DEPARTMENT OF TRADE AND COMMERCE

DOMINION BUREAU OF STATISTICS

SUMMARY REVIEW

OF

THE GOLD MINING INDUSTRY

IN

CANADA

1932

(including The Alluvial Gold Mining Industry, The Auriferous Quartz Mining Industry, The Copper-Gold-Silver Mining Industry, and Related World Data)

Published by Authority of the HON. H. H. STEVENS, M. P.,
Minister of Trade and Commerce.

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THE GOLD MINING INDUSTRY IN CANADA, 1932.

Including:-
(a) The Alluvial Gold Mining Industry.
(b) The Auriferous Quartz Mining Industry.
(c) The Copper-Gold-Silver Mining Industry.

Definition of the Industry. Gold mining in Canada is classified into three principal industries - (a) the recovery of gold from the gravels and sands of stream channels or beaches or what is defined as "The Alluvial Gold Mining Industry"; (b) the recovery of lode gold, which is named "The Auriferous Quartz Mining Industry" and in which industry the gold is usually the most important economic constituent of the ores mined and quartz the predominant gangue mineral; (c) gold is often found in various other mineral deposits, more particularly in those of copper, and for this reason the review of Canada's "Copper-Gold-Silver Mining Industry" is included here to complete a more comprehensive survey of the Canadian gold mining industry.

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CANADA - Production of gold during 1932 from all sources in Canada amounted to 3,051,676 fine ounces valued at $63,083,740 as compared with an output of 2,693,892 fine ounces worth $55,687,688 in 1931.

The total 1932 production was obtained from the following sources: gold contained in crude bullion made by gold mines, 2,420,118 fine ounces; alluvial gold, 56,876 fine ounces; gold in blister and anode copper and in base bullion made at Canadian smelters, 489,558 fine ounces; and the estimated recovery of gold in ores, matte, slags, residues and concentrates exported to foreign metallurgical plants, 85,124 fine ounces.

Seven provinces and Yukon Territory produced gold in 1932 as follows: Nova Scotia, 964 fine ounces; Quebec, 401,105 fine ounces; Ontario, 2,287,394 fine ounces; Manitoba, 122,507 fine ounces; Saskatchewan, 11 fine ounces; Alberta, 83 fine ounces; British Columbia, 199,004 fine ounces; and Yukon, 40,608 fine ounces.

The 1932 Canadian gold production constitutes a new high record in the gold mining industry of the Dominion and for the third consecutive year establishes Canada in second position among the gold-producing countries of the world. Gold now constitutes the most valuable mineral output in Canada, its value having first surpassed that of coal in 1931.

A report by the Department of Mines, Ottawa, states; "The great part of the gold of Canada comes from the Canadian shield, an immense area of precambrian rocks extending from the Labrador Coast westward almost to the mouth of the MacKenzie River. The area of the shield is roughly 1,825,000 square miles, almost half of Canada - the precambrian shield is not only our present greatest reservoir of the precious metal, but in all probabilities the most fruitful region for discovery of new deposits."

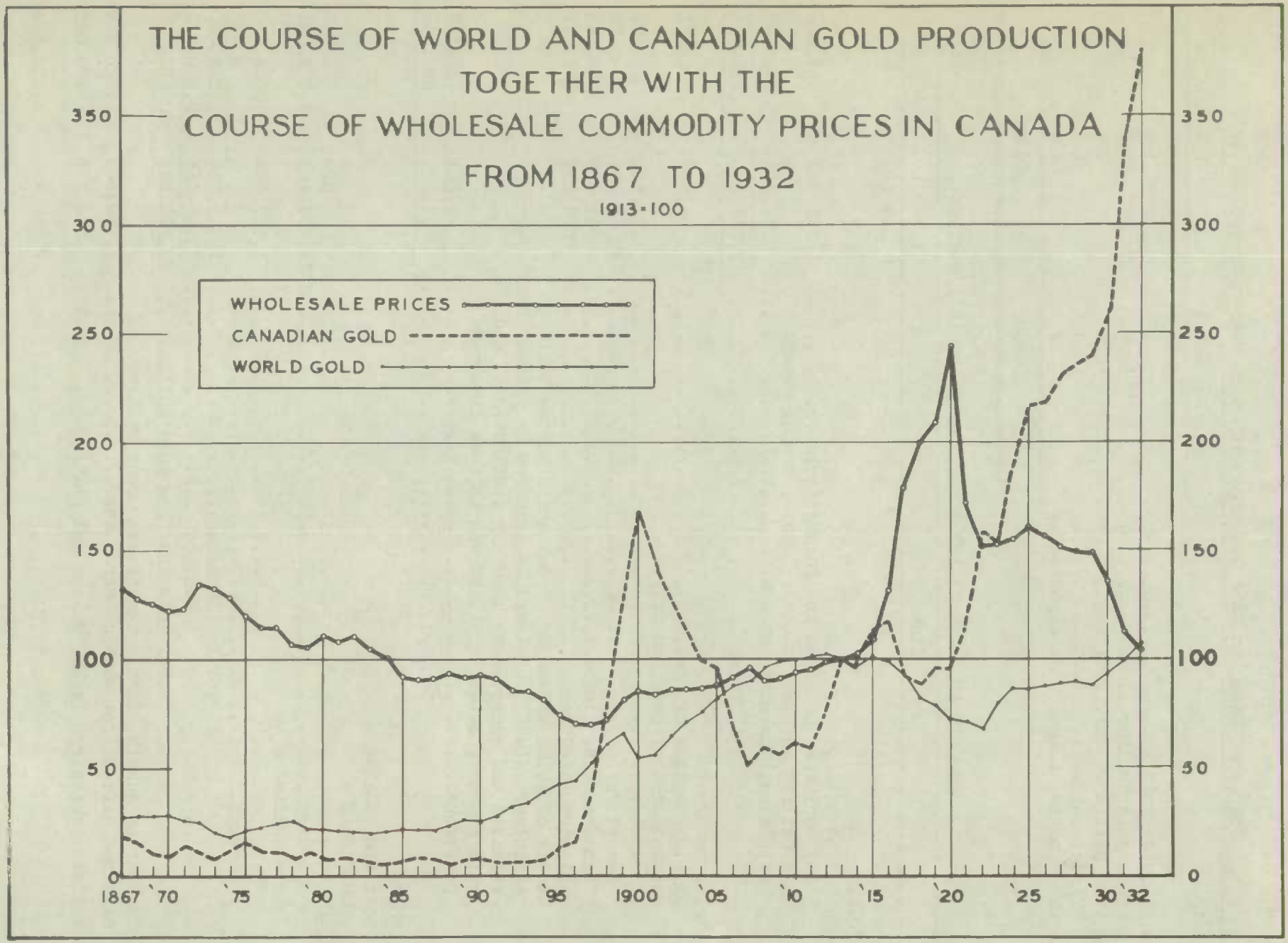
PRODUCTION OF NEW GOLD IN CANADA BY PROVINCES AND SOURCES, 1931 and 1932.

(Gold at $20.671834 per fine ounce)

	1931		1932	
	Fine oz.	$	Fine oz.	$
NOVA SCOTIA -				
In gold bullion	460	9,509	964	19,928
QUEBEC -				
In blister copper, in ores shipped and in gold bullion	300,075	6,203,101	401,105	8,291,576
ONTARIO -				
/ Porcupine area - In gold bullion.	962,252	19,891,513	1,036,295	21,422,118
/ Kirkland Lake - In gold bullion.	1,051,377	21,733,891	1,150,470	23,782,325
Miscellaneous, including Northwestern Ontario and Sudbury area	72,185	1,492,196	100,629	2,080,186
TOTAL	2,085,814	43,117,600	2,287,394	47,284,629
MANITOBA -				
In gold bullion, ores shipped and in blister copper	102,969	2,128,558	122,507	2,532,444
SASKATCHEWAN -				
In ores shipped to Canadian smelters and crude gold to Royal Canadian Mint	...	...	11	227
ALBERTA -				
In alluvial gold	195	4,031	83	1,716
BRITISH COLUMBIA -				
In alluvial gold	13,741	284,052	16,320	337,364
In gold bullion	37,233	769,674	57,846	1,195,783
In blister copper	26,364	544,992	19,013	393,034
In base bullion and in matte and ores exported	82,731	1,710,202	105,825	2,187,597
TOTAL	160,069	3,308,920	199,004	4,113,778
YUKON -				
In alluvial gold	44,061	910,822	40,373	834,584
In ores exported	249	5,147	235	4,858
TOTAL	44,310	915,969	40,608	839,442
TOTAL FOR CANADA	2,693,892	55,687,688	3,051,676	63,083,740

The amount of equalization exchange (premium) paid by the Canadian Government on newly mined Canadian gold purchased during 1932, amounted to $7,706,509.19.

/ Includes small amounts of gold contained in slags, etc.


THE COURSE OF WORLD AND CANADIAN GOLD PRODUCTION
TOGETHER WITH THE
COURSE OF WHOLESALE COMMODITY PRICES IN CANADA
FROM 1867 TO 1932
1913-100
WHOLESALE PRICES
CANADIAN GOLD
WORLD GOLD
350
300
250
200
150
100
50
0
1867
'70
'75
'80
'85
'90
'95
1900
'05
'10
'15
'20
'25
'30
'32

Source of Canadian Fine Gold Production by Percentages, 1931-1932.

	1931	1932
	%	%
In alluvial gold	2.1	1.8
In crude gold bullion	80.6	79.3
In base bullion	0.6	1.0
In blister copper	13.8	15.1
In ores, matte, slags, etc. exported	2.9	2.8
	100.00	100.00

IMPORTS INTO CANADA AND EXPORTS OF GOLD, 1931 and 1932.

Items	1931	1932
	$	$
IMPORTS -		
Coins and bullion -		
Coins, British, Canadian and foreign gold coins	1,646,990	854,908
Gold bullion in bars, blocks, ingots, drops, sheets or plates, unmanufactured	391,003	264,863
Total	2,037,993	1,119,771
Gold, other -		
Bullion or gold fringe	9,506	6,371
Manufactures of gold and silver -		
Leaf	76,431	63,203
Sweepings	35	70
Manufactures, n.o.p.	31,878	19,189
Electroplated ware	575,234	337,721
Medals of gold, silver or copper and other metallic articles, actually bestowed as trophies or prizes, and received and accepted as honorary distinctions, and cups or other metallic prizes won in bona fide competitions	21,251	19,788
Total	714,335	446,342
EXPORTS -		
Coin and bullion -		
Gold coin -		
Canadian	920	500
Foreign	37,439,464	9,424,691
Gold bullion -		
Canadian	31,887,899	51,395,700
Foreign	...	4,520
Total - Canadian	31,888,819	51,396,200
Foreign	37,439,464	9,429,211
Total coin and fine gold bullion	69,328,283	60,825,411
Gold-bearing quartz, dust, nuggets and crude bullion obtained direct from mining operations	17,682,563	3,925,729
Jewellers' sweepings (gold, silver and platinum)	234,276	290,095
Total	17,916,839	4,215,824

Value of Gold Consumed in Canada by the Arts and in Industry, 1932, by Provinces.

	$
Nova Scotia	750
New Brunswick	836
Quebec	322,950
Ontario	670,925
Manitoba	3,000
Saskatchewan	5,071
Alberta	85
British Columbia	8,247
Total for Canada	1,011,864 /

/ Preliminary estimate.

GOLD PRODUCTION OF THE WORLD, (in fine ounces) 1931 and 1932.

Supplied by the "American Bureau of Metal Statistics"

	1931	1932
Union of South Africa	10,877,777	11,558,317
Canada	2,693,892	3,051,676
United States, including Philippines	2,395,878	2,507,587
Russia and Siberia	1,600,000	1,900,000
Australia (including Tasmania)	591,786	707,412
South America	590,640	654,000 /
Mexico	628,468	584,000
Rhodesia	541,447	574,135
Japan	429,942	435,000
British India	330,489	325,000
British West Africa (a)	267,300	290,000
Belgian Congo	211,758	232,200
Other Asia	478,320	437,700 /
Other Oceania	192,316	242,588 /
Other Africa	37,928	91,368 /
Other Europe	270,169	354,400 /
Central America and West Indies	67,730	70,000 /
TOTAL WORLD	22,205,840	24,015,383

1932 figures contain some preliminary data and conjectural figures.
/ Partially estimated.
(a) Includes Gold Coast.

The world production of gold from 1493 through 1932 has been approximately 1,109,000,000 ounces.

COMPARATIVE FIGURES OF GOLD PRODUCTION, FOR THE WORLD, SOUTH AFRICA, UNITED STATES AND CANADA, 1898, 1908, 1918 and 1928 to 1932.

Year	(a) World's output	⁄ Union of South Africa output	(a) United States' output	Canada's output
	Fine ounces	Fine ounces	Fine ounces	Fine ounces
1898	13,904,363	3,823,307	3,118,398	666,386
1908	21,430,438	7,057,100	4,574,340	476,112
1918	18,556,920	8,418,379	3,320,784	699,681
1928	19,755,622	10,354,264	2,144,720	1,890,592
1929	19,500,152	10,412,326	2,056,629	1,928,308
1930	20,200,000	10,716,351	2,138,723	2,102,068
1931	21,300,000	10,877,777	2,221,878	2,693,892
1932	(b) 24,015,383	11,558,317	(c) 2,507,587	(d) 3,051,676

⁄ From the Imperial Institute publications.

(a) Figures taken from annual report of the Director of the Mint, Washington, from 1898 to 1929. 1930 and 1931 figures are supplied by Imperial Institute.

(b) Preliminary estimate "American Bureau of Metal Statistics"

(c) Includes Philippines.

(d) Bureau of Statistics final figure.

The almost phenomenal decline in commodity prices during the past three years has not only benefited the established gold producer but has stimulated investigation as to the possibility of profitably operating on lower grade gold ores that were heretofore considered of doubtful commercial value. The suspension of specie payments by Great Britain in 1931 has since been followed by a heavy discount of the Canadian dollar in New York. This event, possibly more than any other factor, reacted to the benefit of the Canadian gold miner. Exports of gold from Canada are permitted since October, 1931, only under license, the Canadian government purchasing the gold output of practically all Canadian mines.

The Ottawa mint, established as a branch of the Royal Mint under the (Imperial) Coinage Act, 1870, and opened on January 2, 1908 was by 21-22 Geo. V, C.48, constitutes a branch of the Department of Finance and since December 1, 1931, has operated as the Royal Canadian Mint. The great development of the gold mining industry in Canada has resulted in gold refining becoming one of the principal activities of the Mint. Gold coins have never been a popular medium of exchange in Canada and have not been struck since 1919, most of the fine gold produced from the rough shipments from the mines being delivered to the Department of Finance in the form of bars, the rest being sold in convenient form to manufacturers. The fine silver extracted from the rough gold, when not required for coinage, is sold on the New York market or disposed of to local manufacturing firms.

