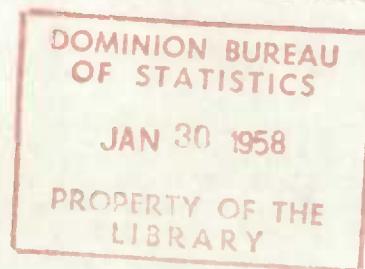


26-216

C-2



THE SILVER-LEAD-ZINC MINING INDUSTRY 1956



Published by Authority of
The Honourable Gordon Churchill, Minister of Trade and Commerce

DOMINION BUREAU OF STATISTICS
Industry and Merchandising Division
Mineral Statistics Section

6502-590-126

Price 25 cents

Vol. 1--Part I--C-1

EDMOND CLOUTIER, C.M.G., O.A., D.S.P., Queen's Printer and Controller of Stationery, Ottawa, 1958

NOTICE

The annual reports prepared by the Industry and Merchandising Division of the Bureau of Statistics are divided into 3 volumes, as follows: **Volume I** — The Primary Industries, including mining, forestry and fisheries; **Volume II** — Manufacturing; **Volume III** — Merchandising and Services. The volumes are made up of parts, and the parts in turn are subdivided according to the industries which they comprise.

Volume I consists of the following parts:

- Part I — Mineral Statistics
- Part II — Forestry Statistics — Operations in the Woods
- Part III — Fisheries Statistics

Part I includes the following reports which constitute the complete series on Mineral Statistics of Canada. Individual reports are issued as the information becomes available; they are arranged in a form suitable for binding.

- A — General Review of the Mining Industry, 50¢
- B — The Gold Mining Industry, 50¢
- C — The Silver-Lead-Zinc Mining Industry, 25¢
- D — The Nickel-Copper Mining, Smelting and Refining Industry, 25¢
- E — The Iron Mining Industry, 25¢
- F — The Miscellaneous Metal Mining Industry, 25¢
- G — The Smelting and Refining Industry, 25¢
- H — The Coal Mining Industry, \$1.00
- I — The Crude Petroleum and Natural Gas Industry, 25¢
- J — The Asbestos Mining Industry, 25¢
- K — The Feldspar and Quartz Mining Industry, 25¢
- L — The Gypsum Industry, 25¢
- M — The Peat Industry, 25¢
- N — The Salt Industry, 25¢
- O — The Talc and Soapstone Industry, 25¢
- P — The Miscellaneous Non-metal Mining Industry, 25¢
- Q — The Cement Manufacturing Industry, 25¢
- R — The Clay and Clay Products Industry, 25¢
- S — The Lime Industry, 25¢
- T — The Sand and Gravel Industry, 25¢
- U — The Stone Industry, 25¢
- V — Contract Drilling in the Mining Industry, 25¢

THE SILVER-LEAD-ZINC MINING INDUSTRY

1956

Definition of the Industry—General statistical data contained in this report pertain only to the mining of silver-cobalt and silver-lead-zinc ores. However, the output figures for specific metals represent the total production from all sources.

Silver mining is not a distinct mining industry in Canada inasmuch as the silver-bearing minerals usually occur in association with other metals of economic value—with lead and zinc; with copper, nickel and arsenic; with lode and placer free gold; in copper-gold and nickel-copper ores. Silver-lead-

zinc mining is a very important industry in British Columbia and in the Yukon Territory. In eastern Canada lead and zinc ores have been mined in Ontario, Quebec, Nova Scotia, Newfoundland and New Brunswick.

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

(a) The Silver-Lead-Zinc Mining Industry

During 1956 there were 88 firms which did some work on 96 properties. There were 44 producers or shippers. The average employments in the industry numbered 6,338 persons to whom \$27,253,247 were paid in salaries and wages. Fuel cost \$1,761,405 and 174,437.431 kwh. of electricity were purchased for \$1,691,216. Process supplies

cost \$8,215,578 and freight plus treatment charges amounted to \$44,648,473.

For statistical purposes some firms are classified as silver lead-zinc mines in a given year and later transferred to copper-gold silver mining as the major portion of the value of their output was derived from copper and gold.

TABLE 1. Principal Statistics for the Silver-Lead-Zinc Mining Industry, Significant Years 1921-1956

Year	Establishments	Employees	Salaries and wages	Cost of fuel and electricity at works	Cost of process supplies	Gross selling value of products (f.o.b. works)	Net ¹ value of production
							\$
	No.	No.	\$	\$	\$	\$	\$
1921	72	781	966,171	90,953	N.A.	2,177,053	N.A.
1929	168	4,153	6,482,392	793,139	"	22,748,089	"
1931	40	1,299	2,149,921	485,106	"	6,351,975	"
1933	43	1,100	1,501,012	284,277	"	7,569,867	"
1937	130	2,220	3,914,643	845,898	1,940,177	28,528,967	22,740,582
1939	83	1,646	2,803,057	667,661	1,619,385	18,254,851	13,555,609
1941	64	1,666	3,452,199	610,168	689,284	24,277,977	20,653,212
1944	20	2,769	5,810,290	860,231	1,752,087	21,291,957	16,802,759
1946	31	2,451	5,987,111	780,136	2,636,735	48,342,501	39,292,606
1949	101	5,438	15,676,043	1,989,632	7,181,113	100,349,929	67,108,165
1951	144	9,324	30,380,859	3,090,958	10,382,057	185,692,981	131,909,215
1953	143	7,144	28,695,373	3,836,581	10,074,160	123,803,184	67,898,350
1954	124	6,386	24,847,011	3,488,018	9,927,474	136,256,758	78,077,960
1955	103	6,529	26,741,770	3,465,589	9,740,623	140,186,677	82,663,039
1956	96	6,338	27,253,247	3,452,621	8,215,578	142,920,691	86,604,019

1. The gross value from which the value of fuel, purchased electricity, process supplies, freight and treatment charges have been deducted.

TABLE 2. Ore Mined and Milled in the Silver-Lead-Zinc Mining Industry, 1955 and 1956

	Newfoundland, Nova Scotia, New Brunswick	Quebec and Ontario	British Columbia	Yukon and Northwest Territories	Canada
Tons					
1955					
Ore mined	592,639	2,196,443	4,573,505	163,765	7,526,352
Ore milled	592,140	2,099,194	4,566,687	162,565	7,420,586
Concentrates produced:					
Lead	31,887	13,980	200,980	19,276	266,123
Zinc	75,209	114,519	382,910	20,506	593,144
Pyrite	7,952	52,014	—	—	59,966
Precipitates and other	—	—	327	—	327
Copper, copper-lead	19,571	3,872	13,993	—	37,436
1956					
Ore mined	448,641	1,962,696	5,055,017	184,652	7,651,006
Ore milled	448,641	1,960,935	5,047,048	180,643	7,637,267
Concentrates produced:					
Lead	39,778	8,761	171,545	19,177	239,261
Zinc	72,599	89,275	433,976	21,339	617,189
Pyrite	6,503	260,387	—	—	267,352
Precipitates and other	—	—	621	—	621
Copper, copper-lead	12,401	9,159	15,804	—	37,364

TABLE 3. Destination of Shipments from Silver-Lead-Zinc Mines, 1955 and 1956

	Tons shipped	Gross value f.o.b. shipping points	Total metal content (without deductions)			
			Gold	Silver	Lead	Zinc
1955						
To Canadian smelters:		\$	Troy ounces	Troy ounces	Pounds	Pounds
Lead ore	1,088	102,220	12	39,412	514,222	212,713
Lead concentrates	187,030	36,685,726	1,411	8,869,755	238,488,452	19,850,681
Zinc concentrates ¹	364,675	43,589,371	1,532	1,711,040	47,139,340	343,125,995
Gold concentrates	215	310,066	8,984	3,903	—	—
Copper concentrates ²	1,559	412,620	957	9,844	—	—
Pyrite	10,096	78,240	—	—	—	9,058,065 ⁷
Silver concentrates, bullion	113	115,769	139	126,331	58,518	4,114
Total Canadian	564,776	81,294,012	13,035	10,760,285	286,200,532	363,193,503
To foreign smelters:						
Lead ore	182	85,574	3	76,967	125,214	27,280
Lead concentrates	90,639	18,455,260	15,078	3,703,287	104,553,292	11,717,377
Zinc concentrates ¹	231,717	31,735,623	5,004	1,252,382	4,762,582	267,143,172
Copper concentrates ³	25,645	5,579,562	11,519	814,297	1,985,296	1,889,922
Gold concentrates .....	..	464	13	4	—	—
Silver concentrates, bullion	1,668	1,781,083	—	1,819,592	1,128,833	—
Precipitates	23	697,058	10,878	346,285	—	—
Tin concentrates	337	346,679	—	—	—	673,411 ⁴
Pyrite	45,538	211,362	—	—	—	45,682,492 ⁷
Total foreign	395,749	58,892,665	42,493	8,012,814	112,555,217	280,777,751
Total shipments	960,525	140,186,677	55,530	18,773,099	398,755,749	643,971,254
Cost of freight .....	...	10,068,235	...	...	...	...
Cost of fuel and purchased electricity ..	...	3,465,589	...	...	...	...
Smelter charges .....	...	34,249,191	...	...	...	...
Cost of process supplies .....	...	9,740,623	...	...	...	...
Net value of shipments .....	...	82,663,039	...	...	...	...

THE SILVER-LEAD-ZINC MINING INDUSTRY

C-5

TABLE 3. Destination of Shipments from Silver-Lead-Zinc Mines, 1955 and 1956 — Concluded

	Tons shipped	Gross value, f.o.b. shipping points	Total metal content (without deductions)			
			Gold	Silver	Lead	Zinc
1956		\$	Troy ounces	Troy ounces	Pounds	Pounds
To Canadian smelters:						
Lead ore	452	103,300	9	40,214	606,250	28,979
Lead concentrates	159,009	34,127,373	1,117	8,261,201	208,687,020	10,356,310
Zinc ore	181	16,412	24	11,142	37,016	51,628
Zinc concentrates ¹	384,948	49,531,733	1,418	1,330,744	53,404,198	362,215,888
Copper concentrates ⁵	8,367	1,539,092	5,350	47,879	—	—
Gold concentrates	4	315	10	9	76	46
Silver-lead concentrates	122	107,779	77	118,655	56,196	5,408
Pyrite	13,849	99,915	—	—	—	—
Total Canadian	566,932	85,525,919	8,005	9,809,844	262,790,756	372,658,259
To foreign smelters:						
Lead ore	50	4,485	9	1,742	19,057	8,095
Lead concentrates	84,811	18,213,576	13,730	3,661,858	99,661,338	13,979,619
Zinc ore	101	10,929	—	10,169	21,206	24,561
Zinc concentrates ¹	232,138	31,359,036	3,628	1,135,015	6,123,217	265,240,832
Tin concentrates	384	423,742	—	—	—	767,516 ⁴
Copper concentrates ⁶	25,754	4,363,618	9,142	706,531	2,071,235	1,352,957
Gold concentrates	151	143,240	4,269	197,331	—	—
Silver-lead concentrates	1,713	1,294,812	—	1,272,477	1,051,376	—
Pyrite	204,029	935,138	—	—	—	—
Bullion	9	257,614	—	289,960	—	—
Precipitates	15	388,582	5,832	201,670	—	—
Total foreign	549,155	57,394,772	36,610	7,476,753	108,947,429	280,606,064
Total shipments	1,116,087	142,920,691	44,615	17,286,597	371,738,185	653,264,323
Cost of freight .....	...	11,926,351	...	...	...	...
Cost of fuel and purchased electricity .....	...	3,452,621	...	...	...	...
Smelter charges .....	...	32,722,122	...	...	...	...
Cost of process supplies .....	...	8,215,578	...	...	...	...
Net value of shipments .....	...	86,604,019	...	...	...	...

