

THIRTY-SIXTH ANNUAL REPORT
OF THE
ONTARIO DEPARTMENT OF MINES
1927
PART I

LETTER OF TRANSMISSION

TO HIS HONOUR W. D. ROSS,

Lieutenant-Governor of the Province of Ontario.

SIR,—I have the honour to transmit to you herewith, for presentation to the Legislative Assembly of the Province of Ontario, the Thirty-sixth Annual Report of the Department over which I have the honour to preside.

I have the honour to be, Sir,

Your obedient servant,

CHAS. MCCREA,

Minister of Mines.

Department of Mines,
Toronto, 1927.

INTRODUCTORY LETTER

TO THE HONOURABLE CHAS. MCCREA,
Minister of Mines.

SIR,—I beg to submit to you herewith the Thirty-sixth Annual Report of the Department of Mines, published in four parts, as follows:—

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I have the honour to be, Sir,

Your obedient servant,

THOS. W. GIBSON,

Deputy Minister of Mines.

DEPARTMENT OF MINES,
Toronto, 1927.



PROVINCE OF ONTARIO
DEPARTMENT OF MINES

HON. CHAS. MCCREA, *Minister of Mines*

THOS. W. GIBSON, *Deputy Minister*

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ONTARIO DEPARTMENT OF MINES
BEING
VOL. XXXVI, PART I, 1927

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1928

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STATISTICAL REVIEW OF ONTARIO'S MINERAL INDUSTRY IN 1926

By W. R. Rogers and A. C. Young

Introduction

The total value of the mineral output of Ontario for the year 1926 was \$85,098,706, being a decrease of \$2,484,600, or 2.8 per cent. from the total of \$87,583,306 in 1925. While production showed a small decline, there was great activity and keen interest displayed throughout the period and the momentary pause may be explained partly to the greatly decreased price of silver, which accounted for more than one million dollars of the decrease, and also to a drop in the value of cobalt and the output of nickel.

As shown in Table I, the mineral production is divided into four main groups comprising thirty-two different mineral substances: Metallics worth \$59,218,297; Non-Metallics \$7,842,632; Structural Materials \$12,681,308, and Clay Products valued at \$5,356,469. All groups, except metallics, showed slight increases in value over the year 1925.

As above noted, the most important group of minerals is that of Metallics. Gold mining on the whole continued to expand, and although the largest field, that of Porcupine, showed a slight falling off in output, the decrease was more than offset by the rapid expansion at Kirkland Lake. Despite a drop of almost seven cents per ounce in the price of silver the more important mines of Cobalt, South Lorrain and Gowganda continued to operate and closely approached the output of the previous year in quantity. There were slight reductions in the quantity of silver bullion sold as well as the silver contents of exported material. In the nickel-copper industry production in 1926 was less than in 1925. This is explained in the annual report of the International Nickel Company, the decrease being in part due to the consumption of large quantities of nickel-steel armour and deck-plate scrap resulting from the disarmament of war vessels and sold to the alloy steel makers at low prices. This substitution made inroads into the company sales of nickel for alloy steel making.

Among the Non-Metallics the most important items were natural gas with a total value of \$4,415,918 and salt \$1,388,672. Other items such as arsenic, feldspar, graphite, gypsum and talc all showed slight increases.

Structural Materials and Clay Products more than maintained the values of the previous year and were indicative of the active conditions prevailing in the building industry during the period. The values, however, were still below those of 1922 and 1923, when higher prices prevailed in building and construction materials. The index numbers of wholesale prices of building commodities has steadily declined from 214.9 in 1920 to 149.4 in 1926, based on 100.0 in 1913, while wages which stood at 180.9 in 1920 dropped to 162.5 in 1922 and has gradually increased to 172.1 for 1926. The index numbers of employment in Ontario on the basis of 100 in January, 1920, stood at 134.8 in 1926.

Table I which follows summarizes production and employment statistics for the year 1926:—

TABLE I.—SUMMARY OF MINERAL STATISTICS OF ONTARIO FOR 1926

Product (tons of 2,000 lbs.)	Quantity	Value	Employees	Wages
METALLIC:				
Gold.....oz.	1,497,215	30,950,753	5,778	8,891,068
Silver....."	9,382,316	5,781,706	1,405	2,223,601
Copper in matte (a).....tons	11,596	2,319,164	} (b) 2,642	3,565,667
Nickel in matte (a)....."	16,988	6,115,540		
Copper (metallic).....lb.	18,121,226	2,509,800	} (c) 490	793,399
Nickel, metallic and contained in speiss exported....."	25,680,593	6,432,939		
Nickel oxide and salts....."	7,862,624	1,825,684	} 316	329,449
Platinum metals.....oz.	19,495	1,559,527		
Bismuth.....lb.	6,440	6,440	} 163	270,044
Cobalt, metallic and in residues exported....."	664,778	1,136,014		
Cobalt oxide (metal content)....."				
Cobalt in salts and unseparated oxides....."	7,398,796	580,730	163	270,044
Lead, pig and in concentrates exported....."				
Total.....		59,218,297	10,794	16,073,228
NON-METALLIC:				
Abrasives.....tons	64	576	2	243
Actinolite....."	80	1,000	11	445
Arsenic, white.....lb.	4,055,477	135,549	(d)	(d)
Asbestos.....tons	14	3,935		
Feldspar, crude and ground....."	22,783	199,102	240	123,416
Graphite, crude and refined....."	2,266	158,994	38	30,091
Gypsum....."	89,987	496,059	188	245,663
Iron pyrites....."	371	4,912		
Mica....."	881	59,085	42	25,371
Mineral water.....Imp. gals.	208,400	27,277	14	5,030
Natural gas.....M. cu. ft.	7,776,496	4,415,918	1,008	720,556
Petroleum, crude.....bbls.	136,971	376,822	2,241	2,876,150
Quartzite and quartz.....tons	192,733	339,304	123	102,230
Silica brick.....no.	1,306,773	56,441		
Salt.....tons	252,345	1,388,672	466	614,790
Talc and soapstone....."	14,882	178,986	50	47,083
Total.....		7,842,632	4,423	4,791,068
STRUCTURAL MATERIALS:				
Cement, Portland.....bbls.	3,398,860	4,792,857	764	997,089
Hydrated lime.....tons	39,217	457,978	} 414	397,988
Quicklime.....bush.	5,402,261	1,593,468		
Sand and gravel.....tons	4,899,580	2,117,461	435	421,887
Sand-lime brick.....M	46,869	461,376	178	171,747
Stone, building, trap, granite, etc.....tons	3,627,971	3,258,168	1,400	990,008
Total.....		12,681,308	3,191	2,978,719
CLAY PRODUCTS:				
Brick, face.....M.	122,929	2,436,848	} 1,842	1,564,594
" common....."	50,638	768,734		
" fancy and ornamental....."	374	20,047		
" sewer....."	6,397	111,620		
Tile, drain....."	12,788	340,403	} 294	337,710
" structural....."		756,011		
Sewer pipe, copings, flue-linings, etc.....ton ^c	48,176	835,206	29	35,997
Pottery.....M.	5,910	87,600		
Total.....		5,356,469	2,165	1,938,301
GRAND TOTAL.....		85,098,706	20,573	25,781,316

(a) Copper and nickel in matte valued at 10 and 18 cents per pound, respectively.

(b) Employees and wages for nickel-copper mines and smelters.

(c) Employees and wages for nickel-copper refineries.

(d) Employees and wages included with silver-cobalt smelters and refineries.

The following comparative statement shows the course of the mining industry during the five-year period, 1922 to 1926 inclusive, as indicated by the value of the total production:

TABLE II.—VALUE OF MINERAL PRODUCTION, 1922 TO 1926

Product	1922	1923	1924	1925	1926
METALLIC:					
Gold.....	\$ 20,579,569	\$ 20,136,287	\$ 25,669,303	\$ 30,206,432	\$ 30,950,753
Silver.....	7,800,029	6,843,364	7,233,078	6,964,325	5,781,706
Platinum metals.....	924,712	1,418,633	1,891,497	1,676,446	1,559,527
Cobalt (a).....	1,080,873	1,456,583	1,662,526	2,328,517	1,136,014
Nickel (b).....	7,038,202	9,572,662	11,309,326	15,946,673	14,374,163
Other nickel and cobalt compounds.....	255,034	347,289	.....	.....	.....
Copper, metallic and in matte.....	2,069,824	3,456,067	3,825,294	4,739,124	4,828,964
Iron ore (c).....	25,261	26,452	110	.....	.....
Pig iron (d).....	340,730	423,298	91,862	.....	.....
Lead (pig).....	173,742	347,886	419,405	601,704	580,730
Zinc.....	2,181	.....	.....	13,685	.....
Bismuth.....	.....	48,139	27,913	18,566	6,440
Total.....	40,290,157	44,076,666	52,130,314	62,495,472	59,218,297
NON-METALLIC					
Abrasives (e).....	.....	100,000	9,272	945	576
Actinolite.....	575	583	1,225	500	1,000
Arsenic, white.....	299,940	582,785	309,108	113,325	135,549
Asbestos.....	.....	2,600	91,900	901	3,935
Barite.....	.....	4,180	.....	.....	.....
Feldspar, crude and ground.....	120,576	134,822	216,791	141,059	199,102
Fluorspar.....	3,905	597	1,343	200	.....
Graphite, crude and refined.....	34,124	65,557	72,842	134,213	158,994
Gypsum.....	621,668	542,317	467,097	491,833	496,059
Iron pyrites.....	39,763	99,716	44,542	8,799	4,912
Mica.....	56,480	110,290	172,252	82,661	59,085
Mineral water.....	10,528	14,047	13,133	25,452	27,277
Natural gas.....	4,024,767	4,066,244	4,076,014	4,083,341	4,415,918
Peat fuel.....	14,500	.....	.....	8,394	.....
Petroleum, crude.....	466,587	478,149	390,424	396,154	376,822
Quartzite and quartz.....	(f) 146,446	(f) 510,410	(f) 221,452	(f) 359,691	339,304
Silica brick.....	.....	.....	.....	.....	56,441
Salt.....	1,573,657	1,674,365	1,337,311	1,466,450	1,388,672
Talc and soapstone.....	178,397	125,124	130,577	174,116	178,986
Total.....	7,591,913	8,511,786	7,555,283	7,488,034	7,842,632
STRUCTURAL MATERIALS:					
Cement, Portland.....	6,235,370	5,855,589	5,668,671	5,253,911	4,792,857
Lime, hydrated and quicklime.....	1,767,543	1,893,663	1,840,152	2,044,125	2,051,446
Sand and gravel.....	1,816,320	1,623,317	1,587,913	1,658,700	2,117,461
Sand-lime brick.....	851,007	897,960	512,361	677,103	461,376
Stone, building, trap, granite, etc....	2,969,926	2,869,228	2,789,368	2,817,335	3,258,168
Total.....	13,640,166	13,139,757	12,398,465	12,451,174	12,681,308
CLAY PRODUCTS:					
Brick, face.....	.....	.....	2,203,617	2,403,832	2,436,848
“ common.....	.....	.....	944,892	733,793	768,734
“ fancy and ornamental.....	4,793,224	4,191,145	88,857	21,728	20,047
“ sewer.....	.....	.....	40,922	37,082	111,620
Tile, drain.....	368,180	283,662	373,980	360,710	340,403
Tile, structural.....	720,101	790,475	550,170	612,138	756,011
Sewer pipe, copings, flue-linings, etc.	973,824	925,858	851,327	893,443	835,206
Pottery.....	88,889	78,000	84,100	86,000	87,600
Total.....	6,944,218	6,269,140	5,137,865	5,148,626	5,356,469
Grand Total.....	68,466,454	71,997,343	77,221,927	87,583,306	85,098,706

(a) Cobalt, oxide, metallic cobalt, and cobalt content of residues marketed.

(b) Nickel in matte, oxide and metallic nickel.

(c) Exports and shipments to points other than Ontario blast furnaces.

(d) Product from Ontario ore only.

(e) Includes corundum, garnets, quartz pebbles.

(f) Includes value of silica brick.