The domestic gold currency of Canada, as at present authorized by the Currency Act, consists of $20, $10, $5 and $2½ gold pieces, 900 millesimal fineness (only $10 and $5 pieces have been issued). Gold is used only to an insignificant extent as a circulating medium in Canada, its monetary use being practically confined to reserves; $5 and $10 gold pieces weighing respectively 129 and 258 grains, 9/10ths pure gold by weight, have been coined, the Canadian gold dollar thus

containing 23.22 grains of pure gold. The $5, $10 and $20 gold coins of the United States, which contain exactly the same weight of gold as Canadian gold coins of these denominations, are legal tender as are the British sovereigns, which are legal tender for $4.86 2/3.

MONTHLY AVERAGES OF EXCHANGE QUOTATIONS AT MONTREAL, 1932.

Note:- The nominal closing quotations in Canadian funds upon which these averages are based, have been supplied by the Bank of Montreal.

Month	Australia Pound 4.8666	France Franc .0392	Germany Reichmark .2382	Italy Lira .0526	Japan Yen .4985	London Sterling 4.8666	New York Dollar 1.00
	$	$	$	$	$	$	$
January	3.2074	.0460	.2772	.0591	.4250	4.01098	1.1708
February	3.1700	.0450	.2719	.0595	.3948	3.96445	1.1433
March	3.2492	.0438	.2654	.0578	.3601	4.06258	1.1142
April	3.3272	.0438	.2642	.0573	.3664	4.15514	1.1120
May	3.3385	.0447	.2696	.0583	.3629	4.17120	1.1328
June	3.3642	.0453	.2732	.0590	.3516	4.20425	1.1526
July	3.2549	.0449	.2723	.0585	.3172	4.06524	1.1472
August	3.1622	.0446	.2710	.0583	.2774	3.95085	1.1386
September	3.0711	.0433	.2629	.0567	.2642	3.83703	1.1050
October	2.9704	.0429	.2604	.0560	.2518	3.71124	1.0945
November	3.0321	.0453	.2750	.0592	.2397	3.78830	1.1570
December	3.0331	.0451	.2751	.0590	.2433	3.78958	1.1558

RECEIPTS AT THE ROYAL MINT, OTTAWA, CANADA, BY SOURCES, 1931 and 1932.

Source	1931 Gross weight	1931 Precious metal content Fine gold	1931 Precious metal content Fine silver	1932 Gross weight	1932 Precious metal content Fine gold	1932 Precious metal content Fine silver
	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.
Nova Scotia	564	460	48	1,145	964	47
New Brunswick	...	...	...	...	...	...
Quebec	137,569	129,451	3,643	482,354	471,198	5,360
Ontario	1,762,481	1,441,662	171,408	2,865,271	2,248,106	300,927
Manitoba	56,938	25,901	3,781	56,449	34,470	4,809
Saskatchewan	11	9	1	4	3	1
Alberta	48	41	5	124	92	9
British Columbia including Dominion of Canada Assay Office, Vancouver	116,787	94,145	16,986	84,293	62,408	13,623
Yukon	10	8	2	321	255	62
Jewellery & scrap, various sources	47,246	29,489	4,344	30,293	12,015	3,831
Foreign	78	70	0	14	10	2
TOTAL	2,121,732	1,721,236	200,218	3,520,268	2,829,521	328,671

GOLD HELD BY THE MINISTER OF FINANCE, CALENDAR YEARS, 1919-1932. /

Calendar Year	Gold Reserve Held on Postal Savings Bank Deposits (a)	Gold Held for Redemption of Dominion Notes	Total Gold Held by Minister of Finance
	$	$	$
1919.....	4,909,675	118,489,692	123,399,367
1920.....	4,067,897	98,751,773	102,819,670
1921.....	3,666,009	84,568,064	88,234,073
1922.....	3,293,287	89,939,108	93,232,395
1923.....	3,154,358	120,651,627	123,805,985
1924.....	3,308,575	107,257,428	110,566,003
1925.....	3,241,490	119,744,819	122,986,309
1926.....	3,162,930	109,369,550	112,532,480
1927.....	3,083,440	107,417,631	110,501,071
1928.....	2,994,001	89,218,454	92,212,455
1929.....	2,709,169	59,345,233	62,054,402
1930.....	2,483,959	79,000,297	81,484,256
1931.....	2,405,030	74,209,510	76,614,540
1932.....	2,324,246	66,854,214	69,178,460

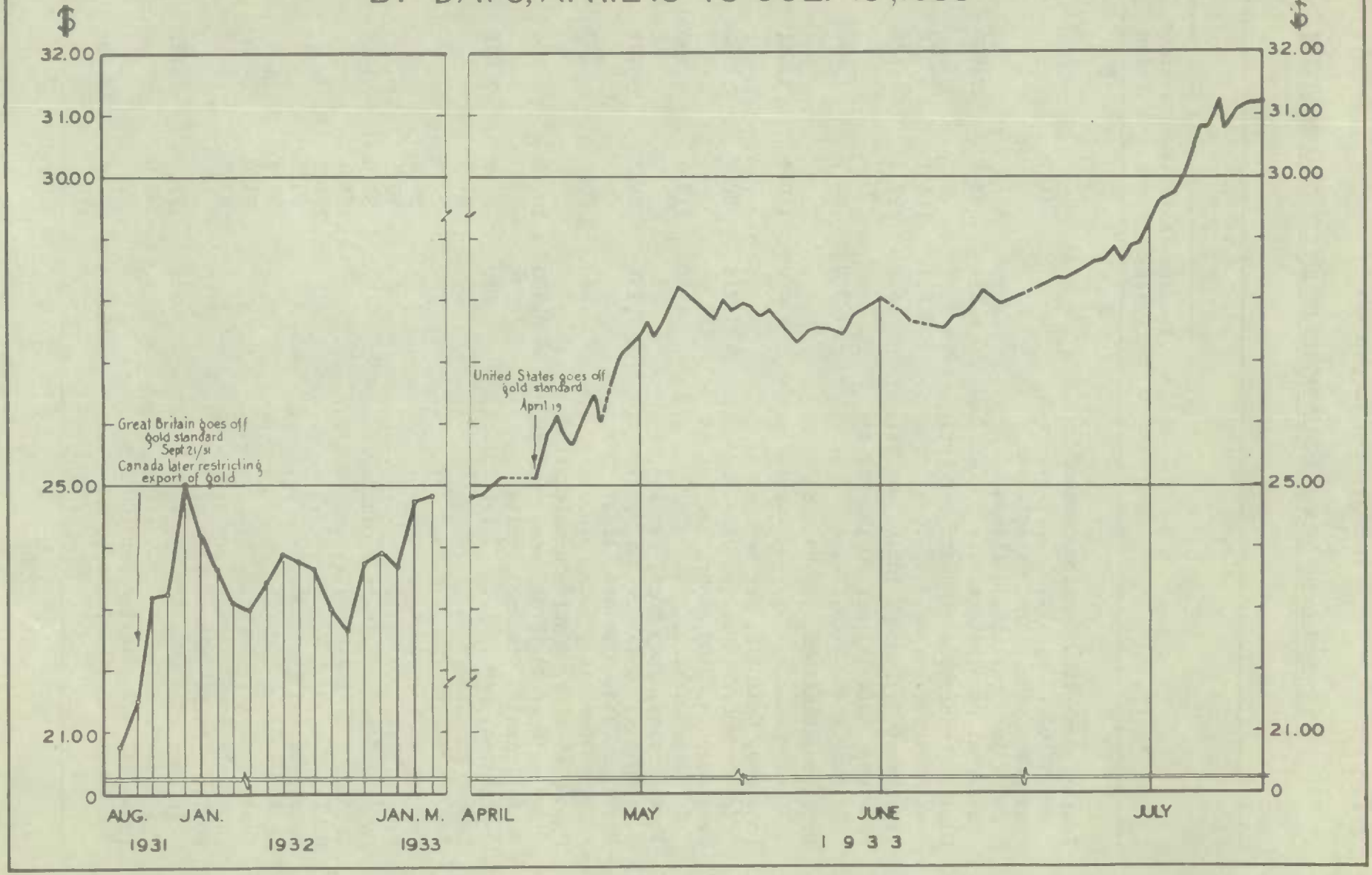
/ Yearly averages.

(a) In the Savings Bank Act (c.15, R.S.C., 1927) it is provided that the Minister of Finance shall hold 10 per cent gold reserve against postal savings bank deposits.

COMPOSITION OF CANADIAN GOLD RESERVES ON DECEMBER 31, 1923-32.

December 31st.	British Coin	U.S. Coin	Canadian Coin	Bullion	Total
	$	$	$	$	$
1923.....	27,212,790	41,090,395	3,336,490	46,026,852	117,666,527
1924.....	26,342,019	77,173,105	3,327,125	34,905,387	141,747,636
1925.....	29,894,943	67,135,310	3,315,730	37,512,195	137,858,178
1926.....	32,133,941	72,423,610	3,221,930	23,415,643	131,195,124
1927.....	28,948,085	51,179,390	3,089,010	47,516,079	130,732,564
1928.....	34,163,297	31,018,970	2,931,835	25,202,771	93,316,873
1929.....	32,164,284	10,995,220	2,801,520	17,034,256	62,995,280
1930.....	30,634,058	28,748,085	2,733,150	34,096,809	96,212,102
1931.....	17,736,296	4,270,780	2,732,880	42,220,192	66,960,148
1932.....	17,638,240	4,271,355	2,704,930	48,429,889	73,044,414

VALUE OF FINE OUNCE OF GOLD IN CANADIAN DOLLARS
BY MONTHS, AUGUST 1931 TO MARCH 1933
AND
BY DAYS, APRIL 18 TO JULY 15, 1933



INDEX NUMBERS OF WHOLESALE PRICES OF SPECIFIED COMMODITIES THAT MAY BE

(1926

	1927		1928	
	Average Price	Relative Price	Average Price	Relative Price
	$		$	
Fruits, domestic, foreign, canned and dried	-	121.6	-	131.7
Flour, Manitoba, first patent, per 2-98s jute carlots, delivered Montreal rate points	8.254	93.6	7.769	88.1
Sugar, granulated, standard per cwt. at Montreal	6.261	105.1	5.712	95.9
Tea, pekoe Ceylon and India, per lb.	.518	97.2	.477	89.5
Potatoes, Ontario, per 90 lb. bag at Toronto	1.770	65.1	1.196	44.0
Potatoes, Manitoba, per cwt. at Winnipeg	1.460	110.6	1.241	94.0
Potatoes, Canada B, per cwt. at Vancouver	1.254	62.4	.896	44.6
Beef carcass, good steer, per lb. at Toronto	.150	112.8	.190	142.9
Pork carcass, shop hogs, per lb. at Toronto	.176	85.5	.176	85.4
Bacon, smoked, standard, light, per lb. at Toronto	.266	80.5	.287	86.9
Condensed milk, manufacturer's price per case of 48-15 oz. tins, carlots	8.100	100.0	8.100	100.0
Wool blankets, standard, white, bleached, per lb.	.930	94.9	1.015	103.6
Lumber and Timber	-	97.5	-	102.3
Fir	-	97.6	-	106.6
Rolling Mill Products	-	98.5	-	96.2
Pipe	-	93.3	-	90.1
Copper, Brass and Their Products	-	94.0	-	104.5
Bricks, Building	-	103.1	-	103.9
Coal	-	101.8	-	95.0
Petroleum and Its Products	-	90.3	-	85.9
Lime	-	98.9	-	99.4
Cement	-	94.0	-	97.0
Inorganic Chemicals	-	97.3	-	89.9
Sodium cyanide bulk 98-99 p.c. per lb. Montreal and Toronto	.232	96.5	.181	75.5
Paints	-	96.0	-	92.6
Dynamite, 40% gelatine per 100 lbs. carloads, f.o.b. factory	14.87	97.6	14.29	93.8

CONSUMED DIRECTLY OR INDIRECTLY BY THE MINING INDUSTRY IN CANADA, 1927-1932.

=100)

1929		1930		1931		1932	
Average Price	Relative Price	Average Price	Relative Price	Average Price	Relative Price	Average Price	Relative Price
$		$		$		$	
-	109.8	-	109.5	-	93.9	-	90.2
7.933	89.9	7.020	79.6	5.029	57.0	4.812	54.6
5.188	87.1	4.754	79.8	4.552	76.4	4.378	73.5
.488	91.5	.381	71.5	.328	61.7	.325	61.0
1.151	42.3	1.743	64.1	.786	28.9	.600	22.1
1.811	137.2	1.926	145.9	.548	41.5	.571	43.3
1.858	92.4	2.063	102.6	.738	36.7	.542	27.0
.191	143.9	.175	131.4	.123	92.5	.110	82.7
.202	98.0	.186	90.4	.121	58.5	.079	38.1
.284	86.1	.323	97.7	.203	61.5	.134	40.6
8.100	100.0	8.100	100.0	8.100	100.0	8.100	100.0
1.050	107.1	.933	95.2	.851	86.8	.762	77.8
-	103.5	-	90.1	-	77.4	-	68.8
-	112.6	-	91.3	-	72.5	-	64.6
-	96.0	-	93.4	-	90.7	-	90.9
-	91.6	-	90.5	-	89.9	-	89.9
-	127.3	-	96.3	-	66.1	-	51.2
-	102.7	-	101.5	-	100.5	-	100.5
-	95.6	-	94.3	-	93.1	-	91.0
-	86.0	-	84.0	-	73.0	-	74.6
-	99.5	-	98.6	-	96.3	-	91.7
-	100.2	-	100.8	-	102.3	-	105.3
-	92.5	-	93.1	-	91.2	-	91.3
.190	79.2	.190	79.2	.190	79.2	.190	79.2
-	93.4	-	84.8	-	75.4	-	70.2
13.67	89.8	13.33	87.5	13.25	87.0	13.02	85.5

Estimated Population of Principal Canadian Mining Areas Depending Wholly or in Part, on the Mining or Exploration of Auriferous Quartz and Copper-Gold-Silver Ore Deposits, as based on Decennial Census Data 1901-1931.

	1901	1911	1921	1931
Quebec -				
Rouyn area	...	...	100	6,500
Ontario -				
Porcupine area	...	5,800	14,500	30,000
Kirkland Lake area	...	250	2,000	11,700
Red Lake area	...	...	...	600
Michipicoten area	10	100	230	1,300
Lake of the Woods	(a)	(a)	200	300
Manitoba -				
Flin Flon area	...	...	4,000	8,300
British Columbia -				
/ Portland Canal area	(a)	(a)	3,050	2,800
Bridge River area	(a)	(a)	(a)	600
Britannia Beach area	(a)	(a)	(a)	1,500
TOTAL	(a)	6,150	24,080	63,600

(a) Complete information not available.

/ Includes data relating to the mining of some ores of comparatively high lead content.

General Electrical Power Rates for the Principal Gold Mining Districts of Northern Ontario, 1926-1932.