Note. In addition to the metals contained in shipments listed in Table 3, 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 the silver-lead-zinc ores produced in this industry.

1. Does not include any zinc concentrates produced from copper-gold-zinc ores in Quebec, Manitoba, Saskatchewan or British Columbia.
2. Copper content, in pounds, was 797,379.
3. Copper content, in pounds, was 10,906,922.
4. Tin content in pounds.
5. Copper content, in pounds, was 3,631,980.
6. Copper content, in pounds, was 10,444,238.
7. Sulphur content, in pounds.

TABLE 4. Employees and Earnings in the Silver-Lead-Zinc Mining Industry, 1952-1956

Year	Administrative		Workmen		Total employees	Total man-hours worked	Earnings		Total earnings
	Male	Female	Male	Female			Administrative	Workmen	
Number									
1952	1,220	110	8,884	117	10,330	23,421,755	5,830,281	31,813,333	37,643,614
1953	1,023	86	5,948	87	7,144	16,229,164	5,263,075	23,432,398	28,695,473
1954	899	82	5,318	87	6,386	14,400,821	4,468,140	20,378,871	24,847,011
1955	951	93	5,405	80	6,529	14,563,682	5,285,716	21,456,054	26,741,770
1956	926	92	5,235	85	6,338	13,827,086	5,078,550	22,174,697	27,253,247

TABLE 5. Number of Workmen, by Months, in the Silver-Lead-Zinc Mining Industry, 1955 and 1956

Month	Total	1956						Total	
		Mine			Mill				
		Surface		Underground	Male	Female			
		Male	Female	Male					
January	5,286	1,655	70	2,657	867	8	5,257		
February	5,219	1,678	73	2,621	871	8	5,251		
March	5,220	1,643	72	2,601	875	8	5,199		
April	5,255	1,649	74	2,570	880	8	5,181		
May	5,560	1,840	77	2,499	876	8	5,300		
June	5,737	1,979	76	2,546	917	8	5,526		
July	5,776	2,030	85	2,522	935	5	5,577		
August	5,684	1,965	82	2,536	941	5	5,529		
September	5,630	1,857	78	2,535	902	5	5,377		
October	5,552	1,739	73	2,568	893	6	5,279		
November	5,475	1,699	75	2,626	900	6	5,306		
December	5,311	1,565	74	2,533	880	6	5,058		
Average	5,405	1,786	78	2,571	898	7	5,320		

TABLE 6. Fuel and Electricity Used in the Silver-Lead-Zinc Mining Industry, 1956

Kind	Unit of measure	Quantity	Cost at plant
		\$	
Bituminous coal (a) From Canadian mines	short ton	22,423	317,391
(b) Imported	"	9,370	173,673
Sub-bituminous coal (from Alberta mines only)	"	2,279	17,654
Anthracite coal	"	83	2,687
Lignite coal	"	4	61
Coke (for fuel only)	"	16	400
Gasoline, (includes gasoline used in cars and trucks)	Imp. gal.	419,367	164,919
Kerosene or coal oil	"	2,799	1,127
Fuel oil	"	4,020,643	942,248
Wood (cords of 128 cubic feet of piled wood)	cord	753	18,191
Gas (a) Liquefied petroleum gases (propane, etc.)	Imp. gal.	274,597	123,054
(b) Other manufactured gas	M cu. ft.	—	—
(c) Natural gas	"	—	—
Other fuel	k. w.h.	185,190,258	1,689,087
Electricity purchased for power and lighting	"	247,173	2,129
Electricity purchased for other purposes			
Total (cost only) .....		...	3,452,621
Electricity generated (a) For own use	k. w.h.	179,328,224	...
(b) For sale	"	180,000	217,944

TABLE 7. Drilling Completed on Silver-Lead-Zinc Deposits, 1954-1956

	Footage drilled		
	1954	1955	1956
Diamond drilling for exploration and testing:			
By mining companies with their own personnel and equipment.....	12,004	76,257	96,654
By diamond drilling contractors.....	409,650	425,866	512,382
Other diamond drilling:			
Blast hole diamond drilling:			
By mining companies with their own personnel and equipment	376,509	523,853	603,135
By diamond drilling contractors.....	6,677	1,335	5,964
Drilling by percussion or other machines ¹	4,733,972	6,935,242	6,252,366

1. Not complete as records are unobtainable at certain mines.

TABLE 8. Taxes Paid by Concerns in the Silver-Lead-Zinc Mining and Smelting Industry, 1954-1956

Tax paid	1954	1955	1956
	\$	\$	\$
Dominion income tax	13,406,884	18,565,345	15,915,807
Provincial tax	2,382,618	3,586,121	4,008,495
Municipal tax	818,893	883,395	909,730

TABLE 9. Cost of Prospecting by Canadian Silver-Lead-Zinc Mining Companies

Province in which prospecting ¹ was conducted	By Newfoundland, Nova Scotia, New Brunswick ² companies ²	By Quebec companies ²	By Ontario companies ²	by British Columbia companies ²	By Yukon and Northwest Territories companies ²	Total
Dollars						
1954						
Newfoundland	298,460	—	—	34,845	—	333,305
Nova Scotia	74,145	—	—	—	—	74,145
New Brunswick	2,671,638	44,789	—	1,276,644	—	3,998,071
Quebec	332,248	20,867	—	6,546	—	359,661
Ontario	453,986	17,576	4,579	270,105	—	746,246
Manitoba	38,254	307	—	10,212	—	48,773
Saskatchewan	165,622	—	194	136,597	—	302,413
Alberta	—	—	1,027	1,845	—	2,872
British Columbia	121,098	—	—	513,153	—	634,251
Northwest Territories	4,473	—	—	27,329	—	31,802
Yukon	82,580	—	—	104,270	130,508	316,358
Canada	4,242,504	83,539	5,800	2,381,546	130,508	6,843,897
1955						
Newfoundland	249,576	—	—	—	—	249,576
Nova Scotia	51,380	—	—	—	—	51,380
New Brunswick	391,766	56,589	990	122,886	—	572,231
Quebec	256,294	141,264	—	288,776	4,031	690,365
Ontario	563,461	76,940	14,797	65,055	2,889	723,142
Manitoba	15,988	—	—	85,537	—	101,525
Saskatchewan	2,762	—	—	42,728	—	45,490
Alberta	—	—	—	—	—	—
British Columbia	—	—	—	500,189	—	500,189
Northwest Territories	5,600	—	—	138,970	24,471	169,041
Yukon	—	—	—	58,242	31,067	89,309
Canada	1,536,827	274,793	15,787	1,302,383	62,458	3,192,248
1956						
Newfoundland	268,064	—	—	—	—	268,064
Nova Scotia	180,029	—	—	—	—	180,029
New Brunswick	85,172	23,980	—	48,066	—	157,218
Quebec	131,198	1,103,375	—	82,776	—	1,317,349
Ontario	94,100	227,882	7,244	89,180	—	418,406
Manitoba	—	—	—	15,853	—	15,853
Saskatchewan	—	—	—	30,269	—	30,269
Alberta	—	—	—	—	—	—
British Columbia	—	11,823	—	873,157	—	884,980
Northwest Territories	—	—	—	51,750	—	51,750
Yukon	—	40,600	—	170,772	35,911	247,283
Canada	758,563	1,407,660	7,244	1,361,823	35,911	3,571,201

Note. No indication is made of the kind of minerals sought.

- Prospecting includes the search for new mineral deposits on the surface and preliminary exploration.
- Province in which the companies' principal operations are conducted.

TABLE 10. Specified Expenditures by the Silver-Lead-Zinc Mining and Smelting Industry

—	1953	1954	1955	1956
Workmen's compensation.....	\$ 957,436	\$ 885,573	\$ 820,537	\$ 988,961
Silicosis assessment.....	255,922	209,228	343,844	384,624
Unemployment insurance.....	304,868	278,460	297,625	535,873
Aggregate cost of all supplies purchased.....	16,476,408	15,099,449	15,319,071	14,324,931
Aggregate cost of plant and equipment purchased.....	4,031,118	3,103,221	2,392,914	6,401,809
Cost of buildings, machinery and equipment erected or installed during year	4,849,234	3,730,998	3,825,729	5,636,545

TABLE 11. Estimated Capital and Repair Expenditures, 1951-1955

Year	Capital expenditures			Repair expenditures			Capital and repair expenditures		
	Con- struc- tion	Machinery	Total	Con- struc- tion	Machinery	Total	Con- struc- tion	Machinery	Total
Thousands of dollars									
1951	4,666	5,412	10,078	321	3,361	3,682	4,987	8,773	13,760
1952	6,840	4,619	11,459	968	2,341	3,309	7,808	6,960	14,768
1953	3,821	2,318	6,139	457	1,110	1,567	4,278	3,428	7,706
1954	2,992	2,247	5,239	757	1,015	1,772	3,749	3,262	7,011
1955	4,804	2,231	7,035	756	1,880	2,636	5,560	4,111	9,671
1956 ¹	6,739	4,203	10,942	978	2,454	3,432	7,717	6,657	14,374

1. Preliminary estimates.

Silver

Statistics on silver production are computed as follows: (a) recoverable silver in ores, concentrates and matte shipped for export; (b) silver in crude gold bullion produced; (c) silver in blister and anode copper made at Canadian smelters; (d) silver in base bullion made by the Consolidated Mining and Smelting Company of Canada Limited, at Trail, British Columbia, which is the only lead smelter in Canada; (e) silver bullion produced from the treatment of cobalt-silver ores by the Deloro Smelting and Refining Company Ltd., at Deloro, Ontario.

The silver production in 1956 increased to 28,431,847 troy ounces from 27,984,204 troy ounces in 1955. The respective values were \$25,497,681 and \$24,676,472.

