933	1932	1933	1932	1933	1932	1933
January	7-060	4-775	40-200	33-244	4-260	3-262	3-750	3-000	15-084	10-458
February	5-965	4-775	41-381	32-556	4-148	3-400	3-712	3-000	14-560	10-431
March	5-763	5-011	36-786	32-370	3-850	3-459	3-150	3-146	12-345	10-800
April	5-565	5-395	34-190	33-681	3-809	3-416	3-000	3-260	11-223	10-872
May	5-237	6-698	32-833	38-163	3-320	3-636	3-000	3-654	10-673	12-065
June	5-145	7-773	30-841	41-000	3-145	3-933	2-993	4-173	9-608	13-280
July	5-053	8-635	29-107	41-524	3-083	4-174	2-747	4-452	9-818	13-411
August	5-219	8-768	34-784	40-227	3-217	3-880	3-235	4-500	11-340	12-182
September	5-978	8-753	38-318	38-339	3-482	3-848	3-465	4-500	13-122	11-932
October	5-733	7-950	36-190	36-977	3-264	3-088	3-052	4-313	11-958	11-804
November	5-131	7-881	36-508	33-808	3-373	3-848	3-030	4-288	12-071	11-537
December	4-813	7-885	34-344	34-329	3-386	3-903	3-000	4-141	11-144	11-431
<b>Average</b>	<b>5-555</b>	<b>7-025</b>	<b>35-962</b>	<b>36-359</b>	<b>3-511</b>	<b>3-705</b>	<b>3-180</b>	<b>3-869</b>	<b>11-913</b>	<b>11-670</b>

Transposed into Canadian funds the average price of copper based on the London market was 7-4548 cents per pound and the average price of lead, based on the same market, was 2-3916 cents per pound for 1933.

## Metal Prices by Months, 1932-1933

Month	Silver				Zinc					
	New York (In cents per oz. ·999 fine)		London (In pence per oz. ·925 fine)		Montreal (In cents per pound)		St. Louis (In cents per pound)		London (In £ sterling per long ton)	
	1932	1933	1932	1933	1932	1933	1932	1933	1932	1933
January	29-780	25-400	19-623	16-883	4-063	3-924	3-011	3-018	14-416	14-381
February	30-136	26-074	19-573	16-885	3-936	3-983	2-817	2-666	13-872	13-866
March	29-810	27-928	18-336	17-588	3-820	4-152	2-787	2-987	12-616	14-647
April	28-298	30-730	16-923	18-440	3-634	4-139	2-725	3-298	11-670	14-951
May	27-755	34-072	16-808	19-046	3-564	4-284	2-532	3-806	12-342	15-505
June	27-466	35-863	16-844	19-078	3-480	4-637	2-777	4-348	11-548	16-988
July	26-700	37-830	16-830	18-341	3-355	5-095	2-537	4-878	11-552	17-795
August	27-988	36-074	18-000	17-877	3-561	4-809	2-758	4-916	13-594	16-869
September	27-870	38-440	17-998	18-272	3-802	4-802	3-322	4-699	15-455	16-810
October	27-195	38-196	17-813	18-221	3-667	4-057	3-027	4-748	14-869	16-310
November	26-608	41-974	18-099	18-428	3-834	4-643	3-064	4-520	15-264	15-048
December	23-010	43-550	17-110	18-074	3-971	4-720	3-124	4-461	15-209	14-826
<b>Average</b>	<b>27-892</b>	<b>34-727</b>	<b>17-843</b>	<b>18-144</b>	<b>3-724</b>	<b>4-488</b>	<b>2-876</b>	<b>4-029</b>	<b>13-545</b>	<b>15-666</b>

The average price of silver in Canadian funds based on the New York market in 1933 was 37-8328 cents per fine ounce. The average price of zinc in Canadian funds based on the London market in 1933 was 3-2165 cents per pound.

## Table showing the amount paid in Canadian dollars for one £ Sterling and one United States dollar by months, 1932-1933

	London		New York	
	1932	1933	1932	1933
January	4-028	3-847	1-173	1-143
February	3-959	4-099	1-145	1-127
March	4-064	4-134	1-118	1-199
April	4-173	4-234	1-112	1-179
May	4-157	4-498	1-131	1-141
June	4-205	4-615	1-153	1-112
July	4-076	4-931	1-148	1-058
August	3-975	4-787	1-142	0-061
September	3-847	4-839	1-108	1-036
October	3-723	4-787	1-096	1-024
November	3-760	5-082	1-148	0-999
December	3-787	5-096	1-154	0-995
<b>Average</b>	<b>3-979</b>	<b>4-579</b>	<b>1-136</b>	<b>1-095</b>

## METALLICS

## Antimony

No production of antimony was reported for 1933. Antimony ores occur in Nova Scotia, New Brunswick, Quebec, British Columbia and in the Yukon Territory. A small amount of antimony is sometimes contained in the silver-lead-bismuth bullion, made at Deloro, Ontario in the refining of the silver-cobalt ores. The Consolidated Mining and Smelting Co. Ltd., at Trail, B.C., produces antimony in an impure state as a by-product in the refining of silver; this is being stored awaiting the necessary installation for its treatment. The New York price for antimony averaged 6.528 cents per pound in 1933. China is by far the largest producer of antimony, though Mexico and Bolivia produce considerable quantities.

Imports of metallic antimony during 1933 totalled 626,854 pounds valued at \$32,796 as compared with 631,204 pounds worth \$37,180 in the previous year. Antimony salts for dyeing totalled 57,138 pounds worth \$2,258, and antimony salts, viz., tartar emetic, chloride and lactate (antimonine) totalled 28,861 pounds valued at \$4,371 in 1933.

## Arsenic

Arsenic is produced in Canada at Deloro, Ontario, in the form of arsenious oxide,  $As_2O_3$ , or white arsenic, in the treatment of the silver-cobalt-arsenic ores of cobalt by the Deloro Smelting and Refining Co. Ltd. Mispickel ores carrying gold occur in British Columbia, Ontario and Nova Scotia; at the present time there is no production of arsenic from these sources.

The chief use for arsenic at the present time is in the manufacture of insecticides of various kinds, though it is also used as a weed killer and, to some extent, in the glass manufacturing industry.

## Production in Canada, Imports and Exports of Arsenic, 1932 and 1933

	1932		1933	
	Quantity	Value	Quantity	Value
	lb.	\$	lb.	\$
<b>PRODUCTION—</b>				
White arsenic and arsenic in other forms.....	—	98,714	—	56,534
<b>Total</b> .....	—	<b>98,714</b>	—	<b>56,534</b>
<b>IMPORTS—</b>				
White arsenic (arsenious oxide).....	425,995	16,694	164,642	5,674
Sulphide of arsenic.....	111,106	4,277	27,694	3,117
Soda, arseniate, bisarsenate and stannate of.....	5,603	1,159	390	101
Arsenate of lead.....	830,120	86,488	498,673	44,256
Arsenate of lime.....	521,546	27,852	287,420	17,426
<b>Total</b> .....	—	<b>130,470</b>	—	<b>70,574</b>
<b>EXPORTS—</b>				
Arsenic, n.o.p..... <b>Total</b> .....	<b>1,788,690</b>	<b>65,237</b>	<b>934,400</b>	<b>33,778</b>

## Bismuth

Metallic bismuth is produced at Trail, B.C., by the Consolidated Mining and Smelting Co. Ltd., as a by-product in the treatment of lead-zinc ores. In the treatment of the silver-cobalt ores of Ontario at the Deloro smelter a silver-lead-bismuth bullion is produced which is exported to United States refineries.

The chief world producers of bismuth are Spain and Bolivia, where bismuth ores are mined, and United States, where it is recovered as a by-product in the smelting and refining of lead ores.

Canadian production in 1933 including bismuth metal and bismuth in silver-lead-bismuth bullion exported totalled 78,303 pounds valued at \$81,442. Imports of metallic bismuth totalled 180 pounds worth \$198, and bismuth salts imports were valued at \$25,255.

## Cadmium

Cadmium is generally associated with zinc ores. The metal has been produced from this source at Trail, B.C., since 1930 by the Consolidated Mining and Smelting Co. The copper-zinc ores of the Flin Flon mine in Manitoba contain cadmium which is recovered in the form of a cadmium sponge in the zinc refinery of the Hudson Bay Mining and Smelting Company.

Cadmium has obtained a strong position as a plating metal; the metal is also used in silver, gold, copper and fusible alloys and in the manufacture of pigments. Cadmium compounds such as chloride, iodide, bromide and nitrate, find various uses in the chemical industries. Production in Canada in 1933 was valued at \$78,733 as against \$26,824 in 1932.

## Cobalt

Canadian cobalt production includes the cobalt contained in ores exported and the cobalt content of the various cobalt products sold by the Deloro Smelting and Refining Company, Ltd., Deloro, Ontario. This is the only company in Canada treating the ores from the Cobalt district. Canada was for many years the principal source of the world's cobalt. At the present time the largest producer is the Union Minière du Haut Katanga of the Belgian Congo. The copper ores of the Rokana Corporation of Northern Rhodesia also carry cobalt in commercial quantities.

### Production in Canada and Exports of Cobalt, 1932 and 1933

	1932		1933	
	Pounds	\$	Pounds	\$
<b>PRODUCTION—</b>				
Cobalt, computed as cobalt in metal, in oxides sold, and in ores and residues exported.....				
<b>Total</b>	<b>490,631</b>	<b>587,957</b>	<b>459,247</b>	<b>594,944</b>
<b>EXPORTS—</b>				
Cobalt, alloys, cobalt metallics, cobalt oxides, cobalt salts and cobalt ores.....				
<b>Total</b>	<b>-</b>	<b>589,334</b>	<b>-</b>	<b>552,450</b>

## Copper

Quebec, Ontario, Manitoba, Saskatchewan and British Columbia are Canada's copper-producing provinces. At the Eustis mine in the Eastern Townships of Quebec, operated by the Consolidated Copper and Sulphur Co., Ltd., a copper concentrate is produced which is exported to United States smelters. The Horne mine, operated in northwestern Quebec by Noranda Mines Limited, is not only a very important copper producer, but is also the third greatest gold producing property in the Dominion. The smelter is situated at the mine and anode copper produced there is shipped to the Canadian Copper Refiners Ltd., Montreal East, a company in which the Noranda Mines Limited has controlling interest.

The copper-nickel ores of the Sudbury district are the present source of the Ontario copper output. In the treatment of these ores by the International Nickel Co. Ltd., a large part of the copper and nickel are separated at the smelter at Copper Cliff, the copper going as blister to the Ontario Refining Co. Ltd., and the crude nickel to the Port Colborne refinery, a considerable quantity of these metals is also contained in exports of matte. Copper-nickel matte made by the Falconbridge Nickel Mines Ltd. is exported to Norway for treatment. In northern Manitoba the Hudson Bay Mining and Smelting Co. Ltd. smelt the copper-zinc ores of their Flin Flon mine. The resultant blister copper is shipped to the refinery at Montreal East and the zinc content is refined on the property. As the ore body lies across the Manitoba-Saskatchewan boundary, part of the production is credited to the province of Saskatchewan.

In British Columbia the Granby Consolidated Mining, Smelting & Power Co. Ltd., operated continuously throughout the year, producing a blister copper for export from the Anyox smelter. Copper concentrates were exported from Britannia to the Tacoma smelter during the year, though at a reduced rate.

Electrolytic copper of a very high grade is now being produced in Canada; this is finding its way into many world markets and it may be pointed out that these markets were not directly available to Canadian producers until modern refineries were built.

Copper prices showed considerable improvement during the year. January quotations, based on the London market for copper and transposed to Canadian funds, averaged 5.70877 cents per pound. The high point, 9.1508 was reached in July and in December the average quotation was 7.8094 cents. The average for the year was 7.4548 cents.

