Published by Authority of Hon. James Malcolm, M.P.,
Minister of Trade and Commerce.

Annual Bulletin
80-29-3-30
675 copies

DOMINION BUREAU OF STATISTICS - CANADA
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THE SILVER MINING INDUSTRY IN CANADA, 1928.

(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 as silver generally occurs with other metals; with lead and zinc, with cobalt, nickel and arsenic; with lode and placer gold; in copper-gold ores, and in nickel-copper ores. Silver in lead and zinc ores and in cobalt-nickel-arsenic ores is generally the predominating factor in determining the marketability of such ores. Silver-lead-zinc mining is a very important industry in British Columbia, the Yukon Territory, Quebec, and to a less extent in Ontario, whereas silver-cobalt mining in Canada is restricted to Ontario only.

Production of silver, lead, zinc, cobalt and arsenic.- In 1928 the total production of these metals from all Canadian sources was as follows: silver, 21,936,407 fine ounces valued at $12,761,725; lead, 337,946,688 pounds worth $15,553,231; zinc, 184,647,374 pounds worth $10,143,050; cobalt, 956,590 pounds worth $1,672,320; and arsenic, 5,432,223 pounds worth $193,050. The greater part of the arsenic was recovered as white arsenic at the Deloro smelter in Ontario from silver-cobalt ores and the remainder was contained in arsenical gold ores shipped from British Columbia mines to foreign smelters.

Among the metals and minerals in Canada, lead held sixth place in 1928, silver seventh place, and zinc, eleventh place in point of value. In 1928 Canada ranked third among the world's silver producing countries; fourth among those producing lead, and sixth in smelter output of zinc. Canada and Central Africa produce about equal amounts of cobalt.

(a) The Silver-Cobalt Mining Industry.

The principal producers in this industry were the Nipissing mine, the Mining Corporation and the O'Brien at Cobalt; the Keeley, Frontier-Lorrain and Lorrain Trout Lake, at South Lorrain; and the Miller Lake O'Brien and Castle Tretheway in the Gowganda area. Several of the older properties were worked by leasers who were able to mine silver ore, at a profit, from veins which were passed over when the mine was on large scale production.

The Nipissing Mining Company was the only company in this group producing silver bullion in 1928. Other mines in the district shipped ore to the mill of the Cobalt Reduction Company, to the Deloro smelter and to smelters in foreign countries.

During 1928 this group of mines produced 260,644 tons of ore and milled 252,670 tons to produce 4,649 tons of concentrates; ore cyanided amounted to 63,592 tons and silver bullion production reached 1,886,958 fine ounces.

Shipments of ores and concentrates to the Canadian smelter amounted to 3,300 and to European and United States smelters, 2,825 tons, making a total of 6,125 tons in 1928 as against 6,507 tons in 1927. The total value of all shipments including bullion was $3,938,884 as against $4,760,546 in 1927.

Capital employed in the silver-cobalt mining industry in 1928 amounted to $22,027,683 of which $16,765,120 was invested in lands, buildings, plant, machinery and tools, $930,891 represented cost of supplies and stock on hand, and $4,331,672 was in cash, trading and operating accounts and bills receivable.

Salaried officials numbered 94 in 1928 as against 109 in 1927. Wage-earners averaged 1,072 persons of whom 692 were employed underground, 210 on the surface and 170 in the mills. Salaries and wages totalled $1,809,466. Fuel cost $430,683 at the mines and included $282,405 for electric power. Power equipment employed, exclusive of boilers, consisted of 159 units having a total rating of 6,368 h.p. Boilers numbered 13 with a total rating of 980 h.p.

PRINCIPAL STATISTICS OF THE SILVER-COBALT MINING INDUSTRY IN CANADA, 1924-1928.

Year	Number of active operators	Number of operating mines	Capital employed	Number of employees	Salaries and wages	Cost of fuel and electricity	Net value of bullion, ore, concentrates and residues sold
			$		$	$	$
1924 ...	26	34	41,013,466	1,769	2,534,304	468,651	6,594,032
1925 ...	33	38	44,045,619	1,788	2,576,414	498,874	6,611,644
1926 ...	33	37	40,504,721	1,779	2,815,930	518,907	5,470,433
1927 ...	23	26	30,123,645	1,458	2,178,163	472,548	4,760,546
1928 ...	15	19	22,027,683	1,166	1,809,466	430,683	3,938,884

STATISTICS OF SILVER-COBALT MINES AND MILL OPERATIONS IN CANADA, 1927 and 1928.