British Columbia continued to be the province which produced the most silver. Ontario moved into second place, with 6.6 million ounces, followed by Yukon with more than 6 million ounces. Quebec produced more than 4 million ounces.

TABLE 12. Production of Silver (All Forms) from Canadian Ores, 1947-1956

Year	Ounces	Value	Year	Ounces	Value
		\$			\$
1947	12,504,018	9,002,893	1952	25,222,227	21,065,603
1948	16,109,982	12,082,487	1953	28,299,335	23,774,271
1949	17,641,493	13,098,808	1954	31,117,949	25,907,870
1950	23,221,431	18,767,561	1955	27,984,204	24,676,472
1951	23,125,825	21,865,467	1956	28,431,847	25,497,681

TABLE 13. Production of Silver (All Forms) by Months, 1955 and 1956

Month	1955	1956	Month	1955	1956
	ounces			ounces	
January	2,232,386	2,333,452	July	2,347,380	2,313,488
February	2,010,506	2,045,349	August	2,470,607	2,362,803
March	2,413,591	2,344,585	September	2,416,829	2,571,756
April	2,324,287	2,061,509	October	2,472,990	2,436,998
May	2,255,620	2,511,200	November	2,213,991	2,164,919
June	2,382,980	2,540,081	December	2,443,037	2,445,707
			Total	27,984,204	28,431,847

TABLE 14. Silver Production According to Nature of Ores, by Provinces, 1956

Province	Crude placer gold	Auriferous quartz ores	Copper-gold-silver ores	Nickel-copper ores	Silver-lead-zinc ores	Silver-cobalt and other ores	Total
ounces							
Newfoundland	—	—	—	—	957,125	—	957,125
Nova Scotia	—	3	—	—	92,856	—	92,859
New Brunswick	—	—	—	—	18,182	—	18,182
Quebec	—	105,937	2,090,685 ¹	—	1,867,344	—	4,063,966
Ontario	—	408,997	12,215	1,391,545	92,134	4,721,556	6,626,447
Manitoba	—	9,748	407,889	12,487	—	—	430,124
Saskatchewan	—	—	1,179,110	—	—	—	1,179,110
Alberta	14	—	—	—	—	—	14
British Columbia	464	29,344	266,229	—	8,505,361	—	8,801,398
Northwest Territories	10	69,906	—	—	—	—	69,916
Yukon	14,400	—	—	—	6,178,306	—	6,192,706
Canada	14,888	623,935	3,956,128	1,404,032	17,711,308	4,721,556	28,431,847

1. Contains a small quantity recovered from gold ores.

TABLE 15. Production of Silver, by Provinces and by Point of Computation, 1955 and 1956

	1955		1956	
	Quantity	Value	Quantity	Value
Newfoundland:			Ounces	\$
In ores and concentrates exported	701,792	618,840	957,125	858,350
Nova Scotia:				
In gold bullion and concentrates	262,067	231,091	92,859	83,276
New Brunswick:				
In ores and concentrates exported	25,087	22,122	18,182	16,306
Quebec:				
In anode copper	2,198,248	1,938,415	2,529,518	2,268,472
In gold bullion made and in concentrates exported	2,588,447	2,282,493	1,534,448	1,376,093
Total	4,786,695	4,220,908	4,063,966	3,644,565
Ontario:				
In silver recovered in Canada from cobalt ores	4,066,453	3,585,798	4,721,566	4,234,300
In gold bullion	397,564	350,572	377,034	338,124
In blister copper	1,370,410	1,208,428	1,312,794	1,177,314
In ores, concentrates, residues, matte, etc., exported	216,590	190,989	215,053	192,859
Total	6,051,017	5,335,787	6,626,447	5,942,597
Manitoba:				
In blister copper	442,935	390,580	407,889	365,795
In gold bullion (gold mines) and in ores exported	11,593	10,223	22,235	19,940
Total	454,528	400,803	430,124	385,735
Saskatchewan:				
In blister copper	1,230,179	1,084,772	1,179,110	1,057,426
In gold bullion and in crude alluvial gold	—	—	—	—
Total	1,230,179	1,084,772	1,179,110	1,057,426
Alberta:				
In alluvial gold	21	18	14	12
British Columbia:				
In alluvial gold	1,004	885	464	416
In gold bullion	24,898	21,955	24,672	22,126
In base bullion and in ores, etc., exported	8,676,220	7,650,691	8,776,262	7,870,552
Total	8,702,122	7,673,531	8,801,398	7,893,094
Northwest Territories:				
In gold bullion, placer gold	58,477	51,565	69,916	62,701
Yukon:				
In alluvial gold	14,976	13,205	14,400	12,914
In silver-lead ores to smelters	5,697,233	5,023,820	6,178,306	5,540,705
Total	5,712,219	5,037,035	6,192,706	5,553,619
Canada	27,984,204	24,676,472	28,431,847	25,497,681

Note. For 1956 silver was valued at 89.68 cents per fine ounce, the average price of domestic sales; for 1955 the corresponding price was 88.18 cents.

TABLE 16. Source of Silver Production, by Percentages, 1952-1956

Source	1952	1953	1954	1955	1956
Per cent					
In silver-cobalt ores	19.21	12.50	11.99	14.53	16.61
In base bullion ¹	48.01	45.65	38.53	37.41	37.08
In gold otes (bullion and placer)	2.83	2.21	2.16	2.38	2.17
In blister and anode copper ²	18.66	14.32	15.61	18.73	19.14
In matte, copper ores and silver-lead ores, etc., exported (other than silver-cobalt ores)	11.29 100.0	25.32 100.0	31.71 100.0	26.95 100.0	25.00 100.0

1. Includes some silver bullion from silver-lead ores.

2. From copper-gold-silver and nickel-copper ores.

TABLE 17. Estimated Consumption of Fine Silver in Canada, for Industrial Purposes, 1947-1956

Year	In anodes for plating	In making sterling silver and other silver alloys (except lead-silver alloys)	In making silver nitrate	In lead-silver alloys	Miscellaneous	Total
Ounces						
1947	1,155,000	1,384,000	874,000	37,000	253,000	3,703,000
1948	1,365,000	1,800,000	956,000	5,000	248,000	4,374,000
1949	2,463,000	2,903,000	969,000	2,500	196,000	6,533,500
1950	1,166,000	2,708,000	1,025,000	5,000	304,000	5,208,000
1951	907,000	2,134,000	1,166,000	3,000	279,000	4,489,000
1952	1,116,500	1,181,000	1,083,000	26,000	379,500	3,786,000
1953	1,132,000	1,820,500	1,282,000	8,500	420,000	4,663,000
1954	978,000	1,436,000	1,249,000	9,000	569,000	4,241,000
1955	1,117,000	1,653,000	1,324,000	10,000	538,000	4,642,000
1956	1,348,000	2,080,000	1,174,000	14,000	590,000	5,206,000

Note. Amounts used for coinage not included in above figures.

TABLE 18. Imports and Exports of Silver and Silver Products, 1955 and 1956

	1955		1956	
	Quantity	Value	Quantity	Value
Imports:	Ounces	\$	Ounces	\$
Silver, unmanufactured	87,128	75,345	1,010,180	901,660
Silver, manufactures of, n.o.p. .....	...	737,255	...	744,793
Toilet articles of which the most important component, in value, is sterling silver .....	...	26,176	...	27,237
Coin, foreign, except gold	—	—	—	—
Total accounted for .....	...	838,776	...	1,673,690
Exports:				
Silver contained in ore, concentrates, etc.	5,873,873	4,857,948	6,924,414	5,871,438
Silver bullion	16,598,577	14,485,037	14,341,753	12,821,395
Silver manufacturers .....	...	54,482	...	34,188
Total accounted for .....	...	19,397,467	...	18,727,021

TABLE 19. Silver Production of the World, 1952-1956

(From the Annual Report of the American Bureau of Metal Statistics)

Country	1952	1953	1954	1955	1956
fine ounces					
North America:					
United States	40,245,000	34,697,000	38,059,000	33,101,000	38,157,000
Canada	25,222,227	28,299,335	31,117,949	27,984,204	27,665,141
Mexico	50,352,398	47,886,437	39,895,546	47,956,548	43,077,046
Total North America	115,819,625	110,882,772	109,072,495	109,041,752	108,899,187
Central America and West Indies	4,744,000	5,933,000	4,290,000	2,953,500	2,987,000
South America:					
Argentina	962,948	895,474	1,639,688	1,414,633	1,671,838
Bolivia	7,065,413	6,112,808	5,043,563	5,851,107	7,543,129
Brazil	17,301	18,000	18,000	17,738	
Chile	1,246,327	1,497,804	1,488,995	1,714,495	1,821,844
Colombia	123,175	117,385	112,354	112,037	110,729
Ecuador	82,297	86,750	32,670	47,732	29,479
Peru	18,385,717	19,650,241	20,405,412	22,947,095	21,833,001
Total South America, as reported	27,883,178	28,378,462	28,740,682	32,104,837	
Europe:					
Austria	3,858	5,144	5,787	3,537	1,190
Finland	150,076	235,788	239,453	224,568	318,446
France	353,650	344,005	305,425	257,200	234,695
Germany, West	1,877,700	2,314,435	2,401,660	2,226,117	
Italy	838,022	832,331	884,897	859,884	1,034,105
Norway	144,132	107,866	122,398	62,050	51,440
Portugal	61,739	88,528	243	29,593	70
Spain (refined)	553,109	1,144,926	1,062,718	928,428	
Sweden	2,196,231	1,571,428	2,215,553	2,397,683	2,562,355
United Kingdom	30,734	28,914	32,000	32,000	
Yugoslavia	2,576,983	3,047,949	2,829,329	2,983,520	2,759,949
Total Europe, as reported	8,786,234	9,721,314	10,099,463	10,004,580	
Oceania:					
Australia (commonwealth)	11,425,872	12,402,963	13,827,038	14,555,412	14,560,000
Fiji	25,838	19,328	20,000 ³	20,421	
New Guinea ¹	51,275	50,000	48,977	44,459	
New Zealand	51,016	75,888	33,049	27,930	1,000
Total Oceania	11,554,001	12,548,179	13,929,064	14,648,222	
Asia:					
Burma	242,307	579,239	1,074,555	1,268,231	1,255,364
India	17,675	16,864	...	15,425	
Japan	5,288,707	6,560,400	6,889,520	6,775,056	7,659,255
Korea, Republic of	11,381	52,177	50,200	79,636	196,404
Philippines	693,751	572,046	527,160	502,069	541,168
Saudi Arabia	111,945	150,626	63,681	...	...
Taiwan (Formosa)	30,000	40,700	20,062	63,948	53,960
Total Asia, as reported	6,395,766	7,972,052	8,625,178	8,704,375	
Africa:					
Algeria	8,648	...	...	...
Belgian Congo	4,726,050	4,961,581	4,533,254	4,083,144	3,697,335
French Morocco	1,914,147	2,054,803	1,914,340	2,324,124	2,250,500
Gold Coast (exports)	44,116	44,949	48,214	39,284	28,592
Kenya	17,315	21,758	1,325	1,170	54,689
Northern Rhodesia ²	348,954	514,699	38,279	109,130	613,115
Southern Rhodesia	81,356	84,566	81,657	76,837	76,870
South West Africa	1,064,335	795,702	900,542	1,318,012	1,605,460
Tanganyika (exports)	35,900	41,234	42,156	43,292	35,020
Tunisia	69,412	39,094	106,095	91,724	86,805
Union of South Africa	1,176,433	1,193,152	1,235,418	1,461,336	1,582,045
Total Africa, as reported	9,486,666	9,751,538	8,901,280	9,548,053	10,030,431
Russia ³	24,000,000	25,000,000	25,000,000	25,000,000	
Total world, as reported	208,669,470	211,187,317	208,658,162	212,005,319	
Estimated world total ⁴	215,100,000	221,600,000	213,400,000	221,500,000	