In Table III is given the aggregate value of the metals and metallic products from the time production began in Ontario down to the end of 1926. As regards pig iron it should be pointed out that since 1914 the statistics of annual production credit the Province only with the value of the product made from Ontario ore. This is but a small part of the total output, since the great bulk of the iron ore charged into the blast furnaces of the Province is "lake" ore from the mines of Minnesota, Michigan and Wisconsin. In the production tables credit is taken only for the ore exported or shipped to points other than Ontario blast furnaces, since to include the value of the domestic ore converted into pig iron in Ontario furnaces would involve a duplication of this item.

TABLE III.—TOTAL MINERAL PRODUCTION OF ONTARIO

Year	Value of Mineral Production				Total
	Metallic (a)	Non-Metallic	Structural Materials	Clay Products	
	\$	\$	\$	\$	\$
Before 1891..	9,520,269		(a)		9,520,269
1891.....	388,715		4,316,958		4,705,673
1892.....	864,382		4,509,757		5,374,139
1893.....	614,762		5,505,991		6,120,753
1894.....	842,750		5,244,008		6,086,758
1895.....	616,055		4,554,083		5,170,138
1896.....	963,288		4,271,715		5,235,003
1897.....	1,038,089		(b) 4,480,452		(b) 5,518,541
1898.....	1,689,002		5,546,875		7,235,877
1899.....	2,055,592		6,361,081		8,416,673
1900.....	2,565,286		6,733,338		9,298,624
1901.....	5,016,734		6,814,352		11,831,086
1902.....	6,257,499		7,134,135		13,391,634
1903.....	5,242,575		7,628,018		12,870,593
1904.....	4,906,677		6,665,970		11,572,647
1905.....	10,201,010		7,653,286		17,854,296
1906.....	13,353,080		9,035,303		22,388,383
1907.....	14,550,835	3,020,537	3,876,275	3,571,726	25,019,373
1908.....	16,754,986	2,629,749	3,396,406	2,856,476	25,637,617
1909.....	22,928,496	2,825,751	4,028,206	3,198,922	32,981,375
1910.....	28,161,678	3,141,658	4,380,000	3,630,559	39,313,895
1911.....	29,102,867	3,674,926	4,935,609	4,263,395	41,976,797
1912.....	34,799,734	4,009,643	4,701,170	4,831,056	48,341,603
1913.....	37,507,935	4,296,450	5,866,775	5,561,151	53,232,311
1914.....	33,345,291	4,339,703	4,505,368	4,105,597	46,295,959
1915.....	44,109,679	4,655,250	3,609,371	1,871,379	54,245,679
1916.....	55,002,918	4,982,140	3,734,065	1,584,699	65,303,822
1917.....	56,831,857	7,702,942	4,962,284	2,596,749	72,093,832
1918.....	66,178,059	7,815,062	4,297,401	2,018,450	80,308,972
1919.....	41,590,759	6,308,182	7,208,413	3,776,562	58,883,916
1920.....	48,281,553	8,141,796	11,921,019	4,735,154	73,079,522
1921.....	28,777,581	6,636,217	13,967,386	(c) 5,183,125	54,564,309
1922.....	40,290,157	7,591,913	13,640,166	6,944,218	68,466,454
1923.....	44,076,660	8,511,786	13,139,757	6,269,140	71,997,343
1924.....	52,130,314	7,555,283	12,398,465	5,137,865	77,221,927
1925.....	62,495,472	7,488,034	12,451,174	5,148,626	87,583,306
1926.....	59,218,297	7,842,632	12,681,308	5,356,469	85,098,706
Total...	882,270,893	.....	441,966,912	.....	1,324,237,805

(a) Prior to 1891, when the Ontario Bureau (now Department) of Mines was established, it is estimated that metals to the value of \$9,520,269 were produced. No estimate has been made of the output of non-metals up to 1891.

(b) Estimated on basis of preceding year (\$1,618,720 for stone, lime, and clay products).

(c) Includes \$88,429 valuation of fire clay and products not listed.

The total production of metals in Ontario is noted hereunder:--

Metal or Product	Production to December 31, 1925	Production, 1926	Production to December 31, 1926
	\$	\$	\$
Silver.....	228,184,421	5,781,706	233,966,127
Nickel, including nickel oxide.....	312,542,357	14,374,163	227,916,520
Gold.....	184,492,033	30,950,753	215,442,786
Pig iron.....	84,775,556	.....	84,775,556
Copper (a).....	72,819,550	4,828,964	77,648,514
Cobalt (b).....	16,574,011	1,136,014	17,710,025
Platinum metals.....	10,269,857	1,559,527	11,829,384
Iron ore.....	9,463,516	.....	9,463,516
Lead.....	2,518,666	580,730	3,099,396
Molybdenite.....	209,735	.....	209,735
Zinc ore.....	108,276	.....	108,276
Bismuth.....	94,618	6,440	101,058
Total.....	823,052,596	59,218,297	882,270,893

(a) Includes small quantities of copper sulphate.

(b) Includes cobalt metal, cobalt oxide, cobalt salts, and cobalt content of residues exported

Gold

The total gold produced during 1926 from all sources in Ontario amounted to 1,497,214.93 fine ounces, valued at \$30,950,753, as against 1,461,039.37 fine ounces worth \$30,206,432 in 1925. These figures include the gold won from the refining of nickel-copper matte.

The crude bullion recovered from the gold mines also contains a certain percentage of silver. The total value of the crude bullion from Porcupine was \$23,810,700 in 1926 as against \$24,886,615 during the previous year, while the corresponding figures for the Kirkland Lake camp were \$7,193,411 and \$5,403,289 respectively, a total gain of \$714,207 for the gold mines of these two areas. From other points a few small properties produced crude bullion worth \$4,992 in 1926, while gold recovered from the refining of nickel-copper matte was valued at \$91,367. Ore milled increased from 3,399,544 tons in 1925 to 3,696,605 tons in 1926. In these years, respectively, the figures for Porcupine were 3,016,178 and 3,180,943 tons milled and for Kirkland Lake 383,235 and 515,124.

With the exception of the Ankerite, March, Paymaster and Kirkland Gold, the producing mines were operated at practically full time during the period. On the average 5,778 wage-earners were employed and \$8,891,068 was paid in wages.

In addition to the producing mines many others carried on development operations during 1926, while the usual assessment work on mining claims as prescribed by the Mining Act was performed by claim holders in the several Mining Divisions. Returns were received from 18 companies shown below, most of which were active throughout the entire period, or were developing under contract. The number of days' work done per mine during 1926 averaged around 242, while the average number of wage-earners was 480, to whom \$682,949 was paid in wages. The total number of wage-earners and wages paid by the active mines, therefore, amounted to an average of 6,258 with a total pay roll of \$9,574,017.

If complete statistics were available from all individuals doing assessment work on which day labour was engaged the gold mining industry of Ontario, exclusive of salaried officials, would approximate 10 million dollars in wages alone and supply employment to more than 6,000 men.

The Porcupine area was represented by nine producing mines, of which the Hollinger, Dome and McIntyre produced the major portion. In Kirkland Lake there were seven producing mines of which Lake Shore, Wright-Hargreaves and Teck-Hughes were the leaders. Details of production are given separately in the following table:—

TABLE IV.—ONTARIO'S GOLD PRODUCTION, 1926

Source	Ore Milled, tons	Bullion shipped				Total Value of Bullion (a)
		Gold		Silver		
		Fine ounces	Value	Fine ounces	Value	
PORCUPINE						
Ankerite.....	23,060	6,785.07	\$ 140,260	588	\$ 328	\$ 140,588
Dome.....	555,700	189,631.62	3,920,033	32,773	20,020	3,940,053
Hollinger.....	1,932,559	713,421.32	14,747,727	134,841	81,928	14,829,655
March Gold.....	4,655	533.27	11,024	110	31	11,055
McIntyre.....	428,653	185,684.61	3,838,441	41,901	23,633	3,862,074
Night Hawk Peninsular.....	21,604	5,364.50	110,481	1,031	673	111,154
Porcupine Paymaster.....	28,049	3,064.59	63,363	350	188	63,551
Vipond.....	79,717	30,452.19	629,503	3,519	2,133	631,636
West Dome Lake.....	36,946	10,627.10	219,662	1,748	1,096	220,758
Miscellaneous (b).....		8.52	176			176
Total.....	3,180,943	1,145,572.79	23,680,670	216,861	130,030	23,810,700
KIRKLAND LAKE						
Argonaut (c).....	35,081	6,915.04	142,946	727	441	143,387
Barry-Hollinger.....	13,680	4,173.02	85,955	516	308	86,263
Kirkland Lake Gold.....	10,829	6,111.51	126,336	1,260	663	126,999
Lake Shore.....	171,197	133,893.00	2,767,809	11,935	7,191	2,775,000
Teck-Hughes.....	80,074	77,266.13	1,597,233	6,450	3,976	1,601,209
Tough-Oakes-Burnside.....	43,871	14,819.25	308,400	2,114	1,309	309,709
Wright-Hargreaves.....	153,392	103,793.12	2,145,404	8,912	5,440	2,150,844
Total.....	515,124	346,971.07	7,174,083	31,914	19,328	7,193,411
MISCELLANEOUS						
Mines, etc. (d).....	538	224.07	4,633	555	359	4,992
Nickel-Copper Refineries.....		4,447.00	91,367			91,367
Total.....	538	4,671.07	96,000	555	359	96,359
Grand Total.....	3,696,605	1,497,214.93	30,950,753	249,330	149,717	31,100,470

(a) There should be deducted from the total, \$595 which was the discount paid due to differences of exchange.

(b) P. DeSantis and Hughes Gold Mines, Ltd.

(c) In addition to gold, copper in concentrates to the value of \$12,331 was marketed.

(d) Includes Goudreau, Blue Quartz and Champion Mines, also Temiskaming Testing Laboratory shipments to Hollinger mine.

The following operators produced gold during the year:—

PRODUCING GOLD MINES, 1926

Name of Company	Name of Mine	Locality	P.O. Address of Manager, etc.
Ankerite Gold Mines, Ltd.	Ankerite	Deloro township . . .	South Porcupine
Argonaut Consolidated Mines, Ltd.	Argonaut	Gauthier township . .	Argonaut
Barry-Hollinger Gold Mines, Ltd.	Barry-Hollinger	Pacaud township . . .	Boston Creek
Blue Quartz Gold Mines, Ltd. . . .	Blue Quartz	Beatty township . . .	Matheson
Champion Gold Mines, Ltd.	Champion	Hancock township . .	Fort Erie
Consolidated West Dome Lake Mines, Ltd.	West Dome Lake	Tisdale township . . .	South Porcupine
Dome Mines Company, Ltd., The Hollinger Consolidated Gold Mines, Ltd.	Dome	Tisdale township . . .	South Porcupine
Kirkland Lake Gold Mining Company, Ltd.	Hollinger	Tisdale township . . .	Timmins
Lake Shore Mines, Ltd.	Kirkland Gold	Teck township	Kirkland Lake
March Gold, Ltd.	Lake Shore	Teck township	Kirkland Lake
McIntyre Porcupine Mines, Ltd.	March Gold	Deloro township	South Porcupine
Night Hawk Peninsular Mines, Ltd.	McIntyre	Tisdale township . . .	Schumacher
Porcupine Paymaster Mines, Ltd.	Night Hawk Penin- sular	Cody township	Connaught Station
Teck-Hughes Gold Mines, Ltd. . . .	Paymaster	Deloro township	South Porcupine
Temiskaming Testing Laboratory	Teck-Hughes	Teck township	Kirkland Lake
Tough-Oakes Burnside Gold Mines, Ltd.	Small prospects	Northern Ontario . . .	Cobalt
Vipond Consolidated Mines, Ltd.	Tough-Oakes Burn- side	Teck and Lebel townships	Kirkland Lake
Wright-Hargreaves Mines, Ltd. . .	Vipond	Tisdale township . . .	Timmins
	Wright-Hargreaves . .	Teck township	Kirkland Lake

The list below gives the names and addresses of the more important companies doing development work during the same period:—

Name	Location	P.O. Address	No. Em- ployees	Days Opera- ted
Abitibi Mines, Ltd.	Lightning River	306 Royal Bank Bldg., To- ronto.	Contract	200
Baldwin Gold Mining Co., Ltd.	Ebby township	134 King St. E., Toronto . . .	20	150
British Canadian Mines, Ltd.	Mine Centre	8 Bloor St. E., Toronto	46	365
Canadian Associated Goldfields	Larder	306 C.P.R. Bldg., Toronto . . .	41	365
Coniaurum Mines, Ltd.	Porcupine	St. Catharines	73	365
Conroyal Mines, Ltd.	Lebel	911 Kent Bldg., Toronto	31	365
Cooper Gold Mines, Ltd.	Michipicoten	302 Bay St., Toronto	51	306
Crown Reserve Mining Co., Ltd.	Larder Lake	Montreal, Que., P.O. Box 386	10	135
Gold Hill Mining Co., Ltd.	Boston Creek	Haileybury	31	365
Harkness-Hays Gold Mining Co., Ltd.	2 miles east of Schreiber	Schreiber	8	141
Hayden Gold Mines Co., Ltd.	Porcupine	509 Brisbane Bldg., Buffalo . .		
Kirkland-Hunton Gold Mines, Ltd.	Kirkland Lake	32 Imperial Bank Bldg., To- ronto.	21	365
Kirk Gold Mines Co., Ltd.	Kirkland Lake	911 Kent Bldg., Toronto	10	200
Kirkland-Hudson Bay Gold Mines, Ltd.	Teck township	New Liskeard	9	171
Manley-O'Reilly Gold Mines, Ltd.	Skead township	17 Main E., Hamilton	21	250
Northland Gold Mines, Ltd.	Kirkland Lake	Kirkland Lake	17	365
Ore Chimney Mining Co.	Barrie township	Northbrook	26	365
Ostrom Gold Mines, Ltd.	Catherine tp	331 Bay St., Toronto	12	100
Pawnee Kirkland Gold Mines, Ltd.	Lebel township	504 Kent Bldg., Toronto	8	40
Sylvanite Gold Mines, Ltd.	Kirkland Lake	Kirkland Lake	58	310
Walsh-Katrine Gold Mines, Ltd.	Katrine township	Box 361, Cobalt	19	365
		Total	512	.....