	1927	1928
Number of mines in operation (x)	26	19
Ore mined.....tons	303,134	260,644
Ores treated.....tons	304,534	252,670
Tailings treated.....tons	21	...
Concentrates produced.....tons	5,533	4,649
Quantity of material cyanided.....tons	78,838	63,592
Bullion recovered.....fine oz.	1,927,529	1,886,958
Silver recovered by direct smelting.....fine oz.	126,462	...
Bullion sold.....fine oz.	2,040,070	1,815,661
Net value of bullion..... $	1,151,544	1,055,485

(x) All plants of this industry are located in Ontario.

SHIPMENTS OF ORES, CONCENTRATES AND RESIDUES FROM THE COBALT DISTRICT, ONTARIO, 1927 and 1928.

Kind	Quantity tons	Net (x) Value $	Metallic content paid for: Silver fine oz.	Cobalt lb.	Copper lb.
1927					
To Canadian smelters -					
Ores.....	677	976,040	1,749,680	133,947	...
Concentrates.....	3,116	2,199,456	4,123,078	295,463	...
To Foreign smelters -					
Concentrates and residues	2,714	433,506	713,010	141,875	40,860
TOTAL.....	6,507	3,609,002	6,585,768	571,285	40,860
1928					
To Canadian smelters -					
Ores.....	705	544,693	926,596	274,803	...
Concentrates.....	2,595	1,894,038	3,486,949	208,826	...
To Foreign smelters -					
Concentrates and residues	2,825	444,668	676,907	203,772	44,475
TOTAL.....	6,125	2,883,399	5,090,452	687,401	44,475

(x) Net value means the actual amount received by the operator.

(b) The Silver-Lead-Zinc Mining Industry

Silver-lead-zinc ores are found in commercial quantities in the provinces of Quebec, Ontario, British Columbia and the Yukon Territory. In 1928 ores from the Tetreault mine in Quebec were concentrated and exported for treatment in Belgian and United States smelters. Galena ore from Galetta, Ontario, was concentrated and smelted at the mine and high-grade ores and concentrates were exported to the United States smelters from the Mayo district of the Yukon.

In British Columbia where the greater part of this industry is carried on, the Trail smelter handled all concentrates from the Sullivan mine as well as from other mines within reasonable shipping distance. In addition to the smelter a customs concentrator was also operated which was of much assistance to small producers.

Among the Canadian provinces, British Columbia was the leading producer of silver, lead and zinc. In this province, 50 per cent of Canada's silver, 94 per cent of the lead and 89 per cent of the zinc, were produced. The Sullivan mine noted the world over for its output of lead and zinc, is the largest individual silver producing mine in Canada.

The silver-lead-zinc mining industry in Canada was represented by 150 mines operated by 132 firms in 1928. In Quebec 7 properties were in operation, one of which was producing. In Ontario, 6 mines were in operation, 2 of which were producing.

In British Columbia, 123 mines were worked, 86 of which were producing and in the Yukon 12 were reported on the producing list.

During the year 2,097,179 tons of ore were mined and 2,209,034 tons were milled. Shipments of lead ores, lead concentrates, zinc ore, zinc concentrates, dry ores and a small tonnage of copper concentrates produced in the treatment of the ores from one Ontario copper-lead-zinc mine amounted to 586,221 tons valued at $17,123,455. As determined by settlement assay the total metal content of these shipments included 11,873 ounces of gold, 11,672,283 ounces of silver, 348,245,816 pounds of lead, 273,306,757 pounds of zinc, and 264,894 pounds of copper.

Capital employed in this industry in 1928 amounted to $38,894,892, and included over 34 million dollars invested in lands, buildings, plant machinery and tools, 2 million dollars in the value of supplies and stock on hand and 2.2 millions in cash, trading and operating accounts and bills receivable.

Salaries totalling $646,460 were paid to 302 employees and wages amounting to $4,885,174 were distributed among 3,378 wage-earners. Fuel used amounted to $671,564 of which $310,932 was spent for electric power. Primary power employed consisted of 602 units with a combined rating of 32,671 h.p. Secondary power included 37 motors rated at 694 h.p. There were 28 boilers in use rated at 4,088 h.p.