### Production in Canada, Imports and Exports of Copper, 1932 and 1933

	1932		1933	
	Pounds	Value	Pounds	Value
		\$	\$	\$
<b>PRODUCTION—</b>				
By Provinces—				
Quebec .....	67,336,692	4,296,216	69,943,882	5,214,177
Ontario .....	77,655,413	4,407,928	145,504,720	10,118,847
Manitoba .....	52,706,861	3,362,803	38,163,181	2,844,989
Saskatchewan .....	—	—	3,223,911	240,338
British Columbia .....	50,580,104	3,227,111	43,101,168	3,213,106
<b>Total</b> .....	<b>247,679,070</b>	<b>15,294,058</b>	<b>299,936,882</b>	<b>21,631,457</b>
By Sources—				
In blister copper produced .....	211,005,063	13,462,583	260,386,715	19,411,309
In ore concentrates and copper matte exported .....	19,023,221	1,213,719	14,904,193	1,111,078
In nickel-copper matte exported .....	17,650,186	617,756	24,645,084	1,109,070
<b>Total</b> .....	<b>247,679,070</b>	<b>15,294,058</b>	<b>299,936,882</b>	<b>21,631,457</b>
<b>IMPORTS—</b>				
Copper in bars or rods, when imported by manufacturers of trolley, telegraph and telephone wires and electric cables for use only in the manufacture of such articles in their own factories .....	466,400	50,604	97,400	12,084
Copper in bars or rods, in coil or otherwise, in lengths of not less than 6 feet, unmanufactured .....	169,200	26,471	305,900	38,736
Copper in blocks, pigs or ingots .....	264,000	18,366	17,200	1,603
Copper, old and scrap .....	9,800	627	4,000	247
Copper in strips, sheets or plates not polished or coated .....	286,500	49,578	144,100	25,142
Copper tubing in lengths of not less than 6 feet, and not polished, bent or otherwise manufactured .....	1,135,966	209,165	256,491	53,464
Copper wire .....	44,520	7,864	22,355	3,997
Copper wire cloth, or woven wire of copper .....	—	3,416	—	4,304
Copper, all other, manufactures of, n.o.p. ....	—	350,422	—	249,980
Copper, precipitate of, crude .....	20,303	1,749	20	4
Anodes of nickel, zinc, copper, silver or gold .....	—	2,737	—	2,649
Copper, sub-acetate of, or verdigris, dry .....	2,209	318	210	43
Copper, sulphate of (blue vitriol) and copper sulphate of, dehydrated, for agricultural or spraying purposes .....	5,174,057	164,693	2,389,595	76,440
Copper rollers adapted for use in calico printing .....	—	59,066	—	51,115
Copper, sulphate of, dehydrated, for agricultural or spraying purposes .....	Not separated in 1932	—	2,195,858	70,895
<b>Total</b> .....	—	<b>945,016</b>	—	<b>590,762</b>
<b>EXPORTS—</b>				
Copper, fine, contained in ore, matte, regulus, etc. ....	37,964,900	1,915,096	35,436,109	1,723,705
Copper blister .....	21,994,500	1,233,090	15,136,000	1,250,750
Copper, old and scrap .....	5,887,600	269,118	4,866,800	264,882
Copper in bars, rods, strips, sheets, plates and tubing .....	62,316,700	14,673,447	—	—
Copper in ingots, bars, cakes, slabs and billets .....	119,060,000	6,795,591	153,348,300	10,346,590
Copper in rods, strips, sheets, plates and tubing .....	19,516,900	1,185,102	38,700,600	3,061,014
Copper wire and cable .....	—	134,932	—	122,260
Copper manufactures, n.o.p. ....	—	25,252	—	148,745
<b>Total</b> .....	—	<b>16,231,628</b>	—	<b>16,917,946</b>
Copper coin, foreign .....	—	66,231	—	22,866
" Canadian .....	—	537	—	340

†For 1932 these figures are for January, February and March only.

## Gold

Gold was produced in every province of the Dominion in 1933, excepting New Brunswick and Prince Edward Island. The increased price in Canadian funds permitted the mining of lower grade ores and as a result less gold was actually produced than in 1932; however, the value to the producer was far more than in the previous year. Perhaps the most important fact to emphasize here is that the high price has resulted in the greatest search for gold properties ever experienced in Canada. It has induced the managements of the older operating companies to increase their plant capacity, has brought into profitable production mines which were experiencing difficulty in maintaining economic operations, and has stimulated the re-opening of abandoned mines which found it impractical to operate at the former price of gold.

Practically all of Canada's gold bullion is shipped by the mines to the Royal Canadian Mint at Ottawa. Up until April 19th Canada shipped her refined gold to New York accepting payment in United States funds at the coinage value, but after April 19th, on which date the United States went off the gold standard, this gold was shipped to London. While it was the practice to ship gold to New York the mining companies were paid a premium on the net value of their gold at a rate equivalent to the exchange premium in United States funds on the date of deposit of the gold at the Mint. After April 19th the Mint paid the producer the standard rate per fine ounce less charges for melting, assaying and refining, and when the gold was sold in a foreign market the difference between the standard rate and the net amount realized, was returned to the producer or shipper. Using the exchange rate until April 19th which Canada paid for United States dollars, and since that date taking the average price for gold in the London market and transposing it to Canadian funds, the average price for gold during the whole year was \$28.60 per fine ounce. Or, in other words, the value of the 1933 Canadian production of gold amounted to \$84,301,875 in Canadian funds.

Ontario, and chiefly the well-established camps at Porcupine and Kirkland Lake, continued to produce nearly three-quarters of the total gold output of the Dominion. Lake Shore is the largest Canadian producer, the Hollinger mine rates second, and the Noranda in Quebec, though primarily a copper mine, rates third. McIntyre, Teek-Hughes, Dome, Wright-Hargreaves follow in the order named; these latter properties, together with several other important mines, contribute to Ontario's impressive total. It is interesting to note that in October the new 200-ton mill at the Macassa mine came into production at Kirkland Lake.

In British Columbia the outstanding gold mine is the Pioneer in the Bridge River area; the Bralorne in the same district is also becoming an important producer. The Premier produced steadily throughout the year and the Cariboo Gold Quartz, a lode property operating in the old Cariboo placer district, is adding much interest to that field. The Reno operated steadily. Placer output in British Columbia and the Yukon remained practically the same as in 1932.

In Manitoba the chief source of gold is the copper-zinc ores of the Flin Flon mine; in the eastern part of the province the San Antonio gold mine is becoming increasingly important and additions to the present mill are planned.

Prospecting and development of gold-bearing claims in Northwestern Quebec was widespread. Granada, Siscoe, and O'Brien Cadillac were constant producers and the Beattie Gold Mines Ltd. completed and began the operation of a mill which produces gold-bearing concentrates which are exported for recovery of precious metals by smelter treatment. A new 100-ton gold mill was also completed and placed in operation during 1933 at the Green-Stabell mine in Dubuisson township. Bussieres Mining Company was an active gold producer in Louvicourt township.



## Production of Gold in Canada by Provinces and by Sources, 1932 and 1933

	1932		1933	
	Fine ounces	Value	Fine ounces	Value
NOVA SCOTIA—		\$		\$
In gold bullion.....	964	19,928	1,382	28,568
QUEBEC—				
In blister copper and in gold bullion.....	401,105	8,291,576	382,886	7,914,956
ONTARIO—				
(a) Porcupine area (In gold bullion).....	1,036,295	21,422,118	1,046,090	21,624,599
(a) Kirkland Lake area (In gold bullion).....	1,143,181	23,631,648	1,007,007	20,816,692
Miscellaneous, including Sudbury and Northwestern Ontario.....	100,629	2,080,186	102,875	2,126,611
Total.....	2,280,105	47,133,952	2,155,972	44,567,895
MANITOBA—				
In gold bullion and in blister copper.....	122,507	2,532,444	125,017	2,584,331
SASKATCHEWAN.....	11	227	5,400	111,628
ALBERTA.....	83	1,716	324	6,698
BRITISH COLUMBIA—				
In alluvial gold.....	16,320	337,364	16,800	347,287
In gold bullion.....	57,846	1,195,783	118,191	2,443,325
In blister copper.....	19,013	393,034	8,067	179,163
In base bullion and in matte and ores exported.....	105,825	2,187,597	93,485	1,932,506
Total.....	199,004	4,113,778	237,143	4,902,181
YUKON—				
In alluvial gold.....	40,373	834,584	39,174	809,793
In ores exported.....	235	4,858	320	6,615
Total.....	40,608	839,442	39,494	816,413
<b>Total at standard price of gold</b> .....	<b>3,941,387</b>	<b>62,933,063</b>	<b>2,947,618</b>	<b>60,932,679</b>
Estimated exchange equalization on gold produced.....	-	8,546,310	-	23,369,205
<b>Total value in Canadian funds</b> .....	-	<b>71,479,373</b>	-	<b>84,301,875</b>

(a) Includes small amount of gold contained in slags, etc.

## Imports into Canada and Exports of Gold, 1932 and 1933

	1932	1933
	\$	\$
IMPORTS—		
Coins and bullion—		
Coins, British, Canadian and foreign gold coins.....	854,908	810,562
Gold bullion in bars, blocks, ingots, drops, sheets or plates, unmanufactured.....	264,863	35,316
<b>Total</b> .....	<b>1,119,771</b>	<b>845,878</b>
Gold, other—		
Bullion or gold fringe.....	6,371	4,561
Manufactures of gold and silver—		
Leaf.....	63,203	52,790
Sweepings.....	70	4,119
Manufactures, n.o.p.....	19,189	17,729
Electroplated ware.....	337,721	260,176
Medals of gold, silver or copper and other metallic articles, actually bestowed as trophies or prizes, and received and accepted as honorary distinctions, and cups or other metallic prizes won in bona fide competitions.....	19,788	-
Gold, unmanufactured, for commercial purposes, from April 1, 1933.....	-	168,382
<b>Total</b> .....	<b>446,342</b>	<b>507,750</b>
EXPORTS—		
Coin and bullion—		
Gold coin—		
Canadian.....	500	10
Foreign.....	9,424,691	5,963,887
Gold bullion—		
Canadian.....	51,305,700	50,002,261
Foreign.....	4,520	877
<b>Total—Canadian</b> .....	<b>51,396,200</b>	<b>56,007,271</b>
<b>Total—Foreign</b> .....	<b>9,429,211</b>	<b>5,964,764</b>
<b>Total coin and fine gold bullion</b> .....	<b>60,825,411</b>	<b>61,967,035</b>
Gold-bearing quartz, dust, nuggets and crude bullion obtained direct from mining operations.....	3,925,729	2,299,650
Jewellers' sweepings (gold, silver and platinum).....	290,095	502,506
<b>Total</b> .....	<b>4,215,824</b>	<b>2,802,156</b>

## Receipts at the Royal Canadian Mint, Ottawa, Canada, by Sources, 1932 and 1933

Source	1932			1933		
	Gross weight	Precious metal content		Gross weight	Precious metal content	
		Fine gold	Fine silver		Fine gold	Fine silver
	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.
Nova Scotia.....	1,144.75	963.832	47.19	1,579.18	1,382.270	103.87
Quebec.....	482,354.34	471,197.715	5,359.63	425,155.29	414,476.545	6,093.67
Ontario.....	2,885,270.73	2,248,106.008	300,927.10	2,718,859.30	2,115,260.420	299,700.80
Manitoba.....	56,449.14	34,469.810	4,809.00	53,952.77	35,731.596	5,945.73
Saskatchewan.....	3.00	3.085	0.59	1,234.60	37.713	3.55
Alberta.....	124.02	92.490	8.60	433.46	323.943	31.76
British Columbia including Dominion of Canada Assay Office, Vancouver.....	84,293.28	62,408.419	13,622.75	177,471.66	136,176.094	25,052.25
Yukon.....	321.41	254.945	61.97	27,661.07	21,566.050	4,858.23
Jewellery and scrap, various sources.....	30,293.07	12,015.167	3,831.25	161,193.66	83,090.046	20,844.57
Foreign.....	13.32	9.604	2.52	13.54	11.849	0.73
Mutilated coin.....	-	-	-	15.50	14.000	0.11
<b>Total.....</b>	<b>3,526,267.96</b>	<b>2,829,521.675</b>	<b>328,670.69</b>	<b>3,567,570.09</b>	<b>2,566,670.496</b>	<b>362,635.27</b>

## Pig Iron, Steel Ingots and Castings

PIG IRON.—Production of pig iron in Canada during 1933 showed an improvement of 59 per cent over the 1932 tonnage and the output of the primary steels advanced 20 per cent.

With the exception of 1932, the tonnage of pig iron produced in 1933 was the lowest reported for any year since 1900. Output was largely confined to the basic grade for steel making purposes, as the foundry and malleable grades continued to be affected by the use of scrap and by the substitution of stampings, forgings and steel castings in place of iron. Iron blast furnaces in Canada operated at 24 per cent of capacity until early in February, after which all operations ceased until the latter part of June, when 21 per cent of the total capacity came into blast. This rate was increased to 28 per cent in July, to 39 per cent in November and continued at that level until December 31st.

STEEL INGOTS AND CASTINGS.—Canada's primary steel production in 1933 was, with the exception of 1932, the lowest since 1905, and consisted chiefly of ingots made for the further use of the producers. This industry continued to suffer from the low rate of activity in the construction trades and the lack of new orders from the railways, although the demand from the automobile and mining industries was slightly better than in the previous year.

## Production of Pig Iron and Ferro-Alloys in Canada, 1932 and 1933

(Tons of 2,240 pounds)

	1932			1933		
	For own use	For sale	Total	For own use	For sale	Total
<b>IN BLAST FURNACE:—</b>						
Basic.....	105,058	-	105,058	177,847	12,644	190,491
Foundry.....	-	25,246	25,246	-	22,429	22,429
Malleable.....	-	13,826	13,826	-	16,156	16,156
<b>Total.....</b>	<b>105,058</b>	<b>39,072</b>	<b>144,130</b>	<b>177,847</b>	<b>51,229</b>	<b>229,076</b>
Ferro-alloys.....	-	16,161	16,161	-	30,569	30,569

## Production of Steel Ingots and Castings in Canada, 1932 and 1933

(Tons of 2,240 pounds)

	1932			1933		
	For own use	For sale	Total	For own use	For sale	Total
<b>STEEL INGOTS—</b>						
Open hearth—Basic.....	308,180	520	308,700	375,138	117	375,255
Acid.....	-	-	-	-	-	-
Electric.....	19,670	-	19,670	16,840	-	16,840
Other.....	-	-	-	-	-	-
<b>Total Steel Ingots.....</b>	<b>327,850</b>	<b>520</b>	<b>328,370</b>	<b>391,978</b>	<b>117</b>	<b>392,095</b>
<b>STEEL CASTINGS—</b>						
Open hearth—Basic.....	565	2,051	2,616	355	4,578	4,933
Acid.....	-	-	-	-	-	-
Bessemer.....	26	820	846	8	305	313
Electric.....	344	7,170	7,514	342	10,298	10,640
<b>Total Direct Steel Castings.....</b>	<b>935</b>	<b>10,041</b>	<b>10,976</b>	<b>705</b>	<b>15,181</b>	<b>15,886</b>
<b>Grand Total.....</b>	<b>328,785</b>	<b>10,561</b>	<b>339,346</b>	<b>392,683</b>	<b>15,298</b>	<b>407,981</b>

## Lead

The principal source of Canada's lead production is the famous Sullivan mine in the East Kootenay district of British Columbia. Concentrates from this mine are treated at the Trail smelter of the Consolidated Mining & Smelting Co. Ltd. In September, 1933, the Base Metals Mining Corporation re-opened the Monarch mine at Field, B.C. This property, which had been closed down due to low metal prices, resumed the production and export of lead and zinc concentrates. Lead also occurs with the gold-silver ores of the Premier mine and with the Britannia copper ores. The Treadwell Yukon Company Ltd., in the Mayo district of the Yukon, exported lead concentrates, though at a reduced rate owing to the exhaustion of some of their more important ore deposits. The average price of lead for the year on the New York market was 3-869 cents per pound and the average price on the London market was 11-67 pounds sterling per long ton.