Development.—During the year the new gold producers appearing in the Porcupine field, township of Deloro, were the Paymaster, Ankerite, and March, although the latter shipped only the recoveries from a trial run during the last month of the year. The Night Hawk Peninsular mine closed down May 31. The Kirkland Lake gold mine reappeared as a producer during October, after having been closed down since May 15, 1924. At the end of 1926 there were fifteen producing gold mines in Ontario, of which eight were in Porcupine and seven at Kirkland Lake and vicinity. Three small properties in other areas produced gold during the year.

The important occurrences at Porcupine include a change made at the Hollinger in regard to mining methods below the 2,000-foot horizon, where the back filling of stopes with sand was commenced. The company purchased seven sand claims for this purpose and erected an aerial tram to handle the sand. Towards the end of the year, three new rod mills were delivered, making a total of eight, each of 1,000 tons capacity, in addition to a ball mill now operating. It is expected these three mills will be in operation in 1927, bringing the grinding capacity to well over 8,000 tons per day. At the McIntyre, the new 4,150-foot shaft (the deepest working in Ontario) was completed in June, 1927, hoists have arrived, and electric equipment is being delivered. New discoveries of ore at depth were reported in ground not heretofore prospected. The connecting of the new shaft to the old workings by long drifts which will follow the general course of known ore deposits will add greatly to the ore reserves. The McIntyre management has announced a change from "shrinkage" stoping to the "cut and fill" method as standard practice on the new levels.

In the Kirkland Lake area, the tonnage of the Teck-Hughes was more than doubled by the addition in 1927 of a new unit to their 250-ton mill. The Kirkland Lake mill again commenced to produce, handling from 125 to 160 tons per day. The 450-ton mill of the Wright-Hargreaves is expected to be increased to 600 or 700 tons in 1927. The Lake Shore is now milling around 700 tons per day, at the same time carrying their shaft to 1,500 feet. The deepest workings in Kirkland Lake are below 2,000 feet where the ores have been found to be as high grade if not better than on the upper levels. For example, in sinking the main shaft at the Teck-Hughes ore of \$29 grade was found across 16 feet at the sixteenth level. At the Sylvania mine, which lies between the Wright-Hargreaves and the Tough-Oakes Burnside, a new 200-ton mill was erected and placed in operation in May, 1927. Considerable development work was also carried on throughout the year in the township of Lebel south of Gull lake, also at the Macassa at the west end of the productive zone.

As regards gold mining in northwestern Ontario, the Minto and Grace mines are being opened up in the Michipicoten area. Other gold properties under development include the Foley at Mine Centre; Huronian, west of Fort William in Moss township; and the Harkness-Hays at Schreiber.

Royal Mint, Ottawa.—This branch of the Royal Mint of London was opened January 2, 1908, for the refining of Canadian crude gold bullion and for coinage purposes. The receipts since its inception have consisted of gold from all over Canada as well as from foreign countries. The proportion in 1924 and 1925 from Ontario was small until a new agreement between the Federal Department of Finance and the Mint became operative in December, 1925. By this arrangement, initiated by the Ontario Mining Association, crude gold bullion from Ontario mines was received, coined and transferred to Canadian banks to the credit of the producer. The silver contents were sold

by the Mint at the best available price and the receipts credited to the owner. The desirability of this method of marketing bullion had been emphasized by the return of Canadian currency to par and further by the fact that American exchange was selling at a slight discount. Advantage has therefore been taken of Clause 5 (1) of the Royal Proclamation of 1907 establishing the Mint by which any person might bring bullion to the Mint and have it struck into gold coin. Under this scheme a saving of approximately \$46,800 per year will be made on express rates, the calculated saving being based on an estimated output of \$30,000,000. A saving in time will be effected as well as insurance costs compared with shipments to branches of the United States Mint where most of the crude bullion has gone in recent years.

The total receipts of crude gold bullion, from all sources in Canada, at the Royal Mint at Ottawa from its opening on January 2, 1908, to the end of 1926 was 7,704,478.34 crude ounces valued at \$123,979,756.41. In addition, between the years 1915-1919, gold to the value of nearly 353 million dollars was received from the Bank of England.

RECEIPTS OF CRUDE GOLD BULLION FROM ONTARIO MINES AT THE
ROYAL MINT, OTTAWA, 1922-1926

Year	Crude ounces	Precious Metals		
		Gold fine oz.	Silver fine oz.	Total Value \$
1922.....	1,234,895	979,338	160,312	20,352,438
1923.....	640,535	509,757	80,151	10,588,584
1924.....	59,220	28,048	4,692	582,960
1925.....	139,130	105,888	19,130	2,201,974
1926.....	1,610,195	1,256,570	224,106	26,112,717

World Output—The following statement of output by the leading gold-producing countries for the last pre-war year, for 1915 (year of maximum world production) and for the post-war period, has been abstracted chiefly from annual reports of the Director of the United States mint:

OUTPUT BY LEADING GOLD-PRODUCING COUNTRIES AND STATES
(Millions of Dollars)

Source	1913	1915	1919	1920	1921	1922	1923	1924	1925	1926
World.....	459.9	468.7	365.8	337.0	330.2	319.4	367.8	389.2	393.3	398.6
Transvaal....	182.0	188.0	172.2	168.0	167.7	145.1	189.1	197.9	198.4	205.8
United States.	88.9	101.0	60.3	51.2	50.1	47.3	50.2	50.6	48.0	46.3
Canada.....	16.6	19.0	15.9	15.8	19.1	26.1	25.5	31.5	35.9	36.3
Ontario.....	4.6	8.5	10.5	11.7	14.6	20.7	20.1	25.7	30.2	30.9
Russia.....	26.3	11.0	1.4	0.9	3.0	5.2	19.8	20.4	20.5	
Mexico.....	19.3	6.6	15.2	15.3	14.2	15.5	16.2	16.5	16.3	16.0
*Oceania.....	51.8	49.0	26.1	22.6	20.7	18.8	18.1	16.5	14.0	13.5
California....	20.4	21.4	17.4	14.8	15.7	14.7	13.4	13.2	13.1	11.9
Rhodesia.....	14.1	18.9	12.3	11.4	12.1	13.5	13.4	13.0	12.0	12.3
Australia....	.....	.....	.....	.....	15.6	15.9	14.9	14.2	11.7	10.9
West Australia	27.1	25.0	15.2	12.8	13.7	11.1	10.4	10.0	9.1	9.0
India.....	11.2	11.5	10.5	10.3	9.7	9.0	7.9	8.2	8.1	7.9

Maximum World production..... 468.7 million dollars in 1915.

Maximum U.S. production..... 101.0 " " "

Maximum Transvaal production..... 205.8 " " 1926.

*Includes Australia and New Zealand.

It will be noted from the table that Canada now holds third place among the gold-producing countries of the world, and for this position the Province of Ontario is chiefly responsible.

In the following table the value of the total gold output of the Province, exclusive of premium, is given, also that from Porcupine and Kirkland Lake, beginning in 1910 and 1913 respectively:—

TABLE V.—TOTAL GOLD PRODUCTION OF ONTARIO

Year	Total Production, Value	Porcupine		Kirkland Lake	
		Value	Per cent.	Value	Per cent.
1866-1891.....	\$ (a)190,258				
1892-1909.....	(b)2,509,492				
1910.....	68,498	35,539	51.8		
1911.....	42,637	15,437	36.2		
1912.....	2,114,086	1,730,628	81.8		
1913.....	4,558,518	4,294,113	94.1	65,260	1.2
1914.....	5,544,979	5,206,006	93.8	114,154	2.0
1915.....	8,501,391	7,462,111	88.6	551,069	6.5
1916.....	10,339,259	9,391,408	90.8	702,761	6.8
1917.....	8,698,735	8,229,744	94.5	404,346	4.6
1918.....	8,502,480	7,767,907	91.4	632,007	7.4
1919.....	10,451,709	9,941,803	95.1	486,809	4.7
1920.....	11,686,043	10,597,572	90.7	1,033,478	8.8
1921.....	14,692,357	13,103,526	89.3	1,524,851	10.4
1922.....	20,579,569	18,374,658	89.3	2,159,581	10.5
1923.....	20,136,287	17,313,115	85.9	2,719,939	13.5
1924.....	25,669,303	22,135,534	86.2	3,446,632	13.4
1925.....	30,206,432	24,733,120	81.8	5,385,256	17.8
1926.....	30,950,653	23,680,670	76.5	7,174,083	23.2
Total.....	215,442,786	184,012,891	85.4	26,400,226	12.3

(a) Estimated.

(b) Maximum yearly output was \$424,568 in 1899.

In the year 1925 Ontario passed the Yukon Territory in total value of gold produced, the output of the latter being \$181,242,977 for the years 1885 to 1925 inclusive, as compared with \$184,492,033 from Ontario. To the end of 1926 Ontario's gross output exceeded that from British Columbia by \$15,078,355, production from the latter province beginning in 1858. Maximum output from the Yukon was \$22,275,000 in the year 1900, owing largely to production from Klondike placer deposits. Production from British Columbia has been more uniform, the maximum for a single year being \$6,149,027 in 1913.

Tables on pages 12 and 13 show yearly production by individual gold mines at Porcupine and Kirkland Lake, respectively, while the statements on pages 14 and 15 show yearly and total dividends paid by individual mines.

Prospecting Activity.—Not since 1907 has there been such activity in Ontario in the staking of mining claims as was witnessed in 1926, when 13,496 claims were recorded. During the intervening years the maximum pre-war recording was 9,746 claims in 1909, and for the post-war period, 6,092 claims in 1923. The chief activity in 1926 centered in the Red, Woman and Narrow lakes areas in Patricia district. The Red Lake rush during the winter of 1925-1926 bore many of the earmarks of the Klondike trek in the late nineties. Interest subsided when the Dome Mines dropped its option on the Howey. However, strong

financial and mining interests took up the reorganized Howey Red Lake Gold Mines and plans for an aggressive development campaign were made, and are being carried out during 1927. During the summer of 1926 some promising gold finds were made in the Woman and Narrow Lake area, about fifty miles to the east of Red lake, notably on the Manion-Jackson claims. In the late summer there was considerable staking for gold in the Lake Savant area, Thunder Bay district.

