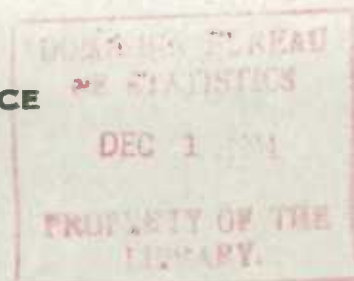


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Minister of Trade and Commerce

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



SUMMARY REVIEW
OF
THE SILVER MINING INDUSTRY
IN
CANADA
1943



OTTAWA
1944

Price 25 cents

MILLION
FINE OZ.

SILVER PRODUCTION

IN CANADA

1914-1943

30

20

10

0

1914 '15

'20

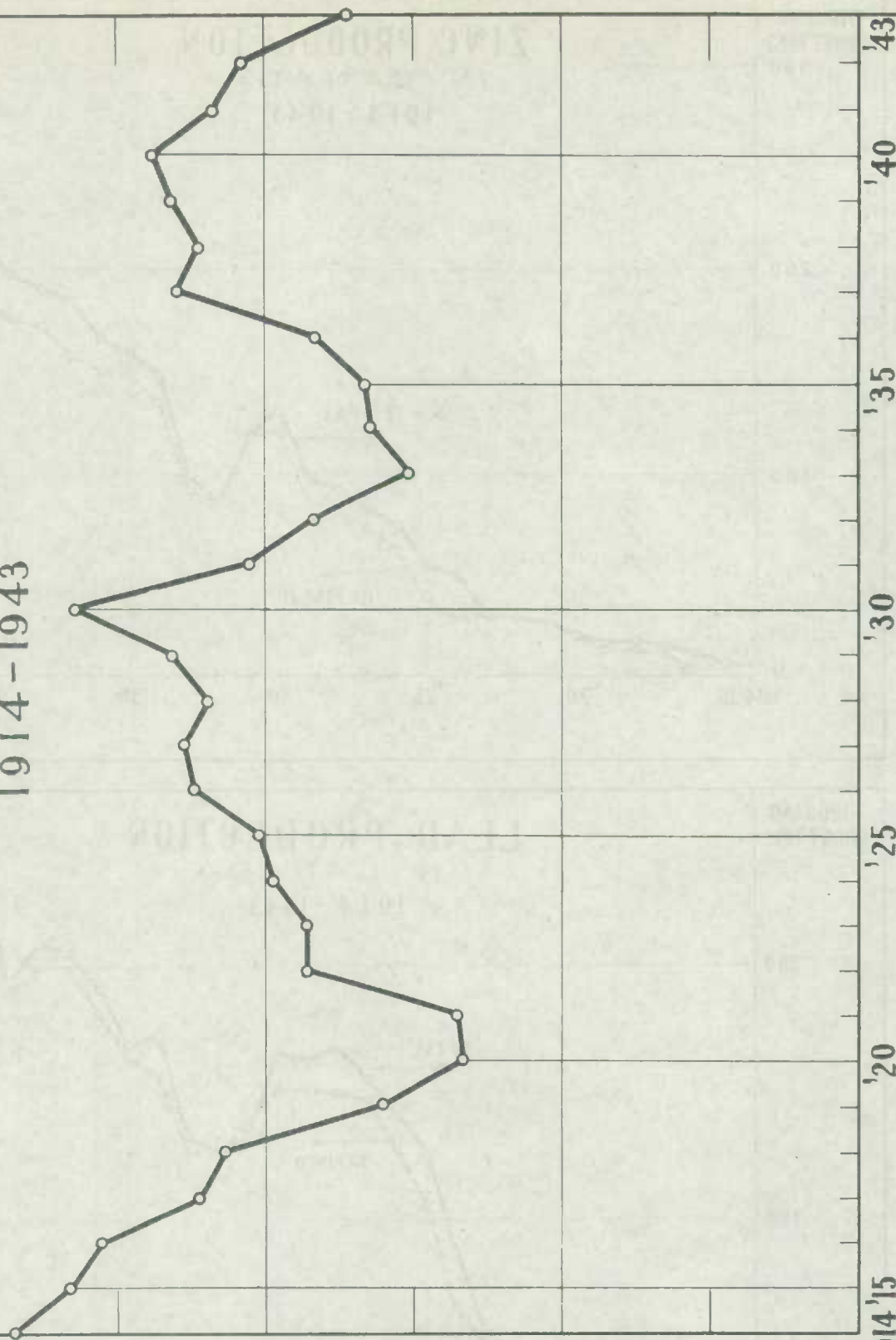
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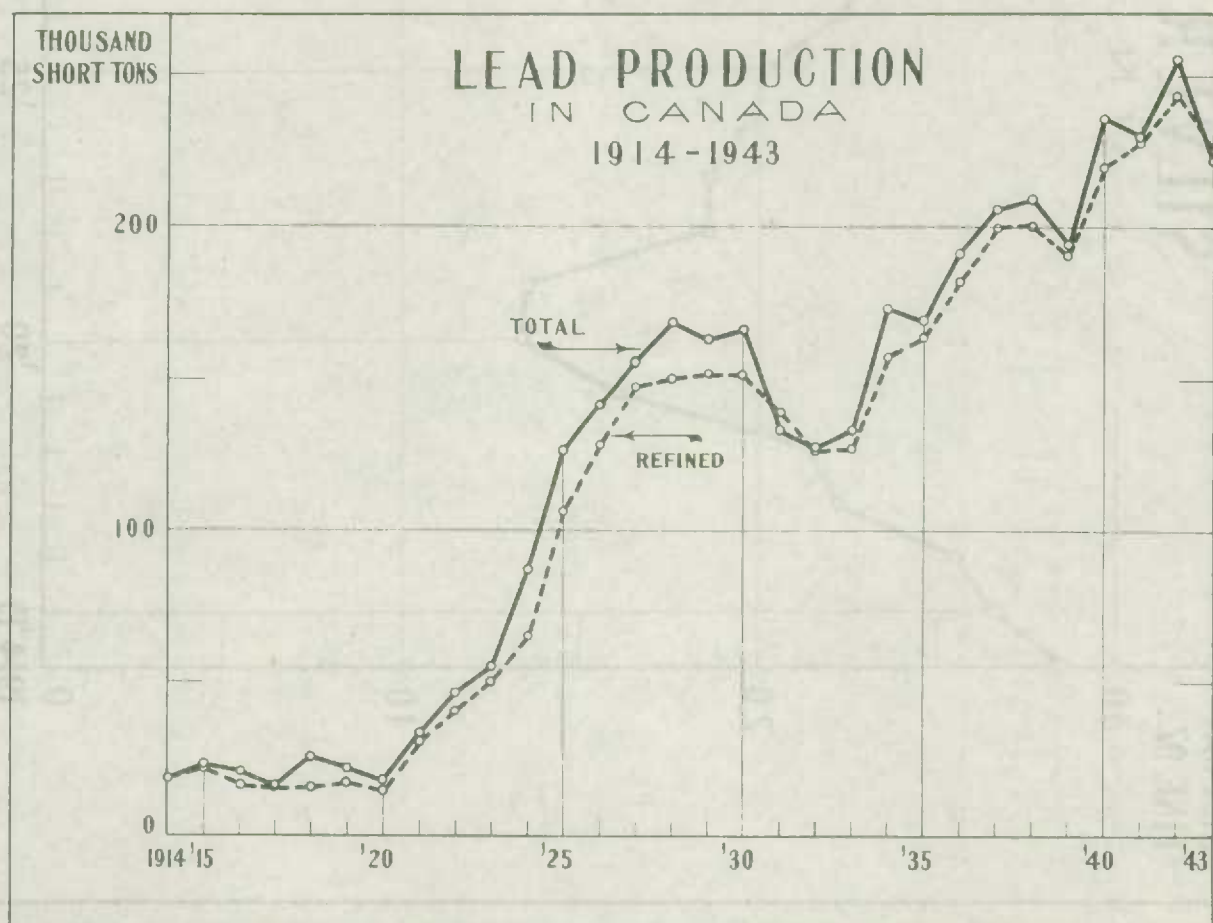
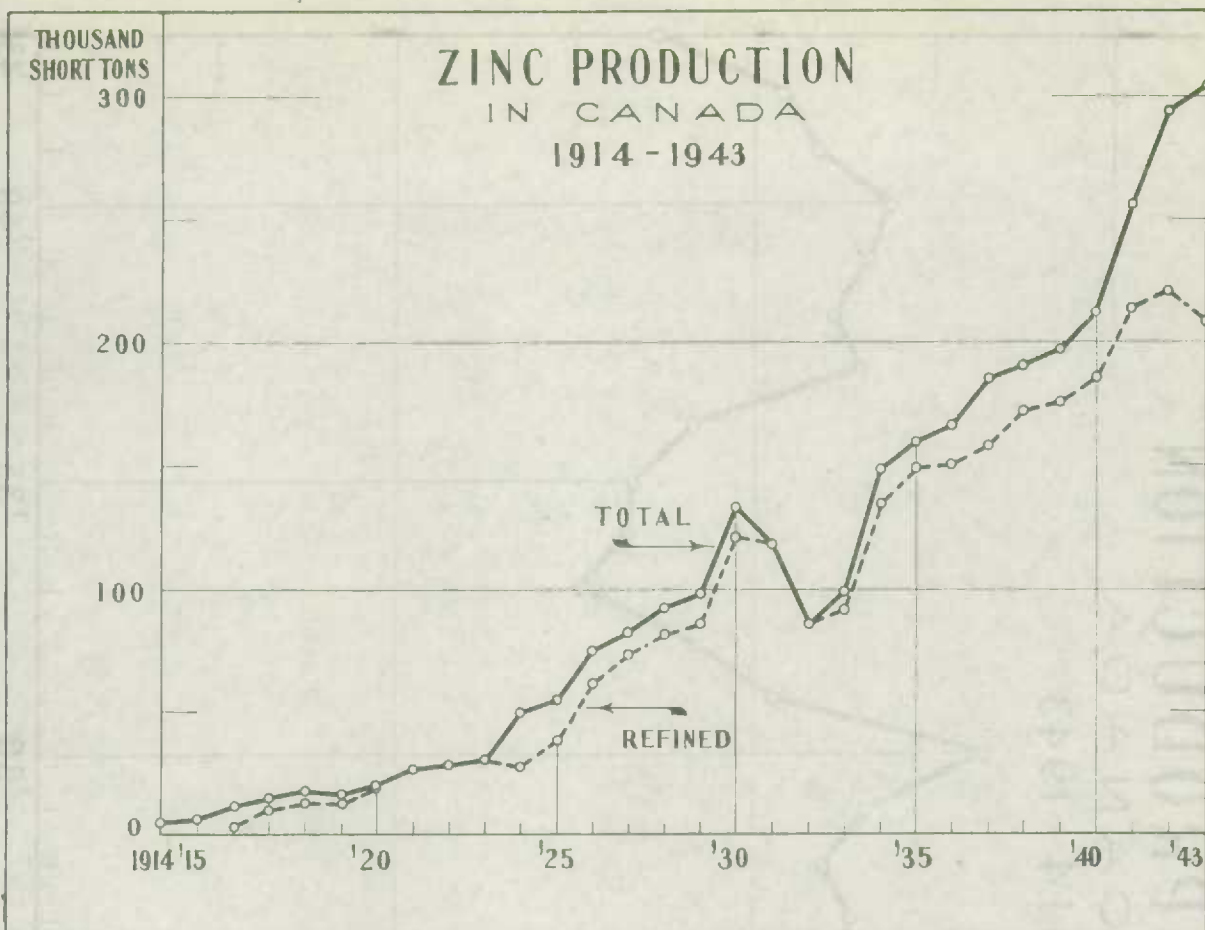
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 Mining Statistician:

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THE SILVER MINING INDUSTRY IN CANADA, 1943

(a) The Silver-Cobalt Mining Industry.

(b) The Silver-Lead-Zinc Mining Industry.

Definition of the Industry - Silver mining in Canada is not a distinct mining industry inasmuch as silver-bearing minerals usually occur in association with other metals of economic value—with lead and zinc; with cobalt, nickel and arsenic; with lode and placer free gold; in copper-gold and nickel-copper ores, and at Great Bear Lake, N.W.T., with silver-pitchblende. Silver-lead-zinc mining is a very important industry in British Columbia and, to a lesser extent, in the Yukon Territory. In Eastern Canada, lead and zinc ores have been mined in Ontario, Quebec and Nova Scotia.