Power Rates:

K.W.H. Basis

Under 25 H.P.	3 cents per K.W.H. plus $1.00 per H.P. per month
25 H.P. and under 50 H.P.	2 cents per K.W.H. plus $1.00 per H.P. per month
50 H.P. and under 100 H.P.	$1.75 cents per K.W.H. plus $1.00 per H.P. per month
100 H.P. and under 200 H.P.	$1.50 cents per K.W.H. plus $1.00 per H.P. per month
200 H.P. and under 300 H.P.	$1.40 cents per K.W.H. plus $1.00 per H.P. per month
300 H.P. and under 400 H.P.	$1.30 cents per K.W.H. plus $1.00 per H.P. per month
400 H.P. and under 500 H.P.	$1.20 cents per K.W.H. plus $1.00 per H.P. per month
500 H.P. and over	$1.00 cents per K.W.H. plus $1.00 per H.P. per month

Maximum Demand Basis:

$50.00 per H.P. per year.
$4.63 per H.P. per month less 10% for payment within 10 days from date of invoice.

The value of electricity purchased by the auriferous quartz mining industry in Canada during 1926, 1930, 1931 and 1932 was $1,547,152; $1,927,268; $2,222,870 and $2,516,897 respectively.

Specified Wages and Hours of Various Labour Employed in the Gold Mining Industry in Ontario, Quebec and British Columbia, 1926 and 1930-1932.

Supplied by the Department of Labour.

	/1926	1930	1931	1932	Maximum and Minimum Hours
	Wages	Wages	Wages	Wages	Worked per week
	$	$	$	$	
Ontario and Quebec					
Surface labourers					
Day	3.50-4.00	3.50-4.50	3.50-4.50	3.50-3.85	48-63
Hour	0.47-0.53	0.42-0.56	0.40-0.56	0.40-0.56	-
Millmen					
Day	4.00-4.75	4.50-4.75	4.50-5.50	4.48-5.50	48-56
Hour	0.56-0.62	0.47-0.62	0.47-0.62	0.47-0.62	-
Blacksmiths					
Day	4.96-6.50	4.96-7.00	4.96-7.00	4.96-7.00	48-65
Hour	0.67-0.75	0.65-0.80	0.65-0.80	0.65-0.80	-
Timbermen					
Day	4.75-5.25	4.75-5.25	4.75-5.50	4.75-5.50	48-56
Hour	0.60	0.60-0.72	0.60-0.72	0.60-0.72	-
Electricians					
Day	-	5.40-6.75	5.40-6.75	5.40-6.75	48-70
Hour	-	0.65-0.75	0.65-0.75	0.60-0.75	-
Machine men					
Day	4.75-5.25	4.75-6.00	4.75-5.50	4.75-5.50	48-56
Hour	0.60	0.60-0.63	0.60-0.63	0.60-0.63	-
Muckers, shovellers and trammers					
Day	4.24-4.75	4.24-5.00	4.24-4.75	4.24-4.75	48-56
Hour	0.53	0.53	0.53	0.53	
British Columbia					
Surface labourers					
Day	4.00-4.50	4.25	4.25	3.84	48-56
Millmen					
Day	5.00	5.50	5.50	4.88	56
Blacksmiths					
Day	5.50-6.00	4.75-6.00	5.25-6.00	6.00	56
Timbermen	4.75-5.50	5.50	5.50	4.88	48-56
Electricians					
Day	-	6.58	6.45	6.00	48-56
Machine men					
Day	4.50-5.50	5.50	4.75-5.50	4.88	48-56
Muckers, shovellers and trammers					
Day	4.00-5.00	5.00	4.25-5.00	4.48	48-56

/ Ontario only.

THE ALLUVIAL GOLD MINING INDUSTRY IN CANADA

Production of alluvial gold in Canada is confined chiefly to British Columbia and Yukon. Comparatively small quantities of placer gold have also been recovered in Alberta and Quebec.

QUEBEC - Placer gold was recovered as early as 1823 from the gravels of the Chaudiere River basin, the deposits located some 40 to 50 miles southeast of Quebec City, being considered of both post-glacial and pre-glacial origin; production from this field was chiefly from 1870-1885. Placer mining activities in Quebec during 1932 were confined to the Seigniory Rigaud Vaudreille (Beauce) and to Ditton township, Compton county. Crude alluvial gold was recovered in the first named district while prospecting only was conducted in Ditton township.

ALBERTA - Placer gold occurs in several streams in Alberta. The metal was discovered on the North Saskatchewan in 1859 or 1860. The gold in this river originates in strata of early tertiary or upper cretaceous age and has been found from about 50 miles above Edmonton nearly to Battleford in Saskatchewan. Recoveries on the Saskatchewan are principally made in rockers. During 1932 small quantities of crude alluvial gold were reported by small operators working on the Peace River or its tributaries. The McLeod River Mining Corporation installed and adjusted a gold dredge on the McLeod River; this handled 12,000 yards of ground including silt removed before entering the gravel beds. The company were unfortunate in breaking part of their bucket line after only 183 hours of operation. Work was continued on the problems of table recoveries and re-concentration. Two small shipments of crude gold were made from the property in 1932. It is interesting to note that the 1932 output contained a small amount of platinum.

BRITISH COLUMBIA - Alluvial gold is rather widespread in British Columbia; the more highly productive areas include those of Atlin, Cariboo, Cassiar, Fraser River and Tulameen. Placer-prospecting was stimulated in 1932 by the issuance by the Department of Mines, B.C. of provisional free miners' certificates free of charge.

On Graham island, in the Queen Charlotte mining division, interest in sluicing of beach sands by individuals has increased and with the recent incorporation of Gold Beach Mines Limited, operation on a 500 yard daily capacity of the Cape Fife beach sand area is planned.

In the Stikine and Liard Mining divisions, placer gold operations constituted the bulk of the mining activity in 1932; boulders and dredge construction not adapted to the type of ground necessitated the cessation of the Barrington dredging operation on Barrington river. Efforts are, however, reported being made to overcome the difficulties. The year 1932 witnessed exceptionally active alluvial mining operations in the Atlin division not only in the older areas but in virgin territory. On Squaw Creek, in the Tatshenshini river area of the extreme north-westerly part of the province, a total of 10 white and 17 Indian miners, including one woman, were engaged in sluicing and recovering from about $5.00 to $60.00 a day from shovelling of the bed-rock gravel; during the 1932 season the largest nugget reported as found in this creek up to the end of August was valued at $130.00; during the season several from $20.00 to $75.00 in value were found. Placer operations in the Manson section of the Omineca mining division included those of Germansen Placers Limited on Germansen creek. This property reached production at the close of the season, while in the same district the Consolidated Mining and Smelting Company brought in over a new road a Sauerman slack-line plant for installation on its property on Slate Creek; a number of prospectors were engaged on Kleanza

and Lorne creeks (tributaries of the Skeena river); on Dog creek (tributary of the Stuart river) and on Jimmay creek (tributary of the Osilinka river). It is stated by the British Columbia Department of Mines that a placer gold discovery on the McLeod river gives promise of assuming importance

Great placer activity was general throughout the Cariboo mining district during 1932. Included among the larger operations were those of the Lowhee Mining Company, Limited, on Lowhee creek; New Waverley Hydraulic Mining Co. Ltd., on Grouse creek; and Consolidated Gold Alluvials of B.C. Ltd., at Wingdam on Lightning creek. A large number of the smaller hydraulic operators were active, promising results being attained on several properties. Encouraging developments occurred in the vicinity of Ahbau Lake and in Beaver Pass. Among the more promising of the new placer discoveries were those of G.S. Gagen of well-worn fairly coarse gold on a rock bench on Gagen creek; coarse gold on false bed rock of the North fork of Hixon creek by A. Nani; coarse gold on false bed rock on Terry creek by G. Lahti and fairly coarse gold on true bed rock on Skaret creek, about eight miles east of Prince George.

Alluvial gold mining was also general throughout the Quesnel Mining division and among the larger operations may be mentioned those of Moorehead Mines, Limited, near Hydraulic; Hireen Placers Limited, at Bullion mine; B. Boe on Cedar creek; and Placer Engineers Limited, on Four Mill creek near Keithley. New placer operations inaugurated in the Quesnel district in 1932 were those of C. and S. Mining Company, Limited, on the north fork of the Quesnel river, this company employed upwards of 75 men during the season, installing a hydraulic system; Ruby Gold Mines, Limited, on the north fork of the Quesnel; B. Boe on Poquette creek; E.A. Bradley on the south side of the south fork of the Quesnel; and G.F. Baird on Antoine creek in the Horsefly section.

Considerable interest has been taken in placer mining both on Rock and Boundary creeks in the Greenwood mining division of the southern mineral survey district where some very favourable looking pay-gravel has been uncovered on the Rock Creek Consolidated Placers ground. Gold was also found in the gravels of McKinney creek (south fork of Rock creek). During the winter many miners continued underground work in this area, washing the development gravels in their tunnels, ground water being sufficient for this purpose. On Boundary creek several crews of men were employed exploring the bench gravels by shaft sinking, trenching and open cuts.

An unusual amount of interest was shown in alluvial mining in the Similkameen division resulting in the recovery of a considerable quantity of gold in small lots; an eight-ounce gold nugget was found on the Tulameen near the mouth of Bear creek. Comparatively large platinum nuggets were also recovered in this district. It is reported that in the Yale district many persons eked out a living on the shallow bars and benches by "sniping" or individual crude hand methods. A large percentage of the gold found in the Fraser river is very fine and the "hidden" values referred to by prospectors are mostly microscopic gold, plus a little platinum. Preliminary tests made by the Department of Mines in Ottawa point to the fact that 95 per cent of this gold is comparatively clean and can be saved by ordinary amalgam barrel methods.

A small dredge working on the Fraser river in the Ashcroft mining division, is reported to have recovered 45 ounces of gold; the dredge was eventually disabled by capsizing. Considerable work was carried out on the Thompson river about 62 miles west of Kamloops where part of the old river bed was tested by digging cross-cut

ditches with a gas shovel; values from 35 cents to $2.70 per cubic yard were reported by the owners. A new gold find was reported in 1932 from Fenton creek in the Clinton mining division; coarse, rough edged gold was found in the creek gravels at depths of from 5 feet to 30 feet. Some new placer gold discoveries were made in the Kamloops division on the streams flowing into Heffley lake from the south and also in Dow creek to the south. Innumerable "snipers" were working along the rivers and creeks in this division with many of them making a living.

Placer mining was active at widely separated points in the west Kootenay especially in the Big Bend section north of Revelstoke and in the district tributary to Nelson. Clean-ups for the season in the Big Bend section by the French Creek Development Company aggregated $13,125; other streams actively prospected or worked in the Revelstoke division during 1932 included McCulloch creek, Smith creek and Goldstream. In the Lardeau division individuals and partnerships worked the Lardeau river at several points; the actively prospected areas of the Ainsworth division included the Lardeau river, Howser Pass, Hall creek and Fry creek; at a few properties in the Nelson division mechanical equipment was utilized; on Hall creek a drag line outfit and caterpillar were employed, while a 120 cubic yard capacity Crown machine was in operation on Falls creek.

During the year 172 new placer mining leases were issued in the East Kootenay, including 132 creek leases, 30 bench leases, and 10 dredging leases. Stakings in 1932 covered areas on Fish Lake creek, St. Mary's river, Perry creek, Valley creek, Kootenay river, Wildhorse creek, Boulder creek, Maus creek, Skookumchuck river, Moyie river, Palmer Bar creek and Nigger creek.

The Lower Bridge River Placers Limited, operating on the lower Bridge river in the Lillooet division, completed the installation of its plant and commenced hydraulicking late in the season; on Tyaughton creek in the same division, Tyaughton Creek Placers Limited, installed a hydraulicking plant on its property. It is reported that this company will be in operation early in 1933.

YUKON - The amount of placer gold mined during the year in Yukon on which royalty export tax was paid was 51,039.8 ounces and the royalty collected was $19,141.96. The major portion of the placer gold recovered was from the Klondike area. The Glacier district was next in importance with an increase in production for the year. The balance of placer gold produced was from the Mayo and Whitehorse districts.

The Klondike River hydro-electric power plant of the Yukon Consolidated Gold Corporation Limited, operated continuously throughout the year; dredge Canadian No. 2 commenced digging on hydraulic lease No. 18 below Bear Creek on May 2nd and ceased October 25th; operating costs were reported at 6.41 cents per cubic yard. Dredge Canadian No. 3 operating on hydraulic lease No. 18 commenced digging June 27th and closed October 21st, costs in this operation were reported at 14.32 cents per cubic yard. Dredge Canadian No. 4 commenced digging on hydraulic lease No. 4 above Bear creek on May 2nd and closed November 15th, costs were estimated at six cents per cubic yard. Dredge New North West No. 1 on upper Dominion creek commenced operations on May 3rd and ceased on November 1st, costs were reported at 13.78 cents per cubic yard. Dredge New North West No. 2 on lower Dominion creek started April 27th and closed October 10th with total costs reported at 10.49 cents per cubic yard. The company's hydraulic operations on Crofton and Lovett hills were carried on with water supplied through the Twelve Mile ditch and on the left limit of the Klondike valley between Bear Creek syphon and Thomas Gulch several lines of shafts were sunk by the company in order to test the gravels in that section. This is a departure

from the usual drilling operations for testing gravels on this ground. The company spent a very considerable amount in purchasing major dredge replacements which were to be installed in the spring of 1933.

In the Glacier district dredging operations were continued on the Sixty Mile river by the Holbrook Dredging Company. One dredge was operated from June 1st to November 15th. On Miller creek, McDonald, McCormick and Stewart were active in drifting and ground sluicing.

Throughout the whole Yukon an increased interest has been shown in placer mining. Creeks which were abandoned are now claiming attention and in many cases satisfactory results were attained.

SUMMARY STATISTICS OF ALLUVIAL GOLD MINING IN CANADA, 1931 and 1932.

	1931		1932		
	British Columbia	Yukon (a)	British Columbia	Yukon	Quebec and Alberta
Number of firms and individual operators /	105	4	112	3	5
Time in operation-months	6-8	6-8	6-10	6-8	6-8
Capital employed	$ 1,881,891	4,026,110	496,670	6,672,148	125,000
Number of employees	165	172	171	186	16
Salaries and wages paid	$ 235,924	447,011	178,833	465,343	21,535
Fuel and electricity used	$ 20,906	20,839	3,139	35,122	579
Electricity generated for own use.....K.W.H.	...	11,387,391	...	12,257,230	...
Crude gold recovered - crude ounce	17,176	55,315	20,400	50,466	236
Platinum recovered - crude ounce	50	...	59	...	0.25
Value of platinum recovered	$ 1,783	...	2,372	...	10
Quantity of material handled.....Cu.yds.	1,587,271	4,914,638	1,053,677	6,051,256	12,000
Length of ditches - miles	127	123	117	123	...
Total value of alluvial products	$ 293,775	932,766	349,172	857,922	3,924

(a) Includes data relating to one property in Quebec.