1. Year ended May 31, of year following that stated.

2. Recovered from an accumulation of refinery slimes.

3. Conjectural.

4. This estimate includes the following countries which also produce silver and from which definite figures are not available: Bechuanaland, Bulgaria, China, Cyprus, Czechoslovakia, Greece, Hong Kong, Hungary, Indonesia, Malaya, Mozambique, Nigeria, North Korea, Poland, Rumania, Sarawak, Sierra Leone, Swaziland, Turkey and Uganda.

Lead

Lead production is calculated as the lead in base bullion made from Canadian ores at the smelter of Consolidated Mining & Smelting Co. of Canada Ltd., at Trail, British Columbia, plus the recoverable lead content in ores and concentrated exported. The value is computed on the basis of the average price in Canadian dollars for refined lead.

The silver-lead-zinc mines of British Columbia produce the major portion of the nation's lead. Some of the lead-silver ores from the Yukon territory were smelted at Trail in British Columbia and part were exported to foreign smelters. In eastern Canada

most of the lead concentrates were shipped to foreign smelters for treatment.

During 1956 the production of lead in all forms amounted to 188,854 tons valued at \$58,582,651 compared with 202,762 tons worth \$58,314,500 in the preceding year. The price range during the year was from 15.50 cents to 16.00 cents per pound; the arithmetical weekly average was 15.51 cents.

Output of refined lead, which included some recovered from imported ores, amounted to 147,865 tons in 1956 compared with 148,811 tons in 1955.

TABLE 20. Production¹ on New Lead, 1947-1956

Year	Tons	\$	Average price per pound (Canadian funds)	Year	Tons	\$	Average price per pound (Canadian funds)
			¢				¢
1947	161,668	44,200,124	13.67	1952	168,842	54,671,021	16.19
1948	167,251	60,344,146	18.04	1953	193,706	50,076,822	12.93
1949	159,775	50,488,879	15.8	1954	218,495	58,250,831	13.33
1950	165,697	47,886,452	14.45	1955	202,762	58,314,500	14.38
1951	158,231	58,229,146	18.4	1956	188,854	58,582,651	15.51

1. Primary lead in base bullion produced, plus recoverable lead in ores exported.

TABLE 21. Production of Lead, by Months, 1955 and 1956

Month	Lead (all forms)		Refined lead ¹	
	1955	1956	1955	1956
Tons (2,000 pounds)				
January	18,959	16,227	12,129	12,179
February	15,018	14,553	12,498	11,469
March	19,113	17,067	13,494	12,438
April	17,889	11,931	13,190	11,554
May	16,808	15,673	13,631	11,990
June	18,050	17,062	13,323	11,591
July	16,900	16,073	7,045	12,374
August	16,926	16,468	10,531	12,196
September	16,191	16,008	13,913	12,706
October	13,863	16,901	14,561	13,923
November	15,279	14,935	12,224	12,914
December	17,766	15,956	12,272	12,531
Total	202,762	188,854	148,811	147,865

1. Includes lead refined from foreign ores.

TABLE 22. Production, Imports and Exports of Lead, 1954-1956

	1954		1955		1956	
	Pounds	Value	Pounds	Value	Pounds	Value
Production:		\$		\$		\$
Newfoundland.....	37,052,168	4,939,054	35,709,911	5,135,085	45,575,841	7,068,813
Nova Scotia	4,186,143	558,013	3,979,230	572,213	1,421,799	220,521
New Brunswick	—	—	1,532,706	220,403	949,090	147,204
Quebec	15,635,942	2,084,271	11,216,005	1,612,862	5,745,615	891,145
Ontario	2,815,611	375,321	3,853,503	554,148	3,010,163	466,876
British Columbia	343,535,334	45,793,259	322,984,797	45,445,214	295,402,176	45,816,877
Yukon	33,765,290	4,500,913	26,248,786	3,774,575	25,604,220	3,971,215
Total	436,690,488	58,250,831	405,525,038	58,314,500	377,708,904	58,582,651
Imports:						
Pig and block.....	296,633	38,677	195,337	30,883	209,444	37,790
Old and scrap	24,200	2,907	107,244	5,632	122,453	6,088
Bars and sheets	60,083	9,573	135,713	21,498	150,803	29,680
Lead pipe	1,160	239	—	—	2,221	512
Acetate of lead	89,478	13,967	160,084	26,602	179,801	32,180
Nitrate of lead	237,984	34,516	313,885	48,219	282,269	45,364
Other manufactures .....	...	200,784	...	191,090	...	275,020
Shots and bullets	5,020	1,731	1,917	646	7,053	6,182
Lead tetraethyl, compounds of	30,590,785	11,429,398	35,058,685	12,707,249	36,508,092	13,348,923
Lead capsules for bottles .....	...	113,894	...	59,935	...	79,468
Lead pigments:						
Litharge	2,004,300	326,260	2,150,900	364,946	2,104,000	383,575
Dry white lead	48,800	7,353	74,918	10,280	83,227	10,258
White lead, ground in oil	1,014	308	—	—	6,080	1,380
Dry red lead and orange mineral	188,503	30,449	303,560	49,936	427,448	74,570
Exports:						
Lead, scrap	1,739,800	158,761	1,253,100	80,686	323,800	25,514
Lead, contained in ore	119,510,600	14,568,258	116,327,700	15,034,498	99,948,200	13,547,850
Pig lead	232,818,300	25,802,738	185,408,500	22,078,426	159,266,500	21,451,906
White lead	11,000	2,018	13,500	2,431	14,700	342,400
Lead manufactures, n.o.p. ....	...	22,974	...	14,899	...	12,218
Lead pipe	54,900	10,719	44,200	8,851	41,900	8,766

TABLE 23. Production, Imports, Exports and Domestic Consumption of Refined Lead, 1947-1956

Year	Production in Canada	Domestic consumption	Exports ²	Imports	Stock ¹ at end of period
Tons of 2,000 pounds					
1947	162,000	64,131	118,214	—	9,134
1948	160,025	59,542	108,302	53	3,866
1949	146,149	51,281	99,010	2,154	10,959
1950	170,023	54,723	115,864	1,237	11,061
1951	162,000	60,348	104,893	1,227	10,365
1952	182,943	62,466	132,406	521	10,281
1953	165,752	67,718	98,686	540	21,184
1954	166,005	67,947	114,427	178	16,971
1955	148,811	69,380	89,512	165	12,330
1956	147,865	68,048	84,064	180	9,499

1. Producers' and consumers' stocks.

2. Producers' shipments for export.

TABLE 24. Consumption of Refined Lead by Principal End-uses, 1952-1956

Use	1952	1953	1954	1955	1956
Tons					
Solders and alloys	13,274	16,123	12,727	16,544	15,263
White lead, red lead and litharge	7,438	6,602	6,739	7,767	7,498
Storage batteries	19,291	20,685	22,041	20,905	21,330
Foil and collapsible tubes	3	1	349	171	661
Ammunition	3,006	3,784	5,266	5,288	4,990
Iron and steel	1,626	1,635	515	609	597
Cable covering	15,959	17,635	19,368	15,395	15,036
Miscellaneous	1,869	1,248	942	2,701	2,673
Total	62,466	67,718	67,947	69,380	68,048

TABLE 25. World Production of Lead on Mine Basis, 1952-1956

(From the Annual Report of the American Bureau of Metal Statistics)

Country	1952	1953	1954	1955	1956
Tons of 2,000 pounds					
United States ³	390,162	341,872	325,427	338,025	348,329
Canada ^{2,3}	168,842	193,706	218,595	202,762	188,971
Mexico	271,196	244,213	238,785	232,381	220,030
Total North America	830,200	779,791	782,707	773,168	757,330
Argentina	22,000	17,500	21,000	25,500	26,800
Bolivia	32,262	26,222	20,092	21,080	23,777
Chile	4,500	3,500	3,500	3,500	3,500
Peru	105,571	126,302	121,326	130,899	133,491
Total South America	164,333	173,524	165,918	180,979	187,568
Austria	5,763	5,677	5,432	5,286	5,281
Finland	238	239	292	852	1,554
France	13,024	12,710	11,486	9,323	9,161
Germany ⁵	56,875	69,351	74,420	74,334	72,100
Greece	6,122	7,152	4,131	5,900	7,485
Italy ³	44,293	45,553	45,300	51,497	52,035
Poland	22,500	23,500	24,000	24,200	24,600
Spain	45,622	57,973	59,877	67,096	64,735
Sweden	22,700	28,146	32,131	35,459	36,097
United Kingdom ³	5,295	7,439	7,708	6,798	7,213
Yugoslavia	87,043	93,864	92,736	99,298	96,258
Total Europe	309,480	351,604	358,113	380,043	376,519
Burma ⁴	2,949	7,731	12,722	15,794	16,144
India ⁴	1,268	1,897	1,974	2,502	2,797
Japan	19,482	20,006	25,175	28,852	32,451
Korea, Republic of	157	164	91	753	1,600
Philippines	2,535	2,683	2,014	2,555	2,360
Total Asia	26,391	32,481	41,976	50,456	55,352
Algeria	4,987	8,662	11,564	11,645	11,354
Belgian Congo .....	...	72	184	91	100
French Equatorial Africa	3,916	4,877	3,833	3,673	3,316
French Morocco	92,161	88,559	90,812	97,999	95,459
Northern Rhodesia ⁴	14,112	12,891	16,300	17,976	17,024
South West Africa	50,324	55,022	65,308	80,983	85,723
Tunisia	25,638	26,455	30,383	29,391	25,794
Total Africa	191,138	196,538	218,889	241,758	238,770
Australia ³	247,719	258,521	295,056	311,360	313,364
Russia	170,000	202,000	228,500	255,000	290,000
Total ⁶	1,939,261	1,996,459	2,091,159	2,193,264	2,218,903

1. Exports.

2. Base bullion from domestic ores, plus recoverable content of ores exported.

3. Calculated as recoverable.

4. Same as pig lead production.

5. Federal Republic of Germany.

6. A.B.M.S. totals are exclusive of any estimate for East Germany, 1949-1956, North Korea, 1949-1956. Besides the productions tabulated above, there are small productions in Ecuador, Guatemala, Bulgaria, Hungary, Norway, Portugal and several other countries.