## Production in Canada, Imports and Exports of Lead, 1932 and 1933

	1932		1933	
	Pounds	Value \$	Pounds	Value \$
<b>PRODUCTION—</b>				
Ontario .....	86,477	1,828	29,910	715
British Columbia .....	252,007,574	5,326,452	261,159,802	6,245,898
Yukon .....	3,853,327	81,444	3,140,825	73,116
<b>Total</b> .....	<b>255,947,378</b>	<b>5,409,704</b>	<b>264,339,537</b>	<b>6,321,729</b>
<b>IMPORTS—</b>				
Old and scrap, pig and block .....	28,398	1,436	15,038	1,148
Bars and sheets .....	159,026	6,893	88,607	3,820
Litharge .....	2,284,700	125,385	1,885,300	100,816
Acetate of lead .....	124,169	8,195	102,747	7,897
Nitrate of lead .....	160,483	9,693	40,385	2,120
Other manufactures .....	—	129,629	—	63,723
Pipe lead .....	31,006	1,350	10,686	658
Shots and bullets .....	7,480	650	5,327	340
Tea lead .....	—	—	200	12
Lead arsenate .....	830,120	80,488	498,673	44,256
Lead tetraethyl, compounds of .....	1,525,825	1,517,639	1,571,775	1,212,900
Lead pigments—				
Dry white lead .....	8,412	629	8,880	599
White lead, ground in oil .....	13,632	1,174	21,250	2,540
Dry red lead and orange mineral .....	620,520	38,035	611,696	32,590
<b>Total</b> .....	<b>—</b>	<b>1,921,306</b>	<b>—</b>	<b>1,473,515</b>
<b>EXPORTS—</b>				
Lead, contained in ore .....	3,713,300	148,518	7,600,000	267,805
Pig lead .....	213,990,700	3,269,121	254,329,400	4,922,514
<b>Total</b> .....	<b>217,704,000</b>	<b>3,417,639</b>	<b>261,929,400</b>	<b>5,190,319</b>

## Manganese

No production of manganese has been reported since 1931. Ores of this metal occur in Canada in the provinces of Nova Scotia, New Brunswick and British Columbia. The world's chief sources are Russia, Southern and Central India and East Central Brazil. The importance of manganese in the manufacture of iron and steel is steadily growing; a large part of the consumption is in the manufacture of manganese-iron alloys (spiegeleisen and ferro-manganese), which are used in the production of special steels.

## Molybdenum

No molybdenum production was reported for 1933. Molybdenite ( $\text{MoS}_2$ ) deposits are known to occur in Nova Scotia, Quebec, Ontario, Manitoba and British Columbia. In 1931 the Phoenix Molybdenite Corporation shipped 1,222 pounds of concentrates valued at \$280 to Hamburg, Germany. The Moss mine at Quyon, Quebec, was one of the more important producers of molybdenite concentrates. The metal is used in the manufacture of aircraft and automobile steels.

## Nickel

Nickel production in 1933 showed a remarkable improvement over 1932. In January, 1933, nickel output totalled only 1,780,899 pounds, but towards the end of the year the output was between nine and ten million pounds per month. The International Nickel Company separates a large part of the nickel from the copper at Copper Cliff, Ontario, sending the crude metal to Port Colborne Ontario, for refining; nickel-copper matte exported by this company is treated in British or foreign plants. The Falconbridge Nickel Mines exports nickel-copper matte to Norway for treatment. A small amount of nickel is recovered annually in the treatment of the silver-cobalt-nickel ores of the Cobalt district.

## Production in Canada, Imports and Exports of Nickel, 1932 and 1933

	1932		1933	
	Quantity	Value	Quantity	Value
	Lb.	\$	Lb.	\$
<b>PRODUCTION—</b>				
Nickel in matte and speiss exported.....				
Refined and electrolytic nickel produced.....	30,327,968	7,179,862	83,264,658	20,130,480
Nickel in oxides and salts sold.....				
<b>IMPORTS—</b>				
Nickel, nickel silver and German silver in ingots or block, n.o.p....	7,364	2,170	686,777	193,299
Nickel in bars and rods, strips, sheets and plates.....	452,781	172,446	203,217	95,189
Nickel silver and German silver in bars, rods, strips, sheets, plates or anodes.....	37,218	12,585	51,742	17,012
Nickel chromium in bars or rods, etc.....	41,434	46,443	50,841	46,210
German, Nevada and nickel silver, manufactures of, not plated....	-	160,798	-	127,076
Nickel-plated household hollow-ware.....	-	12,815	-	1,900
Nickel kitchenware.....	-	825	-	1,305
Nickel-plated ware, n.o.p.....	-	845,734	-	569,862
<b>Total nickel and its products.....</b>	-	<b>1,253,925</b>	-	<b>1,051,913</b>
<b>EXPORTS—</b>				
Nickel, fine.....	15,165,500	4,022,748	42,092,200	13,173,273
Nickel contained in matte.....	15,169,200	2,757,713	38,325,300	6,862,502
Nickel in oxide.....	1,737,200	503,503	7,664,600	2,760,193
<b>Total.....</b>	<b>32,071,900</b>	<b>7,283,964</b>	<b>88,082,100</b>	<b>22,795,968</b>

## Output from Nickel-Copper Mines and Smelters, 1931-1933

	Unit	1931	1932	1933
Ore mined.....	ton	1,714,075	826,041	1,613,956
Ore shipped.....	ton	1,689,874	790,614	1,533,887
<b>Content of ores, etc., shipped—</b>				
Copper.....	pound	123,641,190	92,144,651	125,742,427
Nickel.....	pound	89,424,886	39,001,127	81,078,021
Ore and concentrates treated at smelters.....	ton	1,884,059	793,552	1,523,814
Matte produced at smelters.....	ton	100,273	41,660	82,128
<b>Content of matte—</b>				
Copper.....	pound	77,621,143	32,353,240	51,863,731
Nickel.....	pound	81,285,931	33,871,440	73,420,514
Matte shipped to Canadian refineries.....	ton	63,076	6,651	42,209
Matte exported from Canadian smelters and refineries.....	ton	30,294	21,778	43,315

## Platinum Group Metals

Metals of the platinum group produced from Canadian sources include platinum, palladium, rhodium, iridium, etc., and nearly all the Canadian output is recovered in refining nickel-copper matte from the Sudbury district of Ontario. A minor amount of stream platinum is yielded by British Columbia placers and platinum and palladium are sometimes obtained in small quantities in the smelting operations at Trail, B.C. Russia, Colombia and South Africa are also important producers of these metals. Residues obtained in the metallurgical treatment of the nickel-copper matte are refined by the International Nickel Co. Ltd., at their refinery at Acton, England. This refinery has a capacity of 300,000 ounces per year of platinum group metals.

## Production of Platinum Group Metals, Canada, 1932 and 1933

	1932		1933	
	Platinum	Palladium, Rhodium, etc.	Platinum	Palladium, Rhodium, etc.
Produced from Canadian Ores.....	Oz. 27,284	37,613	24,746	31,009
	\$ 1,097,021	901,890	856,190	645,044
Recovered from alluvial sands.....	Oz. 59	-	40	-
	\$ 2,372	-	1,400	-
<b>Total.....</b>	<b>Oz. 27,343</b>	<b>37,613</b>	<b>24,786</b>	<b>31,009</b>
	<b>\$ 1,099,393</b>	<b>901,890</b>	<b>857,590</b>	<b>645,044</b>

## Imports into Canada and Exports of Platinum, 1932 and 1933

	1932		1933	
	Oz.	Value	Oz.	Value
<b>IMPORTS—</b>		<b>\$</b>		<b>\$</b>
Platinum retorts, pans, condensers, tubing and pipe.....	-	30	-	11,809
Platinum wire and bars, strips, sheets or plates, also platinum, palladium, iridium, osmium, ruthenium and rhodium in lumps, ingots, powder, sponge or scrap.....	-	29,740	-	49,136
Platinum crucibles.....	-	8,638	-	13,029
<b>Total.....</b>	<b>-</b>	<b>38,468</b>	<b>-</b>	<b>73,974</b>
<b>EXPORTS—</b>				
Platinum, etc., contained in concentrates or other forms.....	14,570	1,155,705	20,228	1,168,565
Platinum, old and scrap.....	50	2,374	189	5,439
<b>Total.....</b>	<b>-</b>	<b>1,158,079</b>	<b>-</b>	<b>1,174,004</b>

### Radium-Uranium

In 1930 silver-radium ores were discovered at Eelto Bay, Great Bear Lake in the Northwest Territories of Canada. Since then considerable development work has been accomplished on the deposits, while research work carried on by the Ore Dressing Division of the Federal Department of Mines resulted in the development of a successful process for the extraction of radium and uranium. In 1932 a commercial radium refinery was established at Port Hope, Ont., this being the only plant of its kind in the British Empire for the purpose of refining radium bearing ores. No figures of production are available.

### Selenium

Selenium is obtained as a by-product in copper refining and was produced for the first time in Canada in 1931 by the Ontario Refining Co. Ltd. at Copper Cliff, Ont. The Canadian Copper Refiners, Limited, produced a quantity of selenium-bearing sludge which will be treated at a future date. Production in 1933 totalled 26,090 pounds valued at \$53,745. No production was reported for 1932.

Selenium has its chief use in the glass industry, where it is employed as a decolorizer and in the manufacture of ruby glass. It has also been used successfully in the compounding of rubber, as it increases considerably the resistance of rubber to abrasion.

### Silver

British Columbia is Canada's largest silver producing province and the Sullivan silver-lead-zinc mine the greatest single source. The Premier mine, which has been producing for many years, continues to contribute a substantial amount. On November 16, 1932, the Wernecke mill in the Mayo district of the Yukon shut down permanently after having been in operation since January 6, 1925. Shipments of concentrates resulting from operations after navigation closed in 1932 continued to be made in 1933. The number of mines in the Cobalt district is gradually narrowing down; the two principal producers being the O'Brien mine at Cobalt and the Miller Lake O'Brien at Gowganda. Other sources of silver in the Dominion are the gold ores, copper ores and the nickel-copper ores. Shipments of high-grade silver ore were made from the silver-radium deposit on Great Bear Lake in the Northwest Territories to the smelter at Trail, B.C. A concentrator is under construction at this property and the silver output from this area should be larger in 1934.

The price of silver showed considerable improvement during the year, rising from an average of 29.0449 cents in New York in January to 43.550 cents in December.

Silver producers have reason to hope for a higher and steadier price for their product if the agreements entered into at the Monetary and Economic Conference held in London, July, 1933, between India, China, and Spain as holders of large stocks or users of silver, and Australia, Canada, the United States, Mexico and Peru as principal producers of silver, are ratified by the parliaments of these countries. This agreement was ratified by the Canadian Parliament on February 26, 1934, by the United States Government on December 22, 1933, and by the Chinese National Government on February 28, 1934.

### Production, Imports and Exports of Silver, 1932 and 1933

	1932		1933	
	Quantity	Value	Quantity	Value
	fine oz.	\$	fine oz.	\$
NOVA SCOTIA—				
In gold bullion—Total.....	47	15	104	39
QUEBEC—				
In gold ores in blister copper and in copper ores exported—Total.....	628,902	199,184	471,419	178,351
ONTARIO—				
In silver bullion and nuggets.....	4,781,174	1,514,276	2,762,748	1,045,225
In gold bullion.....	426,703	135,144	408,478	154,539
In blister copper produced; and in ores, concentrates, residues and matte exported or treated in smelters outside the province.....	1,127,911	357,228	1,365,917	516,764
<b>Total.....</b>	<b>6,335,788</b>	<b>2,006,648</b>	<b>4,537,143</b>	<b>1,716,528</b>
MANITOBA—				
In gold bullion and in blister copper—Total.....	1,036,497	328,275	1,101,554	416,749
SASKATCHEWAN.....	14	4	114,601	43,358
ALBERTA—Total.....	9	3	32	12
BRITISH COLUMBIA—				
In alluvial gold.....	3,672	1,163	3,780	1,430
In gold bullion.....	11,329	3,588	25,184	9,529
In blister copper.....	596,810	189,919	346,120	130,947
In base bullion and in ores exported.....	6,681,651	2,116,188	6,357,708	2,405,298
<b>Total.....</b>	<b>7,293,462</b>	<b>2,309,958</b>	<b>6,732,792</b>	<b>2,547,204</b>
YUKON AND NORTHWEST TERRITORIES—				
In alluvial gold.....	9,084	2,877	8,814	3,335
In ores exported or shipped to Canadian smelters.....	3,044,104	964,117	2,234,803	845,488
<b>Total.....</b>	<b>3,053,188</b>	<b>966,994</b>	<b>2,243,617</b>	<b>848,823</b>
<b>Canada.....</b>	<b>18,347,907</b>	<b>5,811,081</b>	<b>15,201,265</b>	<b>5,751,064</b>
IMPORTS—				
Silver in bars, etc., unmanufactured.....	—	585,788	—	674,138
Silver, manufactures of n.o.p., and articles consisting wholly or in part of sterling or other silverware.....	—	94,108	—	73,666
Silver and other coin except gold.....	—	—	—	12
<b>Total.....</b>	<b>—</b>	<b>679,896</b>	<b>—</b>	<b>747,816</b>
EXPORTS—				
Silver contained in ore, concentrates, etc.....	3,488,094	982,652	3,362,354	1,093,464
Silver bullion.....	13,504,060	3,978,438	10,738,729	3,759,387
<b>Total.....</b>	<b>16,992,154</b>	<b>4,961,090</b>	<b>14,101,083</b>	<b>4,852,851</b>
Silver coin, Foreign.....	—	808,695	—	275,007
"    "    Canadian.....	—	86,689	—	62,943

### Titanium

Important deposits of titanium ores occur near Baie St. Paul, Quebec. Exports have been recorded from this district for some years. No production of titanium ores was reported during 1932 or 1933.