/ In addition to the number shown in the table, there were several other small operators from whom no returns were obtainable.

THE AURIFEROUS QUARTZ MINING INDUSTRY

In 1932 returns were received from 100 Canadian auriferous quartz mines, 64 of which produced bullion or shipped ores while 36 were engaged only in exploration or development. Producing mines in this group shipped 2,416,939 fine ounces of gold in bullion, while ores shipped from these properties contained 89,498 fine ounces; minor amounts of the precious metal were contained in slags, etc.

Principal Statistics of the Auriferous Quartz Mining Industry in Canada, 1923 and 1928-1932.

	No. of active operators	No. of operating plants or mines	Capital employed	Number of employees	Salaries and Wages	Cost of fuel and electricity	Net value of bullion, ore, concentrates or residues shipped from mines
			$		$	$	$
1923...	65	65	77,574,976	5,524	8,961,434	1,497,197	25,021,837
1928...	98	100	147,693,710	9,066	14,615,990	2,554,657	36,655,330
1929...	80	85	135,166,105	8,660	14,258,733	2,579,481	37,275,986
1930...	54	56	119,758,057	8,401	14,034,620	2,364,103	39,771,739
1931...	68	69	109,933,164	9,636	16,467,165	2,700,326	49,144,578
1932...	100	100	58,167,335	10,442	17,686,584	3,031,494	58,743,495

Ores Mined and Milled, Crude Bullion Recovered and Crude Bullion and Concentrates Shipped in the Auriferous Quartz Mining Industry, 1931 and 1932.
Ton = 2,000 lbs.

1 9 3 1	Nova Scotia Quebec and Manitoba	Ontario	British Columbia	Canada
Number of Producing Mines	9	20	13	42
Ore Mined.....Tons	150,366	5,041,002	374,058	5,565,426
Ore Milled.....Tons	128,736	5,025,018	296,822	5,450,576
Tailings retreated.....Tons	...	...	...	...
Concentrates Produced.....Tons	182	4	22,064	22,250
Bullion recovered by amalgamation.....Crude ounces	49,061	586	4,420	54,067
Bullion recovered by cyanidation.....Crude ounces	29,412	2,675,338	38,130	2,742,880
Bullion shipped.....Crude ounces	112,559	2,635,344	42,571	2,790,474
Content of bullion shipped -				
Gold.....Fine ounces	73,488	2,058,292	37,513	2,169,293
Silver.....Fine ounces	6,946	356,845	6,843	370,634
Value.....$	1,521,112	42,649,757	769,868	44,940,737
Exchange premium.....$	72,583	1,784,956	36,510	1,894,049
Net value of ores, slags and residues sold.....$	19,800	56,137	2,233,855	2,309,792
Total Value of all Shipments.....$	1,613,495	44,490,850	3,040,233	49,144,578

Ores Mined and Milled, Crude Bullion Recovered and Crude Bullion and Concentrates Shipped in the Auriferous Quartz Mining Industry, 1931 and 1932 - Concluded
Ton = 2,000 lbs.

1 9 3 2	Nova Scotia and Manitoba	Quebec	Ontario	British Columbia	Canada
Number of Producing Mines	6	5	26	27	64
Ore Mined.....Tons	93,954	125,093	5,541,969	311,649	6,072,665
Ore Milled.....Tons	80,750	107,990	5,496,731	238,888	5,924,359
Tailings retreated.....Tons	3,140	...	...	...	3,140
Concentrates Produced.....Tons	22	251	174	17,164	17,611
Bullion recovered by amalgamation.....Crude ounces	2,584	61,751	150,449	24,170	238,954
Bullion recovered by cyanidation.....Crude ounces	53,516	9,937	2,888,963	43,096	2,995,512
Bullion shipped.....Crude ounces	58,602	72,856	3,039,187	66,189	3,236,834
Content of bullion shipped -					
Gold.....Fine ounces	37,254	62,937	2,258,902	57,846	2,416,939
Silver.....Fine ounces	5,196	5,789	427,856	11,330	450,171
Value.....$	771,490	1,302,475	46,830,311	1,188,833	50,093,109
Exchange Premium.....$	100,166	165,282	6,165,189	155,029	6,585,666
Net Value of ores, slags and residues sold.....$	1,551	4,278	66,725	1,990,065	2,062,619
Total Value of all Shipments...$	873,207	1,474,035	53,062,326	3,333,927	58,743,495

Ratio of Gold to Silver as Produced from Gold Ores in the Porcupine and Kirkland Lake Mining Areas, 1931-1932.

	Porcupine			Kirkland Lake		
	Gold Fine oz.	Silver Fine oz.	Ratio of Gold to Silver	Gold Fine oz.	Silver Fine oz.	Ratio of Gold to Silver
1931	962,252	176,666	5.4-1	1,051,377	171,363	6.1-1
1932	1,036,295	203,606	5.1-1	1,150,470	173,110	6.6-1

NOVA SCOTIA - Lode gold mining in Nova Scotia appeared to be rather more widespread than during the past few years. Small parcels of crude gold were received by the Royal Canadian Mint at Ottawa from Mount Uniacke, Goldboro, Oldham, Enfield, Goldenville, Wine Harbour, Upper Musquodoboit, Nine Mile river, Shubenacadie, Stewiacke, Montague Mines, Scraggy Lake, Kempt and Tangier. In the Renfrew district, Hants county, the Renfrew Gold Mine was active during the greater part of the year; underground work consisted of cross-cutting and sinking together with the cleaning up of old levels, while some crude gold was recovered by amalgamation. The United Goldfields of Nova Scotia Limited, carried on considerable development work at the King Fissure mine in the Brookfield district, Queens county. This consisted of 400 feet of shaft sinking, 203 feet of cross cutting and 487 feet of drifting. The company had in the previous year

completed 4,151 feet of diamond drilling; the mining plant at this property operated on purchased electricity. The East Goldbrook mine of the Stormont district in Guysboro county conducted development work and erected mining machinery.

Fine gold contained in bullion shipped from Nova Scotia to the Royal Canadian Mint, Ottawa, totalled 964 ounces in 1932 as compared with 460 ounces in 1931. The recorded gold production of Nova Scotia from 1862 to 1932 inclusive amounted to 925,172 fine ounces valued at $19,125,085.

NEW BRUNSWICK - There was no production of gold in this province in 1932. The New Brunswick Department of Lands and Mines reports that three or four parties continued the search for gold and silver throughout the year, more particularly around the headwaters of the Tobique, Nepisiguit and Upsalquitch rivers in Northumberland and Restigouche counties, and in Albert county at the head of the Salmon river. Small amounts of placer gold have been found in both these areas and geological conditions appear favourable. The provincial government's diamond drill worked on a claim located on the north branch of the North West Miramichi river; quartz veins were investigated here for gold and silver values.

QUEBEC - Six years ago the gold production of Quebec approximated $76,000 annually and with the development of the Rouyn-Harricana mines in the western part of the province it reached $6,200,000 in 1931 and almost $8,300,000 in 1932. There are now four important auriferous quartz mines producing gold in Quebec; the Granada mine in Rouyn, the O'Brien Cadillac mine in Cadillac, the Siscoe mine in Dubuisson and the Bussière or Treadwell Yukon property in Louvicourt. Several others are in an advanced state of development. During 1932 the Bussière's three compartment shaft was sunk to a total depth of 677 feet and a total of 4,566 feet of development work done on four levels; good ore has been found on all levels with the best on the bottom or 650 level; the mill started experimentally in September. As mine development and preparatory work progressed the quantity of the mill feed increased and the grade improved from $1.57 per ton in October, 1932, to $5.02 in February, 1933. Milling operations at the property will be stepped up to the mills' 150 ton capacity.

Beattie Gold Mines Limited, continued development of what has been reported as one of the largest low grade gold ore deposits so far located in Canada. This property is situated in Duparquet township and some 13 miles east of the Ontario boundary; in April, 1932, an exploration shaft was commenced and at the 220 foot level the ore zone was stated to be over 100 feet wide and averaging $4.41 a ton in gold. The company commenced erection of a milling plant of 800 tons (flotation) capacity; this commenced operating in May, 1933. Concentrates are shipped to the American Smelting and Refining Company.

The siscoe Gold Mines Limited, with property in Dubuisson and Varsan townships operated continuously throughout 1932. The company commenced the installation of flotation equipment and conducted extensive underground development work.

Granada Gold Mines Limited, located in the southwestern section of Rouyn township, was in continuous operation throughout the year. In the latter part of May a cyanide unit was added to the mill and preparations were made to increase production.

The new mill at the O'Brien Cadillac mine in Cadillac township commenced operations in October. Crude bullion was recovered by amalgamation; under ground and surface work were carried on during the entire year.

Extensive mining operations were conducted in Cadillac township by Canadian Pandora Gold Mines Limited; underground work at this property comprised shaft sinking, cross cutting and drifting. It is reported that mining has been almost entirely confined to veins which occur in the Temiskaming sediments and that actual development on the 250 foot level had located and partially proven three gold-bearing veins. An interesting gold discovery was made in the summer of 1932 on the property of McWatters Gold Mines Limited located at Rouyn township. This occurrence was explored by diamond drilling and surface work; results are reported as encouraging. Sullivan Consolidated Mines Limited were active on their property in Dubuisson township; considerable underground development was completed at the mine, this was in addition to diamond drilling operations.

From 1877 to the close of 1932 the province of Quebec produced from all types of ore deposits 735,653 fine ounces of new or primary gold. This was valued at $15,207,258. It is interesting to note that at the end of 1927 the total production for the province was only 41,997 fine ounces worth $868,117 as compared with the twelve months output of 401,105 fine ounces valued at $8,291,576 in 1932. This pronounced increase during recent years represents the rapid expansion in the mining of auriferous ores in the northwestern part of the province, especially does it reflect the successful development of the Horne mine by Noranda Mines, Limited.

ONTARIO - The Ontario Department of Mines report that apart from the steadily increasing output by the well-established mines of Porcupine and Kirkland Lake, the outstanding features of the year have been the development of smaller mines in other parts of the province and an increase in prospecting activities. The poor market for base metals has been a factor in concentrating the prospectors' operations on rock formations considered favourable for gold occurrences. During 1932 the Ashley mine in Bannockburn township was brought into production; the Croesus mine in Munro township was re-opened and efforts made to locate the extension of the high grade vein mined in former years. Operations in the Swayze area were extensive and good surface showings opened up on the Kenty, Derraugh and other properties. Important exploration work was commenced in February, 1933 by Hollinger Consolidated Gold Mines, Limited on the large ($2\frac{3}{4}$ acres in area) low grade ore body of the Young-Davidson Mine in the Mattachewan area, preliminary investigations indicate values around $2.50 a ton, tests on the ore reveal good extraction by cyanidation and flotation.

In the Michipicoten area the Parkhill and Minto mines produced throughout the year while the new Goudreau made a small shipment of gold bullion. Encouraging diamond drilling results were attained at Little Long Lac in Thunder Bay and at the close of the year freighting was conducted by airplane to the Central Patricia mine located some twenty miles north of Lake St. Joseph in the Crow River area. It is the intention to erect a small mill on this property.

The gold production by the Porcupine camp amounted to 7.7 per cent above that for 1931. At the Hollinger mine operations were conducted on all levels from the surface to the 3,950 foot level, 42 per cent of the ore milled came from above the 800 foot level and 975,000 tons of backfill were placed during the year. Ore put in sight below the 2,750 foot level amounts to over $3,200,000, the grade being approximately $9.00. The company report ore conditions on the lower levels as most interesting with the apparent continuance (extension) of the ore zone to the west. During 1932 the Hollinger mill treated 1,754,863 tons of ore of an average grade of $6.16, the net value recovered totalled $10,394,409. Cyanide consumed per ton of ore totalled 0.461 pounds; zinc consumed per ton of ore 0.044 pounds; zinc consumed per ton of solution 0.043 pounds; lime consumed per ton of ore 1,964 pounds; lead acetate per ton of ore 0.010 pounds. A total cost of $4.1710 per ton of ore mined

and milled was reported for 1932, this was made up as follows: $3.0296 for mining, $0.6122 milling, $0.2802 Workmen's Compensation (includes silicosis assessment), $0.0169 marketing bullion, insurance $0.0076, $0.0386 surface charges and $0.1859 for general miscellaneous charges and administration. Ore reserves of the Hollinger mine on December 31, 1932, were reported at 6,049,548 tons of a total value of $45,492,076 or an average value of $7.52 per ton.

Dome Mines Limited report that 576,850 tons of ore were hoisted in 1932; of this 536,450 tons were sent to the mill and treated and 40,400 tons of waste were dumped on the surface. In addition 13,700 tons of waste were disposed of in old stopes. The 536,450 tons milled yielded bullion worth $4,040,317; the yield per ton being $7.532. During the year 26,949 feet of diamond drilling were completed, considerable of this being on the 23rd level where interesting and encouraging results were obtained. Of the tonnage milled the stopes yielded 483,500 tons averaging $8.2618 per ton and development work yielded 52,900 tons averaging $4.8113, a total of 536,450 tons. The ore drawn from the Dome extension ground during the year was 110,812 tons containing $691,695 or $6.2421 per ton. Dome ore drawn from stopes wholly in the sedimentary area yielded 165,973 tons containing $1,631,645, an average of $9.8307 per ton; ore from stopes wholly in the greenstones or partially so yielded 317,577 tons containing $2,363,337, an average of $7.4418 per ton. The expenditure on mining was $709,004 or $1.322 per ton; operating costs for the year were $3.882 per ton milled as against $3.482 in 1931. Ore reserves are estimated at 2,000,000 tons in 1932; this includes 723,960 tons of broken ore, ore in the sediments is estimated at 285,000 tons and ore in the greenstones at 1,715,000 tons.

McIntyre Porcupine mines report that during the fiscal year ending March 31, 1933, 736,300 tons of ore were treated of an average assay value of $7.70 per ton resulting in a recovery of bullion with a net value of $5,957,216. Total operating costs amounted to $4.1621 per ton of ore milled and were made up as follows: exploration $0.0963; development $0.4465; breaking and stoping $2.6108; milling $0.7949; heating and maintenance $0.0902 and administration and general expense $0.1234. Ore reserves including broken ore were reported at 2,605,066 tons of an average assay value of $7.70 per ton. The new plant of the company was in continuous operation during the year and unit costs were gradually reduced. An internal vertical shaft was started from the 3,875 foot level. The new shaft and the necessary hoisting equipment are so planned that development can be carried to the 7,000 foot horizon.