It is to be noted that, in addition to its recovery from silver-lead ores, zinc is now produced in large quantities from copper-gold-silver ores mined in Quebec, Manitoba and Saskatchewan.

General statistical data contained in this report are essentially those pertaining to the mining of silver-cobalt and silver-lead-zinc ores and, to a lesser extent, silver-pitchblende ores.

(a) THE SILVER-COBALT MINING INDUSTRY

The mining of silver-cobalt ores in Canada is confined almost entirely to the district of Temiskaming in northern Ontario. Veins containing these metals were discovered at or near the present town of Cobalt in 1903 and shipments of ores from this area have been continuous since 1904. Depletion and exhaustion of ore reserves during recent years have resulted in a relatively great decline in the production of metals from these deposits. In most instances, operations at properties, some of which were prominent as producers in the past, are conducted by lessees and shipments range from one to several hundred tons. The increased demand for cobalt as an alloying metal has, for some years, stimulated operations of a salvage nature at several of the older mines.

In order to encourage the production of cobalt for war requirements, United States and Canadian government agencies co-operated during a considerable period of the present war in the purchase of Canadian cobalt ores. Ores thus acquired were consigned in 1942 and 1943 to a United States Government agency stock pile located at Deloro, Ontario. These government purchases were discontinued in the latter part of 1943.

The only straight custom mill now at Cobalt is the old O'Brien 100-ton mill, now operated by C. W. J. O'Shaughnessy. In August of 1943 the concentrating plant at Cobalt of Cobalt Products Ltd. was taken over by Silanco Mining & Smelting Company. The Temiskaming Testing Laboratories, recently destroyed at Cobalt by fire, have been rebuilt by the Ontario Department of Mines. This plant renders a valuable service to many operators who depend on it for the sampling, valuation and often marketing of ores. Shipments of cobalt ore were also made in 1942 and 1943 from a deposit located at Werner Lake, some 40 miles north of Minaki near the Ontario-Manitoba boundary.

The number of operators reported as actively engaged in the mining or shipping of silver-cobalt ores in 1943 totalled 20; employees numbered 221 and salaries and wages paid amounted to \$290,654. The gross value of shipments totalled \$721,173 and the net value of sales was estimated at \$578,861.

Table 1 - PRINCIPAL STATISTICS OF THE SILVER-COBALT MINING INDUSTRY IN CANADA, 1929-1945

Year	Number of active operators (/)	Number of operating mines (a)	Capital employed \$	Number of em- ployees	Salaries and wages \$	Cost of fuel and electricity \$	Value of bullion, ore, concentrates or residues sold \$
1929	27	32	15,820,455	1,149	1,552,355	407,952	5,918,516
1930	25	28	12,268,522	1,045	1,488,591	552,844	5,657,181
1931	22	26	9,552,520	786	1,149,689	227,467	1,925,595
1932	17	20	5,005,872	569	551,255	124,478	1,755,708
1933	12	14	5,565,755	242	322,281	85,565	1,071,602
1934	15	16	5,102,491	286	361,726	85,685	1,580,518
1935	27	28	6,580,751	402	494,791	114,459	1,070,716 (x)
1936	24	25	5,946,702	565	458,546	104,572	915,576 (x)
1937	25	25	2,655,060	300	394,386	90,154	540,762 (x)
1938	34	30	2,696,217	297	386,851	75,549	288,295 (x)
1939	56	45	2,461,556	525	412,728	65,486	655,052 (x)
1940	48	44	557,080	125	158,024	10,900	809,265 (x)
1941	24	14	459,877	182	229,984	40,875	662,445 (x)
1942	15	14	558,691	192	285,980	68,549	600,207 (x) (b)
1945	20	21	587,039	221	290,654	74,691	578,861 (x) (b)

(/) Includes leasers shipping from dumps.

(x) Net value.

(a) Includes properties on which operations were of a salvage nature only, and the number of mines as recorded is based partially on data of a conjectural nature.

(b) Includes value of ores consigned to the United States Government stock pile at Deloro, Ontario.

NOTE: The cost of process supplies used—explosives, etc.—was recorded for the first time in 1935 and, beginning with 1935, this cost together with the cost of fuel and electricity purchased, freight and smelter charges were deducted from the gross value of sales.

Table 2 - NUMBER OF WAGE-EARNERS ON PAYROLL OR TIME RECORD AT END OF MONTH IN THE SILVER-COBALT MINING INDUSTRY, 1939-1945

Month	1939	1940	1941	1942	1 9 4 5				
					M i n e			M i l l	
					Surface		Underground		
					Male	Female	Male	Male	Female
January	296	63	140	144	46	1	90	33	...
February	281	72	144	109	48	1	97	35	...
March	281	79	159	115	57	1	89	34	...
April	293	84	97	141	61	1	79	36	...
May	312	122	139	179	47	1	94	49	...
June	349	158	146	185	46	1	80	54	...
July	325	144	186	200	49	1	72	54	...
August	308	155	193	200	54	1	70	49	...
September	268	128	181	195	81	1	85	51	...
October	233	127	184	180	63	1	66	37	...
November	190	88	161	172	66	1	82	36	...
December	180	74	154	150	55	1	71	18	...

Silver

- 3 -

Table 3 - STATISTICS OF THE SILVER-COBALT MINES AND MILL OPERATIONS IN CANADA(b), 1941-1943

		1 9 4 1	1 9 4 2	1 9 4 3
Number of mines in operation (x)		14	14	21
Ore mined	tons	11,507	25,550	39,184
Ore salvaged from surface	tons	(c)	18,532	395
Ore treated (milled)(a)	tons	38,715	43,851	39,625
Tailings treated	tons	...	...	8,865
Concentrates produced	tons	1,596	1,415	1,346
Gross value of bullion, ore, concentrates and residues sold	\$	788,815	750,250(d)	721,173(d)
Cost of freight	\$	7,017	1,439	4,192
Smelter charges	\$	18,719	16,255	15,361
Cost of fuel and purchased electricity used..	\$	40,875	68,349	74,691
Cost of process supplies used	\$	59,761	64,000	48,068
Net value of sales	\$	662,443	600,207	578,861

(x) All mines located in northern Ontario and includes properties on which the operations consisted only in salvaging of ore from dumps, etc.

(a) Does not include crude ore shipped.

(b) Partly estimated or conjectural as data are unobtainable from some shippers.

(c) Data not available.

(d) Includes value of ore consigned to United States Government stock pile at Deloro, Ontario.

Table 4 - FUEL AND ELECTRICITY USED DURING 1943

Kind		Quantity	Cost at plant
			\$
Bituminous coal—(a) From Canadian mines	short ton	4	56
(b) Imported	short ton	1,170	19,180
Anthracite coal—(a) From United States	short ton	114	1,880
(b) Other	short ton	34	571
Gasoline (including gasoline used in cars and trucks).	Imp. gal.	27,648	8,482
Kerosene or coal oil	Imp. gal.	95	24
Fuel oil and diesel oil	Imp. gal.	8,287	1,212
Wood (cords of 128 cubic feet of piled wood)	cord	252	1,727
Compressed air	cu.ft.	67,464,700	17,023
Electricity purchased for power and lighting (including service charge)	K.W.H.	2,294,327	24,536
TOTAL .....	...	...	74,691
Electricity generated (a) For own use	K.W.H.	...	...
(b) For sale	K.W.H.	...	...

Table 5 - POWER EQUIPMENT, 1943

	Ordinarily in Use		In Reserve or Idle	
	Number of units	Total horse power	Number of units	Total horse power
1. Steam engines	2	195	2	40
2. Steam turbines .....	...	...	...	...
3. Diesel engines	3	125	1	120
4. Gasoline, gas and oil engines, other than Diesel engines .....	...	...	3	24
5. Hydraulic turbines or water wheels .....	...	...	...	...
6. Electric motors (Except those reported under Item 8)				
(a) Operated by purchased power	73	1,693	15	516
Total (1), (2), (3), (4), (5) and (6a)	78	2,013	21	700
(b) Operated by power generated by 1, 2, 3, 4 and 5	...	...	...	...
7. Stationary boilers	5	175	1	10
8. Motor generator sets .....	...	...	...	...

Arsenic—Canadian production of arsenic (As_2O_3) during 1943 from domestic ores totalled 3,153,538 pounds valued at \$254,009 compared with 14,967,874 pounds worth \$652,041 in 1942. Of the 1943 output, 2,744,921 pounds valued at \$221,085 represents refined arsenic produced by the Deloro Smelting & Refining Co., Deloro, Ontario from crude arsenic recovered at the O'Brien and Beattie gold mines in the Province of Quebec together with the As_2O_3 content of crude arsenic exported from the Beattie gold mine. The balance of Canadian production in 1943, all from Ontario, was obtained in the treatment of silver-cobalt-arsenic ores at the Deloro smelter. In addition to the arsenic recovered from Ontario and Quebec ores, there is a very considerable quantity of arsenic contained in auriferous quartz ores exported to the United States from British Columbia mines; no data are available on the possible recovery of this arsenic and the Canadian mines receive no payment for any part of the arsenic content; it is therefore not credited in 1943 as commercial production. Deposits containing arsenopyrite in association with gold occur in various other parts of Canada.

A report issued by the Bureau of Mines, Ottawa, states that the world production of arsenic is estimated by the United States Bureau of Mines in excess of 80,000 tons compared with 64,000 tons in 1939. The principal producing countries are: United States, Mexico, Sweden, France, Belgium, Australia, Japan, Brazil and Canada. Complete data on world production of arsenic are not available at present.

"Arsenic is used chiefly in the manufacture of insecticides. It is also used in the preparation of weed killers, sheep and cattle dip, wood preservatives, and in the manufacture of glass, minor uses being in pigments, tannery supplies, and pharmaceutical preparations. Arsenic salts are used to replace creosoting in the preservation of wood. The use of arsenic to manufacture chemical warfare materials has notably increased its consumption. Calcium arsenate and, to a much lesser extent, lead arsenate are the arsenicals ordinarily used in insecticides. Paris green, which is a copper acetoarsenite, is also used as an insecticide. Magnesium arsenate and manganese arsenate have also been used for this purpose. A considerable tonnage of white arsenic, in the form of crude arsenic or as sodium arsenite is used in the manufacture of weed killers. High-grade white arsenic is used in glass as a decolorizer, opacifier and refining agent. Small quantities of arsenic are used in the paint industry, as realgar or arsenic disulphide (As_2S_2) and as orpiment or arsenic trisulphide (As_2S_3).

"Although the world consumption of white arsenic has varied greatly during the past ten years, the quoted price remained steady at $3\frac{1}{2}$ cents a pound up to the middle of 1941. As most of it is a by-product of metal recovery, through necessity rather than choice, and as the potential supply is far in excess of any normal demand, there seems to be little likelihood of any sustained increase in price. The New York price remained fixed at 4 cents a pound throughout 1942 and 1943. The Canadian price of white arsenic, as given by Canadian Chemistry & Process Industries, remained at $5\frac{1}{2}$ to 6 cents a pound throughout 1943."

Table 6 - PRODUCTION IN CANADA, IMPORTS AND EXPORTS OF ARSENIC, 1942 and 1943

	1942		1943	
	Quantity	Value	Quantity	Value
	Pounds	\$	Pounds	\$
<u>PRODUCTION</u> -				
White arsenic (x)	14,967,374	652,041	3,153,538	254,009
<u>IMPORTS</u> -				
White arsenic (arsenious oxide)	2,082	203	400	124
Sulphide of arsenic	3,716	1,541	3,373	1,125
Soda, arseniate of, binarseniate	96,450	28,936	83,329	18,712
Arsenate of lead	18,000	1,993	4,432	484
Arsenate of lime	10,576	795	9,664	665
TOTAL .....	...	33,518	...	21,108
<u>EXPORTS</u> --Arsenic--TOTAL	8,386,300	226,018	6,617,100	553,484

(x) Entirely from Ontario.

(x) Includes arsenic in ores exported from British Columbia in 1942 but not in 1943 (see text).