## Zinc

Canadian zinc production is made up of the refined zinc produced at Trail, principally from the ores of the Sullivan mine; refined zinc made by the Hudson Bay Mining & Smelting Co. Ltd., at Flin Flon, Manitoba; zinc in concentrates exported by the Monarch mine at Field, B.C.; and zinc in concentrates exported by the Britannia Copper mine on Howe Sound, B.C. The price of zinc on the basis of London prices converted to Canadian funds, rose from an average of 2.46955 cents per pound in January to 3.9171 cents in July. During the latter months of the year it receded to approximately 3.4 cents per pound.

## Production in Canada, Imports and Exports of Zinc, 1932 and 1933

	1932		1933	
	Pounds	Value	Pounds	Value
		\$		\$
<b>PRODUCTION—</b>				
Manitoba.....	41,736,600	1,004,016	43,516,037	1,397,082
Saskatchewan.....	—	—	2,789,683	89,503
British Columbia.....	130,546,958	3,140,438	151,379,449	4,860,037
<b>Total.....</b>	<b>172,283,558</b>	<b>4,144,454</b>	<b>197,685,169</b>	<b>6,346,622</b>
<b>IMPORTS—</b>				
Zinc dust.....	530,628	40,623	841,400	47,826
Zinc in blocks, pigs, bars and rods, and zinc plates, n.o.p.....	123,476	3,248	16,400	1,074
Zinc in sheets and strips and zinc plates for marine boilers.....	4,070,523	273,359	3,969,100	273,439
Zinc spelter.....	66,476	1,897	162,300	4,921
Zinc white.....	10,112,476	455,861	9,864,697	428,201
Zinc, sulphate and chloride of.....	336,685	10,907	—	—
Zinc sulphate.....	719,923	14,628	433,604	7,902
Zinc, chloride of.....	1,450,036	50,630	1,018,954	30,971
Zinc, manufactures of, n.o.p.....	—	80,261	—	72,499
Lithopone.....	16,110,700	585,148	11,387,409	406,598
<b>Total.....</b>	<b>—</b>	<b>1,517,562</b>	<b>—</b>	<b>1,273,431</b>
<b>EXPORTS—</b>				
Zinc, contained in ore. (This item shows the weight and value of zinc and not the gross weight of ore).....	—	—	8,325,600	135,249
Zinc scrap, dross and ashes.....	827,900	9,522	6,302,100	47,060
Zinc spelter.....	175,321,800	3,852,990	173,453,400	4,990,705
<b>Total.....</b>	<b>—</b>	<b>3,862,512</b>	<b>—</b>	<b>5,173,014</b>

## FUELS

## Coal

Coal production in Canada during 1933 advanced 1.2 per cent to 11,885,078 tons from the 1932 output of 11,738,913 tons. In 1931 Canadian mines produced 12,243,211 tons. Compared with 1932, output from Nova Scotia mines advanced 11.3 per cent; from New Brunswick mines 46.7 per cent; from Manitoba, 119.1 per cent; from Saskatchewan, 4.0 per cent, and from the Yukon, 6.7 per cent. These increases were offset considerably by declines in Alberta and British Columbia; Alberta's production was down 3.2 per cent, and British Columbia's 17.8 per cent.

Governmental assistance in the movement of Canadian coal into competitive markets, previously dominated to a large extent by foreign fuel, materially increased the sale of domestic coal. The tonnages moved under government subvention during the calendar years 1932 and 1933 were as follows:—

	1932*	1933*
Nova Scotia.....	703,091	1,482,061
New Brunswick.....	1,105	1,163
Alberta and B.C. Crownest shipped to Manitoba and to points in Ontario west of Sicax Lookout and Fort Frances.....	218,668	229,204
Alberta to Ontario.....	16,802	33,201
Saskatchewan.....	100,479	130,966
B.C. Bunker and Export.....	81,639	60,372
<b>Total.....</b>	<b>1,122,474</b>	<b>1,937,867</b>

\*Data supplied by the Dominion Fuel Board.

Imports of coal into Canada in 1933 totalled 11,485,224 tons, or 1.7 per cent below the preceding year's total of 11,673,428 tons. Importations from the United States declined 3.2 per cent in 1933; on the other hand, receipts from Great Britain advanced 10.4 per cent. Shipments from the United States consisted of 1,429,829 tons of anthracite coal, 8,108,699 tons of bituminous coal and 2,707 tons of lignite coal; from Great Britain 1,605,776 tons of anthracite coal, and 338,061 tons of bituminous coal; from Germany, 144 tons of bituminous coal; from China 6 tons of anthracite coal, and from Alaska 2 tons of anthracite coal. Exports of Canadian coal declined 9.2 per cent in 1933 to 259,233 tons from the 1932 total of 285,487 tons.

### Output and Value of Coal in Canada by Kinds and by Provinces, 1932 and 1933

Province	1932		1933	
	Quantity	Value	Quantity	Value
	Short tons	\$	Short tons	\$
NOVA SCOTIA (Bituminous).....	4,084,581	15,167,793	4,547,123	15,936,563
NEW BRUNSWICK (Bituminous).....	212,695	794,168	311,972	1,037,034
MANITOBA (Lignite).....	1,552	3,684	3,400	8,315
SASKATCHEWAN (Lignite).....	887,139	1,229,449	922,922	1,289,101
ALBERTA—				
Bituminous.....	1,734,705	5,715,491	1,726,255	5,432,425
Sub-bituminous.....	560,902	1,329,316	554,145	1,274,017
Lignite.....	2,575,041	6,481,502	2,436,137	5,593,800
Total.....	4,870,648	13,526,309	4,716,537	12,306,242
BRITISH COLUMBIA (Bituminous).....	1,681,490	6,392,801	1,382,262	5,306,262
YUKON (Bituminous).....	808	3,491	862	3,670
CANADA—				
Bituminous.....	7,714,279	28,073,744	7,968,474	27,715,954
Sub-bituminous.....	560,902	1,329,316	554,145	1,274,017
Lignite.....	3,463,732	7,714,635	3,362,459	6,891,216
Total.....	11,738,913	37,117,655	11,885,078	35,881,187

### Shipments of Coal from Canadian Mines by Grades and Destinations, 1932 and 1933

(Short tons)

Destination	1932				1933			
	Run-of-mine	Screened	Slack	Total	Run-of-mine	Screened	Slack	Total
Prince Edward Island.....	6,222	58,597	4,323	69,142	4,320	49,272	8,355	61,947
Nova Scotia.....	132,417	356,600	299,031	788,048	108,529	292,953	476,916	878,398
New Brunswick.....	112,020	104,185	220,726	436,931	125,975	108,718	212,694	417,297
Quebec.....	68,816	736,328	782,416	1,587,558	55,543	1,062,430	864,082	1,982,055
Ontario.....	3,537	21,395	4,824	29,756	2,898	42,309	18,719	63,926
Manitoba.....	141,524	373,375	387,648	902,547	104,809	346,513	446,191	897,513
Saskatchewan.....	285,829	845,137	456,666	1,587,632	278,899	823,929	448,304	1,551,132
Alberta.....	200,692	425,664	480,318	1,106,674	194,125	422,289	476,668	1,093,082
British Columbia.....	18,665	592,352	177,835	788,852	19,362	586,183	133,874	739,419
Yukon.....	-	341	-	341	-	328	-	328
Total domestic shipments.....	969,723	3,513,972	2,813,787	7,297,481	894,460	3,734,924	3,085,713	7,715,097
Railroads.....	2,196,059	555,369	113,811	2,865,239	2,002,825	521,558	110,859	2,635,242
Ship's bunkers.....	112,438	51,317	343	164,098	162,043	71,803	-	234,846
Total railroads and ship's bunkers.....	2,308,497	606,686	114,154	3,029,337	2,164,868	593,361	110,859	2,869,088
United States.....	2,164	32,289	78,518	112,971	1,515	18,097	58,130	77,742
Alaska.....	-	14,779	-	14,779	-	14,249	-	14,249
Newfoundland.....	2,889	107,071	1,220	111,188	9,939	61,613	7,180	78,732
Other places.....	899	483	-	1,382	-	1,112	-	1,112
Total external shipments.....	5,952	154,622	79,738	210,312	11,454	95,071	65,310	171,835
Total.....	3,284,171	4,275,280	3,007,679	10,567,130	3,076,782	4,423,356	3,261,882	10,756,020



### Summary Statistics for 1933—Output, Exports, Interprovincial Shipments, Imports and Coal made Available for Consumption in Canada, by Provinces

(Short tons)

Province	Canadian coal				Imported from U.S.A.	Imported from Great Britain	Imported from Germany	Imported from Other Countries	Coal available for consumption
	Output	Received from other provinces	Shipped to other provinces	Ex-ported					
<b>PRINCE EDWARD ISLAND—</b>									
Anthracite .....	—	—	—	—	678	2,863	—	—	3,541
Bituminous .....	—	61,947	—	—	133	1,677	—	—	63,757
<b>Total .....</b>	—	61,947	—	—	811	4,540	—	—	67,298
<b>NOVA SCOTIA—</b>									
Anthracite .....	—	—	—	—	7,850	49,785	—	—	57,635
Bituminous .....	4,547,123	2,158	2,376,889	116,098	448	59,984	—	—	2,116,726
<b>Total .....</b>	4,547,123	2,158	2,376,889	116,098	8,298	109,769	—	—	2,174,301
<b>NEW BRUNSWICK—</b>									
Anthracite .....	—	—	—	—	18,952	76,578	—	—	95,530
Bituminous .....	311,972	312,032	5,541	55,716	9,249	10,790	144	—	582,930
<b>Total .....</b>	311,972	312,032	5,541	55,716	28,201	87,368	144	—	678,460
<b>QUEBEC—</b>									
Anthracite .....	—	—	—	—	283,799	1,447,859	—	—	1,731,658
Bituminous .....	—	1,982,023	—	—	433,706	244,276	—	—	2,660,005
Sub-bituminous .....	—	32	—	—	—	—	—	—	32
<b>Total .....</b>	—	1,982,055	—	—	717,505	1,692,135	—	—	4,391,695
<b>CENTRAL ONTARIO—</b>									
Anthracite .....	—	—	—	—	1,104,155	24,894	—	—	1,129,049
Bituminous .....	—	25,413	—	—	7,086,537	1,205	—	—	7,114,155
Sub-bituminous .....	—	*19,166	—	—	—	—	—	—	19,166
Lignite .....	—	*18,347	—	—	—	—	—	—	18,347
<b>Total .....</b>	—	63,928	—	—	8,190,692	26,099	—	—	8,280,717
<b>MANITOBA AND HEAD OF LAKES—</b>									
Anthracite .....	—	—	—	—	14,261	150	—	—	14,411
Bituminous .....	—	215,957	—	24	569,175	1,178	—	—	786,286
Sub-bituminous .....	—	64,116	—	—	—	—	—	—	64,116
Lignite .....	3,400	614,040	—	1,194	292	—	—	—	616,538
<b>Total .....</b>	3,400	894,113	—	1,218	583,728	1,328	—	—	1,481,351
<b>SASKATCHEWAN—</b>									
Anthracite .....	—	—	—	—	57	—	—	—	57
Bituminous .....	—	94,247	—	21	1,226	101	—	—	95,553
Sub-bituminous .....	—	21,707	—	—	—	—	—	—	21,707
Lignite .....	922,922	961,912	376,860	3,692	317	—	—	—	1,604,599
<b>Total .....</b>	922,922	1,077,866	376,860	3,713	1,600	101	—	—	1,821,916
<b>ALBERTA—</b>									
Anthracite .....	—	—	—	—	75	—	—	—	75
Bituminous .....	1,726,255	5,921	240,141	310	998	—	—	—	1,492,723
Sub-bituminous .....	554,145	—	140,196	—	—	—	—	—	413,949
Lignite .....	2,436,137	5,073	1,286,640	816	—	—	—	—	1,153,754
<b>Total .....</b>	4,716,537	10,994	1,666,977	1,126	1,073	—	—	—	3,060,501
<b>BRITISH COLUMBIA—</b>									
Anthracite .....	—	—	—	—	2	3,647	—	8	3,657
Bituminous .....	1,382,262	19,723	97,850	75,295	7,220	18,850	—	—	1,254,910
Sub-bituminous .....	—	35,175	—	—	—	—	—	—	35,175
Lignite .....	—	64,128	—	6,067	2,098	—	—	—	60,159
<b>Total .....</b>	1,382,262	119,026	97,850	81,362	9,320	22,497	—	8	1,353,901
<b>YUKON—</b>									
Bituminous .....	862	—	—	—	7	—	—	—	869
<b>Total .....</b>	862	—	—	—	7	—	—	—	869
<b>CANADA—</b>									
Anthracite .....	—	—	—	—	1,429,829	1,605,776	—	8	3,035,613
Bituminous .....	7,968,474	2,720,421	2,729,421	247,464	8,108,699	338,061	144	—	16,167,914
Sub-bituminous .....	554,145	149,196	149,196	—	—	—	—	—	554,145
Lignite .....	3,362,459	1,663,500	1,663,500	11,769	2,707	—	—	—	3,353,397
<b>Total .....</b>	11,885,078	4,524,117	4,524,117	259,233	9,541,235	1,943,837	144	8	23,111,069

\* Shipments to any point in Ontario from western mines.