Coniarum and Vipond Mines operated continuously throughout 1932; the Buffalo-Ankerite in the Deloro township resumed operations in May and later increased its mill capacity to 325 tons daily. The March mine closed July 19th and the Hayden mine operated a test mill during May and June. At Triple Lake, about 20 miles south of Porcupine camp, some rich ore was recovered from the John Spence property. The Croesus, in Munro township, operated in September, October and November, recovering small quantities of gold from the ore dumps.

Gold production in the Kirkland Lake area showed a 9.4 per cent increase over 1931. Lake Shore Mines Limited report that for the fiscal year ending June 30, 1932, the company treated 834,434 tons of ore yielding bullion to the amount of $12,356,759. This shows an increase of 135,810 tons of ore milled over the previous fiscal year with a corresponding increase in bullion of $3,203,824. The total tonnage milled during the year was made up of 83,668 tons of ore from development and 750,766 tons from milling. The broken ore reserves amounted to 258,914 tons valued at $4,490,000. The successful operation of the cut and fill method of mining in the underground work has raised the grade of ore and the improved extraction secured by oil flotation and other mill refinements has resulted in larger earnings for the company

During the year No. 1 shaft was carried to a depth of 3,725 feet and at the same time raising on No. 3 shaft from the 3,075 and 3,200 foot levels was in progress. Costs per ton of ore milled were as follows - development $1.198; mining, $2.529; milling and refining $1.188; marketing bullion $0.078; general and administrative $0.248; depreciation $0.884; provision for provincial and Dominion taxes $1.192 or a total cost per ton of $7.317.

Teck-Hughes Gold Mines Limited report 475,700 tons of ore treated during the fiscal year ending August 31, 1932. Bullion amounting to $5,953,687 or $12.52 per ton was recovered. The gross revenue was $6,824,239 or $14.35 per ton. Including the sum of $303,658 charged for depreciation on buildings and fixed plant, the total operating cost was $2,663,067 or $5.60 per ton.

The following is an analysis of operating costs:

	Cost per ton of ore treated	Cost per ounce of gold produced
	$	$
Development and exploration	1.25	2.062
Mining	2.22	3.661
Milling	0.99	1.641
General expense	0.50	0.824
Examination of new properties	0.00	0.004
Depreciation	0.64	1.054
TOTAL	5.60	9.246

At the end of the fiscal year the south shaft extension had been sunk to a depth of 4,864 feet and station cutting for the 40th level had been commenced. No. 2 winze reached a depth of 4,611 feet. The technical estimate of "positive ore" reserve at September 1st, 1932, was broken ore, 335,135 tons of an average grade of $12.03 and 291,354 tons of blocked ore of an average grade of $13.38.

Kirkland Lake Gold Mining Company report a gold production valued at $592,451 in 1932. Shaft sinking from 4,750 to the 4,900 level was commenced at the beginning of the year. At 4,900 a main haulage level was driven 1,000 feet south to No. 2 winze; the No. 2 winze was sunk 543 feet; this provides four new levels that will be worked during 1933. The main development of new ore was on the 4,900 level. Daily mill tonnage totalled 155 and averaged $9.28 per ton.

One of the more important developments at the Wright-Hargreaves mine during 1932 was the confirmation of the continuous character of the north vein ore body on the two lowest levels, the 2,850 and 3,000. At the end of the year it was reported that 1,500 feet of ore on each level had been opened up with ore still to be developed at each end. Ore reserves were reported as on December 31, 1932, at 951,939 tons with an average value of $13.54 per ton. The company announced that the mill capacity would be increased to 1,000 tons and that flotation treatment will be adopted.

Toburn Gold Mines Limited, operating the old Tough-Oakes-Burnside property at Kirkland Lake report that ore production and milling in the cyaniding plant of approximately 100 tons daily capacity, commenced in August, 1932, and to December 31,

there had been mined and milled 14,689 tons of ore averaging 0.723 ounces of gold per ton and yielding as profits before any charges for depreciation or ore depletion $92,589. Some additional ore was found and opened up by underground development; ore reserves as at December 31, 1932, were 29,200 tons of approximately the same average grade as that milled in 1932. The Sylvanite operated continuously throughout the year, daily mill tonnage was 265 and averaged $8.46 per ton. Development on the Macassa to the west of the producers was continued during the period; ore is being opened up on the 2,000, 2,175, 2,325 and 2,475 foot levels, diamond drilling has proven continuity of ore to greater depths than now explored. The Barry-Hollinger, about six miles south of the Kirkland Lake area, operated at 96 tons daily capacity with an average recovery of $4.59 per ton.

The Ashley Gold Mining Co. Ltd., operating the Ashley mine in Bannockburn township, some forty miles west of the main Kirkland Lake area completed in the early part of the year a three compartment inclined shaft to 570 feet; so satisfactory were the early results from drifting on all levels that decision was made to install a mill and the necessary equipment for a cyanide plant of 150 tons daily capacity was hauled in. Construction of plant began in May and was completed in August, gold production commencing in September. The Ashley vein, upon which practically all development has been concentrated to date, has proved down to the 500 foot level to be a narrow high grade vein, the average gold value being approximately $15.00 over a width of 30 inches. On the 500 foot level a length of 950 feet, in practically onecontinuous oreshoot, has been proven. Owing to the narrow character of the Ashley vein, special stoping methods and hand sorting of waste are required to avoid dilution from overbreak of low grade wall rock.

Northwestern Ontario - In the Lake of the Woods area Kenora Prospectors and Miners Limited carried on development on its Cedar Island property and on the strength of the encouraging results acquired the adjoining Mikado mine where drifting was commenced on No. 9 level 500 feet below the surface. The Moss mine near Kashabowie was operated in 1932 at an average rate of 82 tons per day and $6.85 per ton recovery. The Minto and Parkhill in Michipicoten, while relatively smaller in mill equipment, each treated ores of $8.72 grade. At Schreiber several properties were being operated including the McKellar-Longworth by Schreiber Gold Mines Limited and the Harkness Hays.

During 1932 the recovery of gold at the Howey Mine, Red Lake Patricia district amounted to $1,268,780 from which an operating profit (before depreciation, pre-production charges and taxation) of $470,412 was realized. The cost per ton of ore treated in 1932 was $2.471 as compared with a corresponding cost of $3.126 during the preceding year. The mill treated 284,664 tons of an average value of $4.21 per ton, the recovery was 93.6%. A plant extension has been recommended which will increase the capacity of the mill to approximately 1,300 tons per day; the company report that this will not only insure a larger profit on the ore reserves but will also open up as a commercial possibility, a large block of ore above the 1,000 foot level lying west of the shaft. The broken ore reserves above the 1,000 foot level on the 31st day of December amounted to 206,150 tons. The reserve of unbroken ore of a similar grade above the same level amounted to approximately 500,000 tons. In addition to these reserves, there is a body of ore lying to the west of the shaft and above the 1,000 foot level.

Production of gold in Ontario from all sources from 1877 to 1932 inclusive amounted to 19,234,530 fine ounces valued at $397,613,015.

MANITOBA - Production of gold in Manitoba from auriferous quartz ores was stimulated in May 1932 through the commencement of milling operations at the San Antonio mine in the Rice Lake section. Crude gold was recovered by both amalgamation and cyanidation. It is reported that work in the latter part of the year had materially increased the ore in sight and that diamond drilling operations revealed excellent values in seven intersections all in new territory. The Central Manitoba mine, located in the Long Lake district, was in continuous production throughout the year, in addition to underground development the company conducted considerable diamond drill exploration. At Herb Lake the North British Mining and Milling Company Limited commenced milling in April and operated the Ferro mine steadily throughout the remainder of the year. Mining operations were chiefly confined to the surface. A relatively small tonnage of ore was shipped to the Flin Flon smelter from the North Star mine situated at Morton Lake. Auriferous ore was also shipped to the same smelter from the Dominion group located in The Pas mining division; this was extracted by C.H. Brander of Sherridon, Manitoba.

During 1932 operations by Island Lake Mines Limited at Island Lake consisted of exploration work and erection of camps. Extensive tests were made on this ore and equipment purchased to place the property in production on a scale of 50 tons per day. It is hoped that production on a basis of about 30 tons per day will begin in the summer of 1933. Drilling during the winter from the ice disclosed a zone on west island similar to that on gold island.

A promising gold discovery was made at God's Lake, north of Island Lake, during the summer of 1932. It was reported that the break on which the original discovery was made had been traced for a considerable distance, the zone being approximately 100 feet wide and containing in places veins ranging from 4 to 5 feet in width. Production of gold in Manitoba from all sources from 1917 to 1932 inclusive totalled 198,203 fine ounces valued at $4,097,218.

SASKATCHEWAN - Surface and underground work was carried on at the Amisk Gold mine situated at Beaver Lake. No production was reported from this property. Emmet, Irving, Kenward Limited, conducted some development work on a property in the Beaver Lake district; it is stated that a small mill will be installed in 1933.

BRITISH COLUMBIA - The interest directed to gold mining, both lode and placer, resulted in a larger number of prospectors being in the hills than in former years. About 9,000 provisional free miners' certificates were issued in addition to the ordinary ones. New lode discoveries were reported from several parts of the province, which will require exploration before their economic importance can be determined.

Northwestern Mineral Survey District No. 1 - Premier Gold Mining Company Limited mined 221,718 tons (dry weight) of ore with an average assay content of 0.36 ounces gold and 8.3 ounces silver and at the close of 1932 the combined broken and unbroken ore reserves of the Premier mine were 98,156 tons less than at the end of 1931; 123,562 tons of new ore were found and opened up by exploration and development during 1932. The company report that the Premier ore shoot bottoms as to commercial values slightly above the 5th level with a few roots of profitable grade persisting to the 6th level. The total of the estimated broken and unbroken ore reserves down to the 6th level of the present mine workings is 155,467 tons averaging 0.31 ounces of gold and 6.9 ounces of silver. The Prosperity and Porter Idaho mines at Marmot river remained closed throughout 1932. Silverado and Dunwell mines in the Portland Canal division made shipments of silver and gold-bearing ore to the Tacoma smelter. The season's result of the Alaska Juneau Gold Mining Company Limited, stripping and trenching operations on the Smith-Wilms-Bacon group and the MacDougall

group was not conclusive and this company intends to continue with similar work during 1933. The option held on the Whitewater group was dropped by the N.A. Timmins Corporation and operations at the properties ceased at the end of August. During the season some selective mining was undertaken at the Engineer Mine in the Atlin Lake section, a limited quantity of gold was recovered.

Northeastern Mineral Survey District No. 2 - During 1932 Consolidated Mining and Smelting Company through systematic prospecting discovered auriferous quartz fissures in argillite (Polaris group). These occurrences are situated northeast of Aiken Lake at the head of Mesilinka river; this property will be further explored in 1933. Near Barkerville in the Cariboo district the Cariboo Gold Quartz Mining Company included among its activities the construction of a cyanide plant; the property was reported to be in production on January 10, 1933.

Southern Mineral Survey District No. 4 - Developments at the Union mine consisted of the extension of No. 1 and No. 3 tunnels and upraises in various directions where indications of ore were found, about 30 men being employed; at the Homestake where the mineral constituents and country rocks are similar to the Union the property was further developed by sinking a shaft approximately 85 feet, values are reported to vary between $5 and $35 per ton; a mineral zone about 300 feet long was outlined by diamond drilling. Waterloo Gold Mines Limited, cleaned out No. 4 tunnel, reconstructed several miles of road and shipped a car of mixed ore to the Trail smelter. This assayed $30 in gold and $13 in silver per ton. Three carloads of roughly sorted ore averaging $12 per ton in gold were shipped to the smelter from the Carmi mine in the Greenwood division; practically all of this ore was taken from the development headings. At the Dividend and Lakeview in the Osoyoos division ten stamps, two wilfley tables and a jaw crusher were placed on the property and about twelve tons of concentrates shipped by truck to the Tacoma smelter. Most of this ore was taken from dumps or the old "Glory Hole". The Oliver property, 3 miles north of Fairview, shipped some fifteen tons of picked ore to the smelter; work was commenced here at the mouth of an old tunnel where free gold occurs in association with pyrite in a quartz vein. Some exploratory work was conducted at the Hedley mine where a cross cut about 240 feet long was driven under the Sunnyside ground, work ceased with the cold weather. Shipments of ore were made from the Summit claim on Oro Fino mountain by the Parvenue Mines Limited, gold bullion was also recovered at the mill, the shipping ore was reported to average about $70 per ton. The Oro Fino property adjoining the Parvenue shipped about 76 tons of gold quartz ore for treatment in the Parvenue mill; this averaged about $20 per ton in gold. The Dawson-Aurum mines in the Yale division and under option by Consolidated Underwriters Limited, reconditioned the old mill, conducted development work and shipped about 115 tons of roughly sorted ore, gold being the chief value. The Home Gold Mines adjoining the Aurum drove a new cross cut some 182 feet, ore was sorted and sacked at the rate of about one ton a day; this is expected to average $45 per ton, shipments are planned for 1933. In the Clinton mining division the Big Slide Mining Company completed considerable development work on a quartz vein containing pyrite, arsenopyrite and occasional segregations of chalcopyrite; values are reported at from $15 to $20 per ton.

Eastern Mineral Survey District No. 5 - In the Nelson mining division the Reno mine completed its construction programme, this comprised work on the mill, power and aerial tram units. Suspension of production pending these improvements has been the chief factor causing the decreased gold output of the district. At the property of the Gold Belt Mining Company adjoining the Reno holdings, tunnelling operations were started and work was resumed at the Perrier near Nelson. Active mining commenced at the Yankee Girl on March 1st and continued at a steady rate for

the remainder of the year. Ore was shipped to Trail, the principal values were in gold with minor amounts of silver, lead and zinc. Small shipments of exceptionally high grade ore were made from the I.X.L. near Rossland.

Western Mineral Survey District No. 6 - A small mill conducted tests on the You group. This property is at the head of Bear river, Vancouver Island; ore was extracted from a ten inch vein reported by the owner to contain $40 values. T. Marks, owner of the Marks group on the Zeballos river drove an 80 foot cross cut tunnel and reported cutting a width of 6 feet containing small veins of quartz carrying promising gold values.

Martle and Hayden Bay, Old Crown - granted claims on Loughborough inlet, were leased to P.H. Fraser and associates. They contain gold-bearing pyritized quartz veins in what is probably the northwesterly continuation of the Alexandria-Doratha Morton mineral belt in Phillips Arm; none of the properties in the Phillips arm section were under operation after the Alexandria closed down early in the year. An interesting gold discovery was made by Geo. Morrison on what is known as the Mary Mac claims in the Lillooet division. The property is reported to possess outstanding possibilities of developing into importance. At the Pioneer the main vein was picked up by cross cutting from the new shaft on all the lower levels. The new 300 ton mill was started in December and operated satisfactorily under winter conditions. A recent discovery of a pocket of high grade ore on the 8th level produced a ton of ore that yielded over $50,000 in gold, making a total output of 400 pounds of gold for the last two weeks of the year. The Lorne mine operated by Bralorne Mines Limited, has conducted some very interesting development, in that work on the 10th level has cross cut the fault zone; and a cross cut to the southwest of about 300 feet has located the vein west of the fault. This opens up a new and very promising area for development. Work on the California vein by the Bridge River Exploration Company consisted of drifting and cross cutting; it is reported that the tonnage indicated by vein widths will permit large-scale operations on fairly low grade mill feed.