PRINCIPAL STATISTICS OF THE SILVER-LEAD-ZINC MINING INDUSTRY IN CANADA, 1924-1928

Year	Number of active operators	Number of operating plants or mines	Capital employed	No. of employees	Salaries and wages	Cost of fuel and electricity	Net value of ores and concentrates sold
			$		$	$	$
1924 ...	82	94	12,328,511	1,936	2,943,635	474,343	16,600,970
1925 ...	89	94	15,735,930	2,538	3,867,613	584,121	21,902,686
1926 ...	108	127	22,699,417	2,924	4,431,730	658,679	26,190,034
1927 ...	157	173	28,036,330	3,106	4,807,817	588,520	17,520,130
1928 ...	150	132	38,894,892	3,680	5,531,634	671,564	17,123,455

ORE MINED AND MILLED IN THE SILVER-LEAD-ZINC MINING INDUSTRY IN CANADA, 1927 and 1928.

Production		Ontario and Quebec	British Columbia	Yukon	CANADA
1927					
Ore mined	tons	307,771	1,390,311	65,578	1,763,660
Ore milled	tons	329,324	1,520,677	64,100	1,914,101
Concentrates produced - lead	tons	11,721	192,626	5,491	209,838
zinc	tons	21,844	180,989	...	202,833
1928					
Ore mined	tons	320,230	1,729,883	47,066	2,097,179
Ore milled	tons	324,290	1,840,252	44,492	2,209,034
Concentrates produced - lead	tons	11,304	210,461	4,876	226,641
zinc	tons	27,933	213,856	...	241,789
copper	tons	716	...	...	716

DESTINATION OF SHIPMENTS FROM SILVER-LEAD-ZINC MINES OF CANADA, 1927 and 1928.

Product shipped	Tons shipped	Net value at shipping point	Total metal content as determined by settlement assay			
			Gold fine oz.	Silver fine oz.	Lead lb.	Zinc lb.
1927						
To Canadian smelters -						
Lead ore	66,639	1,513,804	6,362	1,398,643	25,352,408	10,581,238
Lead concentrates	195,255	9,728,897	1,007	4,979,854	270,377,177	18,140,044
Zinc ore	1,861	48,367	140	93,534	196,099	495,808
Zinc concentrates	178,713	3,559,187	382	459,765	11,290,986	171,865,106
Dry ore	10,623	78,248	1,100	80,488	321,543	473,061
Total	453,091	14,928,503	8,991	7,012,284	307,538,213	201,555,257
To Foreign smelters -						
Lead ore	1,455	177,131	26	228,619	1,694,881	...
Lead concentrates	11,979	1,624,682	10,704	2,224,724	11,479,154	958,334
Zinc ore	...	...	...	...	...	...
Zinc concentrates	24,249	776,032	2,788	176,433	305,701	23,849,406
Dry ore	72	13,782	1	22,613	74,863	...
Total	37,755	2,591,627	13,519	2,652,389	13,554,599	24,807,740
1928						
To Canadian smelters -						
Lead ore	26,975	607,787	1,477	818,003	13,317,453	2,379,353
Lead concentrates	215,431	9,382,935	1,252	6,055,889	294,948,527	19,734,841
Zinc ore	70,291	79,653	7	118,459	10,867,555	17,740,782
Zinc concentrates	214,735	3,799,758	400	674,239	14,434,944	207,612,371
Dry ore	19,009	148,554	1,111	301,793	64,392	80
Total	546,441	14,018,687	4,247	7,968,383	333,632,871	247,467,427
To Foreign smelters -						
Lead ore	3,069	554,436	197	946,494	3,281,646	...
Lead concentrates	10,469	1,633,721	4,990	2,467,205	10,692,233	715,804
Zinc ore	...	...	...	...	...	...
Zinc concentrates	25,229	836,041	2,317	155,331	201,510	25,123,526
Dry ore	297	63,000	...	127,825	437,556	...
Copper concentrates	716	17,570	122	7,045	...	...
Total	39,780	3,104,768	7,626	3,703,900	14,612,945	25,839,330

To foreign smelters - copper in lead ore, 1,346 pounds; copper in lead concentrates, 83,002 pounds, and copper in copper concentrates, 180,546 pounds, a total of 364,894 pounds.