Zinc

Zinc production is calculated as the refined zinc recovered from domestic ores at Canadian smelters, plus the recoverable zinc in ores and concentrates shipped for export. The quantity arrived at in this way is valued at the average price in Canadian dollars for Grade A electrolytic zinc.

New zinc in all forms produced in 1956 amounted to 422,632 short tons valued at \$125,437,344 compared with 433,357 tons valued at \$118,306,466 in 1955. Refined zinc output, including zinc refined from foreign ores, amounted to 255,564 tons in 1956 and 256,542 tons in 1955.

Zinc concentrates from Buchans Mines in Newfoundland, from Mindamar Metals in Nova Scotia

and from Keymet Mines in New Brunswick were exported for treatment. In Quebec zinc concentrates were produced from ores classified as copper-gold-silver, of the East Sullivan, Quemont, Normetal, Weedon Pyrite and Waite Amulet mines. Other zinc producers were classified as lead-zinc mines.

The zinc concentrates produced in eastern Canada were exported for treatment. The Hudson Bay Mining and Smelting Company's refinery at Flin Flon, Manitoba, treated ores from the Flin Flon mines. A large portion of the zinc ores mined in British Columbia were treated in the smelter at Trail. Ores from the Mayo district in the Yukon were sent to Trail, British Columbia, and to the United States for refining.

TABLE 26. Production¹ of Zinc From All Types of Canadian Ores, 1947-1956

Year	Tons	\$	Average price per pound (Canadian funds)	Year	Tons	\$	Average price per pound (Canadian funds)
			¢				¢
1947.....	207,863	46,686,010	11.23	1952	371,802	129,833,285	17.46
1948.....	234,164	65,237,956	13.93	1953	401,762	96,101,386	11.96
1949.....	288,262	76,372,147	13.25	1954	376,491	90,207,285	11.98
1950.....	313,227	98,040,145	15.65	1955	433,357	118,306,466	13.65
1951.....	341,112	135,762,643	19.90	1956	422,632	125,437,344	14.84

1. Refined zinc made in Canada, plus recoverable zinc in ores, etc., exported.

TABLE 27. Production of Zinc, by Months, 1955 and 1956

Month	Primary zinc in all forms		Refined zinc ¹	
	1955	1956	1955	1956
Tons of 2,000 pounds				
January	36,488	37,670	22,002	21,696
February	32,068	35,547	19,825	20,356
March	36,674	36,752	22,175	22,010
April	34,719	35,295	21,261	21,339
May	37,368	35,387	21,559	21,790
June	33,553	36,087	20,525	20,780
July	33,468	37,329	21,729	21,691
August	37,329	35,430	21,989	21,354
September	37,032	32,858	20,858	20,691
October	40,447	35,615	22,166	21,412
November	38,140	31,618	21,358	20,470
December	36,071	33,045	21,095	21,975
Total	433,357	422,633	256,542	255,564

1. Includes zinc refined from foreign ores.

TABLE 28. Zinc Production According to Types of Ores, by Provinces, 1955 and 1956

Year and province	Recovered from copper-gold-silver ores	Recovered from silver-lead-zinc and other ores	Total	Value
Tons of 2,000 pounds				
1955				\$
Newfoundland	—	28,636	28,636	7,817,635
Nova Scotia.....	—	8,018	8,018	2,188,957
New Brunswick	—	—	—	—
Quebec	44,916	56,515	101,431	27,690,668
Ontario	—	1,548	1,548	422,555
Manitoba	17,966	—	17,966	4,904,725
Saskatchewan	48,960	—	48,960	13,366,168
British Columbia	8,381	207,505	215,886	58,936,877
Yukon	—	10,912	10,912	2,978,881
Canada	120,223	313,134	433,357	118,306,466
1956				
Newfoundland	—	34,680	34,680	10,293,055
Nova Scotia.....	—	2,088	2,088	619,841
New Brunswick	—	531	531	157,460
Quebec	43,156	42,817	85,973	25,516,714
Ontario	—	1,227	1,227	364,218
Manitoba	17,904	—	17,904	5,313,968
Saskatchewan	45,380	—	45,380	13,468,767
British Columbia	7,945	216,378	224,323	66,579,127
Yukon	—	10,526	10,526	3,124,194
Canada	114,385	308,247	422,632	125,437,344

TABLE 29. Imports and Exports of Zinc, 1955 and 1956

	1955		1956	
	Tons	Value	Tons	Value
Imports:		\$		\$
Zinc dust	419	127,357	491	154,031
Zinc in blocks, pigs, bars and rods and zinc plates, n.o.p.	50	27,928	76	42,934
Zinc in sheets and strips, and zinc plates for marine boilers	1,841	788,994	1,615	765,392
Zinc slugs for dry batteries .....	..	346,078	..	317,595
Zinc white (zinc oxide)	805	208,784	629	174,792
Zinc sulphate	1,415	143,508	1,189	117,403
Zinc chloride	129	28,299	257	52,784
Zinc, manufactures of n.o.p. .....	..	2,108,492	..	2,464,058
Lithopone	1,894	265,224	2,295	348,267
Exports:				
Zinc, manufactures of .....	..	162,188	..	221,441
Zinc contained in ore	190,585	22,988,483	199,323	26,484,600
Zinc, scrap, dross and ashes	5,466	462,214	5,466	512,854
Zinc, slab or cake	213,837	47,107,303	183,728	47,013,213
Zinc oxide	1,194	277,360	535	142,505

TABLE 30. Production, Exports and Domestic Consumption of Refined Zinc, 1947-1956

Year	Production	Domestic consumption	Exports	Stocks ¹ at end of period
Tons of 2,000 pounds				
1947	178,264	51,065	127,036	21,275
1948	196,575	46,899	147,454	13,849
1949	206,045	45,669	159,353	12,101
1950	204,367	54,370	148,205	13,048
1951	218,578	61,023	152,661	18,742
1952	222,200	51,581	166,864	25,116
1953	250,961	50,717	158,388	60,959
1954	213,775	46,735	206,038	22,349
1955	256,542	58,062	213,837	17,745
1956	255,564	61,173	183,728	21,461

1. Producers' and consumers' stocks.

TABLE 31. Consumption of Refined Zinc¹, by End-uses, 1953-1956

Use	1953	1954	1955	1956
Tons				
Brasses.....	9,485	6,706	9,277	7,698
Galvanizing.....	21,975	24,333	27,876	33,235
Die castings.....	9,064	6,696	10,759	9,160
Zinc oxide	7,012	7,154	7,050	7,494
Zinc sheet	1,206	942	1,078	1,285
Miscellaneous.....	1,975	904	2,022	2,301
Total accounted for	50,717	46,735	58,062	61,173

1. Secondary zinc is not included.

TABLE 32. World Production of Zinc Ore, by Countries

(From the Annual Report of the American Bureau of Metal Statistics)

In tons of 2,000 pounds of zinc content, either by assay or estimated as recoverable

Country	1951	1952	1953	1954	1955	1956
United States ^{1,2}	681,189	666,001	547,430	473,471	514,671	537,643
Canada ^{1,3}	341,112	371,802	401,762	376,491	433,357	419,402
Mexico ⁴	198,485	250,635	238,691	246,638	296,959	274,348
Total North America	1,220,786	1,288,438	1,187,883	1,096,600	1,244,987	1,231,393
Argentina ⁴	17,058	16,971	17,735	20,852	23,401	23,490
Bolivia ⁴	33,659	39,262	26,427	22,485	23,509	18,818
Peru ⁴	111,504	139,423	151,759	172,631	183,072	176,584
Total South America	162,221	195,656	195,921	215,968	229,982	218,892
Austria ⁴	3,698	4,696	4,826	5,140	5,787	5,868
Finland.....	3,391	1,523	3,555	4,964	23,337	42,738
France ⁴	11,489	13,203	10,128	9,259	9,921	11,475
Germany ³	80,398	88,933	100,579	103,877	101,557	101,802
Greece ¹	9,298	9,988	12,327	5,506	7,600	9,863
Italy ¹	94,086	103,002	90,270	110,759	110,738	116,489
Norway ⁴	6,028	6,160	5,661	5,917	7,411	7,055
Poland ⁶	95,000	105,000	120,000	137,500	142,000	154,500
Spain ⁴	79,298	84,635	89,532	92,054	98,737	90,981
Sweden ⁴	42,238	51,987	49,706	64,406	64,812	72,796
Yugoslavia.....	43,453	52,679	66,106	63,052	65,835	63,425
Other Europe ⁷	2,400	3,000	3,500	4,000	5,300	3,700
Total Europe	470,777	524,806	565,190	606,434	643,035	680,692
Burma.....	—	1,437	4,756	7,112	9,156	8,035
India.....	1,176	2,255	2,650	2,493	2,942	4,161
Philippines.....	171	1,759	823	—	—	1,047
Japan ¹	71,010	96,417	105,891	120,579	119,786	135,198
Other Asia.....	200	300	500	600	1,000	2,000
Total Asia	72,557	102,168	114,620	130,784	132,884	150,441
Algeria ⁴	10,886	13,052	20,976	31,538	35,981	33,620
Belgian Congo ⁴	97,780	108,556	138,665	92,925	74,700	123,500
French Equatorial Africa ⁴	571	369	—	—	—	—
French Morocco ⁴	21,421	31,252	38,895	37,908	47,685	43,541
Northern Rhodesia ⁸	36,555	37,026	39,023	34,811	34,262	34,322
South West Africa ¹	11,110	14,001	14,672	17,939	18,612	20,458
Tunisia ⁴	3,897	3,905	4,022	5,707	5,725	4,700
Total Africa	182,220	206,161	256,253	220,828	216,965	260,141
Australia ¹	179,507	185,557	223,004	237,701	241,376	261,520
Russia.....	163,000	205,000	233,500	250,000	300,000	336,000
Total, as reported	2,451,068	2,709,786	2,776,371	2,758,315	3,009,229	3,139,079

1. Calculated as recoverable.

2. U.S. Bureau of Mines.

3. Dominion Bureau of Statistics.

4. Calculated as zinc content by assay.

5. Federal Republic of Germany. In addition, production from pyrites, estimated in recent years to be about 32,000 tons.

6. Smelter production.

7. No estimates have been made for Soviet sphere countries.

8. Exports.

Note. Estimates for Russia and to some extent countries grouped under "Other" have been based on U.S.B.M. and other publications.