The total production of gold in British Columbia from all sources from 1858 to 1932 inclusive amounted to 10,390,874 fine ounces valued at $214,798,467.

YUKON - Prospecting on Mount Freegold in the Carmacks division was continued in 1932, an average of about 8 men being employed. W.J. Langham and A. Brown operating in this area claim to have found encouraging ore. Work on the Tinto Hill group was discontinued, shallow shafts are reported to have now proven the vein for about 500 feet in length and to average 3 feet in width; gold assays are stated to be interesting.

THE COPPER GOLD-SILVER MINING INDUSTRY

The copper-gold-silver mining industry comprises a group of mines producing or developing ores in which copper is usually the predominating metal in both value and quantity. The precious metals in most of these ores, especially during periods of depressed base metal prices, are often very important factors in the economic working of some deposits of this nature.

It is to be noted that under the copper-gold-silver mining industry are included data pertaining to the relatively recent development and production of the copper-zinc-gold-silver ores of northwestern Manitoba and to some extent of the Rouyn district in Quebec.

PRINCIPAL STATISTICS OF THE COPPER-GOLD-SILVER MINING INDUSTRY IN CANADA, 1923 and 1928-1932.

Year	No. of active operators	No. of operating plants or mines	Capital Employed	Number of employees	Salaries and Wages	Cost of Fuel and Electricity	Net Value of Ores and Concentrates shipped by mines
			$		$	$	$
1923	14	14	19,108,072	1,790	3,004,292	334,696	4,361,486
1928	164	174	50,004,340	4,777	6,764,309	731,836	15,281,519
1929	144	152	52,546,697	5,243	8,498,755	1,035,133	21,859,907
1930	61	68	45,844,395	5,694	9,156,759	1,272,262	15,629,564
1931	53	56	37,127,920	3,351	4,958,317	726,502	15,951,103
1932	28	30	14,793,372	3,076	3,770,627	463,463	11,143,759

SHIPMENTS FROM COPPER-GOLD-SILVER MINES OF CANADA, 1931-1932.

	Quantity	Net Value	Total metal content as determined by settlement assay				
			Gold	Silver	Copper	Sulphur	Zinc
1931	Tons	$	Fine oz.	Fine oz.	Pounds	Tons	Pounds
12 mines shipped to Canadian plants -							
(a) Ores	1,790,539	9,820,390	315,573	1,648,579	98,717,533	...	82,892,165
Concentrates	177,211	3,737,435	54,337	475,920	62,557,732	...	...
4 mines shipped to Foreign plants -							
Ores	55	1,520	58	150	5,345	...	...
Concentrates	71,015	2,236,631	5,396	164,957	35,012,918	...	...
Iron pyrites concentrates	63,293	155,127	...	...	...	31,771	...
TOTAL	2,102,113	15,951,103	375,364	2,289,606	196,293,528	31,771	82,892,165
1932							
14 mines shipped to Canadian plants -							
Ores	850,451	3,283,720	314,784	564,983	51,905,334	...	...
/Copper concentrates	451,117	6,479,044	129,356	1,386,662	110,311,196	...	...
Zinc concentrates	76,507	455,348	7,535	157,843	2,181,377	...	68,258,142
Iron pyrites concentrates	3,465	10,925	...	...	...	598	...
3 mines shipped to Foreign plants -							
Ore	54	3,065	157	28	...	...	...
Copper concentrates	37,558	758,053	8,868	87,346	18,625,044	...	...
Iron pyrites concentrates	48,584	153,604	...	...	...	24,231	...
TOTAL	1,467,736	11,143,759	460,700	2,196,862	183,022,951	24,829	68,258,142

(a) Includes Zinc concentrates.

/ Includes some cyanide precipitate.

NEW BRUNSWICK - Work on the Adams Island copper property in Charlotte county was continued throughout the year by the Eastern Mining and Smelting Company. All work was confined to shaft No. 1 at the western end of the island and to an eighty-eight foot cross cut driven southerly from the foot of that shaft; the shaft is now 95 feet deep, some 3,000 tons of ore are reported on the dump.

QUEBEC - The Consolidated Copper and Sulphur Company operated the Eustis mine, Ascot township, continuously during 1932. Both copper and iron sulphide concentrates were produced and shipped, the greater part of these were exported to the United States. It is interesting to note that in 1932 this company made shipments of iron pyrites concentrates to the Canadian paper manufacturing industry.

Noranda Mines Limited, operating the Horne mine in Rouyn township, report that tonnages of ore shipped from the mine to the smelter and concentrator in the year 1932 increased approximately 20 per cent and although very little exploration work was done during the year the ore reserves show a very substantial increase. The tonnages and average grade of ore shipped from the Horne mine to the smelter and concentrator in 1932 were as follows:

	Tons	Copper	Gold per ton	Silver per ton
Direct smelting sulphide ore.....	515,462	4.18%	$9.62	0.90 oz.
Silicious fluxing ore.....	323,796	1.29%	$4.08	0.29 oz.
Concentrating sulphide ore.....	379,037	2.13%	$2.92	0.36 oz.
TOTAL.....	1,218,295	-	-	-

From the information obtained in drifting, cross cutting, diamond drilling and inclined raising in the various ore bodies, there is now indicated above the 2,475 foot level the following tonnages of the three classes of ores treated:

	Tons	Gold per ton	Copper
Direct smelting ore.....	5,750,000	$3.27	7.6 %
Concentrating ore.....	15,800,000	$4.00	1.16%
Silicious fluxing ore.....	900,000	$4.17	0.28%

During 1931 and 1932 the amount of material treated in the smelter and production were as follows:

	Tons of ore, concentrate and refinery slag treated	Pounds of fine copper produced	Gold produced Oz.	Silver produced Oz.
1931.....	765,544	62,859,355	253,363	558,801
1932.....	918,567	63,013,485	341,350	619,597

Early in the year 1932, owing to the price of copper, operations at the Waite-Ackerman-Montgomery Mines Limited, the controlling share interest of which is held by Noranda Mines Limited, ceased and it is expected this mine will remain closed until copper prices materially increase. At the Aldermac Mine in Boischatel township,

some 3,400 tons of ore were mined and milled, resulting in a shipment of iron pyrites concentrates to a paper mill in Eastern Canada. In addition to operations at the producing mines exploratory surface work was conducted on properties located in Rouyn, Cadillac, Dupuy, Dufresnoy, Beauchatel and Clericy townships.

ONTARIO - Practically all of the copper produced in Ontario during 1931 and 1932 was derived from the nickel-copper ores of the Sudbury district. The mining of these ores is included in the nickel-copper mining, smelting and refining industry in Canada, data pertaining to which are contained in a separate bulletin issued for this particular industry. Gold contained in ores mined by the International Nickel Company of Canada, Limited was recovered during 1932 in metallurgical plants operated at Port Colborne and Copper Cliff, Ontario, and Acton, England. Gold sales in 1932 were reported by the company at 23,042 ounces. Falconbridge Nickel Mines Limited, also operating in the Sudbury district, report that the department for concentrating of precious metal slimes in their Norwegian refineries worked regularly during the year shipping concentrated slimes at suitable intervals; the company reported a recovery of both gold and platinum metals for 1932.

MANITOBA - The Flin Flon mine of the Hudson Bay Mining and Smelting Company Limited is the largest producer of copper-gold ores in Manitoba. During 1932 the company mined and milled 1,439,651 tons of ore averaging .085 ounces gold, 1.13 ounces of silver, 1.98 per cent copper and 3.7 per cent zinc, and from this ore produced 82,565 ounces of gold, 933,983 ounces of silver, 42,158,235 pounds of copper and 41,736,600 pounds of zinc. In addition, the company smelted on toll 23,711 tons of custom ores and concentrates. The total tonnage mined underground was gradually increased from 1,305 tons per day, the average daily tonnage at the start of the year, to an average daily tonnage of 1,700 tons at the end of the year. There were mined from underground and delivered to the concentrator during the year, 564,294 tons of ore assaying:- Gold .099 oz.; silver 1.22 oz.; copper 2.39 per cent; zinc 3.7 per cent.

The operation of the open pit was carried on continuously during the year. There were removed from over the ore by power scrapers and pumping, during the spring and summer 116,500 tons of clay which terminated this slusher operation. In addition there were removed by the electric shovels and sent to the waste dumps 264,845 tons of clay, this making a total of 381,345 tons of clay removed during the year. It was found advisable to use deeper holes in blasting both rock and ore and consequently higher working benches were established so that at the present time most of the benches are 50 feet in height instead of the original 20 feet used at the start of operations. At the start of the year there was mined from the open pit a daily tonnage of 1,736 and at the end of the year a daily tonnage of 2,542. There were mined from the open pit and sent to the concentrator during the year 872,931 tons of ore averaging:- Gold .076 oz.; silver 1.05 oz.; copper 1.71 per cent; zinc 3.7 per cent. In addition 7,994 tons were sent direct to the smelter.

The concentrator treated during 1932 a total of 1,439,651 tons averaging:- Gold .085 oz.; silver 1.13 oz.; copper 1.98 per cent; zinc 3.7 per cent from which were produced 235,265 tons of copper concentrates assaying:- Gold .309 oz.; silver 3.69 oz.; copper 9.99 per cent; zinc 3.50 per cent, and 76,197 tons of zinc concentrates assaying:- Gold .098 oz.; silver 2.06 oz.; copper 1.43 per cent, and zinc 44.5 per cent.

There were treated by the cyanide annex during the year 695,494 tons of sulphide ore tailings from which the following metals were recovered in the form of so-called zinc dust precipitate - gold, 11,526.44 oz.; silver 97,541.45 oz.; and copper 55,249 pounds; this production is included in that given for the blister

copper output of the smelter. Blister copper produced from Flin Flon ore and shipped by the smelter contained 82,565 oz. gold.

Operations at the Sherritt Gordon mine continued in 1932 until June 15th when in view of the low price for copper and the poor industrial outlook for the immediate future, it was deemed advisable to close down mining operations; gold-bearing copper concentrates produced during the period of operation were shipped to the Flin Flon smelter; the cost of the copper was maintained at just over six cents while the grade of ore treated came down from 74.7 pounds to 67.8 pounds in the ton.

BRITISH COLUMBIA - In the Nass river mining division Granby Consolidated Mining, Smelting & Power Company Limited, carried on continuous operations at the Hidden Creek and Bonanza mines and consideration was given to employment of a maximum number of men. Milling of about 5,000 tons of ore was maintained at the Hidden Creek mine; the most important development of the year was the cutting of a fine body of ore on the 700 foot level on No. 4 ore body. Tramming of about 275 tons of ore a day was maintained from the Bonanza mine. On the south side of the creek work on the Bonanza ore body has shown its extension to the southwest. Shipments of about 300 tons of high grade gold-copper blister per month were made during the year. The staff of this company deserve great credit for the remarkably low costs of operation.

Encouraging widths of chalcopyrite ore with appreciable gold values in places were uncovered on the Wildcat property in the Kitsault river section; some other properties in this district show favourable results from development work.

The property of the Lasco Development Company Limited, the Venus group, and the adjoining property, the Juneau group, located on Lasqueti island in the Western Mineral Survey District No. 6 have been amalgamated and are now under development by the Pacific Gold Mines Limited. A compressor plant was installed and development work carried on in the Venus tunnel at the beach. The ore is chalcopyrite carrying substantial gold values.

The Britannia Mining and Smelting Company Limited, operating on Howe Sound, suspended all sales of copper early in March owing to the marked decline in the price of the metal and thereafter all mine operations were curtailed; at the end of the year production was on a basis of approximately 10 per cent of capacity. The plants of the company have been maintained at maximum efficiency so that capacity production may be resumed when market conditions warrant increased output. Due to the import duty of 4 cents per pound on copper, included in the U.S. Revenue Law effective June 21, 1932, the copper thereafter produced at Britannia, when sold, must be marketed abroad and arrangements for such disposal of the product were perfected on a basis believed to be satisfactory. In 1932 there were mined and milled 773,508 tons of ore mainly from the East Bluff deposit where the gold content is slightly higher than in other sections of the mine. Only a portion of the 15,481 tons of iron pyrites produced was disposed of. The British Columbia Department of Mines state that the Britannia has been kept going more from a humanitarian viewpoint than for profitable mining under present market conditions. The Coast Copper Company Limited conducted only road construction during the first four months of the year on their property at Jeune Landing in the Quatsino mining division; the property remained idle during the remainder of 1932.

INTERNATIONAL REVIEW (SUMMARY)

Summary analysis of the factors generally considered to have been wholly or partially instrumental in stimulating Canadian gold production during recent years shows that these same causes have also been actively operating in other gold-producing countries. Extraordinary conditions existing in international trade and finance have in the past four years greatly increased the purchasing power of a given unit of gold as expressed in terms of the commodities for which gold is exchanged. This increase in the purchasing power of gold has stimulated the current production of gold, not only in Canada but throughout the world, and both the gold production of Canada and the gold production of the world reached the highest level in their respective records in 1932. In addition, considerable amounts of previously existing gold have been diverted to monetary uses, a special feature being the large gold shipments from India to London.

While commodity prices, exchange, etc. have proven very important agencies in stimulating gold production, it should be realized that these, as important causes, are of comparatively recent origin in so far as they are related to current gold production; these factors have also proven in the past to be of very uncertain duration and unstable in nature.

For a comprehensive understanding of the world's increasing gold production, it is imperative to possess accurate and complete information as to the economic geology of the various gold-bearing deposits, together with their location, development, metallurgical and mining problems and other data of a similar nature. It does not come within the purview of this review to include such a survey. A few notes of an abridged nature relating to gold mining in countries other than Canada are appended. It is trusted that these may prove of some interest and value for comparative purposes.