The finding of important high-grade copper deposits in the Rouyn field in Quebec some twenty-five miles east of the interprovincial boundary has stimulated the search for copper in Ontario. Heretofore, the small copper mine was forced to ship ore to distant smelters at prohibitive freight rates. Now the early prospect of a customs copper smelter at Noranda Mines has altered the situation. A few years ago copper ore was mined near Dane Station on the T. & N. O. Railway, and it is well known that the ore at the Argonaut gold mine, half-way to the Quebec boundary, carries considerable copper. Finds of rich copper-zinc ore were reported last autumn from Munro township, nine miles east of Matheson, and development is now under way at the Potter-Doal property in the north part of this township. Again, in the vicinity of Kamiskotia lake, some fifteen miles northwest of Porcupine, a promising copper prospect is under option to the Hollinger mine.

Lead-zinc finds northeast of Sault Ste. Marie; from Ben Nevis and Clifford townships to the north of the Argonaut mine, and elsewhere, are referred to on page 30 under that heading.

TABLE VI.—VALUE OF TOTAL PRODUCTION (GOLD AND SILVER) BY MINES OF THE PORCUPINE AREA (a)

Year	Hollinger	Dome	McIntyre	Porcupine Crown and Northcrown	Vipond	Schumacher (b)	West Dome Lake	Night Hawk Peninsular	Rea and Newray	Ankerite	Davidson	Preston and Clifton-Porcupine	Total Value (c)
1910...	\$ 31,194	\$ 4,355											\$ 35,549
1911...	6,000	4,277			\$ 5,160								15,437
1912...	909,181	737,499	\$ 77,657		16,259								1,740,596
1913...	2,488,022	1,242,625	236,299	\$ 326,803									4,316,807
1914...	2,719,355	1,059,238	549,166	685,135	73,628				{ \$18,858 Rea				5,231,989
1915...	4,206,015	1,530,287	750,812	602,436	246,053	\$ 48,236	\$102,880		{ 125,255 Newray			\$15,212	7,495,853
1916...	5,073,401	2,153,820	1,218,073	578,322	176,686	225,301	16,814						9,442,417
1917...	4,261,938	1,480,174	1,710,204	377,904	209,738	198,605	44,434						8,285,321
1918...	5,752,371	82,127	1,578,444	124,474	82,868	92,842	103,745				\$15,579		7,833,966
1919...	6,722,266	1,290,301	1,978,014				23,910				27,089		10,041,580
1920...	6,219,665	2,020,568	2,223,083	71,529			47,169				11,246		10,690,561
1921...	9,051,276	2,290,264	1,827,761	97,301 7,943									13,177,244
1922...	12,274,114	4,178,936	2,021,811										18,479,325
1923...	10,446,412	4,374,144	2,550,129			23,876						1,664	17,405,648
1924...	13,433,063	4,307,624	3,604,874			596,803	60,642	\$258,618				8,331	22,266,894
1925...	15,749,109	4,365,923	3,721,499			565,379	287,758	196,947				5,270	24,886,615
1926...	14,829,655	3,940,053	3,862,074			631,636	220,758	111,154					23,810,700
Total...	114,173,037	35,062,215	27,909,900	2,871,847	2,628,086	564,984	908,110	566,719	147,076	140,588	53,914	30,477,185	156,502

(a) In addition to the mines noted above, the following had a production: Porphyry Hill, \$4,200 in 1913 and \$2,036 in 1915; Porcupine Pet. \$5,000 in 1914 and \$5,551 in 1915; Gold Reef, \$1,547 in 1915 and \$588 in 1917; Tommy Burns, \$289 in 1917; Paymaster, \$2,800 in 1922 and \$63,551 in 1926; Ankerite, \$140,588 and March \$11,055 in 1926; miscellaneous, \$2,756 in 1923; P. De Santis, \$146 in 1926, and Hughes Gold Mines, Ltd., \$30 in 1926. All of these are included in the "Total Value" column. (b) Purchased by the Hollinger in 1922.

(c) A record of total exchange premiums received in addition to the above amounts shows the following: 1920, \$1,265,664; 1921, \$1,238,211; 1922, \$189,022; 1923, \$207,742; 1924, \$172,721; 1925, \$2,607 discount; 1926, nil; or a net total of \$3,070,753 for the 6 years of which we have record.

TABLE VII.—VALUE OF TOTAL PRODUCTION (GOLD AND SILVER) BY MINES OF THE KIRKLAND LAKE AREA

Year	Lake Shore	Wright-Hargreaves	Teck-Hughes	Tough-Oakes Burnside	Kirkland Lake	Argonaut (a)	Barry-Hollinger	Ontario-Kirkland	Total Value (b)
1913.....	\$	\$ 1,127	\$	\$ 66,632	\$	\$	\$	\$	\$ 67,759
1914.....	.....	.....	.....	117,644	.....	5,204	.....	.....	122,848
1915.....	.....	.....	.....	555,539	.....	.....	.....	.....	555,539
1916.....	.....	.....	.....	711,625	.....	.....	.....	.....	711,625
1917.....	.....	.....	66,722	342,831	.....	.....	.....	.....	409,553
1918.....	416,414	.....	80,570	139,683	.....	.....	(c) 10,114	.....	646,781
1919.....	263,354	.....	169,590	.....	56,263	2,631	.....	.....	491,838
1920.....	503,735	.....	247,757	.....	286,901	26,863	.....	.....	1,065,256
1921.....	495,276	468,751	322,919	.....	242,417	513	.....	.....	1,529,875
1922.....	471,341	762,753	596,495	107,481	224,396	.....	.....	10,082	2,172,548
1923.....	547,600	754,979	1,117,963	12,174	223,102	72,512	.....	.....	2,728,331
1924.....	1,098,572	1,088,725	1,023,025	47,547	46,512	152,072	.....	.....	3,456,453
1925.....	1,958,720	1,913,401	996,943	263,064	.....	214,183	56,978	.....	5,403,289
1926.....	2,775,000	2,150,844	1,601,208	309,709	126,999	112,189	86,263	.....	7,193,411
Total.....	8,530,012	7,140,580	6,223,192	2,673,929	1,206,590	586,167	153,355	10,082	26,555,106

(a) Exclusive of copper values.

(b) Exchange premiums received in addition to the above valuations were as follows: 1920, \$110,424; 1921, \$121,425; 1922, \$19,590; 1923, \$37,812; 1924, \$24,028; 1925, \$231 discount and 1926, \$595 discount; a net total of \$312,453 for the 7 years of which we have record.

(c) Patricia mine, afterwards called Barry-Hollinger.

TABLE VIII.—DIVIDENDS AND BONUSES PAID BY GOLD MINING COMPANIES TO DECEMBER 31, 1926

Name of Company	Date of Incorporation	Authorized Capital	Capital Stock Issued	Par value per share	Dividends and Bonuses paid to end of 1925, Amount	Dividends and Bonuses paid during 1926, Amount	Rate per cent, 1926 or per share	Total of Dividends and Bonuses paid to Dec. 31, 1926	Date when last Dividend or Bonus was paid
*Dome Mines Company, Ltd.	Mar. 27, 1911	\$ 4,500,000	\$ 4,290,003	No par	\$ 8,354,171	\$ 1,906,668	\$ 2.00	\$ 10,260,839	Oct. 20, 1926
†Hollinger Cons. Gold Mines, Ltd. . . .	May 25, 1916	25,000,000	24,600,000	5 00	30,530,800	5,805,600	23.6	36,336,400	Dec. 31, 1926
Lake Shore Gold Mines, Ltd.	Feb. 25, 1914	2,000,000	2,000,000	1 00	1,620,000	1,000,000	50.0	2,620,000	Dec. 15, 1926
McIntyre-Porcupine Mines, Ltd.	Mar. 16, 1911	4,000,000	3,990,000	5 00	5,207,408	798,000	20.0	6,005,408	Dec. 1, 1926
Porcupine Crown Mines, Ltd.	May 26, 1913	2,000,000	2,000,000	1 00	840,000	.....	.....	840,000	July 15, 1917
Rea Consolidated Gold Mines, Ltd. . . .	April 5, 1911	1,000,000	200,000	5 00	12,000	.....	.....	12,000	.....1915
‡Schumacher Gold Mines, Ltd.	Jan. 6, 1914	2,000,000	1,850,000	1 00	.....	.....	.....	.....	.....
Teck-Hughes Gold Mines, Ltd., The.	1923	5,000,000	4,747,144	1 00	.....	474,714 40	10.0	474,714 40	Aug. 1, 1926
Tough-Oakes Gold Mines, Ltd.	July 15, 1913	3,000,000	2,657,500	5 00	398,625	.....	.....	398,625	Dec. 27, 1916
Wright-Hargreaves Mines, Ltd.	June 16, 1916	2,750,000	2,750,000	1 00	1,375,000	893,750	32.5	2,268,750	Oct. 1, 1926
Total. ....	.....	.....	.....	.....	48,338,004 25	10,878,732 40	.....	59,216,736 65	.....

*On April 22, 1922, the capital was reduced from \$5,000,000 to \$4,500,000 and \$476,667 distributed to shareholders in addition to dividends above noted.

†Hollinger Consolidated Gold Mines, Limited, is a consolidation of the Acme Gold Mines, Ltd.; Millerton Gold Mines, Ltd.; and Hollinger Gold Mines, Ltd. Dividends include \$160,000 paid in 1915 by Acme, also \$4,170,000 paid by Hollinger to May 25, 1916, the date of the consolidation.

‡The Schumacher mine was sold to the Hollinger in 1922 and a total of \$1,591,000 or 86 per cent. of the assets distributed to shareholders, the final payment being made July 30, 1923.

TABLE IX.—YEARLY DIVIDENDS AND BONUSES PAID BY GOLD MINES, 1912-1926

Year	PORCUPINE						KIRKLAND LAKE				Total
	*Hollinger Consolidated	Porcupine Crown	Dome Mines	Rea Consolidated	McIntyre	Tough-Oakes	Lake Shore	Wright-Hargreaves	Teck-Hughes		
1912.....	\$ 270,000	\$	\$	\$	\$	\$	\$	\$	\$	\$ 270,000 00	
1913.....	1,170,000	.....	.....	.....	.....	.....	.....	.....	.....	1,170,000 00
1914.....	1,170,000	240,000	.....	.....	.....	.....	.....	.....	.....	1,410,000 00
1915.....	1,720,000	240,000	400,000	12,000	.....	132,875	.....	.....	.....	2,344,875 00
1916.....	3,126,000	240,000	800,000	.....	.....	265,750	.....	.....	.....	4,591,750 00
1917.....	738,000	120,000	300,000	.....	541,542 45	.....	.....	.....	.....	1,699,542 45
1918.....	1,230,000	.....	.....	.....	543,042 45	.....	100,000	.....	.....	1,873,042 45
1919.....	1,722,000	.....	.....	.....	364,028 30	.....	100,000	.....	.....	2,186,028 30
1920.....	2,214,000	.....	416,886	.....	546,042 45	.....	80,000	.....	.....	3,256,928 45
1921.....	3,198,000	.....	478,947 75	.....	546,042 45	.....	120,000	.....	.....	4,342,990 20
1922.....	3,198,000	.....	715,000 50	.....	546,042 45	.....	80,000	412,500	.....	4,951,542 95
1923.....	3,198,000	.....	1,430,001 00	.....	548,542 45	.....	160,000	206,250	.....	5,542,793 45
1924.....	3,198,000	.....	1,906,668 00	.....	774,125 00	.....	380,000	206,250	.....	6,465,043 00
1925.....	4,378,800	.....	1,906,668 00	.....	798,000 00	.....	600,000	550,000	.....	8,233,468 00
1926.....	5,805,600	.....	1,906,668 00	.....	798,000 00	.....	1,000,000	893,750	474,714 40	10,878,732 40
Total.....	36,336,400	840,000	10,260,839 25	12,000	6,005,408 00	398,625	2,620,000	2,268,750	474,714 40	59,216,736 65	

*Includes \$160,000 paid by the Acme in 1915 before amalgamation with the Hollinger.

Silver-Cobalt

While the decline in the price of silver from an average for the year of 69.065 cents per ounce in 1925 to 62.107 cents in 1926 undoubtedly affected silver mining operations in Ontario's silver camps, the output achieved during the year was noteworthy in that the decrease, which was expected, amounted to only 6.18 per cent. in quantity. Due to the lowered price, however, the values showed a greater decline.