† Consists of 6 tons imported from China and 2 tons imported from Alaska.

## Imports of Anthracite, Bituminous and Lignite Coal into Canada, by Months, 1932 and 1933

(Short tons)

Month	1932				1933			
	United States	Great Britain	Other countries	Total	United States	Great Britain	Other countries	Total
<b>ANTHRACITE—</b>								
January	142,095	15,903	—	157,998	122,618	17,670	—	140,288
February	119,495	8,916	650	129,061	128,049	47,285	—	175,334
March	214,150	8,103	—	222,253	107,369	28,458	—	135,827
April	122,000	57,029	—	179,029	63,617	87,083	—	150,700
May	150,802	170,967	—	321,769	41,926	230,126	6	272,058
June	100,816	146,657	5,693	253,166	90,920	168,356	—	289,276
July	97,620	213,835	7,073	318,528	162,911	177,974	—	340,885
August	142,135	190,828	—	338,963	146,498	171,398	—	317,896
September	126,697	171,444	6,157	304,298	208,318	171,679	2	379,999
October	203,189	140,916	6,720	350,825	115,841	202,838	—	321,679
November	126,027	197,690	19,266	342,989	132,507	225,048	—	357,555
December	140,506	70,792	7,980	219,278	106,255	47,861	—	154,116
<b>Total</b>	<b>1,685,532</b>	<b>1,399,086</b>	<b>*53,539</b>	<b>3,138,157</b>	<b>1,429,829</b>	<b>1,605,776</b>	<b>†8</b>	<b>3,035,613</b>
<b>BITUMINOUS—</b>								
January	471,155	—	—	471,155	325,915	19,615	—	345,530
February	376,126	2,722	—	378,848	267,342	12,105	—	279,447
March	483,718	5,328	—	489,046	354,970	7,085	—	362,055
April	357,788	5,530	—	363,318	269,381	12,209	144	281,734
May	664,478	53,605	—	718,083	636,997	29,780	—	666,777
June	671,034	34,391	—	705,425	807,728	24,264	—	831,992
July	703,739	32,187	—	735,926	876,832	21,238	—	808,070
August	818,376	40,674	—	859,050	951,582	30,251	—	981,833
September	966,643	25,290	—	991,933	1,061,539	30,488	—	1,092,027
October	949,388	31,425	2	980,815	836,028	52,693	—	888,721
November	1,047,474	117,411	—	1,164,885	987,147	79,259	—	1,066,406
December	660,326	13,505	—	673,834	733,238	19,074	—	752,312
<b>Total</b>	<b>8,170,218</b>	<b>362,063</b>	<b>**2</b>	<b>8,532,318</b>	<b>8,165,699</b>	<b>338,061</b>	<b>†144</b>	<b>8,446,904</b>
<b>LIGNITE—</b>								
January	480	—	—	480	388	—	—	388
February	787	—	—	787	491	—	—	491
March	223	—	—	223	26	—	—	26
April	51	—	—	51	11	—	—	11
May	35	—	—	35	—	—	—	—
June	151	—	—	151	45	—	—	45
July	—	—	—	—	54	—	—	54
August	197	—	—	197	21	—	—	21
September	43	—	—	43	235	—	—	235
October	134	—	—	134	291	—	—	291
November	328	—	—	328	642	—	—	642
December	524	—	—	524	509	—	—	509
<b>Total</b>	<b>2,953</b>	<b>—</b>	<b>—</b>	<b>2,953</b>	<b>2,707</b>	<b>—</b>	<b>—</b>	<b>2,707</b>

\* Consists of 52,189 tons imported from Germany, 650 tons imported from Belgium, and 700 tons imported from French East Indies.

\*\* Imported from Newfoundland.

† Consists of 6 tons imported from China, and 2 tons imported from Alaska.

‡ Imported from Germany.

## Coal Made Available for Consumption in Canada, 1932 and 1933

(Short tons)

Month	1932				1933			
	Output	Imports	Exports	Coal made available for use	Output	Imports	Exports	Coal made available for use
January	1,188,467	629,633	34,017	1,784,083	1,038,528	486,206	37,971	1,486,763
February	1,230,218	508,696	26,948	1,711,966	1,049,516	455,272	22,413	1,482,375
March	1,050,670	711,522	27,380	1,734,812	824,952	497,908	22,531	1,300,329
April	739,534	542,398	12,576	1,269,356	670,733	432,445	8,363	1,094,815
May	697,764	1,030,887	18,209	1,719,382	677,802	938,835	15,008	1,601,629
June	793,868	958,742	13,771	1,738,839	898,951	1,121,313	12,155	1,808,109
July	651,911	1,054,454	27,878	1,678,487	674,216	1,239,090	18,894	1,894,331
August	727,075	1,198,210	24,281	1,901,004	893,870	1,299,750	21,635	2,171,985
September	934,191	1,296,274	18,854	2,211,611	1,138,791	1,472,261	19,049	2,592,003
October	1,268,028	1,331,774	17,748	2,582,054	1,576,799	1,210,601	23,258	2,764,232
November	1,253,947	1,508,202	33,255	2,728,804	1,342,419	1,424,603	26,135	2,740,878
December	1,203,240	893,636	30,510	2,066,366	1,208,511	906,931	31,821	2,173,629
<b>Total</b>	<b>11,728,913</b>	<b>11,673,428</b>	<b>285,487</b>	<b>23,126,854</b>	<b>11,885,078</b>	<b>11,485,224</b>	<b>239,233</b>	<b>23,111,069</b>

## Coke

## Coke Production in Canada, and disposition, by Months, 1933

(Short tons)

Months	Bituminous coal used in coke making			Coke made	Disposition of coke by makers				Total
					Used		Sold		
	Canadian	Imported	Total		In coke or gas plants	In makers' smelters	For domestic use	For other uses	
January.....	37,891	171,224	209,115	150,350	21,909	19,330	123,650	8,273	173,168
February.....	37,735	140,007	177,742	128,292	20,109	3,593	153,720	10,143	187,565
March.....	38,827	151,896	190,723	138,750	21,792	7,066	140,835	10,415	180,108
April.....	39,547	130,525	170,072	121,597	21,004	7,129	63,248	8,462	99,843
May.....	38,134	143,842	179,976	134,275	21,512	10,407	26,469	9,176	67,864
June.....	40,971	143,462	184,433	135,546	10,272	11,997	25,678	12,162	69,109
July.....	43,387	154,597	197,984	144,812	17,025	26,489	52,280	13,891	109,685
August.....	49,729	155,206	204,935	150,283	18,621	31,446	66,739	17,415	134,221
September.....	60,727	151,561	212,288	155,711	20,654	32,889	96,615	18,558	168,716
October.....	69,557	170,270	239,827	172,508	21,268	35,582	126,263	20,176	203,289
November.....	72,023	170,307	242,330	174,236	19,798	42,602	155,537	21,399	239,336
December.....	78,233	183,399	261,632	187,762	20,721	48,491	189,747	17,390	267,349
<b>Total.....</b>	<b>606,761</b>	<b>1,864,296</b>	<b>2,471,057</b>	<b>1,794,122</b>	<b>243,685</b>	<b>277,927</b>	<b>1,211,781</b>	<b>167,460</b>	<b>1,899,933</b>

## Production in Canada, Imports and Exports of Coke, by Provinces, 1932 and 1933

Year	Nova Scotia, New Brunswick and Quebec	Ontario	Manitoba, Saskatchewan, Alberta and British Columbia	Canada
Production.....	1932 403,330	1,087,122	147,249	1,637,701
	1933 446,352	1,183,206	164,564	1,794,122
Imports.....	1932 38,682	605,307	7,813	651,802
	1933 19,286	615,818	8,971	644,075
Exports.....	1932 664	-	14,905	15,469
	1933 353	-	4,816	5,199
Apparent consumption.....	1932 441,348	1,692,429	140,257	2,274,034
	1933 465,255	1,799,024	168,719	2,432,998

## Natural Gas

Natural gas production in Canada during 1933 declined to 22,706,125 thousand cubic feet from the preceding year's output of 23,420,174 thousand cubic feet. Alberta wells produced 14,923,597 thousand cubic feet, or 65.7 per cent of the total Canadian production. Ontario's output was 7,163,895 thousand cubic feet or 31.6 per cent of the total production. The remainder of the output consisted of 618,033 thousand cubic feet from New Brunswick and 600 thousand cubic feet from Manitoba.

## Production in Canada and Imports of Natural Gas, 1932 and 1933

	1932		1933	
	M cu. ft.	Value	M cu. ft.	Value
<b>PRODUCTION—</b>		\$		\$
New Brunswick.....	662,452	326,191	618,033	302,706
Ontario.....	7,386,154	4,719,297	7,163,895	4,475,250
Manitoba.....	600	180	600	180
Alberta.....	15,870,968	3,853,794	14,923,597	3,505,808
<b>Total.....</b>	<b>23,420,174</b>	<b>8,899,462</b>	<b>22,706,125</b>	<b>8,283,944</b>
<b>IMPORTS—</b>				
Gas for cooking, heating or illuminating, imported by pipe line—				
<b>Total.....</b>	<b>120,840</b>	<b>91,234</b>	<b>100,854</b>	<b>73,435</b>

## Peat

The output of peat for use as fuel in Canada totalled 1,131 tons valued at \$3,449 in 1933, as compared with 3,248 tons at \$7,593 in 1932. The 1933 production was obtained from the St. Hyacinthe bog, Quebec and the Chesterville bog, Ontario.

## Petroleum

Crude petroleum production in Canada advanced 10.0 per cent in 1933 to 1,148,916 barrels from the previous year's total of 1,044,412 barrels. The three petroleum producing provinces shared in this advance in output. New Brunswick wells produced 8,835 barrels or 37.9 per cent above the 1932 total; Ontario's output of 136,058 barrels was 4.4 per cent higher, and Alberta's production of 999,415 barrels showed an increase of 10.2 per cent.

Production from the Discovery wells near Fort Norman in the Mackenzie River district increased in 1933 to 4,608 barrels from the 1932 output of 910 barrels. This oil was treated in a small refining plant and was used to a large extent in connection with mining operations in the Great Bear Lake area.

Press dispatches from the Turner Valley field, Alberta, during 1933 indicated the drilling into production of the following wells: Mar-Jon-Freehold in March; Model No. 2 in May; McDougall-Segur No. 6 in July, and the Miracle No. 2 in September. Unsold oil at the well-head in the Turner Valley Field on December 31st totalled 20,377 barrels as compared with 21,101 barrels on hand at the beginning of the year.

Several price changes were recorded for Alberta petroleum during 1933; these changes were as follows:—

	Jan. 1st	Jan. 24th	July 20th	Aug.	Sept. 11th
	per bbl.	per bbl.	per bbl.	per bbl.	per bbl.
Crude naphtha .....	3.32	2.82	2.99	3.16	3.50
Discoloured naphtha.....	3.08	2.58	2.75	2.92	3.26
Light crude .....	2.80	2.41	2.54	2.67	2.93
Crude oil 36° to 49°.....	—	1.80	1.99	2.08	2.26
Crude oil 31° to 35°.....	—	1.41	1.46	1.50	1.61

The completion of a new absorption plant in the Turner Valley field, Alberta, was an important development of the year. This plant materially increased the crude naphtha (natural gasoline) recovery from the Turner Valley wet gas.