UNION OF SOUTH AFRICA - Mr. John Martin, President of the Transvaal Chamber of Mines stated in an address in March, 1933, that the Transvaal production of gold in 1932 of a standard value of 49,076,000 pounds sterling was the greatest annual output ever recorded. For the Witwatersrand Mines alone the yield of gold amounted to 10,987,000 fine ounces having a standard value of 46,671,000 pounds sterling, an increase of 632,000 fine ounces and 2,685,000 pounds sterling compared with the previous twelve months. The past year has, for the industry, been a period of exceptional interest and activity, culminating in the situation created by the recent departure of South Africa from the gold standard. That important change in the monetary policy of the Union affords to the gold mines a great opportunity for expansion of operations and prolongation of life .... It was felt and recommended that individual mines should lower pay limits, accelerate and extend prospecting and development programmes and generally adopt all feasible measures calculated to enlarge the scale and extent of the industry .... It is noteworthy that as early as February the average yield for the whole industry had been lowered by .317 dwt. per ton milled compared with the average for December, while it is evident that the process of gradual reduction will continue .... Moreover, many new or dormant gold-bearing areas on the Witwatersrand and in outside districts are attracting serious attention with a view to their exploitation .... It is necessary to emphasize that there are factors beyond our control that may affect the future situation. One of these is the monetary and taxation policy of the Union Government. The action taken by parliament in linking the South African currency with sterling was a wise and appropriate step which has already produced the most beneficial results .... In these matters the proceedings of the forthcoming World Conference on the International monetary and economic situation may play a momentous part. It would certainly appear

to be fundamentally in the interests of South Africa that there should be no return by this country to the gold standard at the old parity, that any plan for ultimate devaluation should be based on a level suited to the needs and interests of the primary producers of the Union and that, subject to these essential conditions, South African currency policy should maintain the closest association with sterling policy.

The following are results for the first three months of 1931, 1932 and 1933 of the Crown Mines Limited, one of the largest and more important of the Rand Gold Mining companies:-

	1931	1932	1933
Fathomage broken	56,906	64,344	56,729
Tons mined	885,331	928,939	963,926
Tons milled	759,000	809,000	845,000
Percentage of waste sorted	13.7	12.9	12.5
Yield -			
Total - fine ounces	239,766	248,418	260,636
Per ton milled - dwts	6.318	6.141	6.169
Value of yield -			
Total including silver and osmiridium	Pounds sterling 1,019,327	Pounds sterling 1,055,791	Pounds sterling 1,560,404
Per ton milled	26s. 10.3d.	26s. 1.2d.	36s. 11.2d.
Working costs -			
Total	762,346	787,231	840,857
Per ton milled	20s. 1.1d.	19s. 5.5d.	19s. 10.8d.
Working profit -			
Total	256,981	268,560	719,547
Per ton milled	6s. 9.2d.	6s. 7.7d.	17s. 0.4d.

At the end of the year the ore reserves of the company totalled 13,742,950 tons or 745,560 tons in excess of 1931.

UNITED STATES - According to the United States Bureau of Mines the 1932 gold production was $51,836,400. This value was based on arrivals at the United States Mint and Assay offices and at private refineries and includes the Philippine Islands ($4,719,000 gold). The total recovered and recoverable for the important gold and silver producing states, according to the western field offices of the United States Bureau of Mines was $47,026,000 in gold. The following preliminary estimates for 1932 are given.

Alaska - Placer and lode gold production in 1932 was $9,539,000 as against $3,507,000 in 1931; the proportion between placer and lode mines was about 56 to 44.

Arizona - Arizona in 1932 yielded $1,320,000 in gold as compared with $2,608,000 in 1931. The decrease in 1932 from 1931 was due to the heavy curtailment in copper output.

California - The 1932 production of gold in California at $11,649,000 represents an increase of gold production over 1931 of 40,365 ounces, a gain of about 8 per cent. Increased output in the dredging fields of Sacramento and Merced counties more than offset the declining yield in other gold-dredging fields. The production of lode gold came largely from Nevada, Amador, Shasta and Sierra counties. It was estimated that at least 8,000 people were engaged in placer mining.

Colorado - Colorado in 1932 yielded $6,661,000 in terms of recovered and recoverable gold as compared with $4,822,734 in 1931. Of the 1932 output the sulpho-telluride ores of Cripple Creek yielded $2,260,000.

Idaho - Idaho increased its gold output from $380,000 in 1931 to $879,000 in 1932. This increase was chiefly due to the re-opening of the old gold camp at Atlanta; to the increased gold yield from the new dredge operating near Warren and to the operation of the new mill of the Yellow Pine Company.

Montana - Montana in 1932 yielded $824,000 in gold compared with $829,000 in 1931. The largest producers included the Liberty Montana, Ohio-Keating, and Anaconda Copper Mining Company.

Nevada - Nevada mines yielded $2,729,000 in gold in 1932 as compared with $2,941,000 in 1931. The principal producers in 1932 were the Elkoro, Gold Hill Development Company, the Bradshaw at Goldfield, the Nevada Consolidated Copper Company and the Consolidated Copper Mines Corporation at Ely, the Nevada Porphyry Gold Mines and the White Caps Gold Mining Company at Manhattan.

New Mexico - New Mexico in 1932 yielded $518,000 in gold as compared with $644,160 in 1931. Zinc-lead-copper-silver-gold ore from the Pecos mine in San Miguel county and copper concentrates from the Chino mines at Santa Rita yielded the bulk of the gold from New Mexico in 1931.

South Dakota - South Dakota in 1932 yielded $9,960,000 in gold as against $8,932,000 in 1931. Placer gold production in South Dakota in 1932 totalled 1,106 fine ounces, nearly all the remainder was from the Homestake mine, the largest producing gold mine in the United States.

Utah - Utah in 1932 yielded $2,947,000 in gold compared with $4,108,000 in 1931. Virtually all the gold was recovered from ores and concentrates smelted at lead bullion and copper matte smelters.

AUSTRALIA - The Mining Journal, London, reports that the revival of gold mining throughout Australia, which first became evident in 1931, developed into intense and at times feverish activity during 1932, when with a premium of 80 per cent, gold reached 7 pounds sterling 15 shillings per ounce fine, Australian currency. This activity is reflected in greater outputs in all states save Victoria and an increase in the total yield by 107,980 ounces to 699,622 ounces fine. The detailed yields from 1929 to 1932 were as follows:-

	1929	1930	1931	1932
		(fine ounces)		
West Australia	377,176	416,369	510,570	604,710
Victoria	26,275	24,119	43,637	43,112
New South Wales	11,096	12,493	19,673	27,000 /
Queensland	9,476	7,821	10,321	17,000 /
Tasmania	5,597	4,466	4,759	5,000 /
South Australia	1,009	1,311	2,782	2,900 /
TOTAL	430,629	466,579	591,742	699,722

/ Estimated.

In Melbourne, which may be regarded as the financial centre of the Commonwealth, 106 gold mining companies with a nominal capital of 2,549,000 pounds sterling and a subscribed capital of 2,047,000 pounds sterling, were formed during the year compared with 36 companies with a subscribed capital of 674,820 pounds sterling in 1931. Of the new companies 71 were to operate in Victoria on the old fields such as Bendigo, Ballarat, Maldon and Woods Point, 12 in central Australia, and the remainder in other states. It is interesting to note that the Premier Gold Mining Company of Canada took an option over the Big Bell and Little Bell mines in Western Australia. Employment in the gold mining industry of Western Australia increased by 1,263 to 7,607 men (exclusive of prospectors) of which 3,947 were employed underground. Dividends distributed during the year by Kalgoorlie mines were:- Lakeview and Star 65,000 pounds sterling; Great Boulder Proprietary 65,625 pounds sterling; South Kalgoorlie 65,502 pounds sterling; Golden Horseshoe New 55,000 pounds sterling; Boulder Perseverance 24,959 pounds sterling; and Associated 12,384 pounds sterling. Since the re-opening of the Wiluna mine, located some 300 miles north of Kalgoorlie, an extensive programme of development has been carried out; production at the mine from January to October, 1932, amounted to 275,181 tons, the value of gold produced including exchange premiums being in Australian currency 599,918 pounds sterling and the working surplus 277,231 pounds sterling. Underground development was on a very extensive scale and there was a large increase in ore reserves; the company planned treatment of 50,000 tons monthly. The east lode on the property showed ore valued at 32s. per ton over a width of 12 feet, 50 feet below the 800 foot level. At the end of 1932 the reserves of positive ore at this property stood at about 1,500,000 tons.

GOLD COAST - The larger part of the present production of the Gold Coast comes from the Ashanti Goldfields Corporation Limited. Data relating to the output of this company for 1931 and 1932 are as follows:

	Crushed Tons	Net profit Pounds sterling	Dividends Pounds sterling	Per cent	Ore reserves Tons	Value dwt.
1931.....	142,910	422,509	337,500	90	667,400	23.1
1932.....	158,330	689,299	625,000	125	642,100	23.6

NEW ZEALAND - The year proved a very active one in gold mining. In Thames, Coromanded, Nelson, West Coast and Otago mining districts large numbers of men were prospecting and working alluvial claims with the aid of the Unemployment Board. In four of the districts skilled mining engineers were employed by the Mines Department to supervise, control and advise the prospectors. The Borough of Waihi stands out very prominently as the principal gold producer in the Dominion. Gold exported from New Zealand for the first ten months of 1932 amounted to 166,367 ounces compared with 112,581 ounces for ten months of 1931.

SOUTHERN RHODESIA - The gold output after a more or less persistent decline since 1922 again turned upward and amounted to 574,135 fine ounces, a gain of 42,025 fine ounces on the year and was the best return since 1928. Of more importance, however, was the advance in value, which rose from 2,273,875 pounds sterling to 3,366,222 pounds sterling of which the gold premium accounted for 916,522 pounds sterling. The state levied a special tax of 15 per cent of the gold premium on all but the smallest producers, realizing therefrom some 100,000 pounds sterling, besides increasing the income tax to a maximum of 4s. in the pound. The existence of the premium permitted the working of lower grade ore and in consequence a considerably larger

quantity of ore was crushed, the total being 1,750,210 short tons of a value of 27.88s. (gold) as compared with 1,390,179 tons of 32.53s. in the previous year.

RUSSIA - Definite information relating to the gold production of Russia is scanty, the information bureau of the Soviet Union reports that in Yakutia, the Far East, East and West Siberia and the Ural region large new deposits of gold have been found. As a result of increased prospecting the known gold deposits of the U.S.S.R. have increased 258 per cent as compared with previous estimates. The primitive methods used in gold prospecting and mining in old Russia have been largely discarded and modern mechanized methods are in use. New roads have been constructed leading to formerly inaccessible gold regions. An expedition has set out to explore Yakutia in Siberia with the object of finding and prospecting gold, tin and other rare metals. It is headed by M. Odinetz, geologist.

INDIA - Mysore Gold Mining Company reports that during 1932, 181,650 tons of ore were mined and milled of an average assay value of 9 dwts., 21 grains, with a gold production from all sources of 88,619 ounces against 182,731 tons of an average grade of 10 dwts., 10 grains, with a production of 96,042 ounces of gold during 1931. The average price received for the gold during 1932 was 5 pounds sterling 16s. 6½d. an ounce. Ore reserves were reported at 405,000 tons and the company state that the effects of rockbursts deprived them for the time of access for stoping to certain of the deposits.

Champion Reef Gold Mines of India reports 109,470 tons of ore crushed for a recovery of 58,184 ounces of fine gold, in addition 7,856 ounces were recovered from retreated tailings. The average price received for gold was 5 pounds sterling 16s. 8½d. per ounce and the average grade of ore milled was 10.86 dwts. per ton. The ore reserves at December 31, 1932 were estimated at 315,164 tons of an average assay value of 13.37 dwts. per ton.

KENYA - The areas for which the Tanganyika Concessions has applied for an exclusive prospecting license embrace very roughly all the western frontier of the colony between Tanganyika on the south and the Uganda-Kenya railway on the north, a distance of something over 200 miles. In the British House of Commons, in answer to inquiries about developments in the Kavirondo gold areas, it was stated that the number of Europeans on the field including women and children was estimated at 800. The total output of gold from Kenya to the end of 1932 was 18,580 ounces. The Mining Journal, London, reports the output of gold from Kakamega in 1932 at 6,215 ounces and from elsewhere 4,510 ounces, making a total of 10,725 ounces.

The Bureau of Statistics gratefully acknowledges the co-operation of the various Provincial and Federal Government Departments in supplying data utilized in the preparation of this bulletin, also to the United States Bureau of Mines, Transvaal Chamber of Mines, Imperial Institute, American Bureau of Metal Statistics, Mining companies, and other contributors of information.

PRINCIPAL CANADIAN ALLUVIAL GOLD OPERATORS, 1932.

Name	Head Office Address	Location
QUEBEC		
Sekyer, Carl P.	Beauceville, P.Q.	Seigniory Rigaud Vaudreuille
ALBERTA		
McLeod River Mining Corp. Ltd.	404 Brock Bldg., Toronto, Ont.	McLeod River
BRITISH COLUMBIA		
Brown, J. W.	Atlin, B.C.	Atlin District
/Consolidated Mining & Smelting Company Limited	Trail, B.C.	Atlin Mining Div. and Omineca
Cassiar Hydraulic Mines Ltd.	609 Bank of Nova Scotia Bldg., Vancouver, B.C.	Laird Mining Div.
Compagnie Francaise des Mines d'Or du Canada	19 Rue d'Aurnale,Paris,France	Atlin Mining Div.
French Creek Development Co.Ltd.	502 Stock Exchange Bldg., Vancouver, B.C.	Revelstoke
Gagen, G.S.	Cottonwood, B.C.	Cariboo Mining Div.
Germansen Placers Limited	716 Hall Bldg., Vancouver,B.C.	Omineca Mining Div.
Hansen, J.	Barkerville, B.C.	Cariboo Mining Div.
/Lower Bridge River Placers Ltd.	525 Seymour St.,Vancouver,B.C.	Lillooet
Lowhee Mining Company Limited	Rust Building, Tacoma, Wash., U.S.A.	Cariboo Mining Div.
McKee, Robert	1531 Marine Bldg., Vancouver, B.C.	Cariboo Mining Div.
Morrison, McKay & Johnson	Atlin, B.C.	Atlin
Morse, McKechnie & Bratt	Atlin, B.C.	Spruce Creek
Murphy, Nathan	Atlin, B.C.	O'Donnell River
Placer Engineers Ltd.	535 Georgia St. W., Vancouver, B.C.	Keithley and Four Mile Creek
Pitts, C.H.	Ashcroft, B.C.	Ashcroft Mining Div.
Rock Creek Consolidated Placers, Limited	Penticton, B.C.	Greenwood Mining Div.
Sundberg, Carl	Cottonwood, B.C.	Cariboo Mining Div.
Sang Dang	Barkerville	Cariboo Mining Div.
/Slate Creek Consolidated Placers, Limited	Dominion Bank Building, Vancouver, B.C.	Similkameen Mining Div.
Tong Sing Tong	Barkerville, B.C.	Cariboo Mining Div.
Trehouse Hydraulic Mining Co.	Barkerville, B.C.	Cariboo Mining Div.
Turnquist, Emil	Atlin	Ruby Creek
Wong Mon Hong	Barkerville, B.C.	Cariboo Mining Div.
YUKON		
Holbrook Dredging Co. Ltd.	Glacier Creek, Y.T.	Sixty Mile River
McDonald, McCormick & Stewart	Glacier Creek, Y.T.	Miller Creek
Yukon Consolidated Gold Corp.Ltd.	Victoria Bldg., Ottawa, Ont.	Klondike Dist.

/ Operating but not producing.