The Canadian Mining Journal of October 15, 1926, had the following to say regarding the silver situation:—

The decline in quotations for silver have necessitated a change in operating plans at a number of the silver mines in Northern Ontario. It has become necessary to regulate the grade of ore as a means of increasing the number of ounces available per ton. This is not imposing any unreasonable hardship upon the higher grade mines such as Castle-Trethewey, Keeley, Miller Lake O'Brien, and Tonopah Canadian, but it is conveying a serious threat to older producers such as McKinley-Darragh and La Rose. Also, it is causing serious alarm at such mines as Trout Lake, Lorrain, Mining Corporation, O'Brien and even Nipissing. Officials at local mines are advancing various theories for the somewhat rapid decline in quotations for the metal. For the greater part, the theories are based upon the general comment which comes to hand through class journals and the daily press. The views embrace causes and effect which take in all the possible sources including lack of distribution facilities to the interior of China during the present troublous times, and the domestic troubles which are now rampant in Mexico. They also take into account the full seriousness of the recommendations recently advanced in favour of paper currency based on a gold standard in India. So many factors being advanced simultaneously are believed to suggest the possibility that pessimism may also be a serious factor and that when the situation can be viewed in sober realities, the truth may disclose a less alarming condition than is now generally believed to exist.

A total of twenty-six properties made shipments during the year; eighteen from Cobalt, including small lots shipped by companies making clean-ups and the outputs by several lessees; five in South Lorrain; and three in Gowganda. At Cobalt, the Nipissing, Mining Corporation, O'Brien and McKinley-Darragh-Savage were the most important producers. The Cobalt-Contact Company, operating Green-Meehan, Red Rock and Ruby mines, commenced operating a new 80-ton mill on July 1.

The output and shipments of silver are shown below. It should be pointed out that the figures given are based as nearly as possible on actual sales of bullion and silver contained in concentrates and residues exported, with the gross values as reported by the producers before deducting treatment and shipping charges.

SILVER PRODUCTION, 1925-1926

Source	1925		1926	
	Fine Ounces	Value	Fine Ounces	Value
		\$		\$
Sales of bullion by the reduction companies, smelters and mines.....	8,365,093	5,833,856	7,984,980	4,945,167
Contained in concentrates and residues exported.....	1,249,788	866,273	996,577	595,842
Contained in crude gold bullion.....	251,829	171,550	249,330	149,717
Recovered by nickel-copper refineries..	134,390	92,682	151,429	90,980
Total.....	10,001,100	6,964,325	9,382,316	5,781,706

TABLE X.—TOTAL SHIPMENTS FROM SILVER MINES, SMELTERS AND REFINERIES, 1904 TO 1926

Year	Bismuth		Copper (a)		Lead (a)		Nickel (b)		Cobalt (c)		Arsenic		Silver		Total Value
	Tons	Value \$	Tons	Value \$	Tons	Value \$	Tons	Value \$	Tons	Value \$	Tons	Value \$	Ounces	Value \$	
1904.....							14	3,467	16	19,960	72	903	206,875	111,887	\$ 136,217
1905.....							75	10,000	118	100,000	549	2,693	2,451,356	1,360,503	1,473,196
1906.....							160		321	80,704	1,440	15,858	5,401,766	3,667,551	3,764,113
1907.....							370	1,174	739	104,426	40,104	2,958	10,023,311	6,155,391	6,301,095
1908.....							612		1,224	111,118	3,672	40,373	19,437,875	9,133,378	9,284,869
1909.....							766		1,533	94,965	61,039	25,897,825	12,461,576	12,617,580	
1910.....							504		1,098	54,599	4,897	70,709	30,645,181	15,478,047	15,603,455
1911.....							392		852	170,890	3,806	74,609	31,507,791	15,953,847	16,199,346
1912.....							429	14,220	934	314,381	4,166	80,546	30,243,859	17,408,935	17,818,082
1913.....							377	13,326	821	420,386	3,663	64,146	29,681,975	16,553,981	17,051,839
1914 (d).....							90	28,978	351	590,406	2,030	116,624	25,162,841	12,765,461	13,501,469
1915.....							35	28,353	206	383,261	2,490	148,379	24,746,534	12,135,816	12,695,809
1916.....							79	59,380	400	805,014	2,160	200,103	19,915,090	12,643,175	13,707,672
1917.....							155	125,071	337	1,138,190	2,592	608,483	19,401,893	16,121,013	18,021,597
1918.....							186	156,893	380	1,640,310	2,545	566,332	17,661,694	17,341,790	19,741,490
1919.....							12	1,296	298	1,019,479	2,834	485,360	11,214,317	12,738,994	14,474,523
1920.....							5	792	283	1,605,365	1,883	431,527	10,846,321	10,654,471	12,802,882
1921.....							103	34,504	126	616,235	1,491	233,763	8,261,931	5,564,594	6,457,031
1922.....							93	26,346	(f) 776	1,333,676	2,059	299,940	10,711,127	7,658,802	9,355,642
1923 (e).....							16	1,891	380	1,803,872	2,579	582,794	10,377,846	6,677,367	9,151,445
1924.....							26	3,738	476	1,662,526	1,915	323,186	10,361,945	7,009,984	9,060,222
1925.....							45	7,295	558	2,328,517	1,078	113,325	9,614,881	6,700,129	9,295,791
1926.....							31	1,858	332	1,136,014	2,025	135,549	8,981,557	5,541,009	6,855,920
Total.....	28	89,236	704	236,777	152	19,086	5,263	957,746	12,559	17,534,394	57,198	4,696,345	372,755,791	231,837,701	255,371,285

(a) Copper and lead are recovered from certain silver ores and concentrates shipped to United States refineries.

(b) Nickel metal and metallic contents of all nickel compounds.

(c) Cobalt metal and metallic contents of all cobalt compounds.

(d) Prior to 1914 an estimate based on assays was made of the nickel, cobalt and arsenic contained in the ores; subsequently actual recoveries have been reported.

(e) Recoveries of bismuth from base bullion were not reported prior to 1923.

(f) Includes 460 tons of speiss residues worth \$153,116.

A total of 6,262,249 ounces were produced from the Cobalt Mines. South Lorrain produced 3,044,584 ounces and Gowganda 1,236,640 ounces. These figures show the metal contents of ore and concentrates shipped, but must not be confused with the actual bullion recovered in the reduction operations during the period, on the basis of bullion actually marketed and as contained in concentrates exported, along with the silver recovered from gold mines and nickel-copper matte.

Figures shown in the table on page 16 are different from those published in these reports prior to the year 1924, inasmuch as they more nearly represent the silver actually going as such into the commerce of the country. In 1923 and formerly, statistics of silver production were based on the silver content of all ores or concentrates as shipped by the mines and reported by them, and while such figures bear no exact relation to the silver actually marketed in bullion form they are of considerable historical value as statistical records of individual mines and of mining areas. The change made in the system of compilation merely moves the position or point where the count is made, *i.e.*, from the mine or concentrating plant forward to the point where merchantable bar silver is marketed, except in the case of exports of ore, concentrates or residues where no change in practice was necessary.

Since the discovery of silver at Cobalt in 1903 the silver contents of shipments from the camp and outlying silver areas, as reported by the operators, have been as follows:

TABLE XI.—SILVER SHIPMENTS BY CAMPS, 1904-1926

Year	Average price, cents per ounce (New York)	Silver Content in Troy Ounces, 1904-1926					Montreal River and Maple Mountain
		Total Ounces	Cobalt	Casey Township	South Lorrain	Gowganda	
1904	57.221	206,875	206,875				
1905	60.352	2,451,356	2,451,356				
1906	66.791	5,401,766	5,401,766				
1907	65.237	10,023,311	10,023,311				
1908	52.864	19,437,875	19,424,251	500	13,124		
1909	51.502	25,897,825	25,658,683	26,185	194,955		18,002
1910	53.486	30,645,181	29,849,981	92,544	221,133	471,688	9,835
1911	53.340	31,507,791	29,989,893	114,789	933,912	468,687	510
1912	60.835	30,243,859	28,605,940	253,824	834,119	549,976	
1913	57.791	29,681,975	28,105,505	825,108	248,992	502,370	
1914	54.811	25,162,841	24,155,699	499,643	108,199	399,300	
1915	49.684	24,746,534	24,280,366	223,939		242,229	
1916	65.661	19,915,090	19,008,517	445,900	77,280	383,393	
1917	81.417	19,401,893	18,327,258		10,000	1,064,635	
1918	96.772	17,661,694	16,807,407	143,901	72,188	638,198	
1919	111.122	11,214,317	10,314,689	171,278	4,586	723,764	
1920	100.900	10,846,321	10,402,249		8,253	433,352	(a)2,467
1921	62.654	8,261,931	7,673,535	1,101	328,886	258,292	117
1922	67.528	10,711,127	9,239,147	1,028	1,284,307	170,651	(b)15,994
1923	64.873	10,377,846	7,259,858		2,955,646	160,761	1,581
1924	66.781	9,935,902	6,704,787		2,633,058	598,057	
1925	69.065	10,707,235	6,252,115		3,099,964	1,355,156	
1926	62.107	10,543,473	6,262,249		3,044,584	1,236,640	
Total		374,984,018	346,405,437	2,799,740	16,073,186	9,657,149	48,506

(a) Includes 885 ounces from Silver Islet, Lake Superior.

(b) Silver Islet, Lake Superior.

In addition to the foregoing which deals with producing mines only, there was considerable work carried on by organized companies, some of which may join the list of producers in the near future. Not including the usual assessment work carried on by individuals, partnerships and syndicates, there was a total of \$42,581 expended in wages on development work and employment given to 50 persons. The names of the companies reporting were:—

OPERATING BUT NON-PRODUCING SILVER MINES, 1926

Company	Name of Mine	Location
Capitol Silver Mines, Ltd.	Capitol	Gowganda
Casey Mountain Operating Syndicate, Ltd.	Casey Mountain	Casey tp.
Crescent Silver Cobalt Mining Co., Ltd.	Crescent	Cobalt
Cobalt Argyros Mines, Ltd.	Argyros	Cobalt
Genesee Mining Co., Ltd.	Genesee	Cobalt
Hector Silver Mines, Ltd.	Hector	Gillies Limit
Kerr Lake Mines, Ltd.	Kerr Lake	Cobalt
Kirk-Budd Mining Co., Ltd.	Kirk-Budd	Gillies Limit
Oxford-Cobalt Silver Mines, Ltd.	Oxford-Cobalt	Gillies Limit

Refineries.—The production of refined silver is carried on by two companies in Cobalt which operate reduction plants in conjunction with the mines and mills. The processes of extraction are hydro-metallurgical or wet methods, such as the cyanide process applied to silver-bearing ores. The Nipissing Mines, Limited, and the Cobalt Reduction Company (Mining Corporation), both operate such plants and in addition to high-grade silver bullion, they market flotation concentrates and residues. The refinery of the latter company was not operated in 1926. The major portion of the ore and concentrates shipped out of the Cobalt camp for treatment goes to the Deloro Smelting and Refining Company at Deloro.

TABLE XII.—OPERATIONS OF ONTARIO SILVER-COBALT REFINERIES IN 1926

Schedule	Sales	
	Quantity	Value
Silver bullion..... fine oz.	4,890,586	3,008,500
Arsenic, white..... lb.	3,707,038	116,653
Cobalt products, including metals and metallic content of all oxides, mixed oxides and salts..... "	437,666	996,502
Nickel oxide, and salts..... "	217,816	20,513
Base bullion (a)..... "	469,607	130,131
Speiss residues (b)..... "		
Total.....		4,272,299

(a) Contains silver, lead, bismuth and antimony.

(b) Speiss residues contain silver, cobalt, nickel and arsenic.