## Production of Crude Petroleum in Canada, 1932 and 1933

Province	1932		1933	
	Barrels	Value	Barrels	Value
NEW BRUNSWICK.....	6,408	\$ 14,332	8,835	\$ 18,111
ONTARIO—				
Petrolia and Enniskillen.....	58,871	110,300	57,298	106,527
Oil Springs .....	31,438	62,057	31,343	61,396
Moore Township .....	3,272	6,132	2,192	4,075
Sarnia Township .....	1,227	2,299	2,181	4,054
Plympton Township.....	274	513	211	392
Bothwell Township.....	19,480	36,467	22,935	42,633
West Dover.....	453	849	763	1,334
Onondaga.....	543	1,018	946	1,798
Mosn Township.....	8,429	15,795	8,168	15,183
Euphemia.....	496	929	511	799
Dunwich.....	285	534	346	643
Raleigh.....	—	—	239	444
Thamesville.....	534	1,001	847	1,574
Dawn.....	5,061	9,484	8,078	12,634
Total for Ontario.....	130,343	247,468	136,058	253,486
ALBERTA—				
Turner Valley.....	868,812	2,713,146	999,415	2,789,361
Red Coulee.....	33,256	34,228		
Wainwright.....	4,683	4,167		
Total for Alberta.....	906,751	2,751,541	999,415	2,789,361
NORTHWEST TERRITORY.....	910	9,251	4,608	23,037
<b>Canada.....</b>	<b>1,044,412</b>	<b>3,022,592</b>	<b>1,148,916</b>	<b>3,082,995</b>

## Imports into Canada and Exports of Petroleum and Its Products, 1932 and 1933

	1932		1933	
	Quantity	Value	Quantity	Value
<b>IMPORTS—</b>		\$		\$
Asphaltum solid.....cwt.	250,649	193,912	89,238	106,586
Asphaltum not solid.....	-	10,709	-	10,312
Asphaltum oil for paving purposes only.....	-	8,887	-	1,458
Crude petroleum in the natural state, 0.7900 specific gravity or heavier at 60 degrees temperature, when imported by oil refiners to be refined in their own factories.....gal.	889,838,742	26,310,278	954,392,366	20,200,580
Crude petroleum, gas oils other than naphtha, benzine and gasoline lighter than 0.8235 but not less than 0.775 specific gravity at 60 degrees.....gal.	306,975	13,837	60,331	3,773
Petroleum (not including crude petroleum imported to be refined or illuminating or lubricating oils) 0.8235 specific gravity or heavier at 60 degrees temperature.....gal.	57,292,849	2,062,912	43,271,325	1,445,467
Petroleum, and other oils imported by miners or mining companies or concerns for use in the concentration of ores of metals in their own concentrating establishments.....gal.	116,987	58,400	95,421	47,948
Petroleum, crude, not in its natural state, 0.725 specific gravity or heavier, but not heavier than 0.770 specific gravity, at 60 degrees temperature when imported by oil refiners to be refined in their own factories.....gal.	20,061,147	1,021,485	25,636,911	1,031,971
<b>KEROSENE, FUEL AND ILLUMINATING OILS</b>				
Coal oil and kerosene lighter than .8235 specific gravity at 60 degrees temperature, n.o.p.....gal.	1,670,205	126,768	1,569,384	116,057
Illuminating oils, composed wholly or in part of the products of petroleum, coal, shale or lignite, costing more than 30 cents per gallon.....gal.	2,117	890	3,658	1,585
Engine distillate lighter than 0.8235 specific gravity at 60 degrees temperature.....gal.	63,842	6,843	64,626	6,880
Fuel oil, ex-warehoused for ships' stores.....gal.	32,008,998	857,490	26,896,996	723,863
<b>LUBRICATING OILS</b>				
Lubricating oils, composed wholly or in part of petroleum, and costing less than 25 cents per gallon.....gal.	7,849,532	1,460,204	6,208,152	1,160,093
Lubricating oils, n.o.p.....gal.	3,753,387	1,567,818	3,660,582	1,404,241
<b>GASOLINE AND OTHER OILS</b>				
Natural casinghead, compression or absorption gasoline lighter than 0.6690 specific gravity at 60 degrees temperature, when imported by distillers of petroleum for blending with other gasolines distilled in Canada.....gal.	26,693,969	1,530,657	39,688,271	2,545,302
Gasoline lighter than 0.8235 specific gravity at 60 degrees temperature.....gal.	74,859,806	7,503,705	17,122,366	1,446,766
All other oils, n.o.p.....gal.	229,589	80,693	305,985	90,768
<b>OTHER PRODUCTS OF PETROLEUM</b>				
Grease, axle.....lb.	3,148,868	169,484	2,417,038	130,792
Paraffine wax.....lb.	1,619,905	53,508	1,760,621	60,855
Paraffine wax candles.....lb.	309,486	58,204	165,491	32,174
Vaseline, and all similar preparations of petroleum for toilet, medicinal or other purposes.....	-	200,084	-	214,539
Naphtha and products of petroleum, n.o.p., lighter than 0.8235 specific gravity at 60 degrees temperature.....gal.	1,884,315	176,702	1,244,030	113,627
<b>Total</b> .....	-	<b>43,472,870</b>	-	<b>31,916,337</b>
<b>EXPORTS—</b>				
Oil, petroleum, crude.....gal.	7,297,332	244,613	10,658,848	394,727
Oil, coal and kerosene, refined.....gal.	881,623	116,897	996,468	179,986
Oil, gasoline and naphtha.....gal.	4,209,436	585,790	4,042,959	627,851
Oil, mineral, n.o.p.....gal.	7,922,816	276,015	12,938,982	537,776
Wax, mineral.....cwt.	23,855	66,144	2,498	6,955
<b>Total</b> .....	-	<b>1,289,459</b>	-	<b>1,747,295</b>

## NON-METALLICS (except Fuels)

## Abrasives

**Corundum.**—Corundum is found in Canada in the northern part of Hastings and in Renfrew counties in Ontario. No production has been reported for several years.

**Grindstones, Pulpstones and Scythestones.**—Quarries for the production of these products are located at Shediac and Stonehaven, New Brunswick; Pictou county, Nova Scotia, and at Newcastle Island opposite Nanaimo, Vancouver Island, British Columbia. Crude blocks produced from Quarry Island, Nova Scotia, were shipped to the Stonehaven dressing works to be made into grindstones. Grindstones, scythestones and pulpstones are made at Stonehaven, New Brunswick, from local stone. No records of production were received from the British Columbia quarries. Total production of all classes totalled 76 tons valued at \$6,522.

**Diatomite.**—Diatomite is produced at Little River and New Annan, Nova Scotia, the Muskoka District of Ontario, and at Quesnel, B.C. Total output amounted to 1,789 tons, valued at \$36,648.

## Imports into Canada and Exports of Abrasives, 1932 and 1933

	1932		1933	
	Quantity	Value	Quantity	Value
<b>IMPORTS—</b>		\$		\$
<b>Abrasives—</b>				
Artificial abrasives in bulk, crushed or ground, when imported for use in the manufacture of abrasive wheels and polishing composition.....	-	154,419	-	194,618
Diamond dust or bort and black diamonds for borers.....	-	129,703	-	354,999
Emery in bulk, crushed or ground.....	-	31,252	-	26,371
Grinding wheels.....	-	132,373	-	47,965
Grinding stones or blocks.....	-	30,010	-	5,141
Grindstones not mounted and not less than 36" in diameter.....	-	83,896	-	76,615
Grindstones, n.o.p.....	-	3,587	-	2,516
Pumice and pumice stone, lava and calcareous tufa, not further manufactured than ground.....	-	22,391	-	18,113
Sandpaper, glass, flint and emery paper or emery cloth.....	-	91,485	-	81,559
Manufactures of emery or of artificial abrasives, n.o.p.....	-	38,778	-	24,717
Diatomaceous earth or infusorial earth (Kieselguhr) ground or unground..... cwt.	2,009	2,944	44,120	71,166
Iron sand or globules or iron shot and dry putty for polishing or sawing.....	-	8,142	-	7,063
<b>Total.....</b>	-	<b>724,986</b>	-	<b>910,843</b>
<b>EXPORTS—</b>				
Grindstones, manufactured.....	-	7,541	-	2,840
<b>Abrasives—</b>				
Natural, n.o.p..... cwt.	22,419	27,169	36,096	43,906
Artificial, crude, including carborundum..... cwt.	246,177	953,422	628,958	2,121,681
Artificial, made up into wheels, stones, etc.....	-	24,221	-	35,933
<b>Total.....</b>	-	<b>1,012,353</b>	-	<b>2,204,360</b>

## Asbestos

Asbestos production in 1933 showed considerable improvement over the preceding year. During the first three months of the year production was between five and six thousand tons per month; in April it rose to 8,000 tons, in May to 11,000 tons and improved each month until November, when it stood at 20,463 tons. December output was less at 17,326 tons. In 1932 the National Research Laboratories, Ottawa, as a result of experimental work, prepared specifications for a standard testing machine for use in grading of milled asbestos fibre; these have now been unanimously approved by the industry.

## Sales of Asbestos in Canada, 1932 and 1933

Grades	1932			1933		
	Shipments and Sales		Average value per ton	Shipments and Sales		Average value per ton
	Tons	Value		Tons	Value	
		\$	\$		\$	\$
Crudes.....	471	119,221	253.12	1,306	341,734	261.66
Fibres.....	45,323	1,885,841	41.61	82,605	3,843,887	46.53
Shorts.....	77,183	1,034,659	13.40	74,456	1,025,556	13.77
<b>Total.....</b>	<b>122,977</b>	<b>3,039,721</b>	<b>24.72</b>	<b>158,367</b>	<b>5,211,177</b>	<b>32.90</b>
Sands, gravel and stone (waste rock only).....	3,473	3,369	0.97	6,445	3,215	0.50
<b>Total.....</b>	<b>126,450</b>	<b>3,043,090</b>	-	<b>164,812</b>	<b>5,214,392</b>	-

Quantity of rock mined during 1932=1,145,340 tons, during 1933=1,566,919 tons.  
Quantity of rock milled during 1932=1,029,709 tons, during 1933=1,329,814 tons.  
Quantity of tailings retreated during 1932=709,094 tons, during 1933=521,930 tons.

## Imports into Canada and Exports of Asbestos, 1932 and 1933

	1932		1933	
	tons	\$	tons	\$
<b>IMPORTS—</b>				
Asbestos brake and clutch lining.....	-	194,745	-	165,994
Asbestos in any form other than crude, and all manufactures of, n.o.p.....	-	228,619	-	233,966
Asbestos packing.....	55	52,733	79	54,148
<b>Total.....</b>	-	<b>474,097</b>	-	<b>454,108</b>
<b>EXPORTS—</b>				
Asbestos.....	42,661	2,115,140	78,701	3,998,377
Asbestos, sand and waste.....	69,769	986,095	70,296	991,417
Asbestos manufactures, including asbestos roofing.....	-	75,517	-	73,044
<b>Total.....</b>	-	<b>3,176,752</b>	-	<b>5,062,838</b>

## Barytes

There has been no important production of barite in Canada for some years. It is interesting to note that a small commercial shipment was reported from Tianago, Penlorwood township, Ontario, in 1933. Other Canadian deposits include those in Colechester and Hants counties, Nova Scotia; in Ontario in the Thunder Bay district; near Night Hawk Lake, Porcupine District, and in North Burgess and Yarrow Townships, Lanark county.

## Bituminous Sands

Bituminous sands occur in the Fort McMurray district of Alberta and investigations leading to the utilization of this material have been carried on for some years. Experiments have followed three main channels—(1) the use as a bituminous binder in road construction; (2) the use of separated bitumen as a source of gasoline, lubricants, etc., and (3) its use for the production of certain of the higher priced classes of asphaltic materials. Production in 1933 totalled 466 tons valued at \$1,662.

## Feldspar

The provinces of Ontario and Quebec are the principal sources of Canadian feldspar. Production in 1933 increased 50 per cent in quantity and 28 per cent in value over 1932. A large part of the Canadian output is now consumed by Canadian grinding mills, the product being used in the manufacture of glass, enamels, electrical porcelain and vitrified ware. It also enters into the manufacture of floor and wall tile, and, in the finely ground form, as an ingredient in scouring soaps. It is understood a small shipment was made from a Manitoba property for museum specimens.

## Production in Canada, Imports and Exports of Feldspar, 1932 and 1933

	1932		1933	
	Tons	Value	Tons	Value
		\$		\$
PRODUCTION—				
Quebec.....	3,390	39,062	6,182	59,283
Ontario.....	3,857	42,920	4,387	45,350
<b>Total</b> .....	<b>7,047</b>	<b>81,982</b>	<b>10,569</b>	<b>104,633</b>
IMPORTS— <b>Total</b> .....	<b>1,487</b>	<b>24,875</b>	<b>560</b>	<b>7,970</b>
EXPORTS— <b>Total</b> .....	<b>2,017</b>	<b>15,465</b>	<b>3,596</b>	<b>23,076</b>

## Fluorspar

Fluorspar production in Canada in 1933 totalled 73 tons valued at \$1,064; this came entirely from Hastings county, Ontario. In 1932 an output of 32 tons valued at \$464 was produced from the same area. Fluorspar also occurs at the Rock Candy mine situated north of Grand Forks, British Columbia. This mine, owned by the Consolidated Mining and Smelting Co., Ltd., supplies the fluorspar used by them in their metallurgical works at Trail.

Imports of fluorspar into Canada during 1933 amounted to 2,219 tons valued at \$21,165, as against 1,009 tons valued at \$22,965 in 1932.

## Graphite

The production of graphite in Canada during 1933 amounted to 405 tons valued at \$18,367 as compared with 346 tons valued at \$18,483 in 1932. The mineral mined during both years came entirely from the province of Ontario. Canada has produced both flake and amorphous graphite and in the Black Donald mine in Renfrew county, Ontario, the Dominion possesses one of the largest graphite deposits in the world. Important graphite properties have also been operated in the province of Quebec.

Graphite imports, including crucibles, were valued at \$100,253 as compared with \$102,343 in 1932.

## Production, Imports and Exports of Graphite, 1932 and 1933

	1932		1933	
	Tons	Value	Tons	Value
		\$		\$
PRODUCTION..... <b>Total</b>	<b>346</b>	<b>18,483</b>	<b>405</b>	<b>18,367</b>
IMPORTS—				
Crucibles, plumbago.....	—	29,909	—	26,521
Plumbago, not ground or otherwise manufactured.....	—	1,869	—	4,729
Plumbago, ground and manufactures of, n.o.p.....	—	70,565	—	69,003
<b>Total</b> .....	—	<b>102,343</b>	—	<b>100,253</b>
EXPORTS—				
Graphite or plumbago, crude or refined.....	<b>907</b>	<b>41,146</b>	<b>987</b>	<b>40,115</b>
Carbon and graphite electrodes.....	—	217,732	—	305,607

## Gypsum

Owing to restricted building programs in Canada in 1933 the Canadian gypsum production was slightly less than in the preceding year. Gypsum is mined in Nova Scotia, New Brunswick, Ontario, Manitoba and British Columbia. Anhydrite or anhydrous calcium sulphate also occurs in these provinces, and at present a considerable tonnage of this mineral is exported from Nova Scotia to the Southern States where it is used as a fertilizer for the peanut crop.