DIRECTORY

PRINCIPAL OPERATORS IN CANADIAN AURIFEROUS QUARTZ MINING INDUSTRY, 1932.

Name	Head Office Address	Location
NOVA SCOTIA		
/East Goldbrook Mine	3 Cherry St., Halifax, N.S.	Guysboro Co.
Renfrew Gold Mines Ltd.	New Glasgow, N.S.	Hants Co.
/United Goldfields of N.S. Ltd.	Liverpool, N.S.	Queens Co.
QUEBEC		
/Adanac Gold Syndicate	Room 601, 330 Bay St.,Toronto,Ont.	Rouyn
/Arntfield Gold Mines Ltd.	303 Old Birks Bldg.,Montreal,P.Q.	Boischatel Tp.
/Beaufor Gold Mines Ltd.	905 Dominion Square Building, Montreal, P.Q.	Pascalis Tp.
/Buffalo Canadian Gold Mines Ltd.	603 Royal Bank Bldg.,Toronto,Ont.	Rouyn Tp.
Beattie Gold Mines Limited	101 Adelaide St.W.,Toronto,Ont.	Duparquet Tp.
Bussieres Mining Co. Ltd.	Crocker Bldg., San Francisco, California, U.S.A.	Louvicourt Tp.
/Canadian Pandora Gold Mines Ltd.	Box 883, New Liskeard, Ont.	Cadillac Tp.
/Copper Basin Gold Mines Ltd.	Room 200, 31 rue St. Jacques W., Montreal, P.Q.	Dubuisson Tp.
/Cummings-Trudel Mining & Development Co. Ltd.	Room 300, Victoria Building, Ottawa, Ont.	Barraute Tp.
/Dalton, John	Timmins, Ont.	-
/Francoeur Gold Mines Ltd.	500 Dominion Square Building, Montreal, P.Q.	Boischatel Tp.
/Gold Belt Mines Syndicate	Siscoe	Louvicourt Tp.
Granada Gold Mines Ltd.	Federal Bldg., Toronto 2, Ont.	Rouyn Tp.
/Lac, La Mine du, Ltee.	Notre Dame du Lac Station, P.Q.	-
/Lake Shore Prospecting Syndicate	Amos	Varson Tp.
/Le Roy Gold Mines Ltd.	660 St. Catherine St.W.,Montreal, P.Q.	Louvicourt Tp.
/Mathews Gold Mine Ltd.	Barraute, P.Q.	Pascalis Tp.
/Maybell Mines Ltd.	410 New Birks Bldg.,Montreal,P.Q.	Clericy and Louvicourt Tp.
/McWatters Gold Mines Ltd.	Haileybury, Ont.	Rouyn Tp.
/Malrobic Mines Ltd.	4 Excelsior Life Bldg.,Toronto,Ont.	Malartic Tp.
/Mines Development Corp.	189 Rue St. Jean, P.Q.	Barraute Tp.
/Northern Quebec Goldfields and Exploration Co.	Three Rivers, P.Q.	Bousquet Tp.
/Northern Aerial Minerals Exploration Ltd.	100 Adelaide St. W., Toronto, Ont.	Northern Quebec
/North American Mines Inc.	75 Federal St.,Boston,Mass.,U.S.A.	Northern Quebec
/Normont Gold Mines Ltd.	719 Insurance Exchange Building, Montreal, P.Q.	Boischatel Tp.
/Northern Quebec Goldfields Ltd.	708 Dominion Square Bldg., Montreal, P.Q.	Rouyn Tp.
O'Brien & Fowler Ltd.	Victoria Bldg., Ottawa, Ont.	Cadillac Tp.
/Paragon Gold Syndicate	Box 622, Rouyn, P.Q.	Duparquet Tp.
/Quebec Gold Belt Syndicate	Box 190, Fort Erie, Ont.	Louvicourt Tp.

PRINCIPAL OPERATORS IN CANADIAN AURIFEROUS QUARTZ MINING INDUSTRY, 1932 - Con.

Name	Head Office Address	Location
QUEBEC - Con.		
Bisco Gold Mines Ltd.	905 Dominion Square Building, Montreal, P.Q.	Dubuisson and Varson Tps.
/Standard Gold Mines Ltd.	Box 578, Montreal, P.Q.	Bourlamaque Tp.
/Sladen-Malartic Mines Ltd.	48 Sparks St., Ottawa, Ont.	Dubuisson Tp.
/Sullivan Consolidated Mines Ltd.	84 Notre Dame St.W., Montreal,P.Q.	Dubuisson Tp.
Venus, La Mine d'Or, Cons.	51 rue Colomb, P.Q.	Barraute Tp.
ONTARIO		
Ashley Gold Mining Corp. Ltd.	350 Bay St., Toronto, Ont.	Bannockburn Tp.
Barry Hollinger Mines Ltd.	504 General Assurance Building, Toronto, Ont.	Boston Creek
Buffalo Ankerite Gold Mines Ltd.	1005 Stock Exchange Building, Buffalo, N.Y., U.S.A.	Deloro Tp.
/Casey Mountain Operating Syndicate Ltd.	411 McCallum Hill Building, Regina, Sask.	District of Patricia
Coniaurum Mines Limited	100 Adelaide St.W., Toronto, Ont.	Schumacher
Dome Mines Limited	36 Toronto St., Toronto, Ont.	South Porcupine
Downey, Ralph	Sudbury, Ont.	Sudbury Dist.
Hayden Gold Mines Ltd.	85 Richmond St.W., Toronto, Ont.	Porcupine Dist.
Hollinger Consolidated Gold Mines Ltd.	Timmins, Ont.	Timmins
Howey Gold Mines Ltd.	Red Lake, Ont.	Patricia Dist.
Kenora Prospectors & Miners Ltd.	100 Adelaide St. W., Toronto, Ont.	Lake of the Woods
/Kenty Gold Mines Ltd.	43 Victoria St., Toronto, Ont.	Swayze Tp.
Kirkland Lake Gold Mining Co.Ltd.	25 King St. W., Toronto, Ont.	Kirkland Lake
/Lakeland Gold Mines Ltd.	19 Sun Life Bldg., Hamilton, Ont.	Bourkes
Lake Shore Mines Ltd.	Kirkland Lake, Ont.	Kirkland Lake
/Macassa Mines Ltd.	901 Federal Bldg , Toronto, Ont.	Kirkland Lake
March Gold Ltd.	618 Wallbridge Bldg.,Buffalo, N.Y. U.S.A.	Porcupine Dist.
McIntyre Porcupine Mines Ltd.	Schumacher, Ont.	Schumacher
Minto Gold Mines Ltd.	Wawa, Ont.	Wawa
/Moffatt-Hall Mines Ltd.	Haileybury, Ont.	Lebel Tp.
Moss Gold Mines Ltd.	75 Sparks St., Ottawa, Ont.	Thunder Bay Dist.
Munro-Croesus Mines Ltd.	Haileybury, Ont.	Matheson
New Goudreau Gold Mines Ltd.	1502 Royal Bank Bldg.,Toronto, Ont.	Goudreau
Parkhill Gold Mines Ltd.	212 Keefer Bldg., Montreal, P.Q.	Wawa
Schreiber Gold Mines Ltd.	Schreiber, Ont.	Schreiber
/Soo Mining & Prospecting Syndicate	450 Queen St. E., Sault Ste. Marie, Ontario	Hawk Jct.
Sylvanite Gold Mines Ltd.	Kirkland Lake, Ont.	Kirkland Lake
/Tashota Gold Mines Ltd.	Tashota, Ont.	Thunder Bay Dist.
Teck-Hughes Gold Mines Ltd.	Kirkland Lake, Ont.	Kirkland Lake
Toburn Gold Mines Limited	217 Bay St., Toronto, Ont.	Kirkland Lake
Triple Lake Mines Ltd.	South Porcupine, Ont.	McArthur Tp.
Vipond Consolidated Mines Ltd.	Star Bldg., Toronto, Ont.	Timmins
Wright-Hargreaves Mines Ltd.	Liberty Bank Building, Buffalo, N.Y., U.S.A.	Kirkland Lake

PRINCIPAL OPERATORS IN CANADIAN AURIFEROUS QUARTZ MINING INDUSTRY, 1932 - Con.

Name	Head Office Address	Location
MANITOBA		
Brander, C.H.	Sherridon, Manitoba	Pas Mining Dist.
Central Manitoba Mines Ltd.	301 Mining Exchange Building, Winnipeg, Man.	Beresford Lake
Dickson, O.	c/o W.G. Young, The Pas, Man.	Morton Lake
Island Lake Mines Ltd.	100 Adelaide St.W., Toronto,Ont.	Island Lake
North British Mining & Milling Co. Ltd.	The Pas, Manitoba.	Herb Lake
San Antonio Gold Mines Ltd.	Curry Bldg., Winnipeg, Man.	Bissett
Warren, G. S.	Flin Flon, Man.	Frog Lake
SASKATCHEWAN		
Amisk Gold Syndicate Ltd.	55 Broad St. Ave., London, E.C.2, England	Amisk Lake
Graham, Robert	Box 426, The Pas, Man.	Amisk Lake
BRITISH COLUMBIA		
Bloom, A.	-	Zeballos River
Bralorne Mines Ltd.	555 Burrard St.,Vancouver,B.C.	Bralorne
Cariboo Gold Quartz Mining Co.	Barkerville, B.C.	Barkerville
Clubine Comstock Gold Mines	909 Paulsen Bldg., Spokane, Wash., U.S.A.	Salmo
Dunwell Mines Limited	101 Pemberton Building, Victoria, B.C.	Portland Canal Mining Div.
Engineer Gold Mines Ltd.	342A Spadina Road, Toronto, Ont.	Atlin Mining Div.
Evening Star Leasing Syndicate	Box 41, Rossland, B.C.	Kootenay Dist.
Golden King Group	c/o K.J. Robinson, 1025 Granville St., Vancouver, B.C.	Vancouver Mining Div.
Golden Age Mining Co.	1907 Grace Avenue, Spokane, Wash., U. S. A.	Nelson Mining Div.
Grandoro Mining & Milling Co. Ltd.	744 Hastings St. W., Vancouver, B.C.	Osoyoos Mining Div.
Holden, A. J.	Porcher Island, B.C.	Porcher Island
Henderson, R. G.	Slocan City, B.C.	West Kootenay
I.X.L. Syndicate	Box 191, Rossland, B.C.	Rossland
Livingstone Mining Co. Ltd.	913 Hodge Building, Seattle, Washington, U.S.A.	Taghum
Midnight Mining Syndicate	Rossland, B.C.	Trail Creek Mining Div.
Osborn, S.D.	Erie, B.C.	Kootenay Dist.
Parvenue Mines Ltd.	Penticton, B.C.	Oosyoos Mining Div.
Perrier Gold Mines Ltd.	Box 1059, Nelson, B.C.	Nelson Mining Div.
Pioneer Gold Mines of B.C. Ltd.	470 Granville St., Vancouver, B.C.	Bridge River
Premier Gold Mining Co. Ltd.	London Bldg., Vancouver, B.C.	Portland Canal Mining Div.
Relief Arlington Mines Ltd.	718 Granville St., Vancouver,B.C.	West Kootenay
Reno Gold Mines Ltd.	Yorkshire Bldg., Vancouver, B.C.	Salmo

PRINCIPAL OPERATORS IN CANADIAN AURIFEROUS QUARTZ MINING INDUSTRY, 1932 - Concluded

Name	Head Office Address	Location
Sapples, J. & Devine, A.	Salmo, B.C.	Nelson Mining Div.
Silverado Mines Ltd.	101 Pemberton Bldg., Victoria, B.C.	Portland Canal Mining Div.
Unfried, F.	Nelson, B.C.	Nelson Mining Div.
/Velvet Gold Mining Co.	Rossland, B.C.	Trail Creek Mining Div.
Wheeler, Owen	Rock Creek, B.C.	Yale Mining Div.
Wilcox Mining Syndicate	Rossland, B.C.	Nelson Mining Div.
Witter, C.E.	Salmo, B.C.	Nelson Mining Div.

/ Operating but not producing.

OPERATORS IN CANADIAN COPPER-GOLD-SILVER MINING INDUSTRY, 1932.

Name	Head Office Address	Location
NEW BRUNSWICK		
/Eastern Mining & Smelting Co. Ltd.	94 Prince William Street, Saint John, N.B.	Adams Island
QUEBEC		
Aldermac Mines Limited	500 Dominion Square Building, Montreal, P.Q.	Boischatel Tp.
/Bagmac Rouyn Mines Ltd.	Haileybury, Ont.	Rouyn Tp.
/Cannon, Francis Edward	c/o M.A. Wilson, 302 Bay St., Toronto, Ont.	Dufresnoy Tp.
/Clericy Consolidated Mines Ltd.	74 Sparks St., Ottawa, Ont.	Clericy Tp.
Consolidated Copper & Sulphur Co. Limited	Eustis	Ascot Tp.
Noranda Mines Ltd.	804 Royal Bank Bldg., Toronto, Ont.	Rouyn Tp.
/Normetal Mining Corp. Ltd.	350 Bay St., Toronto, Ont.	Dupuy Tp.
/Syndicat Mines de Gaboury	Guigues, P.Q.	Gaboury Tp.
/Tonawanda Mines Ltd.	Haileybury, Ont.	Cadillac Tp.
MANITOBA		
Hudson Bay Mining & Smelting Co. Ltd.	Woodstock, Ont.	Flin Flon
Sherritt Gordon Mines Ltd.	100 Adelaide St. W., Toronto, Ont.	Sherridon
BRITISH COLUMBIA		
/Bernard, Joseph	Erie, B.C.	Erie
Britannia Mining & Smelting Co. Ltd.	Britannia Beach	Vancouver Co.
Consolidated Underwriters Ltd.	714 Stock Exchange Bldg., Vancouver, B.C.	Yale Mining Div.
/Coast Copper Co. Ltd.	Trail	Quatsino Mining Div.
/Forshaw, Robert	Box 517, Greenwood	Phoenix
Granby Consolidated Mining, Smelting & Power Co. Ltd.	Hall Bldg., Vancouver, B.C.	Anyox
/McDonald & Borden	Nelson, B.C.	Forty-nine Creek
Norcross, David H.	Box 296, Nelson, B.C.	West Kootenay
Pickering, B.A.	Box 857, Nelson, B.C.	Nelson
/Quatsino Copper-Gold Mines Ltd.	640 Pender St., Vancouver, B.C.	Quatsino Mining Div.
/Sunloch Mines Ltd.	Trail	Victoria Mining Div.
/Timmins, N.A., Corp.	Canada Cement Bldg., Montreal, P.Q.	Skeena Mining Div.

/ Operating but not producing.

NOTE:- The diversified types of auriferous ores especially those mined in British Columbia often do not permit of a clearly defined industrial classification, some gold producing properties are, for this reason, sometimes included in the silver-lead-zinc mining industry.