TABLE XIII.—DIVIDENDS AND BONUSES PAID BY SILVER MINING COMPANIES TO DECEMBER 31, 1926

Name of Company	Date of Incorporation	Authorized Capital	Capital Stock Issued	Par value per share	Dividends and Bonuses paid to end of 1925	Dividends and Bonuses paid during 1926	Total Dividends and Bonuses paid to 31st Dec., 1926	Date when last Dividend was paid
Aladdin Cobalt Company, Limited.....	Aug. 23, 1912	500,000	500,000	5 00	75,000 00	.....	75,000 00	April 30, 1917
Beaver Consolidated Mines, Ltd.....	Mar. 1, 1907	2,000,000	2,000,000	1 00	710,000 00	.....	710,000 00	May 31, 1920
Buffalo Mines, Ltd., The (a).....	April 27, 1906	500,000	500,000	50	2,787,000 00	.....	2,787,000 00	May 28, 1914
Casey Cobalt Silver Mining Co., Ltd.....	Dec. 19, 1906	100,000	100,000	1 00	203,249 33	.....	203,249 33	April 22, 1914
Castle-Trethewey Mines, Ltd. (b).....	Jan. 20, 1922	2,000,000	2,000,000	1 00	18,027 13	.....	18,027 13	April 15, 1925
Cobalt Central Mines Co., Ltd.....	Dec. 13, 1905	5,000,000	5,000,000	1 00	192,845 00	.....	192,845 00	Aug. 25, 1909
Cobalt Comet Mines, Ltd. (c).....	April 16, 1913	1,000,000	1,000,000	1 00	230,000 00	.....	230,000 00	April 1, 1915
Cobalt Silver Queen, Ltd.....	April 1, 1906	1,500,000	1,500,000	1 00	315,000 00	.....	315,000 00	Dec. 31, 1908
Coniagas Mines, Limited, The.....	Nov. 24, 1906	4,000,000	4,000,000	5 00	11,440,000 00	.....	11,440,000 00	May 1, 1924
Crown Reserve Mining Co., Ltd.....	Jan. 16, 1907	2,000,000	1,999,957	1 00	6,190,849 00	.....	6,190,849 00	Dec. 28, 1916
Foster Cobalt Mining Co., Ltd.....	Feb. 14, 1906	1,000,000	915,588	1 00	45,000 00	.....	45,000 00	Jan. 1, 1907
Hudson Bay Mines, Ltd.....	July 16, 1909	3,500,000	3,200,050	5 00	778,909 42	.....	778,909 42	Aug. 31, 1913
Keeley Silver Mines, Ltd.....	June 22, 1922	2,000,000	2,000,000	1 00	1,280,000 00	480,000 00	1,760,000 00	Sept. 15, 1926
Kerr Lake Mining Company, Ltd. (d).....	Aug. 9, 1905	40,000	40,000	100 00	10,299,000 00	150,000 00	10,449,000 00	Oct. 15, 1926
La Rose Mines, Ltd.....	May 31, 1908	1,500,000	1,500,000	1 00	6,600,546 84	.....	6,600,546 84	Mar. 24, 1923
Lorrain Trout Lake Mines, Ltd.....	Mar. 20, 1923	1,500,000	1,500,000	1 00	150,000 00	.....	150,000 00	July 15, 1925
McKinley-Darragh-Savage Mines of Cobalt, Ltd.....	April 27, 1906	2,500,000	2,247,692	1 00	5,955,391 86	.....	5,955,391 86	July 31, 1925
Mining Corporation of Canada, Ltd.....	Nov. 23, 1916	8,300,250	8,300,250	5 00	5,706,381 22	415,012 50	6,121,393 72	July 15, 1926
City of Cobalt Mining Co., Ltd. (e).....	Jan. 7, 1909	1,500,000	1,500,000	1 00	145,000 00	.....	145,000 00	April 15, 1920

TABLE XIII.—Continued

Name of Company	Date of Incorporation	Authorized Capital	Capital Stock Issued	Par value per share	Dividends and Bonuses paid to end of 1925	Dividends and Bonuses paid during 1926	Total Dividends and Bonuses paid to 31st Dec., 1926	Date when last Dividend or Bonus was paid
Cobalt Lake Mining Co., Ltd. (e)	Dec. 22, 1906	\$ 3,000,000	\$ 3,000,000	\$ 1 00	\$ 465,000 00	\$	\$ 465,000 00	May 29, 1914
Cobalt Townsite Mining Co., Ltd. (e)	May 8, 1906	100,000	45,011	1 00	1,042,259 61	.....	1,042,259 61	Nov. 11, 1914
Nipissing Mining Co., Ltd. (f)	Dec. 16, 1904	250,000	250,000	100 00	28,578,297 25	750,000 00	29,328,297 25	Oct. 20, 1926
Penn-Canadian Mines, Ltd. (g)	April 24, 1912	1,500,000	1,349,705	1 00	175,461 65	.....	175,461 65	Sept. 10, 1917
Peterson Lake Silver-Cobalt Mining Co., Ltd.	April 11, 1906	3,000,000	2,469,802	1 00	462,350 35	.....	462,350 35	Jan. 2, 1917
Right of Way Mining Co., Ltd.	July 13, 1906	500,000	499,518	1 00	324,643 93	.....	324,643 93	Oct. 1, 1909
Right of Way Mines, Ltd.	Sept. 11, 1909	2,000,000	1,685,500	1 00	252,825 00	.....	252,825 00	Mar. 17, 1917
Seneca-Superior Silver Mines, Ltd.	Sept. 29, 1911	500,000	478,884	1 00	1,579,817 20	.....	1,579,817 20	Dec. 15, 1916
Temiskaming Mining Co., Ltd.	Nov. 5, 1906	2,500,000	2,500,000	1 00	2,159,156 25	.....	2,159,156 25	Jan. 31, 1920
Temiskaming and Hudson Bay Mining Co., Ltd.	July 10, 1903	25,000	7,761	1 00	1,940,250 00	.....	1,940,250 00	Nov. 10, 1914
Trethewey Silver Cobalt Mines, Ltd.	May 30, 1906	2,000,000	1,000,000	1 00	1,211,998 50	.....	1,211,998 50	Jan. 2, 1919
June 1, 1911	2,000,000	1,416,590	1 00	637,465 50	.....	637,465 50	Sept. 22, 1913	
Wettlaufer Lorrain Silver Mines, Ltd.	Nov. 30, 1908	1,500,000	1,416,590	1 00	637,465 50	.....	637,465 50	Sept. 22, 1913
Total	.....	.....	.....	.....	91,951,725 04	1,795,012 50	93,746,737 54	.....

(a) In 1917 the capital stock of the company was reduced from \$1,000,000 to \$750,000, in 1918 from \$750,000 to \$500,000, and on December 21, 1919, from \$500,000 to \$150,000, by returning to shareholders amounts equal to the reduction in capital, leaving 300,000 shares issued of 50 cents each. The mine was sold to the Mining Corporation of Canada, and operated by it in 1920 and subsequently.

(b) 200,000 preferred shares par \$1.00, redeemed April, 1925, and capital reduced from \$2,200,000 to \$2,000,000.

(c) Cash assets amounting to \$50,000 paid on April 27, 1917.

(d) In addition a return of capital amounting to \$600,000 was made on July 3, 1919, to stockholders of the Kerr Lake Mines, Ltd.

(e) Mining Corporation of Canada, Limited, owns and operates the City of Cobalt, Cobalt Lake and Cobalt Townsite mines.

(f) Includes \$16,288,297.25 paid in dividends by the Nipissing Mines Co. (the holding company) to the end of 1916.

(g) Paid out of capital \$40,491.15 on September 10, 1917, and an equal amount on April 24, 1918.

Mines shipping over 100,000 ounces in 1926 are given in order:—

MINE	OUNCES
Nipissing.....	1,966,299
Keeley.....	1,705,530
Mining Corporation of Canada.....	1,105,459
Frontier Lorrain (Lorrain Operating Co.).....	1,104,597
Castle-Trethewey.....	979,890
O'Brien.....	867,987
McKinley-Darragh-Savage.....	340,203
Lorrain Trout Lake.....	143,399

In Table XI statistics are shown based on the metal contents of shipments of ore and concentrates and should not be confused with the figures in the main table on page 2 and Table X immediately preceding. Silver shown as shipped in the following table is compiled for each mining area and is mainly the silver contents of ore or concentrates shipped to the reduction works at Cobalt or the silver smelters. Of necessity there is a lag and it does not follow that all the ores, etc., shipped have received treatment during the year by smelters, although in the aggregate these figures will agree closely with those for silver bullion sold, as given in the table on page 2 and also in Table X.

In addition to the silver content of ores, concentrates, residues, etc., producing mines are paid for the cobalt content, provided the percentage is sufficiently high. Mine shippers in 1926 were paid \$214,326 for 913,877 pounds of cobalt, and \$5,394 for 69,502 pounds of copper.

From weekly statements, issued by the General Freight and Passenger Agent of the Temiskaming and Northern Ontario Railway, showing railway shipments of ore, concentrates, etc., from the Cobalt area the following information has been compiled: Total shipments, 12,446 tons, of which 4,795 were consigned to Deloro, 2,666 to United States smelters and refineries, and 978 tons to Europe.

The producers of silver are given in the following list:—

SILVER PRODUCERS IN 1926

Operator	Mine or Source	Location
Brewer, Sullivan & Laurentian Mines..	Adanac lease.....	Cobalt
Castle-Trethewey Mines, Ltd.....	Castle-Trethewey.....	Gowganda
Cobalt Contact Mines, Ltd.....	Cobalt Contact.....	Cobalt
Coniagas Mines, Ltd., The.....	Coniagas.....	Cobalt
Crown Reserve Mining Co., Ltd.....	Crown Reserve.....	Giroux Lake
Canadian Lorrain Silver Mines, Ltd...	Canadian Lorrain.....	South Lorrain
Dominion Reduction Co., Ltd.....	Mill clean-up.....	Cobalt
Doherty Easson Mining Syndicate, Ltd.	Penn-Canadian.....	Cobalt
Frontier (Lorrain) Mines, Ltd.....	Lorrain Operating & Frontier Lorrain.	Silver Centre
Genesee Mining Company, Ltd.....	Genesee.....	Cobalt
Hudson Bay Mines, Ltd., The.....	Hudson Bay.....	Cobalt
Masters, S. C.....	Silver Queen.....	Cobalt
Keeley Silver Mines, Ltd., The.....	Keeley.....	South Lorrain
Kerr Lake Mining Company, Ltd.....	Kerr Lake.....	Cobalt
La Rose Mines, Ltd.....	La Rose.....	Cobalt
Lorrain Consolidated Mines, Ltd.....	Lorrain Consolidated.....	Silver Centre
Lorrain Trout Lake Mines, Ltd.....	Lorrain Trout Lake.....	Silver Centre
Lynch, C. D.....	Peterson Lake.....	Cobalt
McKinley-Darragh-Savage Mines, Ltd.	McKinley-Darragh.....	Cobalt
McLeod, J. H.....	Foster Cobalt.....	Cobalt
Menago Mining Company, Ltd.....	Colonial.....	Cobalt
Mining Corporation of Canada, Ltd...	Townsite City, Buffalo, Cobalt Lake..	Cobalt
Northern Extension Mines, Ltd.....	Aguanico.....	Cobalt
Nipissing Extension Mines Co., Ltd...	Nipissing Extension.....	Cobalt
Nipissing Mining Company, Ltd.....	Nipissing.....	Cobalt
O'Brien, Ltd., M. J.....	O'Brien.....	Cobalt
O'Brien, Ltd., M. J.....	Miller Lake O'Brien.....	Gowganda
Reinhardt, Carl.....	Crown Reserve.....	Giroux Lake
Tonopah Canadian Mines Company...	Walsh & Morrison.....	Gowganda

Nickel, Copper and Platinum Metals

The tonnage of ore raised by the nickel mines, and treated in the smelters during 1926, showed an increase of around 50,000 tons over the figures for 1925. During the period two companies were active, the International Nickel Company of Canada, operating smelters at Copper Cliff near Sudbury and a refinery at Port Colborne, and the Mond Nickel Company which smelts its ore at Coniston, near Sudbury, and exports the matte to Wales for refining. A portion of the matte made by the former company is exported to Huntington, West Virginia, for the manufacture of Monel metal and the fabrication of nickel articles.

Production of ore during the year from the several mines was as follows:—

<i>International Nickel Company—</i>	Tons
Creighton Mine, Froid Mine.....	691,660
<i>Mond Nickel Company—</i>	
Garson, Froid Extension, Worthington, Levack.....	630,390
	1,322,050

The actual production of nickel and copper was less than in 1925 for reasons that are well set out in the Annual Report of the International Nickel Company. Net earnings of the Company were \$5,556,267 for the year, or an increase of \$28,783 over 1925. The following abstracts are from the discussion of the situation by Robt. C. Stanley, president of the Company:—

Sales of metallic nickel were less than during 1925, due principally to a falling off in exports to Europe. There was also a decline in domestic sales of nickel in final quarter of 1926, compared with last quarter of 1925. This apparent loss of business was due to heavy purchases of nickel by consumers for stock in fall of 1925, presumably anticipating price increase of January 1, 1926. Buying of this character was not in evidence in the fall of 1926, as there was no price advance on contract renewals for 1927 deliveries.