Gypsum products are placed on the market in many different forms, some of which are hardwall plaster, wood fibre plaster, beam and column fireproofing, roof and partition tile, wall-board, and in other forms for insulating and fire-resisting purposes.



## Production in Canada, Imports and Exports of Gypsum, 1932 and 1933

	1932		1933	
	Tons	Value \$	Tons	Value \$
<b>PRODUCTION—</b>				
Crude—				
(1) Lump or mine run.....	98,672	114,504	36,439	43,002
Crushed.....	268,645	314,336	298,579	329,419
Fine ground.....	1,826	10,459	1,130	6,067
(2) Calcined.....	69,486	641,080	40,837	233,358
<b>Total.....</b>	<b>438,629</b>	<b>1,080,379</b>	<b>376,885</b>	<b>611,846</b>
<b>IMPORTS—</b>				
Gypsum, crude (sulphate of lime).....	55	1,381	18	524
Plaster of Paris, or gypsum ground, not calcined.....	171	3,434	136	4,251
Plaster of Paris or gypsum calcined and prepared wall plaster.....	1,384	31,165	615	16,745
<b>Total.....</b>	<b>1,610</b>	<b>35,980</b>	<b>769</b>	<b>21,520</b>
<b>EXPORTS—</b>				
Gypsum or plaster, crude.....	372,314	470,247	287,305	344,085
Plaster of Paris, ground, and prepared wall plaster.....	798	13,079	633	13,990
<b>Total.....</b>	<b>373,112</b>	<b>484,226</b>	<b>287,938</b>	<b>358,074</b>

(1) Includes some anhydrite produced in Nova Scotia.

(2) Does not include gypsum calcined in the manufacturing plants at Montreal and Calgary.

## Iron Oxides

In 1933 production of iron oxides from Canadian deposits totalled 4,327 tons valued at \$52,250 as compared with 5,240 tons valued at \$46,161 in 1932.

Iron oxides are marketed in two forms, crude and calcined. Crude oxides are dried before shipment for use in the purification of illuminating gas, while the calcined product is ground, usually for consumption in the paint industry.

Quebec has been the principal producer of this commodity, though a small annual production has been reported from British Columbia which is used for purifying illuminating gas.

Imports of ochrey earths, oxides, etc., totalled 1,078 tons valued at \$35,595.

## Magnesitic-dolomite

Production of calcined and dead-burned magnesitic-dolomite in 1933 amounted in value to \$360,128, as compared with \$262,860 in 1932. The production of this material is confined to the townships of Harrington and Grenville along the north shore of the Ottawa river, about sixty miles west of Montreal. Its principal use is as a basic refractory for lining furnaces in metallurgical plants. It is also used for the construction of floors and for floor tiles.

## Production in Canada, Imports and Exports, 1932 and 1933

	1932		1933	
	Tons	Value \$	Tons	Value \$
<b>PRODUCTION—</b>				
Calcined or clinkered— <b>Total.....</b>	—	<b>262,860</b>	—	<b>368,128</b>
<b>IMPORTS—</b>				
Magnesia pipe covering.....	—	64,024	—	35,062
Magnesite, crude rock.....	—	—	—	—
Magnesite, dead burned, sintered, caustic, calcined or plastic magnesia.....	1,065	28,020	1,403	43,229
Brick, fire, magnesite.....	—	71,077	—	240,855
<b>Total.....</b>	—	<b>164,627</b>	—	<b>325,146</b>
<b>EXPORTS—</b>				
Magnesite, calcined, dead burned, etc.....	1,194	33,103	2,320	63,056

### Magnesium Sulphate

Magnesium sulphate is found in the Osoyoos and Lillooet districts in British Columbia and a small shipment was reported during 1933. Imports of magnesium sulphate or Epsom salts totalled 2,135 tons valued at \$49,868 in 1933.

### Mica

Mica production at 855 tons worth \$48,082 showed considerable improvement over 1932. In addition to increased shipments to the United States, exports to Great Britain were greater than for several years.

Practically the entire Canadian production comes from mines in the Perth-Kingston district of Ontario and in the Gatineau and Lièvre rivers sections of Quebec. A small production was recorded for British Columbia in 1933. At the present time one Canadian plant, located in Quebec produces ground mica, which is used in the prepared roofing and rubber trade.

#### Production of Mica in Canada, 1932 and 1933

Grade	1932			1933		
	Quantity	Value, f.o.b. shipping point	Price per pound	Quantity	Value, f.o.b. shipping point	Price per pound
	Lb.	\$	\$	Lb.	\$	\$
Knife trimmed.....	-	-	-	8,591	3,923	0.46
Thumb trimmed.....	2,019	1,254	0.62	51,881	8,397	0.16
Splittings.....	3,350	2,014	0.60	73,150	27,096	0.37
Scrap.....	612,980	3,560	0.006	1,575,875	8,666	0.006
<b>Total.....</b>	<b>618,349</b>	<b>6,828</b>	<b>-</b>	<b>1,709,197</b>	<b>48,082</b>	<b>-</b>

#### Imports into Canada and Exports of Mica, 1932 and 1933

	1932		1933	
	Tons	Value \$	Tons	Value \$
<b>IMPORTS—</b>				
Mica and manufactures of, n.o.p.— <b>Total.....</b>	-	<b>71,749</b>	-	<b>33,506</b>
<b>EXPORTS—</b>				
Rough cobbled and thumb trimmed.....	1	177	26	6,445
Mica splittings.....	50	26,833	38	29,479
Mica, scrap and waste.....	300	2,843	1,076	9,560
Mica, plate and manufactures of (micanite).....	-	1,260	-	729
<b>Total.....</b>	<b>-</b>	<b>31,113</b>	<b>-</b>	<b>46,213</b>

### Mineral Waters

Sales of natural mineral waters in Canada during 1933 totalled 38,818 imperial gallons valued at \$5,441 as compared with 76,714 imperial gallons valued at \$7,170 in 1932. These shipments were made from mineral springs located in Ontario and Quebec.

Imports of natural mineral waters, not in bottles, during 1933 amounted to 45 gallons valued at \$40 as compared with 947 gallons valued at \$1,286 in 1932. Mineral and aerated waters, n.o.p., imported during 1933 totalled \$75,242 as against \$105,547 in 1932. Exports of mineral and aerated waters amounted in value to \$5,572 as compared with a value of \$7,361 in 1932.

### Phosphate

Sales of phosphate in Canada during 1933 totalled 105 tons valued at \$805 as against 1,316 tons valued at \$12,333 in 1932. This mineral in the form of apatite, a calcium phosphate, was produced entirely in the Buckingham district in Quebec.

The Consolidated Mining and Smelting Co. Ltd., of Trail, B.C., has conducted exploratory work on a deposit of rock phosphate in the Crow's Nest District of British Columbia with the intention of possibly utilizing it in the manufacture of fertilizer. The supply necessary for the fertilizer plant is obtained chiefly south of the international boundary in the States of Idaho and Montana.

Since going to press, 2,103 tons valued at \$1,670 have been reported produced in British Columbia.

Imports of phosphate rock (fertilizer) totalled 18,351 tons valued at \$74,527 as compared with 65,533 tons worth \$346,907 in 1932.

### Pyrites (Sulphur)

The sulphur content of pyrites shipped and of waste smelter gases used in the manufacture of sulphuric acid amounted in 1933 to 57,373 tons valued at \$510,299 as compared with 53,172 tons valued at \$470,014 in 1932. Sulphur used in the manufacture of sulphuric acid was recovered from salvaged smelter gases at smelters situated at Copper Cliff, Ontario, and Trail, B.C.

During 1933 pyrites concentrates were shipped by the Consolidated Copper and Sulphur Company, Ltd., of Eustis, Quebec, and in British Columbia the Britannia Mining and Smelting Company, Ltd., shipped pyrites concentrates to Canadian and foreign consumers.

#### Production in Canada, Imports and Exports of Pyrites\*, 1932 and 1933

	1932		1933	
	Sulphur content tons	Value \$	Sulphur content tons	Value \$
<b>PRODUCTION—</b>				
Quebec.....	17,954	133,838	19,167	146,261
Ontario.....	3,332	33,320	8,196	81,960
British Columbia.....	31,886	302,856	30,010	282,078
<b>Total.....</b>	<b>53,172</b>	<b>470,014</b>	<b>57,373</b>	<b>510,299</b>
<b>IMPORTS—</b>				
Brimstone, or sulphur, crude or in roll or flour.....	104,995	2,023,085	140,810	2,520,920
<b>EXPORTS—</b>				
Pyrites (Sulphur content).....	17,455	89,568	15,347	121,280

\*SULPHUR.—It has been the practice of the Bureau in past years to report export shipments of pyrites in terms of the sulphur content of the pyrites. In view of the fact that there is now an important production of sulphur in the form of sulphuric acid made from waste bessemer gases, it has been decided to modify the method of reporting production so as to show the total sulphur content of pyrites shipped and of bessemer gases used in the manufacture of sulphuric acid.

### Quartz

Production of quartz including crushed quartzite and silica in other forms totalled 185,807 tons valued at \$298,497 as compared with 189,132 tons valued at \$276,147 in 1932. Silica was produced in Quebec, Ontario, Manitoba and British Columbia and the records indicate that it was used for the fluxing of metalliferous ores, manufacture of scouring compounds, electro-chemical and electro-metallurgical processes, glass manufacturing, moulding, brickmaking and artificial abrasive manufacture. Several modern plants are now in operation in Eastern Canada for the production of ground and crushed silica products.

In July, 1933, a new mill of 300-ton daily capacity was put in operation at Lac Remi, Quebec. This plant is treating material from a large local deposit of kaolin and silica and producing kaolin for the ceramic, paper and other trades and pure silica for glass making, sand blasting and other purposes. Also near Lac Bouchette in the Lake St. John district, Quebec, a new mill has been built for the working of a large quartz deposit.

#### Production in Canada and Imports of Quartz, 1932 and 1933

	1932		1933	
	Tons	Value \$	Tons	Value \$
<b>PRODUCTION—</b>				
Nova Scotia.....	—	—	1,017	1,447
Quebec.....	20,123	71,645	28,443	110,395
Ontario.....	66,135	93,574	66,472	86,020
Manitoba.....	87,253	102,493	67,207	82,954
British Columbia.....	15,621	8,435	22,668	17,681
<b>Total.....</b>	<b>189,132</b>	<b>276,147</b>	<b>185,807</b>	<b>298,497</b>
<b>IMPORTS—</b>				
Silicx or crystallized quartz, ground or unground.....	6,180	167,997	4,370	82,823
Flint and ground flint stones.....	1,926	16,075	2,277	26,015
<b>Total.....</b>	<b>8,112</b>	<b>184,072</b>	<b>6,647</b>	<b>108,838</b>

## Salt

Salt production in 1933 increased 6 per cent in quantity over 1932. Salt is produced at the Malagash mine in Nova Scotia by mining methods, and in Ontario, Manitoba and Saskatchewan by pumping brine from wells. Canadian salt companies now produce an extensive variety of high grade products; various table salts and other grades are manufactured for dairy, highway, chemical, fishery and other purposes.

## Production of Salt in Canada, by Grades, 1932 and 1933

Grade	1932			1933		
	Manu- factured	Sold	Value of salt sold (Not includ- ing con- tainers)	Manu- factured	Sold	Value of salt sold (Not includ- ing con- tainers)
	Tons	Tons	\$	Tons	Tons	\$
Table, dairy and pressed blocks .....	81,168	60,128	1,194,649	63,894	61,231	1,120,698
Common, fine .....	58,472	59,036	349,571	67,414	63,786	395,609
Common course .....	44,757	47,499	304,482	18,472	18,117	179,891
Land salt .....	583	583	2,349	493	305	951
Other grades .....	55	55	258	34,396	31,935	137,984
Brine for chemical works (Salt equivalent sold or used) .....	96,242	96,242	96,242	104,740	104,740	104,740
<b>Total .....</b>	<b>261,277</b>	<b>263,543</b>	<b>1,947,551</b>	<b>289,409</b>	<b>280,114</b>	<b>1,939,873</b>
Value of containers .....	-	-	560,413	-	-	591,182
<b>Grand total .....</b>	<b>261,277</b>	<b>263,543</b>	<b>2,507,964</b>	<b>289,409</b>	<b>280,114</b>	<b>2,531,055</b>

## Imports into Canada and Exports of Salt, 1932 and 1933

	1932		1933	
	Tons	Value	Tons	Value
		\$		\$
<b>IMPORTS—</b>				
Salt, for use of the sea or gulf fisheries .....	27,798	100,939	54,439	184,278
Salt, in bulk, n.o.p. ....	39,065	177,623	51,486	222,082
Salt, n.o.p., in bags, barrels, etc. ....	34,990	307,195	29,558	240,657
Salt, table, made by an admixture of other ingredients, when containing not less than 90 per cent of pure salt .....	180	10,197	137	4,220
<b>Total .....</b>	<b>102,033</b>	<b>595,954</b>	<b>135,620</b>	<b>651,237</b>
<b>EXPORTS—</b>				
<b>Total .....</b>	<b>5,627</b>	<b>36,248</b>	<b>5,335</b>	<b>43,461</b>

## Sodium Carbonate

Production of sodium carbonate in Canada during 1933 amounted to 253 tons valued at \$2,471 and came entirely from deposits located on or near the line of the Pacific Great Eastern Railway in the province of British Columbia. A considerable quantity of the 1933 output was consigned to soap manufacturing plants. The total tonnage of the mineral produced during the year was 49 per cent less than in 1932.