Table 7 - CONSUMPTION OF ARSENIOS OXIDE AND ARSENIC ACID IN THE MANUFACTURE OF CANADIAN INSECTICIDES, 1932-1942

Year	Pounds	\$	Year	Pounds	\$
1932	1,721,044	69,250	1938	3,029,145	93,873
1933	3,116,401	110,011	1939	4,287,435	132,584
1934	4,709,443	168,185	1940	5,607,444	122,265
1935	2,736,089	86,983	1941	5,707,499	212,637
1936	3,368,956	106,132	1942	6,106,887	273,919
1937	3,296,559	102,651			

NOTE: In addition, the following calcium arsenate was used: 1940, 342,452 pounds valued at \$21,671; 1941, 509,381 pounds at \$34,704, and 1942, 394,978 pounds worth \$26,773.

Cobalt—Output of Canadian cobalt comes entirely from cobalt-bearing deposits located in northern Ontario and usually includes the cobalt recovered and sold in the metallic state, the cobalt content of oxides and salts sold and the metal content of cobaltiferous ores exported. No cobalt metal, oxides or salts were produced in Canada from Canadian ores in 1943 and the 175,961 pounds valued at \$191,407 credited as Canadian cobalt production during the year under review represents the metal content of Canadian ores exported. Not included in this figure is the cobalt contained in ores purchased for Metals Reserve Company of the United States. These ores were stockpiled at Deloro, Ontario and their metal content will be recorded as Canadian production when exported or treated in Canada.

Deloro Smelting and Refining Company, Limited, has the only plant in Canada that treats ores for the recovery of cobalt. The plant is located at Deloro, Ontario, and produces cobalt metal, oxides, and salts, chiefly for the British market. For the past two years the company has been treating cobalt residues from Africa and has processed little or no Canadian ores. The Canadian production of cobalt ore in 1943 was largely purchased by Deloro Smelting and Refining Company as agent for the Department of Munitions and Supply, acting for Metals Reserve Company of the United States, and was stockpiled for this account.

In the United States, most of the cobalt produced is obtained from cobalt residues imported from Africa. These are converted to metal at Niagara Falls, N.Y., and to oxide at New Brighton, Wilmington, and Canonsburg, in Pennsylvania, and at Cleveland, Ohio.

The total annual world output is estimated to approximate 6,000 metric tons. The greater part of the world's requirements are now supplied from the extensive deposits of the Belgian Congo and Northern Rhodesia, the remainder being contributed mainly by India, French Morocco, and Canada. Other producing countries are Australia, Japan, Germany, and Russia.

The Bureau of Mines, Ottawa, reports that about 75 per cent of the world production of cobalt is used in the metallurgical industry and most of the remainder in the ceramic industry. The metallurgical uses are for high-speed cutting steels; for making stellite or stellite-type alloys, which contain 45 to 50 per cent cobalt, 30 to 37 per cent chromium, and 12 to 17 per cent tungsten. There are various modifications of this composition, but all contain high percentages of cobalt. Stellite is used for cutting metals at high speed and for making permanent magnets. The use of stellite continues to spread and it is of great value in the manufacture of valves for aeroplane engines. Small quantities of cobalt used with other chemicals in nickel-plating solutions are said to produce a bright nickel electro deposit as an undercoating for later chromium plating. A certain amount of cobalt is used in electroplating and as a catalyst. Cobalt oxide is used mainly in the ceramic industry owing to its fine colouring properties. Other compounds of cobalt are used as driers in paints and varnishes.

Consumption of cobalt, chiefly in the production of high-speed cutting tools and permanent magnets, increased substantially during the past two years.

The market for cobalt is uncertain at present and will remain so until the Metals Reserve Company in Washington decides on what is to be done with the surplus stocks that have been built up.

The price of cobalt has remained fairly steady in recent years. The nominal New York price for cobalt metal remained at \$1.50 a pound and for black oxide in 350-lb. lots, at \$1.85 a pound, throughout the year. The nominal price for cobalt ore, 10 per cent grade, f.o.b. cars, Ontario, remained at \$1.10 a pound of cobalt.

Since 1904, the first year for which cobalt production was recorded in Canada, there were produced, to the end of 1943, in all forms, 34,381,103 pounds of Canadian cobalt valued at \$33,692,811.

Table 8 - PRODUCTION OF DOMESTIC COBALT IN CANADA, 1913-1919 and 1929-1943

Year	Pounds	Year	Pounds
1913	1,642,000	1933	466,702
1914	702,000	1934	594,671
1915	412,000	1935	681,419
1916	800,000	1936	887,591
1917	674,000	1937	507,064
1918	760,000	1938	459,226
1919	596,000	1939	732,561
		1940	794,359
1929	929,415	1941	265,257
1930	694,163	1942	83,871 (x)
1931	521,051	1943	175,961 (x)
1932	490,631		

(x) Exclusive of cobalt in ores placed on United States Government stock pile at Deloro, Ontario.

Table 9 - PRODUCTION IN CANADA, IMPORTS AND EXPORTS OF COBALT, 1942 and 1943

Table 3 - PRODUCTION IN CANADA, IMPORTS AND EXPORTS OF COBALT, 1942 and 1943

		1 9 4 2		1 9 4 3	
		Quantity	\$	Quantity	\$
PRODUCTION (In terms of metallic cobalt and cobalt in oxides and salts sold and in ores exported)					
	pounds	83,871(x)	88,444	175,961(x)	191,407
IMPORTS —Cobalt ore					
	pounds	4,336,200	1,485,370	2,236,300	785,721
Oxide of cobalt					
	pounds	164	433	55	130
EXPORTS —Cobalt, contained in ore					
	pounds	93,400	97,266	163,100	188,510
Cobalt, metallic					
	pounds	943,632	1,471,024	911,107	1,507,635
Cobalt, alloys					
	pounds	226,963	1,253,264	214,202	1,021,663
Cobalt oxides and cobalt salts ...					
	pounds	232,808	285,424	67,040	155,630

(x) Exclusive of cobalt in ores placed on Government stock pile at Deloro, Ontario; this will be credited as Canadian production when exported or recovered in Canadian smelters.

Table 10 - COBALT SALTS USED IN THE MANUFACTURE OF CANADIAN PIGMENTS AND PAINTS, 1932-1942

Year	Pounds	\$	Year	Pounds	\$
1932	17,021	10,960	1938	43,703	17,993
1933	10,885	7,463	1939	52,979	21,638
1934	26,300	14,069	1940	89,332	28,111
1935	110,419	33,292	1941	74,445	39,349
1936	170,932	43,230	1942	200,228	145,433
1937	37,258	17,062			

OPERATORS IN CANADIAN SILVER-COBALT MINING INDUSTRY, 1943

Name of Operator	Head Office Address	Location
Austin Mining Synd. (Nerlip)	Box 643, Cobalt, Ont.	Coleman Tp.
Ankarlo & Bell (Silver Bar)	3033 N. Humboldt Ave., Milwaukee 12, Wis.	Cobalt
Bellayse Mineral Interests Ltd.	room 710 .. 36 Toronto St., Toronto, Ont.	South Lorraine
Cobalt Products Ltd. (Provincial) (x)	67 Yonge St., Toronto, Ont.	Bucke Tp.
(Agaunico) (x)		Gillies Limit
Comet Leasing Co. (Kerr Lake)	Box 274, Cobalt, Ont.	Coleman Tp.
Cross Lake Lease (O'Brien)	Box 390, Cobalt, Ont.	Haultain Tp.
(Miller Lake O'Brien)		Coleman Tp.
Davis, Norman B. (x)	512 Victoria Bldg., Ottawa, Ont.	Warner Lake
McCready, W. E. (Nipissing)	Cobalt, Ont.	Cobalt
Mercier, Raoul (Trethewey)	Box 547, Cobalt, Ont.	Coleman Tp.
(Poster)		

OPERATORS IN CANADIAN SILVER-COBALT MINING INDUSTRY, 1943
(Concluded)

Name of Operator	Head Office Address	Location
Murphy and Landry (Coniagas) (Trethewey)	Cobalt, Ont.	Cobalt
Nipissing Mining Co. Ltd.	1007 Excelsior Life Bldg., Toronto	Cobalt
Presse, A. (Nipissing)	Cobalt, Ont.	Cobalt
O'Shaughnessy, C. V. J. (x)	Box 319, Cobalt, Ont.	Custom mill—Cobalt
Peterson Lease (Hudson Bay)	52 Nickal St., Cobalt, Ont.	Cobalt
Rowe, Stuckey & Parsons (Frontier)	Box 755, Cobalt, Ont.	Silver Centre
Sarynac Milling & Development Co. Ltd. (x) (Coniagas and Red Jacket)	501 Central Bldg., Toronto, Ont.	Coleman Tp.
Sutherland, J. H. (Lawson)	Cobalt, Ont.	Coleman
Silanco Mining & Smelting Corp. Ltd. (x)	45 Richmond St. W., Toronto, Ont.	Bucke Tp. Gillies Limit
Smith, Chas. (Cobalt Lake)	Cobalt, Ont.	Cobalt
Sycee Cobalt Silver Mines Ltd.	Fasken & Co., 36 Toronto St., Toronto, Ont.	Coleman Tp.
Taylor, W. D. (Lorrain Trout Lake)	Cobalt	South Lorraine
Waldag Prospecting Synd. (Waldman)	room 304 .. 21 King St. E., Toronto, Ont.	Gillies Limit
Windsor Cobalt Silvers Ltd. (Cobnor) (x)	room 15 .. 9 Toronto St., Toronto, Ont.	Bucke Tp.

(/) Now operated by Silanco Mining & Smelting Corp. Ltd.

(x) Conducted milling operations.

NOTE: In addition to the names listed, there were several small shippers from whom official reports were unobtainable. Mine names shown in brackets.

(b) THE SILVER-LEAD-ZINC MINING INDUSTRY

In 1943 the silver-lead-zinc mining industry of Canada reported 31 operators or firms as being actively engaged in the mining, prospecting or development of silver-lead-zinc deposits and of these operators, 24 reported commercial shipments during the year under review. Capital employed totalled \$20,603,191; employees numbered 3,097, and salaries and wages paid amounted to \$6,423,724. The cost of explosives and other process supplies consumed totalled \$2,044,367 and fuel and electricity used was recorded at \$986,519. The gross value of production as reported by the entire industry totalled \$27,072,882 and the net value of same was estimated at \$21,952,644.

Quebec—A report on "Lead in 1943" as prepared by the Bureau of Mines, Ottawa, states:

"In Quebec, the Tetreault property near Notre Dame-dés-Anges, Portneuf county, was taken over in 1942 by Siscoe Gold Mines, Ltd., and was operated under the supervision of Wartime Metals Corporation. The lead and zinc concentrates produced are contracted to the Metals Reserve Company. Production continued throughout 1943. New Calumet Mines, Ltd., operating at Calumet Island, Pontiac county, completed the erection of a 500-ton mill, which went into production in September, 1943. The property was actively explored and developed during the past two years; lead concentrates were stock-piled and zinc concentrates exported in 1943.

"Aldermac Copper Corporation is opening up a new property at Moulton Hill, Ascot township, 4 miles from Sherbrooke. The property is being developed underground and it is expected that a new 250-ton concentrator will be in operation by June 15, 1944. The sulphide ore is composed of copper, lead, and zinc sulphides with appreciable values in gold and silver. The mill will produce copper, lead and zinc concentrates for shipment to the United States. The proportion of metals in the sulphide is approximately 3 zinc, 1 lead and 1 copper. A pyrites concentrate may also be produced.

"Golden Manitou Mines, Ltd., took over in 1941 part of the holdings near Val D'Or of Quebec-Manitou Mines, Limited, and in 1942 completed the erection of a 600-ton mill for the production of zinc and gold concentrates. The capacity of the mill has since been increased to 900 tons. Lead and zinc-bearing concentrates and gold precipitate were produced and shipped during 1943.

"Investigation in 1945 by Hollinger North Shore Exploration Company (subsidiary of Hollinger Consolidated Gold Mines), of its concession near the Quebec-Labrador boundary, disclosed occurrences of zinc, which will be drilled in 1944.