During recent years, particularly in 1926, large quantities of nickel-steel armour and deck-plate scrap, resulting from the disarmament programme, were consumed by alloy steel makers. Substitution of this scrap for metallic nickel made inroads into sales of nickel for alloy steel making. There is every evidence that the bulk of this domestic scrap has been used, and that normal consumption of metallic nickel by steel companies may be expected in the near future.

Sales of mill products, both monel metal and rolled nickel, increased substantially in volume, and more than offset the loss of foreign and domestic nickel sales.

Mining, smelting, refining, and development at the Froid mine were referred to as follows:—

Mining and smelting operations at Copper Cliff were continuous throughout the year. Bessemer matte was produced at lower cost than during any previous year. An electrolytic department at Port Colborne, projected in 1925, was completed and is now economically producing a large tonnage of high purity nickel. Changes in furnace and converter practice have enabled your operatives to further reduce costs. The refinery was run continuously throughout the year at a rate regulated to meet consumption and to avoid an undue accumulation of metal stocks.

Your management has been actively engaged in initial stages of development of Froid mine, where diamond drilling has developed further large reserves of high-grade ore. To complete this shaft, erect the permanent surface plant and develop the ore body sufficiently for mining operations, will require several years and involve a substantial capital expenditure. It is the intention to bring this mine into production during the ensuing five years. By following this policy, the Creighton mine ore reserves will be available for an increasing output of monel metal for many years and the Froid ore, which carries much higher precious metal values than Creighton ore, will be refined for nickel. With its present refining process your company will recover the platinum metals from the Froid ore and in consequence will derive additional profit from this operation.

In Table XV, following, the course of the nickel industry during the past five years is presented. That this metal takes on added importance during times of war is indicated by the fact that while in 1913 the quantity of ore smelted was 823,403 tons, it rose in 1918 to 1,559,892 tons, fell, as noted in the table, to 314,120 tons in 1922, and through new markets found for nickel it rose again in 1923 to 1,140,160 tons. Nickel and copper contained in matte exported in 1926 were valued at 18 and 10 cents per pound respectively:—

TABLE XIV.—NICKEL-COPPER MINING AND SMELTING, 1922-1926

Schedule	1922	1923	1924	1925	1926
Ore raised..... tons	259,569	1,187,354	1,411,980	1,264,748	1,322,050
Ore smelted..... " "	314,120	1,140,160	1,307,694	1,258,849	1,309,782
Bessemer matte produced..... " "	17,324	58,084	65,943	70,280	78,643
Nickel contents of matte..... " "	8,678	31,029	34,638	36,596	39,038
Copper contents of matte..... " "	5,421	15,769	18,490	19,636	24,159
Matte exported*..... " "	19,831	21,450	26,565	32,397	34,908
Matte refined in Canada..... " "	10,340	31,765	37,613	38,567	33,489
Men employed..... No.	1,492	2,496	2,459	2,650	3,132
Wages paid..... \$	2,009,335	3,093,402	2,859,600	3,487,051	4,359,066

*All matte was exported prior to 1918 when refining in Canada began at Port Colborne, Ontario. The British America Nickel Corporation commenced refining operations at Deschênes, Quebec, in 1920, and closed down finally in July, 1924.

Dividends.—Heretofore the Department of Mines has not received information in regard to dividends paid by nickel companies. The figures which follow are published for the first time in the Annual Report:—

TABLE XV.—TOTAL DIVIDENDS PAID BY NICKEL COMPANIES*

Company	Period (inclusive)	Total to end of 1925	Paid in 1926	Total to end of 1926
Canadian Copper Company.....	1894-1901	\$1,975,000	.....	\$1,975,000
†International Nickel Co. {	preferred.....	1906-1925	\$534,756	11,229,762
	common.....	1909-1925	3,346,768	58,133,828
Total.....	.....	\$67,457,066	\$3,881,524	\$71,338,590
‡Mond Nickel Company {	deferred.....	1906-1914	£264,043	£264,043
	preferred.....	1904-1925	1,619,989	£236,370
	common.....	1905-1925	1,880,318	112,500
Total.....	.....	£3,764,350	£348,870	£4,113,220
.....	or	\$18,319,586	\$1,697,811	\$20,017,397
Grand Total.....	.....	\$85,776,652	\$5,579,335	\$91,355,987

*For the Mond Nickel Company the fiscal year ends April 30 and the figures given are to that date.

†Successors to the Canadian Copper Company. The International Nickel Company paid dividends on the common stock from 1909 to 1919, inclusive, and again in 1925 and 1926. Common stock outstanding is \$41,834,600, and preferred stock \$8,912,600, or a total of \$50,747,200.

‡Debenture interest paid by the Mond company was £96,393 for the fiscal year ending April 30, 1926; and from 1912 to 1926, inclusive, totalled £935,156. The issued and paid-up capital of this company is £900,000 common; £1,750,000 cumulative preference, £2,000,000 non-cumulative preference, both of these 7 per cent.; £375,000 of 5 per cent. debenture stock, and £1,000,000 of 5½ per cent. debenture stock; or a total of £6,025,000.

Refineries.—During the year at Port Colborne, the International Nickel Company of Canada recovered electrolytic and refined nickel, nickel oxide, converter copper, nickel sulphate, platinum, palladium and other metals of the platinum group. The record for 1926 is shown in the subjoined table:—

TABLE XVI.—NICKEL-COPPER REFINING, 1926

Schedule	Quantity	Value
		\$
Matte, treated..... tons	33,489	.....
Nickel oxide, marketed..... lbs.	7,644,808	1,805,171
Metallic nickel, recovered..... "	25,627,602	6,423,401
Blister copper, recovered..... "	18,505,324	2,457,752
Gold, recovered*..... ounces	4,447	91,367
Silver, recovered*..... "	151,429	90,980
Platinum metals, recovered*..... "	19,495	1,559,527
Employees..... No.	490	.....
Wages paid..... \$	.....	793,399

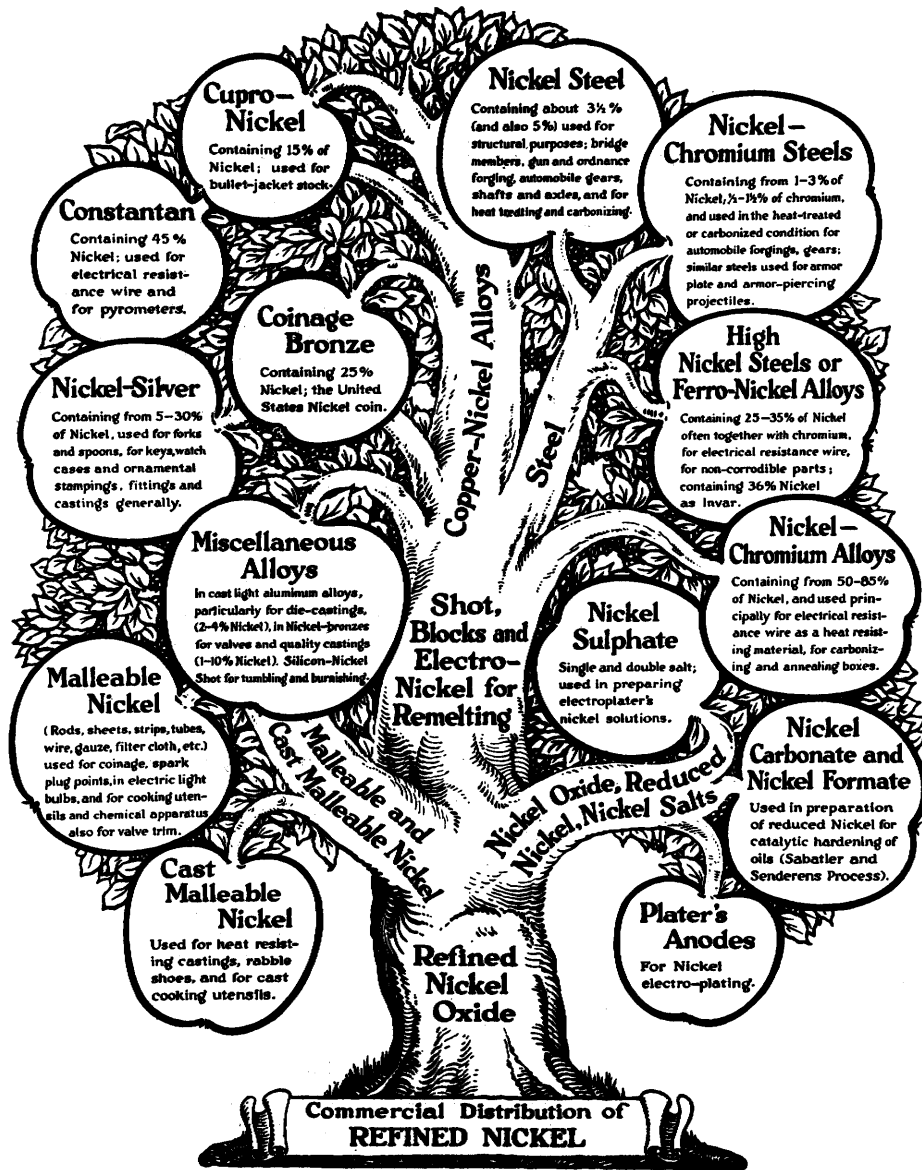
*Includes recoveries by the Mond Nickel Company at Clydach in Wales.

Platinum metals are the most important by-products in the refining of nickel-copper matte. Details regarding precious metals recovered during a five-year period by nickel-copper refineries treating Ontario matte are noted below:

TABLE XVII.—PRECIOUS METALS RECOVERED, 1922-1926

	1922 Ounces	1923 Ounces	1924 Ounces	1925 Ounces	1926	
					Ounces	Value, \$
Gold †.....	2,094	3,574	4,125	4,016	4,447	91,367
Silver.....	50,239	100,982	122,889	134,390	151,429	90,980
Platinum.....	4,802	6,810	9,181	8,692	9,471	919,349
Palladium.....	6,862	7,511	8,923	7,856	9,790	626,166
Rhodium, Ruthenium, Osmium and Iridium.....	124	304	593	432	234	14,012
Total platinum metals..	11,788	15,625	18,697	16,980	19,495	1,559,527

†Includes small recoveries of the rhodium group by the Mond Nickel Company.



Chart, reproduced through the courtesy of the International Nickel Company of Canada, showing ramifications in the distribution and uses of refined nickel.

Sulphuric Acid.—Reference was made in the 1925 Report to the new acid plant of the Mond Nickel Company at Coniston, which began to operate in November, 1925. Waste sulphur gases from the smelting of nickel-copper ores are being utilized for the production of acid by the "contact" process. In January, 1927, W. H. DeBlois, manager of the chemical division of the Mond Nickel Company, presented a paper in Montreal before the local branches of

the Society of Chemical Industry and the Canadian Institute of Mining and Metallurgy on "The Contact Process for Sulphuric Acid," and from this paper much of the following data has been abstracted. The paper was printed in the March issue of both *Canadian Chemistry and Metallurgy* and the *Canadian Mining and Metallurgical Bulletin*.

The smelters of the Sudbury area discharge into the air in the form of sulphur dioxide some 500 tons of sulphur daily, the equivalent of 1,500 tons of sulphuric acid, while Canada's total consumption is about 200 tons daily. The recovery of a small part of this sulphur by the Coniston acid plant represents the first attempt to save this waste product, and an important new industry is now established which will assure Canadian consumers an ample supply of sulphuric acid at a cost below prevailing United States prices. In 1926 this new plant produced 15,756 tons of acid of two grades, namely, 66° Baumé (93 per cent.) and oleum (fuming sulphuric). Two other plants in Canada produce sulphuric acid, but neither of them obtain it as a by-product.