Cadmium

Cadmium is recovered from the silver-lead-zinc ores treated by the smelter of the Consolidated Mining and Smelting Company of Canada Limited, Trail, British Columbia, and from the copper-gold-zinc ores processed at the smelter of the Hudson Bay Mining and Smelting Company Limited, Flin

Flon, Manitoba. Production in 1956 was 2,339,421 pounds compared with 1,919,081 pounds in the preceding year. These figures include recoverable cadmium in exported concentrates, but do not include cadmium recovered in Canada from foreign ores.

TABLE 33. Production of Cadmium in All Forms, From Canadian Ores, 1947-1956

Year	From copper-gold-silver-zinc ores	From silver-lead-zinc ores	Total
Pounds			
1947	172,896	545,638	718,534
1948	148,864	617,226	766,090
1949	181,092	665,449	846,541
1950	141,456	706,950	848,406
1951	147,168	1,179,752	1,326,920
1952	205,911	742,676	948,587
1953	157,997	960,288	1,118,285
1954	154,596	932,184	1,086,780
1955	191,691	1,727,390	1,919,081
1956	208,327	2,131,094	2,339,421

TABLE 34. Production, Exports and Domestic Consumption of Cadmium Metal, 1947-1956

Year	Production	Domestic consumption	Exports
Tons of 2,000 pounds			
1947	359	72	309
1948	383	92	275
1949	423	113	279
1950	419 ¹	116	349
1951	633 ¹	146	460
1952	410 ¹	116	310
1953	489 ¹	133	485
1954	529 ¹	113	392
1955	857 ¹	174	694
1956	966 ¹	144	827

1. Includes cadmium recovered from foreign ores.

(b) The Silver-Cobalt Mining Industry

The silver-cobalt mining industry is centered in the Temiskaming district in Ontario. Mining started in the Cobalt area early in this century when the silver discovery was made during the construction of a railway.

The average number of persons employed in the industry was 694 to whom \$2,415,545 were paid as salaries and wages. Fuel cost \$125,900 and 18,358,856 kwh. of electricity were purchased for \$126,155. Process supplies used were valued at \$339,787.

TABLE 35. Principal Statistics of the Silver-Cobalt Mining Industry, Significant Years, 1921-1956

Year	Establishments ¹	Employees	Salaries and wages	Cost of fuel and electricity at plant	Cost at plant of process supplies	Gross value of products	Net value added
	No.	No.	\$	\$	\$	\$	\$
1921	39	1,224	1,739,706	448,897	N.A.	6,316,812	N.A.
1929	32	1,149	1,532,333	407,952	"	3,918,316	"
1931	26	786	1,149,689	227,467	"	1,925,593	"
1933	14	242	322,281	83,565	"	1,071,602	"
1937	25	300	394,386	90,134	116,455	853,386	540,762
1939	43	323	412,728	63,486	105,500	890,128	653,032
1941	14	182	229,984	40,875	59,761	788,815	662,443
1944	11	165	260,575	48,323	35,809	422,860	323,260
1946	11	247	404,012	58,712	48,932	325,846	207,483
1949	18	264	607,782	82,735	127,661	822,881	503,572
1951	20	514	1,406,783	148,661	299,084	4,539,842	3,640,343
1953	13	739	2,204,274	301,297	428,963	4,623,407	3,235,891
1954	15	808	2,614,266	273,024	466,390	5,294,499	4,103,256
1955	14	762	2,598,437	264,015	470,270	5,534,895	4,350,174
1956	15	694	2,415,545	252,055	339,787	4,563,402	3,502,093

1. Includes lessees shipping from dumps.

2. Gross value less the value of fuel, electricity, process supplies, freight and treatment charges.

TABLE 36. Summary¹ of Operations of Silver-Cobalt Mines and Mills, 1954-1956

		1954	1955	1956
Ore mined	tons	289,101	302,821	205,013
Ore salvaged from surface ²	tons	7,937	17,447	19,801
Ore and tailings treated (milled) ³	tons	326,790	290,813	224,408
Concentrates produced	tons	10,415	9,481	7,632

1. Partly estimated as data are unobtainable from some small shippers.

2. Complete data not available.

3. Does not include crude ore shipped.

TABLE 37. Mine and Mill Shipments of Canadian Silver-Cobalt Ores and Concentrates, 1955 and 1956

	Gross weight	Metal content			
		Silver	Cobalt	Nickel	Copper
Tons	Ounces	Pounds	Pounds	Pounds	Pounds
1955					
To Canadian smelters and to the government stockpile at Deloro, Ontario	9,490	4,252,268	1,447,043	412,411	171,559
To foreign plants	—	—	—	—	—
Total	9,490	4,252,268	1,447,043	412,411	171,559
1956					
To Canadian smelters and to the government stockpile at Deloro, Ontario	8,078	4,132,272	823,289	200,009	524,499
To foreign plants	91	2,315	16,007	2,878	5,329
Total	8,169	4,134,587	839,296	202,887	529,828

TABLE 38. Employees and Earnings in the Silver-Cobalt Mining Industry, 1952-1956

Year	Administrative		Workmen		Total employees	Man-hours worked	Earnings		Total earnings
	Male	Female	Male	Female			Administrative	Workmen	
Number									
1952	71	5	613	7	696	1,605,890	242,036	1,919,858	2,161,894
1953	81	9	644	5	739	1,554,897	286,506	1,918,128	2,204,274
1954	113	15	677	3	808	1,772,748	363,338	2,250,928	2,614,266
1955	92	7	658	5	762	1,706,610	424,348	2,174,089	2,598,437
1956	98	7	584	5	694	1,513,615	445,119	1,970,426	2,415,545

TABLE 39. Number of Workmen on the Payroll at End of the Month in the Silver-Cobalt Mining Industry, 1955 and 1956

Month	1955						1956									
	Mine				Mill	Total	Mine				Mill	Total				
	Surface		Under-ground				Surface		Under-ground							
	Male	Female	Male	Male			Male	Female	Male	Male						
January	131	5	417	110		663	110	5	382	94	591					
February	135	5	433	115		688	117	5	370	97	589					
March	132	5	411	119		667	121	5	357	99	582					
April	136	5	384	122		647	129	5	349	103	536					
May	138	5	384	130		657	133	5	329	112	579					
June	154	5	374	111		644	128	5	365	113	611					
July	157	5	398	123		683	116	6	373	123	618					
August	189	5	407	110		711	124	7	345	97	573					
September	183	5	391	114		693	126	5	321	89	541					
October	144	5	396	114		659	129	6	351	85	571					
November	143	5	359	106		613	131	6	370	88	595					
December	149	5	359	96		609	120	5	379	82	586					
Average	149	5	395	114		663	127	5	359	98	589					
Man-hours of labour						1,504,762					1,287,582					

TABLE 40. Fuel and Electricity used in the Silver-Cobalt Mining Industry, 1956

Kind	Unit of measure	Quantity	Cost at plant
Bituminous coal (a) From Canadian mines	short ton	—	\$
(b) Imported	"	1,403	27,098
Sub-bituminous coal (from Alberta mines only)	"	—	—
Anthracite coal	"	474	13,253
Lignite coal	"	665	13,677
Coke (for fuel only)	"	—	—
Gasoline, (includes gasoline used in cars and trucks)	Imp. gal.	53,412	21,693
Kerosene or coal oil	"	25	11
Fuel oil	"	26,587	7,012
Wood (cords of 128 cubic feet of piled wood)	cord	109	1,536
Gas (a) Liquefied petroleum gases (propane, etc.)	Imp. gal.	1,705	755
(b) Other manufactured gas	M cu. ft.	—	—
(c) Natural gas	"	—	—
Other fuel	—	—	40,865
Electricity purchased for power and lighting	k.w.h.	—	126,155
Electricity purchased for other purposes	"	—	—
Total .....		...	252,055
Electricity generated (a) For own use	k.w.h.	—	—
(b) For sale	"	—	—

TABLE 41. Specified Miscellaneous Expenditures by the Silver-Cobalt Mining Industry, 1953-1956

—	1953	1954	1955	1956
	\$	\$	\$	\$
Workmen's compensation	62,277	73,837	67,112	60,927
Silicosis assessment	46,267	49,564	51,743	52,824
Unemployment insurance	17,275	17,680	21,146	16,977
Aggregate cost of all supplies purchased	1,220,658	1,500,105	1,191,439	1,098,192
Aggregate cost of plant and equipment purchased	240,376	349,594	163,733	132,128
Cost of buildings, machinery and equipment erected or installed during the year	229,912	447,022	344,525	342,997

TABLE 42. Estimated Capital and Repair Expenditures, 1952-1956

Year	Capital expenditures			Repair expenditures			Capital and repair expenditures		
	Construction	Machinery	Total	Construction	Machinery	Total	Construction	Machinery	Total
Thousands of dollars									
1952	353	375	728	1	1	1	...	...	813
1953	532	138	670	164	180	344	696	318	1,014
1954	904	1	932	122	139	261	1,026	...	1,193
1955 .....	...	...	635	147	...	...	...	...	782
1956 ² .....	...	...	881	100	111	211	...	...	1,092

1. Less than \$100 thousand.

2. Preliminary estimates.

Cobalt

Ores from the cobalt area were treated by Deloro Smelting and Refining Co. Ltd., which produced metallic cobalt and cobalt compounds at Deloro, Ontario. At Port Colborne the International Nickel Company of Canada produced electrolytic cobalt in addition to the production of cobalt oxide

from the nickel-copper ores of the Sudbury area. Cobalt is recovered from the nickel-copper matte shipped to Norway by the Falconbridge Nickel Mines Ltd. Cobalt was recovered from the nickel-copper ores from Lynn Lake, Manitoba, by Sherritt-Gordon Mines Ltd. at the firm's refinery in Alberta.

Arsenic

Data on arsenious oxide formerly included in this bulletin are now given in the report on the Miscellaneous Non-metal Mining Industry.