"Ontario—In Ontario, Lake Geneva Mining Company, Limited, continued producing lead and zinc concentrates throughout the year for the Metals Reserve Company. The operation is being carried on through Wartime Metals Corporation. An extensive exploration campaign was concluded during the year. This indicated the continuation of the veins and two new levels were opened up. The mill capacity is 100 tons of ore daily.

"British Columbia—In British Columbia, the lead and zinc concentrates produced in the concentrator at the Sullivan mine of the Consolidated Mining & Smelting Company of Canada Ltd. were shipped by rail 185 miles to the company's smelter and refinery at Tadanac, near Trail. The Monarch mine of Base Metals Mining Corporation, Limited, was reopened in the latter part of 1939 and has been in production since January, 1940. Western Exploration Company at Silverton was re-treating the tailings accumulated during previous operations, mainly for the recovery of the zinc. The company's Mammoth mine was also in production. The Lucky Jim mine, at Zintcon, was taken over late in 1940 by Zintcon Mines, Limited, a new company owned by Sheep Creek Gold Mines, Limited. The mine and concentrator were in production in 1943. Reco Mountain Base Metals Mines, Ltd., a subsidiary of Gold Frontier Mines, Ltd., took over the Noble Five, Surprise, and Deadman mines, near Sandon, Slocan mining division in 1942. The properties were explored by diamond drilling and underground development in 1943. The 100-ton mill of the Noble Five was rehabilitated and started to operate in September 1943, producing lead and zinc concentrates which were shipped under contract to Metals Reserve Company of the United States.

"The Whitewater mines and mill were taken over in the fall of 1942 by Kootenay Belle Gold Mines Limited, and were put into shape for production. Retallack Mines, Limited, a subsidiary of Kootenay Belle Gold Mines, Limited, was formed in December, 1943, to take over the management of the property and production is expected early in 1944. An agreement has been negotiated with U.S. Commercial Company, a subsidiary of Metals Reserve Company, for the disposal of the lead and zinc concentrates. All the mill machinery and mine equipment has been transferred from the Kootenay Belle Gold Mines at Sheep Creek, and when added to the existing facilities of the Whitewater is expected to give an initial milling capacity of 300 tons a day.

"The Van Roi mine on Four-Mile Creek, near Silverton, was being prepared for operation in 1943, after lying idle for many years. The old mill is being re-modelled and will have a capacity of 300 tons a day. The property is being operated by Van Roi Base Metals, Limited. The Highland-Bell, located at Beaverdell, was active throughout the year.

"The Kootenay Florence mine at Ainsworth, on the west shore of Kootenay Lake, was taken over in 1943 by Wartime Metals Corporation and was operated as the Kootenay Florence Project. The mill equipment and machinery of the Ymir Consolidated Mines, Ltd. were installed in the old Kootenay Florence mill building. Production was started in the spring of 1943. Several small lead-zinc properties, mainly in the Ainsworth-Slocan district, shipped crude ore to the Trail smelter. The Reeves McDonald zinc-lead mine on the Pend d'Oreille River remained idle in 1943."

The lead smelter and the electrolytic lead and zinc refineries at Trail were in continuous operation throughout 1943. The Consolidated Mining and Smelting Company of Canada Limited reported that the production of ore from the Sullivan mine reached a record high of 243,631 tons in March, 1943; the tonnage of Sullivan ore treated in 1943 totalled 2,500,714. The grade of ore mined in 1943 was again slightly lower than in the previous year; for the first time in some years development work was insufficient to maintain the ore reserves, 1,600,000 more tons of ore being mined than were actually developed during the year.

"Yukon—A relatively small tonnage of silver-lead ores was shipped from properties located at Galena Hill in the Mayo district. The ore was mined chiefly by lessees operating on deposits formerly worked by the Treadwell Yukon Corporation, which company is now in liquidation. Shipments in 1943 were consigned to the Bunker Hill smelter, at Bradley, Idaho.

General statistics relating to the production of zinc from Canadian copper-gold-silver-zinc deposits are contained in the 1943 annual report on the Canadian Gold Mining Industry.

For statistical purposes, the data pertaining to the mining of pitchblende ores in the Northwest Territories are combined with those of the Silver-Lead-Zinc Mining Industry. Both the mine and mill of Eldorado Mining and Refining, located at Port Radium, were operated continuously throughout 1943; pitchblende concentrates were shipped to the company's radium refinery located at Port Hope, Ontario.

Table 11 - PRINCIPAL STATISTICS OF THE SILVER-LEAD-ZINC MINING INDUSTRY(x) IN CANADA, ALTERNATE YEARS, 1927-1933 and 1935-1943

Year	Number of active operators	Number of operating plants or mines	Capital employed	Number of employees	Salaries and wages	Cost of fuel and electricity	Value of ores and concentrates sold(b)
	(a)	(a)	\$		\$	\$	\$
1927	157	173	28,036,330	3,106	4,807,817	588,520	17,520,150
1929	149	168	50,573,661	4,153	6,482,392	793,139	22,748,089
1931	39	40	51,152,078	1,299	2,149,921	485,106	6,351,975
1933	38	39	13,080,224	1,024	1,369,510	260,621	7,569,867
1935	69	70	16,596,941	1,657	2,431,110	438,126	10,553,086
1936	88	89	19,372,600	1,870	2,917,832	680,677	13,814,645
1937	128	130	29,637,739	2,220	3,914,643	845,898	22,740,582
1938	107	108	30,386,714	1,640	3,027,915	702,571	18,483,945
1939	82	83	23,664,620	1,646	2,803,057	667,661	13,555,609
1940	82	83	19,969,198	1,585	3,052,532	468,157	16,439,580
1941	63	64	17,717,334	1,666	3,452,199	610,168	20,653,212
1942	44	44	19,484,442	2,185	4,730,370	791,772	23,504,642
1943 -							
British Columbia...	19	20	14,905,284	2,103	4,401,956	647,896	19,777,315
Yukon, Northwest territories and Ontario (c)	7	7	1,435,734	250	661,684	170,921	318,745
Quebec	5	5	4,262,173	744	1,360,084	167,702	1,836,584
TOTAL	31	32	20,603,191	3,097	6,423,724	986,519	21,932,644

(x) Since 1931 includes data relating to mining of silver-pitchblende ores in the Northwest Territories.

(a) Since 1934 includes a number of small shippers from whom no particulars were received relating to capital, wages, etc.

(b) Commencing in 1935, the value of fuel, purchased electricity and process supplies have been deducted.

(c) 3 in Ontario, 3 in Yukon and 1 in Northwest Territories.

NOTE: For value of process supplies used in 1942 and 1943, see Table 15, also the statistics shown in this report do not include those relating to smelting and refining.

Table 12 - CAPITAL EMPLOYED IN THE SILVER-LEAD-ZINC MINING INDUSTRY IN CANADA, 1943

Province	Number of mines	Present cash value of land (excluding minerals)	Present value of buildings, machinery, tools, equipment, etc.	Inventory value of materials on hand, ore in process, fuels, etc.	Inventory value of finished products on hand	Operating capital (cash, bills and accounts receivable, prepaid expenses, etc.)	TOTAL
		\$	\$	\$	\$	\$	\$
Quebec	5	1,205,725	2,120,078	290,166	361,937	284,267	4,262,173
Ontario, Yukon and Northwest Territories (A)	7	80,010	711,814	561,627	697	81,586	1,435,734
British Columbia (x) ..	20	5,846,015	6,863,252	1,198,727	257,211	740,079	14,905,284
TOTAL	32	7,131,750	9,695,144	2,050,520	619,845	1,105,932	20,630,191

(x) Data relating to several small shippers in British Columbia are unobtainable.

(A) Includes data relating to mining of pitchblende ore in the Northwest Territories.

Table 13 - NUMBER OF WAGE-EARNERS, BY MONTHS, IN THE SILVER-LEAD-ZINC MINING INDUSTRY, 1942 and 1943

Table 13 - Number of Male Miners, by Month, in the District of Columbia, 1942

Month	1 9 4 2 Total	1 9 4 3			M I L L	
		M I N E		Male	Female	
		Surface				
		Male	Female			
		Underground				
January	1,580	543	7	1,438	475	21
February	1,611	583	6	1,474	476	21
March	1,601	601	6	1,431	473	22
April	1,639	631	6	1,383	475	27
May	1,665	668	6	1,387	475	32
June	1,807	751	10	1,439	489	36
July	1,909	771	9	1,450	522	38
August	1,993	785	14	1,437	506	38
September	2,100	739	15	1,428	509	39
October	2,174	755	14	1,468	515	38
November	2,211	712	15	1,654	530	35
December	2,195	720	9	1,565	498	55
AVERAGE	1,877	688	12	1,463	495	32

Table 14 - NUMBER OF WAGE-EARNERS WHO WORKED THE NUMBER OF HOURS SPECIFIED, DURING ONE WEEK IN MONTH OF HIGHEST EMPLOYMENT, 1943

Hours	Male	Female	Hours	Male	Female
30 hours or less	76	4	55 hours	4	...
31-43 hours	137	...	56-64 hours	579	1
44 hours	11	...	65 hours and over	168	...
45-47 hours	27	...	GRAND TOTAL	3,027	40
48 hours	1,875	35	Total wages paid in that		
49-50 hours	58	...	week	Male ...\$	118,039
51-54 hours	92	...		Female...\$	1,323

Table 15 - FUEL AND ELECTRICITY USED IN THE SILVER-LEAD-ZINC MINING INDUSTRY, 1942 and 1943

	Unit of measure	1 9 4 2		1 9 4 3	
		Quantity	Value	Quantity	Value
			\$		\$
Bituminous coal—Canadian	short ton	50,602	231,111	46,516	215,144
Imported	short ton	386	4,400	3,002	32,659
Anthracite coal—United States	short ton	270	2,934	387	4,082
Other	short ton	...	...	...	...
Lignite coal	short ton	501	3,795	538	2,409
Coke	short ton	291	2,041	...	...
Gasoline	Imp. gal.	37,976	14,186	55,422	19,582
Kerosene	Imp. gal.	1,312	445	1,728	815
Fuel oil and diesel oil	Imp. gal.	923,479	157,673	1,104,269	201,789
Wood (cords of 128 cu. ft.)	cord	1,620	12,247	1,608	29,571
Other fuel .....	...	...	...	...	...
Electricity purchased, including service charges	K. W. H.	62,863,531	362,940	81,712,950	480,468
TOTAL .....	...	...	791,772	...	986,519
Electricity generated for own use	K. W. H.	57,866,247	...	55,763,446	...
Process supplies used, explosives, etc. ....	...	...	1,163,819	...	2,044,367

Table 16 - POWER EQUIPMENT INSTALLATION IN THE SILVER-LEAD-ZINC MINING INDUSTRY, 1943

	Ordinarily in Use		In Reserve or Idle	
	Number of units	Total horse power (x)	Number of units	Total horse power (x)
Steam engines .....	...	...	...	...
Steam turbines	3	6,000	...	...
Diesel engines	24	3,951	7	664
Gasoline, gas and oil engines, other than Diesel engines	13	585	6	439
Hydraulic turbines or water wheels	12	1,580	...	...
Electric motors—(a) Operated by purchased power	933	22,330	128	4,462
TOTAL	985	34,446	141	5,565
(b) Operated by power generated by the establishment	568	12,051	55	895
Stationary boilers	17	2,910	1	20
Motor generator sets	31	3,052	4	306

(x) According to manufacturers' rating.

Table 17 - ORE MINED AND MILLED IN THE SILVER-LEAD-ZINC MINING INDUSTRY(x) IN CANADA, 1942 and 1943

		Yukon and Northwest Territories	British Columbia	Quebec and Ontario	CANADA
1942—Ore mined	ton	6,669	2,810,566	134,245	2,951,480
Ore milled	ton	6,369	2,944,620	122,425	3,073,414
Concentrates produced—Lead	ton	60	325,597	1,920	327,577
Zinc	ton	...	390,362	12,834	403,196
Pitchblende-silver.	ton	292	...	...	292
Gold precipitate ..	ton	...	...	3	3
1943—Ore mined	ton	37,371	2,708,886	506,400	3,252,657
Ore milled	ton	32,186	2,714,329	499,380	3,245,895
Concentrates produced—Lead	ton	...	292,407	5,383	297,790
Zinc	ton	...	331,563	55,894	387,457
Pitchblende-silver.	ton	903	...	...	903
Gold precipitate ..	ton	...	...	20	20

(x) Includes silver-pitchblende ores mined in Northwest Territories.