## Sodium Sulphate

Sodium sulphate occurs naturally in large deposits in Western Canada. During 1933 all shipments were made from deposits in Saskatchewan, the material being marketed in Canada and the United States. Paper pulp manufacturers afford a considerable market for this material and another valuable outlet is its use in the metallurgical treatment of the nickel-copper ores of Ontario.

Production in 1933 was valued at \$485,416 as against \$271,736 in 1932, an increase of 78 per cent.

Imports of salt cake in 1933 totalled 2,595 tons valued at \$34,371 as against 4,433 tons valued at \$51,925 during the previous twelve months; nitre cake imports totalled 574 tons worth \$15,989 as compared with 824 tons worth \$16,432 in 1932; and Glauber's salt imports amounted to 895 tons valued at \$13,237 as compared with 903 tons valued at \$11,027 during the corresponding period of 1932.

## Talc and Soapstone

A survey of the Canadian talc mining industry for the year 1933 reveals a noticeable increase in both the value and quantity of output as compared with corresponding data for 1932. The mineral was produced during both years in the Madoc area, Hastings county, Ontario, and near Anderson Lake, British Columbia. Canadian talc is of a high standard quality and is finding a market not only in various parts of Canada but also in the United States and Europe.

The soapstone production of the Dominion comes from near Broughton Station, Beauce county, Quebec; the value of output in 1933 was slightly under that for the preceding year. The mineral is sold in the form of both blocks and powder for various industrial purposes.

## Production in Canada, Imports and Exports of Talc and Soapstone, 1932 and 1933

	1932		1933	
	Tons	Value	Tons	Value
		\$		\$
PRODUCTION—				
Soapstone.....	—	46,751	—	43,593
Talc.....	12,103	112,287	15,169	143,014
<b>Total</b> .....	—	<b>159,038</b>	—	<b>186,607</b>
IMPORTS—				
Talc or soapstone, ground or unground— <b>Total</b> .....	<b>1,900</b>	<b>49,774</b>	<b>2,149</b>	<b>48,650</b>
EXPORTS—				
Talc— <b>Total</b> .....	<b>7,896</b>	<b>85,790</b>	<b>10,725</b>	<b>116,950</b>

## STRUCTURAL MATERIALS AND CLAY PRODUCTS

Structural materials, including cement, clay products, stone and sands and gravel showed considerable decline owing to the falling-off in construction work during 1933 as compared with the preceding year. Lime production was only slightly less than in 1932. Contracts awarded for building and construction projects in Canada during 1933 as reported by the McLean Building Review were valued at \$97,289,800 as compared with \$132,872,400 in 1932.

## Cement

## Production in Canada, Imports and Exports of Cement, 1932 and 1933

	1932		1933	
	Barrels	Value	Barrels	Value
		\$		\$
OUTPUT— <b>Total</b> .....	<b>4,643,675</b>	—	<b>2,410,518</b>	—
SALES—				
Quebec.....	2,210,584	3,155,702	1,517,555	2,128,900
Ontario.....	1,599,342	2,283,975	1,095,845	1,587,812
Manitoba.....	242,112	519,594	129,540	296,351
Alberta.....	163,571	399,922	149,206	299,530
British Columbia.....	263,112	530,528	115,286	226,342
<b>Total</b> .....	<b>4,496,721</b>	<b>6,939,721</b>	<b>3,007,432</b>	<b>4,536,935</b>
Stocks, December 31.....	2,431,881	—	1,830,928	—
IMPORTS—				
Portland.....	21,350	58,092	19,119	37,768
Manufactures.....	—	6,883	—	4,971
<b>Total</b> .....	—	<b>64,975</b>	—	<b>42,739</b>
EXPORTS— <b>Total</b> .....	<b>53,333</b>	<b>38,921</b>	<b>52,581</b>	<b>47,369</b>
APPARENT CONSUMPTION— <b>Total</b> .....	<b>4,466,738</b>	—	<b>2,974,029</b>	—

## Clay Products

## Production in Canada, Imports and Exports of Clay and Clay Products, 1932 and 1933

Kind	1932		1933	
	Quantity	Total selling value	Quantity	Total selling value
		\$		\$
<b>PRODUCTION (SALES)—</b>				
Brick: Soft mud process {Face..... M	6,188	108,582	2,482	41,743
{Common..... M	12,801	182,372	11,920	152,336
Stiff mud process (wire cut) {Face..... M	30,197	664,756	19,060	403,218
{Common..... M	40,753	638,022	23,782	358,700
Dry press {Face..... M	5,522	119,547	4,555	101,342
{Common..... M	4,248	46,762	4,541	51,814
Fancy or ornamental brick (including special shapes, embossed and enamelled brick)..... M	125	6,237	6	387
Sewer brick..... M	643	12,156	243	3,693
Paving brick..... M	6	155	1	42
Firebrick from domestic clay..... M	1,580	71,757	1,547	73,226
Fireclay..... tons	990	11,826	1,420	11,272
Bentonite..... tons	7	176	55	1,363
Fireclay blocks and shapes.....	-	75,209	-	80,625
Structural tile: Hollow blocks (including fireproofing and loadbearing tile)..... tons	48,118	421,672	21,395	175,773
Roofing tile..... No.	48,039	3,900	20,469	1,136
Floor tile (quarries)..... Sq. ft.	94,316	21,502	91,495	14,297
Drain tile..... M	7,385	186,070	9,771	219,190
Sewer pipe (including copings, flue linings, etc.).....	-	813,224	-	346,970
Pottery, glazed or unglazed.....	-	244,861	-	203,032
Other products.....	-	19,932	-	16,430
<b>Total</b> .....	-	<b>3,650,218</b>	-	<b>2,256,588</b>
<b>IMPORTS—</b>				
Building brick.....	-	41,163	-	3,975
Building blocks.....	-	15,682	-	2,082
Clays—				
China..... cwt.	346,270	154,125	509,068	210,047
Fire..... cwt.	385,956	101,768	793,894	101,916
Pipe.....	-	18,308	-	1,222
Zirconium silicate.....	-	1,252	-	687
Zirconium oxide.....	-	4,574	-	6,751
Other clays.....	-	182,258	-	192,461
Drain tile, unglazed.....	-	317	-	231
Drain and sewer pipe.....	-	10,856	-	10,294
Insulators, electric, porcelain.....	-	170,908	-	126,526
Earthenware and chinaware.....	-	3,236,055	-	2,858,562
Brick, fire, other, valued at not less than \$100 per M, rectangular shaped; the dimensions of each not to exceed 125 cubic inches, for use exclusively in the construction or repair of a furnace, kiln, etc.....	-	48,133	-	68,725
Brick, fire, n.o.p., for use exclusively in the construction or repair of a furnace, kiln or other equipment of a manufacturing establishment.....	-	384,250	-	379,952
Firebrick, n.o.p.....	-	37,173	-	34,480
Firebrick, chrome.....	-	9,848	-	38,431
Magnesite brick.....	-	71,077	-	246,855
Silica brick.....	-	122,952	-	147,901
Paving brick.....	-	14,446	-	4,866
Other clay manufactures.....	-	780,605	-	524,732
<b>Total</b> .....	-	<b>5,405,750</b>	-	<b>4,961,265</b>
<b>EXPORTS—</b>				
Building Brick..... M	535	8,011	383	6,789
Clay—				
Unmanufactured..... cwt.	3,031	895	9,769	1,522
Manufactures.....	-	13,436	-	11,016
Earthenware.....	-	33,301	-	26,965
Porcelain insulators.....	-	140,761	-	95,260
<b>Total</b> .....	-	<b>196,194</b>	-	<b>141,552</b>

## Sand and Gravel

Sand and gravel production in Canada during 1933 totalled 12,909,451 tons valued at \$4,369,494 as compared with 14,469,942 tons valued at \$4,480,596 shipped in 1932.

Imports of sand and gravel into Canada during 1933 amounted to 89,017 tons worth \$72,480 while sand imported for the manufacture of glass and carborundum and for use in foundries amounted to 64,114 tons valued at \$160,131. Corresponding data for 1932 showed 36,387 tons worth \$48,677 and silica sand 59,176 tons valued at \$162,869. Exports of sand and gravel in 1933 totalled 102,174 tons appraised at \$15,801 as against a total of 177,710 tons worth \$33,620 exported in 1932.

## Lime

## Production in Canada, Imports and Exports of Lime, 1932 and 1933

	Total 1932		1933				Total 1933	
	Quantity	Value	Quicklime		Hydrated Lime		Quantity	Value
			Tons	\$	Tons	\$		
<b>PRODUCTION—</b>								
Nova Scotia.....	5,533	35,534	3,325	24,270	580	5,890	3,914	30,160
New Brunswick.....	11,572	109,184	8,059	68,440	8,790	66,340	16,849	134,786
Quebec.....	93,813	587,901	88,707	532,766	20,594	107,955	109,301	640,721
Ontario.....	166,703	1,273,230	123,943	991,946	19,733	143,152	143,676	1,135,008
Manitoba.....	18,235	172,110	14,793	110,057	3,239	56,683	18,032	167,640
Alberta.....	6,642	56,577	6,886	59,061	97	976	6,983	60,037
British Columbia.....	17,152	160,001	18,147	144,479	2,570	18,449	20,717	162,928
<b>Total.....</b>	<b>320,650</b>	<b>2,391,347</b>	<b>263,960</b>	<b>1,931,923</b>	<b>65,612</b>	<b>399,443</b>	<b>319,472</b>	<b>2,331,370</b>
<b>IMPORTS—Total.....</b>	<b>322</b>	<b>6,341</b>	-	-	-	-	<b>272</b>	<b>4,444</b>
<b>EXPORTS—Total.....</b>	<b>9,344</b>	<b>189,329</b>	-	-	-	-	<b>10,359</b>	<b>192,929</b>

## Stone

## Production of Stone in Canada by Kinds and by Provinces, 1933

	Granite		Limestone		Marble		Sandstone	
	Tons	\$	Tons	\$	Tons	\$	Tons	\$
Nova Scotia.....	3,430	22,230	16,072	33,381	-	-	11,790	16,043
New Brunswick.....	2,196	87,080	15,200	42,821	-	-	800	12,906
Quebec.....	128,729	417,819	1,174,971	982,792	7,689	39,853	60,491	40,292
Ontario.....	76,925	78,448	1,150,772	862,263	853	13,381	8,855	12,333
Manitoba.....	-	-	32,858	71,240	-	-	-	-
Alberta.....	-	-	1,472	4,317	-	-	700	20,000
British Columbia.....	148,918	144,887	95,008	90,303	-	-	-	-
<b>Total for Canada.....</b>	<b>360,398</b>	<b>748,470</b>	<b>2,486,359</b>	<b>2,087,207</b>	<b>8,512</b>	<b>53,234</b>	<b>82,666</b>	<b>101,574</b>

## Production in Canada, Imports and Exports of Stone, 1932 and 1933

	1932		1933	
	Tons	Value	Tons	Value
		\$		\$
<b>PRODUCTION—</b>				
Nova Scotia.....	34,661	87,307	31,492	71,660
New Brunswick.....	16,805	154,018	18,202	142,807
Quebec.....	2,240,825	2,300,901	1,371,850	1,480,756
Ontario.....	1,905,138	1,655,016	1,237,435	964,425
Manitoba.....	78,423	299,282	32,858	71,240
Alberta.....	1,428	2,885	2,172	24,317
British Columbia (includes slate for 1932).....	407,892	381,802	243,926	235,280
<b>Canada.....</b>	<b>4,691,172</b>	<b>4,942,711</b>	<b>2,937,935</b>	<b>2,990,485</b>
<b>IMPORTS—</b>				
Building stone, other than marble or granite, sawn on more than two sides, but not sawn on more than four sides.....	17	275	4	200
Building stone other than marble or granite, planed, turned, cut or further manufactured than sawn on four sides.....	7	796	-	-
Flagstone, sandstone, and all building stone, not hammered, sawn or chiselled.....	-	32,887	-	8,947
Flagstone and building stone, other than marble or granite, sawn on not more than two sides.....	-	1,758	-	720
Granite, sawn only.....	-	7,689	-	5,320
Granite, manufactures of, n.o.p.....	-	11,240	-	8,406
Granite monuments.....	-	68,466	-	28,312
Granite, rough, not hammered or chiselled.....	-	48,351	-	48,028
Paving blocks.....	-	626	-	35
Marble, rough, not hammered or chiselled.....	-	18,648	-	7,005
Marble, sawn or sand rubbed, not polished.....	-	27,132	-	10,416
Marble, not further manufactured than sawn for tombstones.....	-	12,323	-	16,005
Marble, manufactures of, n.o.p.....	-	43,044	-	18,526
Refuse stone.....	33,388	28,559	41,277	36,773
Slate—including roofing, pencils, writing, mantels and manufactures of, n.o.p.....	-	57,931	-	30,567
Manufactures of stone, n.o.p.....	-	34,221	-	15,531
<b>Total.....</b>	-	<b>393,946</b>	-	<b>226,225</b>
<b>EXPORTS—</b>				
Crushed stone.....	43,993	80,451	40,343	76,162
Granite and marble, unwrought.....	2,133	41,172	904	12,997
Freestone, limestone, and other building stone, unwrought.....	20	100	113	1,480
Dressed stone.....	-	3,084	-	701
<b>Total.....</b>	-	<b>124,807</b>	-	<b>91,340</b>

†Includes marble not further manufactured than sawn, when imported by manufacturers of tombstones to be used exclusively in the manufacture of such articles in their own factories.



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