TABLE 43. Production of Cobalt from Canadian Ores, 1947-1956

Year	Quantity	Value	Year		Quantity	Value
	Pounds	\$				
1947	572,673	875,644	1952		1,421,923	3,226,903
1948 ¹	1,544,852	2,029,178	1953		1,602,545	4,013,077
1949	619,065	952,469	1954		2,252,965	5,912,997
1950	583,806	964,003	1955		3,318,637	8,563,700
1951	951,607	1,999,612	1956		3,516,670	9,065,493

1. Includes shipments from stockpiled ores which were mined in earlier years.

TABLE 44. Production of Cobalt from Canadian Ores, Imports and Exports, 1955 and 1956

	1955		1956	
	Quantity	Value	Quantity	Value
	Pounds	\$	Pounds	\$
Production:				
(In terms of metallic cobalt and cobalt in oxides and salts sold and in ores exported).....	3,318,637	8,563,700	3,516,670	9,065,493
Imports:				
Cobalt ore	37,800	10,898	1,900	1,031
Oxide of cobalt	8,000	20,490	11,353	27,125
Exports:				
Cobalt contained in ore	—	—	16,000	15,092
Cobalt, metallic	1,542,988	3,461,575	1,432,884	3,546,025
Cobalt alloys	12,357	56,098	11,343	40,086
Cobalt oxides and cobalt salts	1,640,282	2,894,384	1,289,145	2,315,141

TABLE 45. World Production of Cobalt

(From the Annual Report of the American Bureau of Metal Statistics)

Country	1952	1953	1954	1955	1956
Pounds					
Canada ¹	1,421,923	1,602,545	2,252,965	3,318,637	3,838,913
Northern Rhodesia ²	1,037,120	1,032,640	940,800	271,040	—
Belgian Congo ²	15,432,200	18,249,679	18,979,401	18,836,808	20,037,609
French Morocco ³	2,200,191	1,327,169	1,622,586	1,671,087	1,432,990
United States ³	1,363,251	1,258,924	1,996,488	2,609,000	3,588,114

1. Metal recovered from smelter products, plus cobalt contained in cobalt residues exported.

2. Cobalt content of alloys.

3. Content of ore.

Principal Operators in the Silver-Lead-Zinc Mining Industry, 1956

Name of operator	Head office address	Location of mine
Newfoundland:		
Buchans Mining Co. Ltd.	Water St., St. John's	Buchans
Independent Mining Corp. Ltd.	15 Toronto St., Toronto, Ontario	Corner Brook
Nova Scotia:		
Big Glen Mines Ltd.	25 King St. W., Toronto, Ontario	Cape Breton
Cape Breton Metals Ltd.	25 Adelaide St. W., Toronto, Ontario	Cape Breton
Dawmac Mining and Oils Ltd.	1519 Pine Ave. W., Montreal, Quebec	Cobequid
Mina-Nova Mines Ltd.	217 Bay St., Toronto, Ontario	Boisdale Hills
Mindanaar Metals Corp. Ltd.	50 King St. W., Toronto, Ontario	Stirling
New Brunswick:		
Anacon Lead Mines Ltd.	330 Bay St., Toronto, Ontario	Bathurst (New Larder "U")
American Metal Co. Ltd.	25 Adelaide St. W., Toronto, Ontario	Newcastle
Astrabrun Mines Ltd.	44 King St. W., Toronto, Ontario	Nepisquit River
Asarco Exploration Co. of Can. Ltd.	King & Yonge Sts., Toronto, Ontario	Nine Mile Brook

Principal Operators in the Silver-Lead-Zinc Mining Industry, 1956 - Continued

Name of operator	Head office address	Location of mine
New Brunswick — Concluded:		
Brunhurst Mines Ltd.	100 Adelaide St. W., Toronto, Ontario	Bathurst
Brunswick Mining and Smelting Corp. Ltd.	Box 260, Bathurst	Gloucester Co.
Celta Development and Mining Co. Ltd.	465 St. John St., Montreal, Quebec	Gloucester Co.
Coniagas Mines, Ltd.	330 Bay St., Toronto, Ontario	Little River
Conwest Exploration Co. Ltd.	Spencerville, Ontario	Bathurst
Coulee Lead and Zinc Mines Ltd.	67 Yonge St., Toronto, Ontario	Bathurst
Dominion Gulf Co.	Box 2038, Pittsburgh 30, Pa., U.S.A.	Bathurst
Fab Metal Mines Ltd.	25 Adelaide St. W., Toronto, Ontario	Gloucester Co.
Glenbuck Mines Ltd.	357 Bay St., Toronto, Ontario	Northesk
Glencona Mining Co. Ltd.	132 St. James St. W., Montreal, Quebec	Point Roche
Headway Red Lake Gold Mines Ltd.	67 Yonge St., Toronto, Ontario	Bathurst
Joburke Gold Mines Ltd.	357 Bay St., Toronto, Ontario	Bathurst
Kerromac Mining Co. Ltd.	132 St. James St. W., Montreal, Quebec	Bathurst
Keyboycon Mines Ltd.	330 Bay St., Toronto, Ontario	Bathurst
Keymet Mines Ltd.	330 Bay St., Toronto, Ontario	Petit Rocher Nord
Nudulama Mines Ltd.	330 Bay St., Toronto, Ontario	Bathurst
Nipiron Mines Ltd.	302 Bay St., Toronto, Ontario	Bathurst
O'Brien, M.S., Ltd.	900 Victoria Bldg., Ottawa, Ontario	Beresford
Oakwood Mines Ltd.	25 King St. W., Toronto, Ontario	Albert Co.
Rio Canadian Exploration Ltd.	200 Bay St., Toronto, Ontario	Bathurst
Selco Exploration Co. Ltd.	77 York St., Toronto, Ontario	Charlotte
Timmins, N.A., (1938) Ltd.	1010 Canada Cement Bldg., Montreal, Quebec	Northumberland
Titanic Mine Holdings Ltd.	215 St. James St. W., Montreal, Quebec	Gloucester
Quebec:		
Absam Mines Ltd.	465 St. John St., Montreal	Barraute
Anacon Lead Mines Limited	330 Bay St., Toronto, Ontario	Montauban Les Mines
Ascot Metals Corporation Ltd.	P.O. Box 307, Sherbrooke	Moulton Hill
Barvue Mines Ltd.	25 Adelaide St. W., Toronto, Ontario	Barraute Twp.
Barvallee Mines Ltd.	159 Ouest, rue Craig, Montreal	Fredmont
Belfort Mines Ltd.	5 St. James St. E., Montreal	Barraute Twp.
Chatelet Mines Ltd.	McWatters	Carpentier Twp.
Consolidated Candego Mines Ltd.	1434 Ste. Catherine St. W., Montreal	Marsoui, Gaspe North
Empire Oil & Minerals Inc.	400 St. James St. W., Montreal	Le tac Twp.
Federal Metals Corp.	1403 Aldred Bldg., Montreal	Grand Cascapedia
Gaspe Mines	4 ave. de Bernieres, Quebec	Cascapedia River
Golden Manitou Mines Ltd.	25 Adelaide St. W., Toronto, Ontario	Bourlamaque Twp.
Grandines Mines Ltd.	330 Bay St., Toronto, Ontario	Portneuf
Lachance Mines Ltd.	161 Notre Dame St. S., Thetford Mines	Thetford Mines
Les Mines Roy Ross Inc.	Rimouski	St. Fabien
MacDonald Mines Ltd.	1434 Ste. Catherine St. W., Montreal	Dufresnoy Twp.
New Calumet Mines Ltd.	355 St. James St., Montreal	Calumet
New Inscos Mines Ltd.	355 St. James St., Montreal	Dufresnoy Twp.
New Formaque Mines Ltd.	1390 Sherbrooke St. W., Montreal	Dalquier Twp.
Northern Quebec Explorers	309 Edifice Paré, Amos	Lac Mattagami
St. Roberts Metals Corp.	132, ouest rue St-Jacques, Montreal	Risborough Twp.
Suffield Metals Corporation Ltd.	P.O. Box 307, Sherbrooke	Ascot
United Montauban Mines Ltd.	330 Bay St., Toronto, Ontario	Montauban Les Mines
Vecozor Mineral Exploration	1449 St. Alexander St., Quebec	Risborough
Vendome Mines Ltd.	5 St. James St. E., Montreal	Piedmont
West Macdonald Mines Ltd.	1434 Ste. Catherine St. W., Montreal	Dufresnoy
Ontario:		
Consolidated Sudbury Basin Mines Ltd.	25 King St. W., Toronto	Errington
Jardun Mines Ltd.	Box 1600, Sault Ste. Marie	Jarvis Twp.
McCombe Mining and Exploration Ltd.	330 University Ave., Toronto	Kenora
British Columbia:		
American Metal Co. Ltd.	25 Adelaide St. W., Toronto, Ontario	Hope
American Zinc, Lead Smelting Co.	927 Old National Bank, Spokane, Wash., U.S.A.	Nelson
Atlin-Ruffner Mines (B.C.) Ltd.	302 Bay St., Toronto, Ontario	Atlin
Base Metals Mining Corp. Ltd.	62 Richmond St., Toronto, Ontario	Golden, Kaslo
B.C. Metal Mines Ltd.	614 W. Pender St., Vancouver	Lardeau
Beatrice Mining Co. Ltd.	744 W. Hastings St., Vancouver	Revelstoke
Berens River Mines Ltd.	173 Portage Ave., Winnipeg, Manitoba	Fort Steele
Burgess and Burgess	Ymir	Ainsworth
Camoose Mines Ltd.	357 Bay St., Toronto, Ontario	Kanloops