Table 18 - DESTINATION OF SHIPMENTS FROM SILVER-LEAD-ZINC MINES OF CANADA, 1942 and 1943

	Tons shipped	Gross value at shipping point	Total Metal Content as Determined by Settlement Assay			
			Gold	Silver	Lead	Zinc
			fine oz.	fine oz.	pounds	pounds
1942						
To Canadian smelters -						
Lead ore	9,082	446,775	580	819,458	685,139	843,839
Lead concentrates (a)	351,849	16,951,704	6	7,975,252	479,435,732	32,967,898
Zinc ore	52	2,392	...	2,983	8,834	37,974
Zinc concentrates (x)	366,106	7,214,685	6	724,003	29,451,015	365,605,607
Dry ore	2,346	20,379	429	7,491	71,092	100,116
Gold precipitate	(b)	6,488	143	4,080	...	...
TOTAL	729,435	24,642,423	1,164	9,533,267	509,651,812	399,555,434
To Foreign smelters -						
Lead ore	469	108,563	14	158,455	611,501	...
Lead concentrates	5,954	525,623	194	423,818	8,163,186	350,077
Zinc concentrates (x)	45,157	2,433,515	94	145,037	598,272	49,339,769
Gold precipitate	3	62,870	1,163	56,955	...	...
TOTAL	51,583	3,130,571	1,465	769,265	9,372,959	49,689,846
GRAND TOTAL (Gross) .....	...	27,772,994	...	...	...	...

Table 18 - DESTINATION OF SHIPMENTS FROM SILVER-LEAD-ZINC MINES OF CANADA, 1942 and 1943 (Concluded)

	Tons shipped	Gross value at shipping point	Total Metal Content as Determined by Settlement Assay			
			Gold fine oz.	Silver fine oz.	Lead pounds	Zinc pounds
1942 (Concluded)						
Cost of freight .....	...	1,662,341	...	...	...	...
Cost of fuel and purchased electricity .....	...	791,772	...	...	...	...
Smelter charges .....	...	650,420	...	...	...	...
Cost of process supplies .....	...	1,163,819	...	...	...	...
NET VALUE .....	...	23,504,642	...	...	...	...
1943						
To Canadian smelters -						
Lead ore	3,053	178,543	481	341,528	193,202	11,483
Lead concentrates (a)	308,379	15,246,727	37	6,630,217	406,085,211	30,559,105
Zinc ore .....	...	...	...	...	...	...
Pyrites concentrates	509	19,245	471	6,054	...	...
Zinc concentrates (x)	306,769	6,253,860	13	620,190	28,129,985	303,830,945
Dry ore	1,899	31,685	408	54,874	29,926	60,212
TOTAL	620,589	21,730,060	1,410	7,652,663	434,436,324	334,461,745
To Foreign smelters -						
Lead ore	228	41,341	3	57,442	266,853	...
Lead concentrates	8,268	937,075	7,600	492,222	10,289,890	235,785
Zinc concentrates (x)	82,627	3,751,444	86	283,606	145,593	90,270,160
Gold precipitates	20	612,962	10,408	378,797	...	...
TOTAL	91,143	5,342,822	18,097	1,212,067	10,702,336	90,505,945
GRAND TOTAL (Gross) .....	...	27,072,882	...	...	...	...
Cost of freight .....	...	1,655,637	...	...	...	...
Cost of fuel and purchased electricity .....	...	986,519	...	...	...	...
Smelter charges .....	...	453,715	...	...	...	...
Cost of process supplies .....	...	2,044,367	...	...	...	...
NET VALUE .....	...	21,932,644	...	...	...	...

(x) Does not include any zinc concentrates produced from copper-gold-zinc ores in Quebec, Manitoba, Saskatchewan or British Columbia.

(a) Includes shipments of silver-pitchblende concentrates from Northwest Territories. Information relating to content of pitchblende is not available for publication.

(b) Data not available.

NOTE: In addition to the metals contained in shipments listed in Table 18, there are considerable quantities of lead and silver contained in ores shipped from certain gold mines in British Columbia. Cadmium, bismuth, antimony, tin and sulphur are also recovered from these ores (silver-lead-zinc).

Table 19 - DRILLING COMPLETED ON SILVER-LEAD-ZINC DEPOSITS IN CANADA, 1943

	Footage drilled
Diamond drilling for exploration and testing -	
By mining companies with their own personnel and equipment	5,591
By diamond drilling contractors	64,425
Other diamond drilling -	
Blast hole diamond drilling -	
By mining companies with their own personnel and equipment .....	...
By diamond drilling contractors	96,963
Drilling by percussion or other machines	1,871,957 (x)

(x) Not complete as records are unobtainable at certain mines.

Production of newly mined silver from all types of Canadian ores totalled 17,344,569 fine ounces valued at \$7,849,111 in 1943 compared with 20,695,101 fine ounces worth \$8,726,296 in 1942. The average estimated price of the metal in Canadian funds was 45.254 cents per fine ounce in 1943 as against 42.166 cents in 1942. The greatest annual production of silver in Canada occurred in 1910, in which year an output of 52,869,264 fine ounces was recorded; the highest average yearly Canadian price per fine ounce for silver was 111.122 cents in 1919. Production of silver in Canada since 1887, the first year for which data are available, to the close of 1943, totalled 867,292,819 fine ounces valued at \$488,706,170.

The following information is taken from the review of the 1943 Silver Market by Handy and Harman, New York:

"The year 1943 proved to be an uneventful chapter in the story of silver. War conditions necessitated the continuance of Government control, both at home and abroad, over the price of the white metal and over its allocation for industrial and monetary purposes, but this control involved no new features of importance. The only significant development during the year was the action taken by the United States Congress which made Government-owned silver available for sale or lease subject to certain restrictions. Prices in the London market did not vary throughout the year, the quotation for both spot and forward having been 25½ pence; imports and exports on private account were prohibited and, while Government operations continued, only very limited information regarding them is available.

"The making available of United States Treasury silver came at a most opportune time because there had been a shortage of newly mined metal for several months; in the case of foreign silver, priced at 45 cents, the shortage was the direct result of a decline in imports caused by Mexico's retention for coinage of an increasingly larger proportion of that country's current production; in the case of domestic silver, priced at 71.11 cents, the shortage was due to two causes: first, reduced output, occasioned by a scarcity of mine labour and materials; second, the fact that producers had reverted to making deliveries to the Treasury instead of to industry. On the subject of world production, our information is particularly scanty this year and we confine our estimate to the four larger producing countries only; United States, 44,500,000 ounces; Canada, 18,500,000 ounces; Mexico, 87,000,000 ounces; Peru, 16,000,000 ounces. Compared with 1942, these figures show declines in output for the United States and Canada of 18 per cent and 16 per cent respectively, an increase in the case of Mexico of 8 per cent, and no change in Peru. For the first year since the inauguration of the silver purchase program in 1934, United States Government holdings of silver showed a decrease, and no foreign silver was purchased in 1943. Of the silver consumed in the United States during 1943, approximately 65 per cent went into war production or for purposes classified as essential by the War Production Board. In these categories the largest single use was for photographic film, followed in order of quantity by silver brazing alloys and silver-lead solders, airplane engine bearings, electrical contacts and parts, military insignia, silver-plated eating utensils for the army and navy, and in considerable less volume by medical and dental products.

"In the non-essential field, the United States manufacturer of silverware and jewellery was limited throughout 1943 to using domestic silver only, and since February 25 the amount of silver for these purposes has been under quota restrictions of the War Production Board. The price at which manufacturers could obtain silver has increased during the past year and a half from the pre-war level of 35 cents per ounce to 45 cents per ounce, and for some purposes to 71.11 cents per ounce. The higher figure was established in September, 1942 by the office of the Price Administration in the case of domestic silver, and in July, 1943 by the Green Act in the case of Treasury silver. This higher price has retarded the use of silver to some extent."

Table 20 - PRODUCTION OF SILVER IN CANADA, BY PROVINCES AND METHOD OF COMPUTATION, 1942 and 1943

	1 9 4 2		1 9 4 3	
	Quantity	Value	Quantity	Value
		\$		\$
Nova Scotia				
In gold bullion	446	188	144	65
Quebec				
In anode copper	1,438,907	606,750	1,509,610	685,159
In gold bullion made and in concentrates exported	216,185	91,155	702,505	317,912
Total	1,655,042	697,865	2,212,115	1,001,071
Ontario				
In silver recovered in Canada from cobalt ores	857,615	355,189	97,411	44,082
In gold bullion	465,275	196,188	559,640	155,701
In blister copper	2,188,004	922,595	1,608,787	728,040
In ores, concentrates, residues, matte, etc., exported	261,895	405,592	625,482	285,058
Total	4,452,787	1,877,562	2,671,320	1,208,879

Silver

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Table 20 - PRODUCTION OF SILVER IN CANADA, BY PROVINCES AND METHOD OF COMPUTATION, 1942 and 1943 (Concluded)

	1	2	1	2
	Quantity	Value	Quantity	Value
		\$		\$
<u>Manitoba -</u>				
In blister copper	809,518	341,257	535,906	241,614
In gold bullion (gold mines) and ores exported	12,508	5,273	55,575	24,153
Total	821,824	346,530	587,279	265,767
<u>Saskatchewan -</u>				
In blister copper	2,658,585	1,120,955	2,812,625	1,272,825
In gold bullion and in crude alluvial gold	5,747	2,423	1	...
Total	2,664,132	1,123,558	2,812,624	1,272,825
<u>Alberta -</u>				
In alluvial gold	2	1	1	...
<u>British Columbia -</u>				
In alluvial gold	5,925	2,498	2,628	1,189
In gold bullion	82,051	34,589	30,431	13,771
In base bullion and in ores, etc., exported	10,508,250	4,450,909	8,962,429	4,055,858
Total	10,596,204	4,467,936	8,995,488	4,070,818
<u>Yukon -</u>				
In alluvial gold	17,321	7,304	8,810	3,987
In silver-lead ores exported	464,812	195,932	45,538	19,703
Total	482,133	205,236	52,348	23,690
<u>Northwest Territories -</u>				
In pitchblende-silver ores shipped to smelters (a) and in gold bullion	22,531	9,500	15,250	5,996
CANADA-TOTAL	20,695,101(c)	8,728,296	17,344,569(b)	7,849,111

(a) No recovery from pitchblende ores in 1942 or 1943; includes 19 oz. in gold ores exported in 1942.

(b) Silver in all crude ores, etc., exported totalled 2,345,758 ounces.

(c) Silver in all crude ores etc. exported totalled 956,193 ounces.

NOTE: For 1942 silver was valued at 42.17 cents per fine ounce, the average price of the metal on the New York market adjusted and expressed in Canadian funds; for 1943 the corresponding price was 45.254 cents.

Table 21 - SOURCE OF CANADIAN SILVER PRODUCTION, BY PERCENTAGES, 1939-1943

Source	1939	1940	1941	1942	1943
In silver-cobalt ores	6.5	5.38	2.6	4.13	0.81
In base bullion (x)	39.7(x)	44.39(x)	45.5	46.16	45.58
In gold ores (bullion and placer)	4.6	5.60	4.1	3.71	3.07
In blister and anode copper	23.6	27.62	31.8	34.28	37.28
In matte, copper ores and silver-lead ores, etc., exported (other than silver-cobalt ores)	25.6	19.01	16.2	11.72	13.26
	100.0	100.0	100.0	100.0	100.0

(x) Chiefly from silver-lead ores.

(x) Includes silver recovered in Canada from pitchblende-silver ores.

Table 22 - CANADIAN SILVER PRODUCTION ACCORDING TO NATURE OF ORES, BY PROVINCES, 1943

Province	Crude placer gold oz.	Auriferous quartz ores oz.	Copper- gold- silver ores oz.	Nickel- copper ores oz.	Silver- lead- zinc ores oz.	Silver- cobalt and other ores oz.	TOTAL oz.
Nova Scotia .....	...	144	...	...	...	...	144
Quebec .....	...	128,561	1,501,884	...	581,670	...	2,212,115
Ontario .....	...	859,701	1,659	1,648,888	17,921	143,151(x)	2,671,320
Manitoba .....	...	9,895	577,386	...	...	...	587,279
Saskatchewan .....	...	1	2,812,623	...	...	...	2,812,624
Alberta	1	...	...	...	...	...	1
British Columbia	2,628	379,973	307,321	...	8,305,566	...	8,995,488
Northwest Territories	...	13,250	...	...	...	...	13,250
Yukon	8,810	...	...	...	43,538	...	52,348
CANADA	11,439	1,391,523	5,200,873	1,648,888	8,948,695	143,151	17,344,569

(x) Exclusive of silver in cobalt-silver ores placed on United States Government stock pile at Deloro, Ont.

Table 23 - PRODUCTION OF SILVER FROM ALL ORES IN CANADA FOR YEARS SPECIFIED, 1887-1943

Year	Ounces	Cents per ounce	Year	Ounces	Cents per ounce
1887	355,083	98.00	1931	20,562,247	29.87
1891	414,523	98.00	1932	18,347,907	31.67
1896	5,205,343	67.06	1933	15,187,950	37.83
1901	5,539,192	58.95	1934	16,415,282	47.46
1906	8,473,379	66.79	1935	16,618,558	64.79
1910 (x)	32,869,264	53.49	1936	18,334,487	45.13
1911	32,559,044	53.30	1937	22,977,751	44.88
1916	25,459,741	65.66	1938	22,219,195	43.48
1919	16,020,657	111.122(✓)	1939	23,163,629	40.49
1920	15,330,357	100.90	1940	23,833,752	38.25
1925	20,223,988	69.06	1941	21,754,408	38.26
1927	22,736,698	56.37	1942	20,695,101	42.17
1929	23,143,261	52.99	1943	17,344,569	45.25
1930	26,443,823	38.15			

(x) Year of maximum output.

(✓) Highest price per ounce recorded since 1887.

Table 24 - GOLD AND SILVER RECEIVED AT THE VANCOUVER ASSAY OFFICE AND THE ROYAL CANADIAN MINT DURING 1943

Source	Gross Weight ounces	Fine Gold ounces	Fine Silver ounces
From Canadian mines, mills or refineries - 'location of plant)			
Ontario	2,613,308.050	2,110,420.496	275,272.27
Quebec	1,304,195.150	1,087,610.755	127,697.94
British Columbia	210,490.910	162,102.034	33,984.39
Manitoba	156,422.550	129,975.593	10,243.70
Yukon	52,709.610	41,156.866	8,810.11
Nova Scotia	4,448.625	4,130.962	144.70
Northwest Territories	86,065.025	64,586.155	14,363.50
Alberta and Saskatchewan	57.210	26.229	2.77
Total Primary	4,427,677.150	3,600,009.070	470,519.38
From jewellery and scrap	22,561.795	10,534.869	3,161.89
Foreign	1,526.300	1,470.261	28.96
Mutilated gold coin	0.264	0.257	...
GRAND TOTAL	4,451,765.489	3,612,014.437	473,710.23

The coinage of silver during 1943 has been the most considerable in mint operations, reaching upwards of 37,812,387 pieces having a total value of \$7,059,008.

Silver

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Table 25 - SILVER CONSUMED IN SPECIFIED CANADIAN INDUSTRIES, 1941 and 1942

	1941		1942	
	Fine oz.	Value \$	Fine oz.	Value \$
Scientific equipment				
Fountain pens and pencils	690,516(x)	268,549	744,175(x)	295,189
Jewellery and silverware (fine silver) .....	...	1,144,409	...	1,476,788
Jewellery and silverware (silver alloys) .....	...	646,528	...	754,421
Medicinal and pharmaceutical preparations (bullion)	90,203	35,912	141,875	57,928
Miscellaneous chemicals	10,928	4,370	6,944	2,780

(x) Consumed largely in the manufacture of photographic film.

Table 26 -IMPORTS INTO CANADA AND EXPORTS OF SILVER, 1942 and 1943

	1942		1943	
	Quantity	Value \$	Quantity	Value \$
Imports (x) -				
Silver, unmanufactured	30,797	12,568	...	...
Silver, manufactures of, n.o.p. ....	...	146,850	...	51,427
Toilet articles of which the most important component, in value, is sterling silver ..	...	14,355	...	254
Total .....	...	175,753	...	51,681
Exports -				
Silver contained in ore, concentrates, etc.	5,534,947	1,487,045	2,255,018	1,040,297
Silver bullion (Canadian)	10,645,539	4,465,595	9,198,617	4,517,756
Silver manufactures .....	...	17,033	...	71,300
Total .....	...	5,969,673	...	5,629,353

(x) The following are the imports of films during 1942 and 1943: Photographers' 1942, value, \$622,706; 1943, \$407,054. Cinematograph films (positives) 1942, 4,141,479 feet, value \$355,896; 1943, 4,565,195 feet \$368,470. Films for aerial photography 1942, value \$5,416; 1943, \$65,442. Films cinematograph (negative) value 1942, \$61,867; 1943, \$76,880. Educational films 1942, \$171,847; 1943, \$358,513.

Table 27 - WORLD'S MONETARY STOCKS OF SILVER AT THE CLOSE OF 1942 (Supplied by the United States Mint and Subject to Revision) Stated in United States money, 000's omitted

Country	Monetary unit	Silver stocks in banks and treasuries \$	Per capita \$
North America -			
United States (including Alaska, Hawaii and Puerto Rico)	dollar	5,287,817	24.43
Canada	dollar	40,010	3.50
Mexico	Peso	(1)	...
Newfoundland and Labrador (2)	dollar	2,281	7.60
Central America and West Indies -			
British Honduras	dollar	196	3.21
British West Indies:			
Barbados	dollar	1,560	7.88
Jamaica	pound	858	.68
Trinidad and Tobago	dollar	1,200(5)	2.37
Costa Rica	colon	128	.19
Cuba	peso	88,000	20.95
Dominican Republic (4)	dollar	489	.28
Guatemala	quetzal	1,707	.50
Haiti (5)	Gourde	...	...
Honduras	Lempira	4,510	3.85
Nicaragua	cordoba	103	.07
Panama, Republic of (5)	balboa	1,010	1.60
Salvador (6)	colon

Silver

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Table 27 - WORLD'S MONETARY STOCKS OF SILVER AT THE CLOSE OF 1942 (Supplied by the United States Mint and Subject to Revision) Stated in United States Money, 000's omitted (Concluded)

Country	Monetary unit	Silver stocks in banks and treasuries	Per capita
		\$	\$
<u>South America -</u>			
Argentina	peso	...	1.12
Bolivia	Bolivian	3,875	...
Brazil	cruzeiro	(1)	...
British Guiana	dollar	1,188(3)	3.42
Chile	peso	...	...
Colombia	peso	9,503	1.01
Ecuador	sucre	438	.15
Paraguay	peso	...	...
Peru	sol	3,558	.50
Surinam	florin	526	2.81
Uruguay	peso	6,405	2.91
Venezuela	bolivar	(1)	...
<u>Europe (1)</u> .....	...	...	...
<u>Asia -</u>			
British India (excluding Burma) (7)	rupee	37,050	.10
Iran	rial	20,204	1.68
Palestine and Trans-Jordan	pound	6,698	4.23
<u>Africa -</u>			
British East Africa (Kenya, Tanganyika, Uganda and Zanzibar)	shilling	17,578	1.37
British West Africa (Gambia, Gold Coast, Nigeria and Sierra Leone)	pound	386	.01
Egypt and Anglo Egyptian Soudan	pound	22,875	.99
Portuguese East Africa	escudo	240	.06
Southwest Africa	pound	79	.22
<u>Oceania -</u>			
Fiji Islands	pound	657	3.06
New Zealand	pound	7,168	4.39

(1) Data not available.

(2) Canadian coin and currency also circulate.

(3) Estimated.

(4) Dominican Republic—Silver: Dominican and United States; Paper: United States.

(5) United States coin and currency also circulate.

(6) Gold formerly valued at 70 colones per troy ounce was revalued at 87.50 colones per troy ounce at existing exchange rate(\$0.40) under decree of May 20, 1942 effective June 5, 1942. Silver was demonetized under decree of December 25, 1941 effective February 28, 1942.

(7) Source: The Statist, January 30, 1943. Silver represents rupee coin in Reserve Bank of India.

Table 28 - AVERAGE COMMERCIAL RATIO OF SILVER TO GOLD FOR EACH SPECIFIED YEAR SINCE 1700 (Supplied by United States Mint)

Year	Year	Year
1700	14.81	1905
1750	14.55	1910
1800	15.68	1915
1850	15.70	1920
1875	16.64	1925
1880	18.05	1930
1885	19.41	1931
1890	19.75	1932
1895	51.60	1933
1900	55.55	1934
		1935
		1936
		1937
		1938
		1939
		1940
		1941
		1942
		1943
		72.49
		54.19
		77.09
		77.44
		80.39
		88.84
		99.76
		99.75
		90.57
		85.08 (x)

(x) Estimated on averages in Canadian funds.

Lead and Zinc—Statistics relating to Canadian primary production of lead and zinc represent the content of these metals contained in ores exported plus the quantity of lead in base bullion produced and refined zinc made in Canada. Refined lead is produced in Canada only by the Consolidated Mining & Smelting Company of Canada Ltd. which company operates an electrolytic lead refinery at Trail, British Columbia. Refined zinc is produced at Flin Flon, Manitoba by the Hudson Bay Mining & Smelting Company Limited and at Trail, British Columbia by the Consolidated Mining & Smelting Company of Canada Ltd.

Compared with 1942, the production of refined metal from the Trail plants showed a substantial reduction due to the falling off in ore receipts from the Sullivan mine; production of refined lead was 224,493 tons or about 19,000 tons less than in 1942; the zinc plant produced 152,299 tons of bar zinc or about 15,000 tons less than in 1942. Production of slab zinc at Flin Flon, Manitoba by the Hudson Bay Mining & Smelting Company Limited totalled 108,498,410 pounds in 1943 compared with 101,244,017 pounds in 1942; the 1943 output was the highest on record. The estimated average values per pound for lead and zinc in 1943, in Canadian funds, were 3.754 cents and 4 cents, respectively, compared with corresponding prices of 3.362 cents and 3.411 cents in 1942.

The Mining Journal, London, in a review of lead and zinc in April, 1943, states: "Though somewhat more information has been available in 1943 regarding wartime developments in lead and zinc, the statistics are still insufficient to warrant making any estimates of world production and consumption in the last two or three years. In general, the lead position, at any rate so far as the United Nations are concerned, has been relatively easy, though consumption has probably increased somewhat in 1943, and production and consumption are probably roughly in balance. The zinc position also in 1943 was somewhat easier than in the previous two years, and sufficient supplies of zinc have been forthcoming to meet all essential requirements."

The Bureau of Mines, Ottawa, reports that the basic uses of zinc under war conditions are the same as those in peacetime, but in all fields of use the wartime demand for the metal is exceptionally large. In peacetime, the galvanizing industry uses most of the primary and secondary output of zinc. Large quantities of the metal are used also in the brass and castings industry; as paint pigments; in radio and flashlight batteries; and in making zinc oxides. In the present war lead has been the least scarce of the metals, but as a result of direct and indirect war demands and the substitution of lead for copper and brass, consumption has been increasing. Lead is the only common metal classified in the least critical group; its use is very diversified.

The agreement made in 1939 by the large base metal producers and the Imperial Government, by which the producers were to supply the Imperial Government with copper, lead and zinc at prices which prevailed shortly before the outbreak of the war, was continued with some adjustments or revisions for increases in prices due to the increased cost of labour and materials. Canada can now furnish large quantities of these metals in the refined state, whereas in 1914 no refined copper, nickel or zinc and only a comparatively small amount of refined lead were produced in this country.