Principal Operators in the Silver-Lead-Zinc Mining Industry, 1956 - Continued

Name of operator	Head office address	Location of mine
British Columbia — Concluded:		
Cassiar Consolidated Mines Ltd.	850 W. Hastings, Vancouver	Stewart
Canadian Exploration Limited	Royal Bank Bldg., Vancouver	Salmo
Carnegie Mines of B.C. Ltd.	1126 Sherbrooke St. W., Montreal, Quebec	Slocan
Cooper, J.A.	Kaslo	Kaslo
Cody-Reco Mines Ltd.	330 Bay St., Toronto, Ontario	Slocan
Consolidated Mining and Smelting Co. of Canada Ltd., The	Trail	Kimberley, Riondel, Salmo, Tulsequah
Deer Horn Mines Ltd.	44 King St. W., Toronto, Ontario	Burns Lake
Dumas, F.J.	Ainsworth	Ainsworth
Fairview Mining Co. Ltd.	626 Pender St. W., Vancouver	Osoyoos
F.C.L. Mines Ltd.	Louis Creek	Kamloops
Gallo, John	Ilazerton	Omineca
Great North Mining Co. Ltd.	789 W. Pender St., Vancouver	Portland Canal
Giant Mascot Mines Ltd.	908 Royal Bank Bldg., Vancouver	Spillimachien
Hayes, D.I.	Spokane, Wash., U.S.A.	Nelson
Highland-Bell Limited	789 West Pender St., Vancouver	Greenwood
Isaacs and Pittman	Box 3651, Kaslo	Slocan
Jardine, J.A.	Kaslo	Kaslo
Jackson Basin Mining Co. Ltd.	413 Granville St., Vancouver	Slocan
Kelowna Mines Headley Ltd.	Hedley	Sandon
Kootenay Belle Gold Mines Ltd.	916 Stock Exchange Bldg., Vancouver	Slocan, Ainsworth
Kootenay Exploration Ltd.	425 Baker St., Nelson	Kinbasket Lake
Kootenay Base Metals Ltd.	525 Seymour St., Vancouver	Fort Steele
Lane, W.E.	Ainsworth	Ainsworth
Luning, S.A.	311 Douglas Bldg., Seattle, Wash., U.S.A.	Slocan
Magnuson Mines Ltd.	629 Spokane St., Trail	Fruitvale
MacDonald and Laib	Bayonne	Nelson
McCready, G.E.	Kaslo	Ainsworth
McVicar Mining Co. Ltd.	475 Howe St., Vancouver	Squamish
Mills, Pengelly and Cooper	Silverton	Slocan
McCreary and Gibbs	Box 375, New Denver	Revelstoke
Mollie Mac Mines Ltd.	850 W. Hastings, Vancouver	Slocan
Merrel & Lyon	Silverton	Cariboo
Newmont Mining Corp. of Can. Ltd.	173 Portage Ave., Winnipeg, Manitoba	Usk
Nicholson Creek Mining Corp.	Seattle, Wash., U.S.A.	Nelson
New Jersey Zinc Explorations Ltd.	525 Seymour St., Vancouver	Nelson
New Arlington Mines Ltd.	Box 387, Nelson	Slocan
Noonday Mine	Nelson	Ainsworth
Norcross & Endersley	Noranda, Quebec	Alberni
Noranda Exploration Co. Ltd.	25 King St. W., Toronto, Ontario	Fort Steele
Northwestern Explorations Ltd.	302 Baker St., Nelson	Lightning Peak
Paycheck Mining and Development Co. Ltd.	844 W. Hastings St., Vancouver	Nelson
Pacific Mining Services Ltd.	Sandon	Slocan
Petersen, E.H. & H.A.	525 Seymour St., Vancouver	Ainsworth
Pioneer Gold Mines of B.C. Ltd.	525 Seymour St., Vancouver	Kamloops
Plateau Metals Ltd.	413 Granville St., Vancouver	Nelson
Reeves MacDonald Mines Ltd.	Box 353, Castlegar	Trail Creek
Renata Group	850 W. Hastings St., Vancouver	Lyton
Rose Mining Corp.	490 Baker St., Nelson	Invermere
Sheep Creek Mines Ltd.	572 Howe St., Vancouver	Skeena
Silbak Premier Mines Ltd.	602 West Hastings St., Vancouver	Omineca
Sil-Van Consolidated Mining & Milling Ltd.	373 Baker St., Nelson	Slocan
Silver Ridge Mining Co. Ltd.	702 West Hastings St., Vancouver	Omineca
Silver Standard Mines Ltd.	373 Baker St., Nelson	Sandon
Silver Ridge Mining Co. Ltd.	1158 Melville St., Vancouver	Silverton
Slocan Van Roi Mines Ltd.	850 West Hastings St., Vancouver	Skeena Crossing
Skeena Silver Mines Ltd.	525 West Pender St., Vancouver	Revelstoke
Sunshine Lardeau Mines Ltd.	44 King St. W., Toronto 1, Ontario	Portland Canal
Torbit Silver Mines Ltd.	25 Adelaide St. W., Toronto, Ontario	Kamloops
Trojan Exploration Ltd.	Slocan City	12 Mile Creek
Thickett, Archibald & Boisvert	413 Granville St., Vancouver	Ainsworth
Utica Mines (1937) Ltd.	25 Adelaide St. W., Toronto, Ontario	Slocan
Violanac Mines (B.C.) Ltd.	850 W. Hastings St., Vancouver	Duncan
Vancouver Island Base Metals Ltd.	Ainsworth	Ainsworth
Vigilante Mine	Box 61, Greenwood	Greenwood
Wanke, E.A., and C. Johnson	Silverton	Slocan
Western Exploration Co. Ltd.	1768 E. Hastings St., Vancouver	Ainsworth
Western Mines Ltd.	25 Adelaide St. W., Toronto, Ontario	Ainsworth
Yale Lead and Zinc Mines Ltd.	918 Rogers Bldg., Vancouver	Nelson
Yankee Dundee Mines Ltd.		

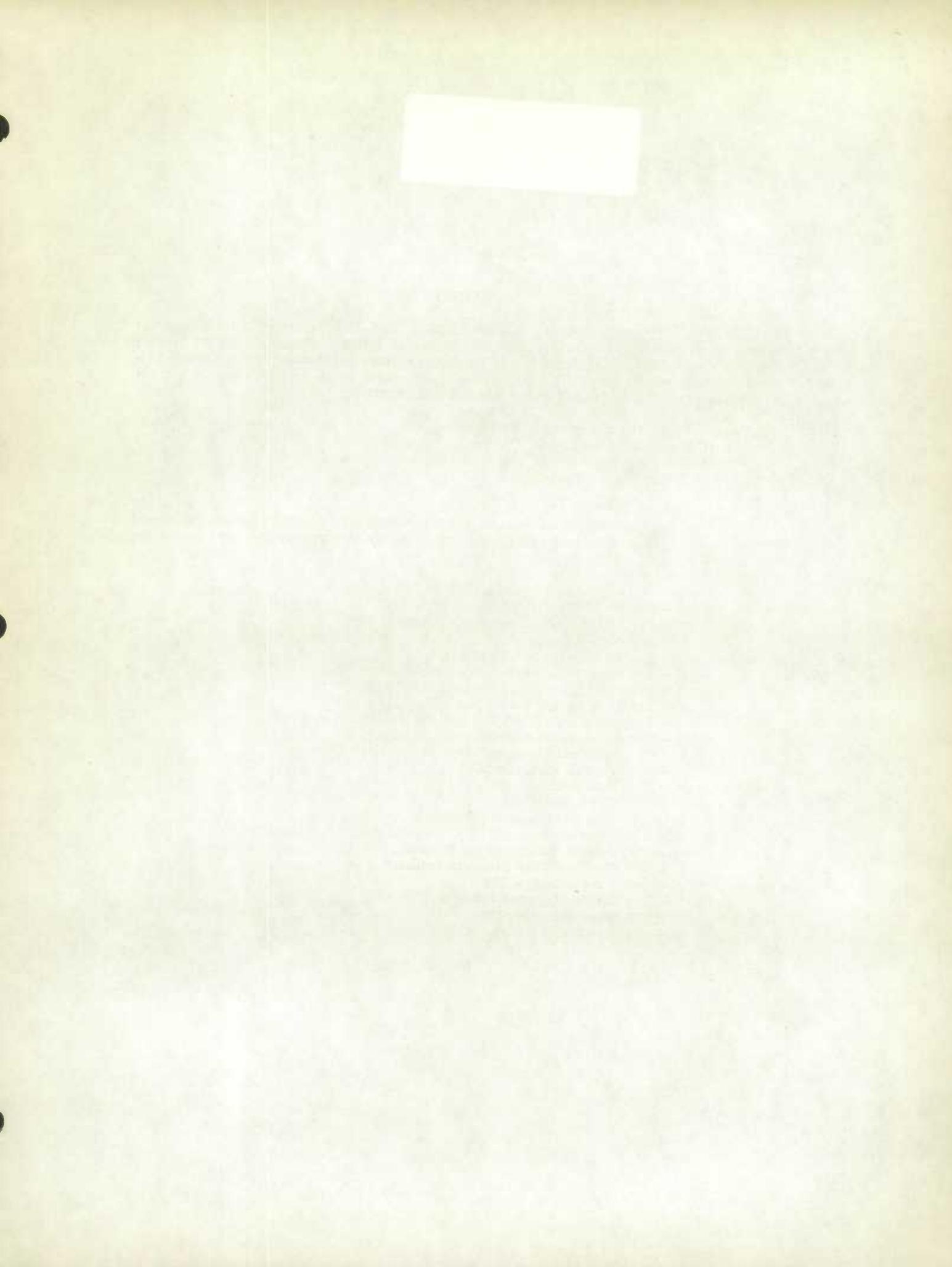
Principal Operators in the Silver-Lead-Zinc Mining Industry, 1956 - Concluded

Name of operator	Head office address	Location of mine
Northwest Territories:		
Pine Point Mines Ltd.	Yellow Knife	Slave Lake
Yukon:		
MacKeno Mines Ltd.	100 Adelaide St. W., Toronto, Ontario	Mayo
Silden Mines Ltd.	Keno Hill	Keno Hill
United Keno Hill Mines Ltd.	85 Richmond St. W., Toronto, Ontario	Mayo
Galkeno Mines Ltd.	100 Adelaide St. W., Toronto, Ontario	Mayo

List of Operators in the Silver-Cobalt Mining Industry, 1956

Name of operator	Head office address	Location of mine
Quebec:		
Quebec Cobalt and Exploration Ltd.	88 Metcalfe St., Ottawa, Ontario	Basin of Pekans
Touton Mining & Exploration Co. Ltd.	Fabre Station	Fabre Twp.
Ontario:		
Big Agaunico Mines Ltd.	Box 99, Haileybury	Bucke Twp.
Castle-Trethewey Mines Ltd.	25 King St. West, Toronto	O'Brien
Cobalt Consolidated Mining Corp. Ltd.	100 Adelaide St. W., Toronto	Coleman Twp.
Cotley Mines Ltd.	Drawer 369, Haileybury	Elk Lake
Hamason Mines Ltd.	65 Macpherson Ave., Toronto	Ingram Twp.
Harrison Minerals Ltd.	145 Yonge St., Toronto	Bucke Twp.
Langis Silver & Cobalt Mining Co. Ltd.	265 Craig St. W., Montreal, Quebec	New Liskeard
Mayfair Mines Ltd.	331 Bay St., Toronto	Coleman Twp.
New Morrison Mines Ltd.	Cornwall	O'Brien
McAllister, R.C.	Box 283, Cobalt	Coleman Twp.
Nipissing-O'Brien Mines Ltd.	360 Bay St. W., Toronto	Coleman Twp.
Silver Claim Lake Mines Ltd.	Rexdale P.O., Toronto	Nickle Twp.
Silver Crater Mines Ltd.	696 Yonge St., Toronto	Coleman Twp.
Silver Miller Mines Ltd.	357 Bay St. W., Toronto	Coleman Twp.
Siscoe Metals of Ontario Ltd.	Cornwall	Nicol Twp.
Tiara Mines Ltd.	100 Adelaide St. W., Toronto	Elk Lake

Note. In addition to the names listed, there were some small shippers.



STATISTICS CANADA LIBRARY
BIBLIOTHÈQUE STATISTIQUE CANADA



1010693461