LEAD

Table 29 - PRODUCTION (b) OF NEW LEAD IN CANADA, 1925-1943

Year	Pounds	\$	Price per pound (Canadian funds)
1925 (x)	253,590,578	23,127,460	9.120
1926	283,801,265	19,240,661	6.751
1927	311,423,161	16,477,139	5.256
1928	337,946,688	15,553,231	4.576
1929	326,522,566	16,544,248	5.054
1930	332,894,163	13,102,635	3.927
1931	267,342,482	7,260,183	2.710
1932	255,947,378	5,409,704	2.114
1933	266,475,191	6,372,998	2.392
1934	346,275,576	8,456,658	2.456
1935	339,105,079	10,624,772	3.133
1936	383,180,909	14,993,869	3.913
1937	411,999,484	21,053,173	5.110
1938	418,927,660	14,008,941	3.344
1939	388,569,550	12,313,768	3.169
1940	471,850,256	15,863,605	3.362
1941	460,167,005	15,470,815	3.362
1942 (a)	512,142,562	17,218,233	3.362
1943	444,060,769	16,670,041	3.754

(x) Year of maximum value of Canadian lead production. (a) Year of maximum output of Canadian lead.
 (b) Primary lead in base bullion produced plus lead in ores exported.

Table 50 - PRODUCTION IN CANADA, IMPORTS AND EXPORTS OF LEAD, 1942 and 1943

	1942		1943	
	Pounds	Value \$	Pounds	Value \$
Production -				
Quebec	437,634	14,713	2,435,523	91,430
Ontario	3,183,159	107,018	2,273,896	85,362
British Columbia	507,199,704	17,052,054	439,155,635	16,485,902
Yukon	1,322,065	44,448	195,715	7,347
TOTAL	512,142,562	17,218,233	444,060,769	16,670,041
Imports -				
Pig and block	18,084	2,186	19,481	3,561
Old and scrap	5,133	204	2,183	87
Bars and sheets	7,546	1,100	8,862	1,379
Litharge for storage batteries	1,904,900	169,117	2,397,300	203,677
Acetate of lead	215,574	26,338	62,307	8,013
Nitrate of lead	246,484	23,178	123,163	15,453
Other manufactures .....	...	81,393	...	229,644
Pipe lead .....	...	...	59	10
Shots and bullets	1,373	249	141,484	22,176
Lead arsenate	18,000	1,993	4,432	484
Lead tetraethyl, compounds of	8,795,358	3,063,925	10,556,057	3,568,496
Lead capsules for bottles .....	...	7,892	...	25,465
Lead pigments -				
Dry white lead	25,508	2,428	435,835	37,606
White lead, ground in oil	2,674	697	...	...
Dry red lead and orange mineral ..	163,517	16,597	114,123	11,936
TOTAL .....	...	3,397,297	...	4,127,987
Exports -				
Lead, contained in ore	11,859,000	409,193	11,470,200	425,306
Pig lead	421,565,000	15,243,454	308,695,300	9,222,104
White lead	472,900	38,693	205,500	20,380
TOTAL .....	...	15,691,340	...	9,667,790

Production of lead in all forms and from all types of Canadian ores from 1887 to 1943 inclusive, totalled 8,262,541,389 pounds valued at \$354,727,126.

The annual capacity for the production of refined lead at Trail, British Columbia, is approximately 244,000 short tons.

Table 51 - REFINED LEAD PRODUCTION IN CANADA(x) 1929-1943

Year	Pounds of refined lead produced	Year	Pounds of refined lead produced
1929	304,449,673	1937	399,394,939(✓)
1930	304,471,706	1938	400,763,914(✓)
1931	278,448,457	1939	381,137,424(✓)
1932	253,136,522	1940	440,175,333(✓)
1933	254,565,861	1941	456,054,164(✓)
1934	314,457,735(✓)	1942	486,612,849(✓)
1935	327,515,277(✓)	1943	447,742,463(✓)
1936	363,449,490		

(x) Includes the electrolytic lead produced from Canadian and foreign ores at Trail, B.C., and also the pig lead from Galatta, Ont., until 1931.

(✓) Primary lead only.

Silver

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Table 32 - AVAILABLE STATISTICS ON THE CONSUMPTION OF LEAD IN SPECIFIED CANADIAN MANUFACTURING INDUSTRIES, 1941 and 1942

Industry	Items used	1 9 4 1	1 9 4 2
		Pounds	Pounds
Brass and copper products	(Pig lead	1,459,661	1,780,402
	(Scrap and other lead	748,746	641,465
White metal alloys	(Pig lead	59,905,256	48,281,959
	(Scrap lead	25,152,510	21,194,878
Electrical apparatus	(Pig lead	57,455,241	59,690,349
	(Scrap lead	207,715	127,755
	(Other	Not available	...
Iron and steel	Lead	2,526,060	6,050,628
Ammunition	Pig lead	8,810,880	10,467,969
TOTAL ACCOUNTED FOR		116,221,867	128,255,582

Table 33 - LEAD PRODUCTION OF THE WORLD ON MINE BASIS, 1938 and 1943 (American Bureau of Metal Statistics)
(Tons of 2,000 pounds)

	1 9 3 8	1 9 4 3
United States	569,726	446,548
Canada	209,457	222,177
Newfoundland	31,856	33,000
Mexico	311,255	209,500
Total North America	922,294	910,825
Argentina	26,125	20,500
Bolivia	14,578	12,600
Chile	1,016	200(x)
Peru	65,982	54,000
Total South America	105,701	87,500
Austria	(/)	...
Bulgaria	575	...
Czechoslovakia	4,409	...
Finland	95	...
France	5,511	...
Germany	105,821	...
Great Britain	33,312	...
Greece	4,519	...
Italy	43,541	...
Norway	161	...
Poland	5,842	...
Romania	6,233	...
Russia	76,000(x)	...
Spain	55,063	41,600
Sweden	9,502	...
Yugoslavia	85,649	...
Total Europe	416,033	...
Burma	89,712	...
China, including Hong Kong	7,716	...
Japan	13,000(x)	...
Korea	11,000(x)	...
Turkey	6,175	...
Total Asia	127,601	...
Australia	507,295	...
Algeria	5,071	...
French Morocco	20,944	...
Nigeria	352	...
Southwest Africa	19,502	...
Tunis	20,855	...
Other Africa	7,700	...
Total Africa	74,182	...
GRAND TOTAL	1,953,104	...

(A) Included with Germany. (x) Conjectural.

Small productions from Brazil, Ecuador and the Philippines are not included in the above table.

Table 34 - USE OF LEAD IN THE UNITED STATES, 1938 and 1943(a) (American Bureau of Metal Statistics)
(Tons of 2,000 pounds)

	1938	1943
White lead	71,000	50,000
Red lead and litharge (b)	43,000	79,000
Storage batteries	167,000	257,000
Cable covering	60,000	132,000
Building (c)	36,000	62,000
Automobiles	6,000	1,000
Ammunition	31,200	178,000
Terne plate	4,300	5,000
Foil	22,000	13,000
Bearing metal	9,000	23,000
Solder	15,000	38,000
Type metal	12,000	17,000
Calking	12,000	30,000
Castings	6,000	(e)
Other uses (d)	51,500	215,000
TOTAL	546,000	1,100,000

(a) Includes antimonial lead.

(b) Exclusive of oxides for storage batteries.

(c) Under the head of "Building" is included the lead used in chemical construction.

(d) Among "Other uses" the largest item in recent years has been the manufacture of lead-tetraethyl for tempering gasoline.

(e) Included in "Other uses".

NOTE: The American Bureau of Metal Statistics estimates that about 75 per cent of the lead that goes into storage batteries returns into production of soft and hard lead, which production is not accounted fully in prior tables owing to omission of most of the secondary smelters. For this reason the totals in the above accounting are in excess of shipments reported ex primary refineries.

In the accounting for the use of lead in 1941 the allocation to ammunition does not include the use for that purpose in the government arsenals, and also omitted are consignments of refined pig lead for government use otherwise.

ZINC

Table 35 - PRODUCTION(x) OF ZINC FROM ALL TYPES OF CANADIAN ORES, 1929-1943

Year	Pounds	\$	Price per pound (Canadian funds)
1929	197,267,087	10,626,778	5.39
1930	267,643,505	9,635,166	3.60
1931	237,245,451	6,059,249	2.55
1932	172,283,558	4,144,454	2.41
1933	199,131,984	6,393,132	3.21
1934	298,579,683	9,087,571	3.04
1935	320,649,859	9,936,908	3.10
1936	333,182,736	11,045,007	3.31
1937	370,337,589	18,153,949	4.90
1938	381,506,588	11,723,698	3.07
1939	394,533,860	12,108,244	3.07
1940	424,028,862	14,463,624	3.411
1941	512,381,636	17,477,337	3.411
1942	580,257,373	19,792,579	3.411
1943 (A)	610,754,354	24,430,174	4.00

(x) Includes refined zinc and zinc in ores, etc., exported.

(A) Year of maximum Canadian zinc production.

The total value of Canadian zinc production since the first recording of Canadian zinc statistics in 1898, and inclusive of 1943, totalled \$256,848,376.

Table 36 - PRODUCTION IN CANADA, IMPORTS AND EXPORTS OF ZINC, 1942 and 1943

	1942		1943	
	Pounds	Value \$	Pounds	Value \$
Production -				
Quebec	73,940,811	2,522,121	128,169,810	5,126,792
Ontario	4,710,394	160,671	3,299,812	131,993
Manitoba	29,908,179	1,020,168	46,783,873	1,871,355
Saskatchewan	84,461,520	2,880,983	96,350,404	3,854,016
British Columbia	387,236,469	13,208,636	336,150,455	13,446,018
TOTAL	580,257,373	19,792,579	610,754,354	24,430,174
Imports -				
Zinc dust	7,500	920	7,500	1,014
Zinc in blocks, pigs, bars and rods, and zinc plates, n.o.p.	171,400	20,923	138,400	26,257
Zinc in sheets and strips, and zinc plates for marine boilers	833,300	105,903	987,300	141,997
Zinc spelter	11,658,200	1,043,041	27,076,400	2,429,945
Zinc slugs for dry batteries .....	...	109,386	...	64,385
Zinc white (zinc oxide)	2,072,403	156,484	2,218,564	174,075
Zinc sulphate	1,364,999	45,554	708,869	31,743
Zinc, chloride of	342,933	18,762	189,305	11,745
Zinc, manufactures of, n.o.p. ....	...	361,708	...	377,486
Lithopone	19,996,324	948,244	17,754,879	857,507
TOTAL .....	...	2,810,925	...	4,116,154
Exports -				
Zinc, contained in ore	152,227,700	4,070,803	222,550,300	6,097,117
Zinc, scrap, dross and ashes	7,086,900	202,609	4,291,000	159,218
Zinc, spelter	304,317,100	10,783,049	258,629,700	10,260,030
TOTAL	463,631,700	15,056,461	485,471,000	16,516,365

Canadian zinc refineries have an estimated annual capacity of 232,875 tons of cathode zinc.

Table 37 - CANADIAN ZINC PRODUCTION (RECOVERABLE) ACCORDING TO NATURE OF ORES, BY PROVINCES, 1938-1943

Year and Province	Recovered from copper-gold-silver ores	Recovered from silver-lead-zinc and other ores	TOTAL
	Pounds	Pounds	
1938 - Quebec	5,315,852	...	5,315,852
Manitoba	46,864,575	...	46,864,575
Saskatchewan	29,962,597	...	29,962,597
British Columbia .....	...	299,363,564	299,363,564
TOTAL CANADA	82,143,024	299,363,564	381,506,588
1939 - Nova Scotia .....	...	9,152,856	9,152,856
Quebec	28,758,759	...	28,758,759
Manitoba	40,302,747	...	40,302,747
Saskatchewan	37,278,001	...	37,278,001
British Columbia .....	...	279,041,497	279,041,497
TOTAL CANADA	106,339,507	288,194,553	394,533,860
1940 - Nova Scotia .....	...	4,755,502	4,755,502
Quebec	27,696,721	...	27,696,721
Manitoba	35,103,373	...	35,103,373
Saskatchewan	44,452,595	...	44,452,595
British Columbia .....	...	312,020,671	312,020,671
TOTAL CANADA	107,252,689	316,776,173	424,028,862
1941 - Quebec	46,389,581	...	46,389,581
Ontario .....	...	1,100,949	1,100,949
Manitoba	34,879,239	...	34,879,239
Saskatchewan	62,142,288	...	62,142,288
British Columbia .....	...	367,869,579	367,869,579
TOTAL CANADA	143,411,108	368,970,528	512,381,636

Table 37 - CANADIAN ZINC PRODUCTION (RECOVERABLE) ACCORDING TO NATURE OF ORES, BY PROVINCES, 1938-1943
(Concluded)

Year and Province	Recovered from copper-gold-silver ores	Recovered from silver-lead-zinc and other ores	TOTAL
	Pounds	Pounds	Pounds
1942 - Quebec	67,064,556	6,876,275	73,940,811
Ontario .....	...	4,710,394	4,710,394
Manitoba	29,908,179	...	29,908,179
Saskatchewan	84,461,520	...	84,461,520
British Columbia .....	...	387,236,469	387,236,469
TOTAL CANADA	181,454,235	398,823,138	580,257,373
1943 - Quebec	80,401,857	47,767,973	128,169,810
Ontario .....	...	3,299,812	3,299,812
Manitoba	46,783,873	...	46,783,873
Saskatchewan	96,350,404	...	96,350,404
British Columbia	461,776	355,688,679	356,150,455
TOTAL CANADA	223,997,890	386,756,464	610,754,354

Table 38 - CANADIAN PRODUCTION OF LEAD AND ZINC, BY MONTHS, 1942-1944

Month and Year	Lead (a)	Zinc (b)	Month and Year	Lead (a)	Zinc (b)
	Pounds	Pounds		Pounds	Pounds
January..... 1942	40,046,125	47,027,869	July 1942	36,611,066	47,285,323
January 1943	38,604,106	52,578,751	July 1943	36,100,126	52,585,837
February 1942	39,038,425	43,203,703	August 1942	41,455,245	48,692,557
February 1943	38,807,636	48,105,936	August 1943	32,113,307	52,053,564
March 1942	41,681,881	47,933,913	September 1942	44,144,152	47,455,979
March 1943	46,936,027	54,101,689	September 1943	32,884,233	48,129,596
April 1942	44,569,901	48,764,184	October 1942	45,549,537	52,200,779
April 1943	36,773,575	50,706,472	October 1943	35,272,574	46,836,774
May 1942	47,552,134	48,773,593	November 1942	45,894,806	50,283,756
May 1943	40,601,268	53,667,946	November 1943	34,635,657	46,989,693
June 1942	42,885,117	46,063,524	December 1942	42,714,173	52,572,193
June 1943	39,579,471	53,355,891	December 1943	31,752,789	51,662,235
1944			1944		
January	32,710,839	47,509,864	July	24,523,164	40,877,099
February	29,753,989	44,735,515			
March	24,264,103	46,049,214			
April	25,270,297	43,359,215			
May	20,491,362	45,646,454			
June	19,744,120	39,759,145			

(a) In base bullion produced in Canada plus lead in ores exported.

(b) Refined zinc produced in Canada plus zinc in ores exported; 1942 and 1943 data are finally revised.

Table 39 - REFINED NEW ZINC PRODUCED IN CANADA, 1933-1943

Year	Price (x)	Short	Year	Price (x)	Short
	per pound	tong		per pound	tong
	cents			cents	
1933	3.21	91,946	1939	3.07	175,641
1934	3.04	134,917	1940	3.411	185,722
1935	3.10	149,523	1941	3.411	213,608
1936	3.31	151,103	1942	3.411	215,795
1937	4.90	158,542	1943	4.00	206,510
1938	3.07	171,932			

(x) In Canadian funds.

Table 40 - AVAILABLE STATISTICS ON THE CONSUMPTION OF ZINC IN SPECIFIED CANADIAN MANUFACTURING INDUSTRIES, 1941 and 1942

Industry	Items Used	1 9 4 1	1 9 4 2
		Pounds	Pounds
Brass and copper products	(Other zinc	420,576	...
	(Zinc ingots and slabs	50,061,499	76,990,715
	(Zinc scrap	76,044	525,767
White metal alloys	(Zinc spelter	17,049,480	26,581,960
	(Zinc scrap	1,028,061	1,746,106
Electrical apparatus	(Zinc ingots and bars	2,830,304	2,826,831
	(Zinc sheets	1,664,145	1,477,013
Acids, alkalies and salts	Zinc metal	12,896,774	16,033,434
Iron and steel	Zinc	49,327,893	45,378,520
Miscellaneous chemicals	Zinc sheets and spelter	149,619	342,000
GRAND TOTAL		135,504,595	171,902,346

In addition, there are relatively large quantities of zinc oxide and lithopone used in the manufacture of paint.

Table 41 - WORLD'S PRODUCTION OF ZINC SPELTER (a) 1938 and 1943 (American Bureau of Metal Statistics) (Tons of 2,000 pounds)

Country	1 9 3 8	1 9 4 3
United States (b)	446,341	941,900
United States (c)	31,613	47,800
Mexico	39,552	...
Canada	171,656	206,548
TOTAL NORTH AMERICA	689,162	...
Peru .....	...	1,699
Belgium	231,924	...
Czechoslovakia	9,784	...
France	68,532	...
Germany	212,173	...
Great Britain	61,938	...
Italy	37,550	...
Netherlands	27,888	...
Norway	51,257	...
Poland	122,119	...
Russia	88,200(x)	...
Spain	8,435	18,500
Yugoslavia	4,361	...
TOTAL EUROPE	924,161	...
Australia	78,198	...
Japan	55,115(x)	...
French Indo-China	4,900	...
Rhodesia	11,441	...
TOTAL	1,762,977	...

(a) The statistics in this table are the summaries of production as made by the metallurgical works of the world whose principal business is the reduction of ore. Insofar as they produced slab zinc from secondary material, such is included.

The statistics for U.S.A. also include the small production by secondary smelters, but outside of U.S.A. there is not a similar inclusion.

(b) Production from ores, foreign and domestic, as per U.S. Bureau of Mines.

(c) Production from secondary material.

(x) Conjectural.

Table 42 - ESTIMATED MANUFACTURE OF ZINC IN THE UNITED STATES, 1938, 1941, 1942 and 1943 (American Bureau of Metal Statistics) - (Tons of 2,000 pounds)

	1 9 3 8	1 9 4 1	1 9 4 2	1 9 4 3
Galvanizing	198,000	300,000	247,500	253,000
Sheets	108,500	138,500	76,200	(c)
Tubes	29,300	55,000	47,000	(c)
Wire	23,600	37,100	35,200	(c)
Wire cloth	5,600	8,600	7,300	(c)
Shapes (a)	31,000	60,800	81,800	(c)
Brass making	102,000	513,000	520,000	397,000
Rolled zinc	46,000	69,000	66,000	49,000
Die castings	48,000	125,000	80,000	69,000
Other purposes (b)	27,000	24,000	14,500	27,000
TOTAL	421,000	851,000	728,000	795,000

(a) Includes pole-line hardware, hollow ware, chains and all articles not elsewhere mentioned.

(b) Includes slab zinc used for the manufacture of French oxide, zinc for wet batteries, slush castings, the desilverization of lead, wire for metallizing, and sundries, etc.

(c) Not yet available.

The totals in this table for manufactures do not balance with the totals of deliveries, owing largely to changes in stocks ex-smelters, but over a period of years the totals for delivery and manufacture are substantially in harmony. It is probable, moreover, that the above accountings are slightly underestimated and there may be some plus or minus as between brass making and die casting, especially in 1941.

The data for 1942-43 are as reported by the U.S. Bureau of Mines.

Table 43 - CADMIUM RECOVERED FROM CANADIAN ORES, 1938-1943

Year	From copper-gold-silver-zinc ores Pounds	From silver-lead-zinc ores Pounds	TOTAL Pounds
1938	188,796	510,342	699,138
1939	140,438	799,253	939,691
1940	129,356	778,791	908,127
1941	169,917	1,081,374	1,251,291
1942	176,550	972,413	1,148,963
1943	187,938	598,673	786,611

NOTE: Until 1936 cadmium was produced only in British Columbia; since 1936 the metal has been produced both at Flin Flon, Manitoba and at Trail, British Columbia.

Since 1939 the Consolidated Mining and Smelting Company has produced antimony metal at the Trail smelter; the total production of the metal from British Columbia ores in 1943 totalled 1,114,166 pounds valued at \$189,408. Bismuth metal is also recovered at the Trail smelter from silver-lead-zinc ores, the production in 1943 amounting to 407,597 pounds valued at \$562,484. In addition to metals, there has been an increasing quantity of sulphur salvaged yearly in the smelting of silver-lead-zinc ores in the Trail plants of the Consolidated Mining and Smelting Company. This has been recovered in both the gaseous and elemental forms and is utilized in the manufacture of sulphuric acid and fertilizers.

PRINCIPAL OPERATORS IN THE CANADIAN SILVER-LEAD-ZINC MINING INDUSTRY, 1943

(x) Active but not producing.

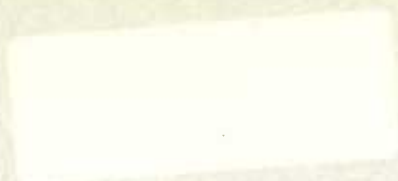
Name of Operator	Head Office Address	Location of Mine
QUEBEC -		
Federal Zinc & Lead Co. Ltd. (x)	708 Drummond Bldg., Montreal	Lemieux Tp.
Golden Manitou Mines Ltd.	room 1104 .. 330 Bay St., Toronto, Ont.	Bourlamaque Tp.
Lyall and Beidelman (x)	708 Drummond Bldg., Montreal	Lemieux Tp.
New Calumet Mines Ltd.	25 King St. W., Toronto, Ont.	Calumet Island
Siscoe Metals Ltd. (Tetreault mine)	907 Dominion Square Bldg., Montreal	Portneuf Co.
ONTARIO -		
Beausoleil, Geo. & Co. (x)	221 Notre Dame St. W., Montreal, Que.	Enterprise
Lake Geneva Mining Co. Ltd.	941 Dominion Square Bldg., Montreal, Que.	Hess Tp.
Ozone War Metals Mining Synd. Ltd. (x)	39 La Belle Bldg., Windsor, Ont.	Prospecting

PRINCIPAL OPERATORS IN THE CANADIAN SILVER-LEAD-ZINC MINING INDUSTRY, 1945 (Con.)

(x) Active but not producing.

Name of Operator	Head Office Address	Location of Mine
<u>YUKON -</u>		
Bjornnes, Ellef	Mayo	Mayo M.D.
Settlemier & Bermingham	Mayo	Mayo M.D.
Treadwell Yukon Corp. Ltd. (a)	1022 Crocker Bldg., San Francisco, Cal.	Mayo M.D.
(a) Now in liquidation.		
<u>BRITISH COLUMBIA - (/)</u>		
Ainsmore Cons. Mines Ltd.	112 Yonge St., Toronto, Ont.	Ainsworth
Base Metals Mining Corp. Ltd.	suite 602 .. 350 Bay St., Toronto, Ont.	Field
Campbell, Colin J. (Bosun)	4675 West 5th Ave., Vancouver	New Denver
Cons. Mining & Smelting Co. of Canada Ltd.	Trail	Kimberley
Doney, E. and Vandergriff, E. (Victor)	Sandon	Sandon
Highland-Bell Ltd.	Creston	Beavardell
Kootenay Belle Gold Mines Ltd. (Whitewater)	916 Stock Exchange Bldg., Vancouver	Retallock
Kootenay Florence Project	c/o Wartime Metals Corp., 637 Craig St. W., Montreal, Que.	Ainsworth M.D.
McCready, G. E. (Caledonia)	Retallock	Ainsworth M.D.
Omineca Base Metals Ltd. (x)		
(Silver Standard)	475 Howe St., Vancouver	New Hazelton
Petersen, Eugene H. (New Spring field)	Box 182, Sandon	Sandon
Providence Mine Synd.	Box 629, Greenwood	Greenwood M.D.
Reco Mountain Base Metals Mines Ltd.	c/o Hamilton and Wragge, Nelson	Sandon
Sheep Creek Gold Mines Ltd. (Zincton)	616 Stock Exchange Bldg., Vancouver	Zincton
Wanke, Ed. A. (Cariboo)	Greenwood	Rock Creek
Western Exploration Co. Ltd.	Silverton	Slocan Lake

(/) Exclusive of several small shippers who are usually lessees.



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