Raw products heretofore used in Canada for sulphuric acid manufacture were either domestic iron pyrites, or imported lump sulphur from Texas. It is possible to produce liquid sulphur dioxide, which would meet the requirements of Canada's pulp and paper industry, by dissolving the impure waste gases at Sudbury, but the cost of heating this water to again drive off the pure sulphur dioxide before compressing and liquefying, in all probability, would prove prohibitive. The adoption of the "contact" process for acid manufacture was decided on because of its adaptability to producing strong acid and oleum to meet the main Canadian demand. Simply stated, this process means the combination of sulphur dioxide with oxygen of the air, using platinum as a catalytic agent, to form sulphur trioxide which only requires the addition of water to produce sulphuric acid. The gas emanating from the basic converters, which bessemerise the blast furnace nickel-copper matte, is almost pure nitrogen and sulphur dioxide, the latter averaging about 14 per cent. by volume. This gas is conducted by hoods covering the converters through flues and chimneys to the upper air, and it is at the hoods that separate flues convey to the acid plant the small part of the gas saved: The importance of a cheap source of sulphuric acid, controlled within the Empire, is apparent. The chief uses in the order named are oil refining, ammonium sulphate, explosives, steel pickling, also the tanning, textile and dye industries.

Iron Ore, Pig Iron, Steel and Coke

During 1926 no shipments of iron ore were made from Ontario mines, and since no ore of domestic origin was reported as charged to the blast furnaces, the entire output of pig iron during the year must be credited to foreign ore, and hence the item of pig iron does not appear in Table I.

The total quantity of iron ore charged during the year at Hamilton and Sault Ste. Marie, was 948,154 tons, from which there was produced a total of 545,737 short tons of pig iron of the following grades: 311,730 tons of basic, 187,361 tons of foundry, and 46,646 tons of malleable iron. The average prices of iron during the period on the Pittsburgh market were as follows: Bessemer, \$21.33; basic, \$18.55, and No. 2 foundry, \$21.64 per long ton. In computing the values given below the basic and malleable were taken at \$18.55 and \$18.88 respectively, and foundry at \$23.05 per long ton. The total value of the pig iron produced during 1926 was \$9,805,300.

IRON BLAST FURNACES IN OPERATION, 1926

Name of Company	Furnaces			Fuel used	Location
	No.	Daily capacity, long tons	Days operated		
Algoma Steel Corporation, Ltd.	4	1,500	362	Coke..... Coke, coal and gas	Sault Ste. Marie Hamilton
Steel Company of Canada, Ltd.	2	725	365		

BLAST FURNACES IN ONTARIO FOR THE PRODUCTION OF PIG IRON

Company	Location	Furnaces		Remarks
		No.	Daily capacity gross tons	
Algoma Steel Corporation, Ltd.	Sault Ste. Marie..	4	1,450	Active
Atikokan Iron Company.....	Port Arthur.....	1	175	Idle since 1911
Canadian Furnace Co., Ltd.	Port Colborne....	1	325	Idle since Nov., 1923
Canadian Steel Corporation, Ltd.	Ojibway (near Windsor).....	2	1,100	Under construction
Midland Iron and Steel Co., Ltd.	Midland.....	1	120	Idle since Feb., 1921
Parry Sound Iron Co., Ltd.	Parry Sound.....	1	90	Idle since Oct. 1, 1919
Standard Iron Co., Ltd.	Deseronto.....	1	60	Idle since June 9, 1919
Steel Company of Canada, Ltd.	Hamilton.....	2	750	Active

Note.—The first and last mentioned produce open-hearth steel as well as pig iron.

The following table gives particulars of the iron and steel-making industry of the Province for the last five years:—

TABLE XVIII.—IRON AND STEEL STATISTICS, 1922-1926

Schedule	1922	1923	1924	1925	1926
Ontario ore smelted..... short tons	23,398	36,622	8,231	6,830	.....
Foreign ore smelted..... "	1,217,543	1,283,886	836,233	732,356	948,154
Limestone for flux..... "	137,852	283,190	187,571	109,198	218,996
Coke..... "	336,301	576,832	438,323	262,344	503,871
Pig iron produced..... "	293,662	674,428	465,888	412,837	545,737
Value of pig iron produced..... \$	6,493,513	15,995,496	9,484,139	8,048,992	9,805,300
Steel made..... short tons	358,126	607,385	499,986	529,327	534,732
Value of steel made..... \$	12,812,927	21,133,664	14,196,029	18,904,520	16,710,365

Steel.—Steel ingots to the amount of 477,439 long tons were made in Ontario by five companies. Of these 460,766 tons were basic open hearth while the remainder, 16,673 long tons, were classed as "all other." This material was made for use in the manufacturing plants of the makers.

Direct steel castings derived by the open hearth basic, crucible, and electric processes, totalled 10,902 long tons, of which 8,002 long tons were electric and the balance, open hearth basic and crucible. The major portion of the output, or 7,900 long tons, was made for sale and the remainder for the use of the companies in manufacture.

Ferro-alloys were made by three companies and included ferro-manganese 78-80 per cent., and ferro-silicon of 15 and 50 per cent. silica content. The total output amounted to 37,692 long tons.

STEEL AND FERRO-ALLOY PRODUCERS

Company	Location
Steel Company of Canada, Ltd.....	Hamilton
Algoma Steel Corporation, Ltd.....	Sault Ste. Marie
National Castings Co., Ltd.....	Belleville
Dominion Foundries and Steel, Ltd.....	Hamilton
Wm. Kennedy & Sons, Ltd.....	Owen Sound
Canadian Carborundum Co., Ltd.....	Niagara Falls
Electro Metallurgical Co. of Canada, Ltd.....	Welland
Abrasive Company of Canada, Ltd.....	Hamilton
Canadian Electric Castings Co., Ltd.....	Orillia
Welland Steel Castings, Ltd.....	Welland

Coke.—The Algoma Steel Corporation, Sault Ste. Marie, and the Steel Company of Canada, at Hamilton, produce coke in conjunction with their blast furnace operations; while the Hamilton By-Products Coke Ovens, Ltd., also at Hamilton, produces coke for domestic purposes, having commenced in January, 1924. At the latter plant the present battery of 25 ovens (450 tons of coal or 315 tons of coke daily) was increased by the addition of 35 Solvay process by-product ovens. The contract for the new ovens was let in February, 1926. The total coke and coke breeze used and sold was 929,838 tons, having a value of \$6,714,879, of which 363,408 tons worth \$2,936,364 were sold and the balance consumed in the blast furnaces at Sault Ste. Marie and Hamilton.

The materials used and products consumed and sold by the coke plants in Ontario during 1926 are shown in the subjoined table:—

THE COKING INDUSTRY IN ONTARIO, 1926

Kind	Unit	Quantity	Value
MATERIALS USED			\$
Bituminous coal, foreign.....	tons	1,228,845	6,203,907
Sulphuric acid.....	lb.	10,348,363	160,134
Sulphur.....	"	416,000	4,480
All other materials.....			21,230
Total.....			6,389,751
PRODUCTS MADE			
Coke*.....	tons	873,264	6,525,134
Coke breeze.....	"	56,574	189,745
Gas sold and used.....	M. cubic ft.	9,819,375	2,103,715
Tar and tar products.....	Imp. gals.	10,016,407	595,564
Ammonium sulphate.....	lb.	26,816,041	598,920
Light oils.....	Imp. gals.	1,901,715	123,611
Total.....			10,136,689

*Does not include 144,220 tons of coke by municipal gas plants.

Of the products made, shown above the major portion of the coke, breeze and gas were consumed in the plants reporting. The total value of materials made and marketed was \$10,136,689. During the period the number of wage earners was 285 to whom \$502,736 was paid in wages.

In addition to the coke produced and used, as shown in the preceding table, nine other plants were active in the production of domestic gas from imported coal. A list of the producers in Ontario follows:

DOMESTIC GAS PRODUCERS IN ONTARIO, 1926

Company	Location
Board of Light and Heat Commission.....	Guelph
City Gas Company of London.....	London
Consumers Gas Company of Toronto.....	Toronto
Hamilton By-products Coke Ovens, Ltd.....	Hamilton
Hydro-Electric Power Commission.....	Cobourg
Ottawa Gas and Electric Companies.....	Ottawa
Port Hope Gas Company.....	Port Hope
Public Utilities Commission.....	Kitchener
Public Utilities Commission.....	Owen Sound
St. Thomas Gas Department.....	St. Thomas

Lead and Zinc

The interest manifested in the lead deposits of Ontario during 1924 and 1925 and mentioned in the reports of those years, was continued in 1926, when considerable prospecting and development work was carried on at various points throughout the Province. Of the well-known lead properties in eastern Ontario, the Frontenac mine, near Perth Road in Frontenac county, was under development by the Forbes Galena Mines, Limited; the Hollandia at Bannockburn in Hastings county also received some attention, while the Summerville Lead Mines, Limited, opened up a property in Victoria county. There was also some activity on lead prospects in the Ottawa valley. In recently discovered areas, however, more important developments have been made. Near Chelmsford, about fifteen miles west of Sudbury, the Bunker Hill and Sullivan Mining Company* continued their campaign of diamond-drilling on a zone about four miles in length which roughly follows the boundary between Balfour and Creighton townships. The ore shown up by 60,000 feet of diamond-drilling consists of zinc, lead and copper and also carries values in gold and silver. It is too soon to state how large a deposit is being developed, but there are indications of a large ore body which will mean the establishment of a new mining industry in the Sudbury nickel basin.

Lead-zinc ores have also been disclosed in Algoma district northeast of Searchmont station on the Algoma Central and Hudson Bay Railway, in Galbraith township north of Bruce Mines, and on the north shore of Lake Superior eastward from Port Arthur. Zinc-bearing copper ore has also been traced across the Ontario boundary from the copper fields of Rouyn and vicinity, and outcrops of copper have been noted in Clifford township, and lead-zinc in Ben Nevis. In the northern part of Munro township a most encouraging find of copper-zinc ore was made in November on what is known as the Potter-Doal claims.

The output of lead from all sources in 1926 amounted to 7,398,796 pounds, having a value of \$580,730, as compared with 7,268,193 pounds worth \$601,704 in 1925. The production from Ontario has been constantly increasing during the past five years. The principal producer, as formerly, was the Kingdon Mining, Smelting and Manufacturing Company from their lead mine and smelter near Galetta on the Ottawa river. The sales by this company during the period were 7,346,180 pounds, while the remainder of the output was contained in base bullion derived from the smelting of silver-cobalt ores at Deloro, and also includes 30,950 pounds produced in 1918 from Bedford township and not heretofore accounted for in the mineral production of the Province.

*This is the parent company. Its subsidiary, Treadwell-Yukon Mining Company, operates the Chelmsford property, now known as the Errington mine.

NON-METALLIC MINERALS

Abrasives

The only abrasive material produced in Ontario during 1926 was 64 tons of quartz pebbles worth \$576, which were gathered in the vicinity of Jackfish on the shore of Lake Superior. These were used chiefly in tube mills in the prairie provinces for grinding cement clinker. No production of corundum or garnets was reported. Carborundum, an artificial product made in the electric furnace, has displaced corundum to a large extent in the abrasive field.

Actinolite

Shipments during 1926 amounted to 80 tons, valued at \$1000. There is only one producer in the Province, namely, the Actinolite Mining Company, with a mill at the village of the same name, situated about four miles north of Tweed station on the Canadian Pacific railway. The mineral, which is found in serpentine rocks, is mined in the townships of Kaladar and Elzevir, Hastings county, and the head office of the company is Bloomfield, New Jersey. The product, a fibrous form of serpentine, is used principally for roofing purposes as an ingredient in coal-tar compounds. Mining in a small way has been carried on intermittently for many years. No ore was raised in 1925 or in 1926.

Asbestos

The Bowman asbestos property, now known as the Porcupine Asbestos Corporation, Limited, near McKay lake in Deloro township, was the first of its kind in Ontario upon which organized development has been carried out. In 1923, 6 tons worth \$2,600 were shipped. In 1924 the output was increased to 172 tons having a value of \$91,900; in 1925, 2 tons valued at \$901 were marketed; and in 1926, sales were 14 tons worth \$3,935. Considerable surface work consisting of a transmission line, camp buildings and a motor road to Timmins have been constructed, with a view to increasing the production.

Barite (Barytes)

There was a production of barite (heavy spar) in 1921 by H. C. Bellew, 6 Saint Sacrament St., Montreal, Que., of approximately 200 tons, from a deposit which is located on lot 20, concession X, township of North Burgess, Lanark county. No shipments, however, were reported during 1921 or 1922.

In 1923 there were shipped 200 tons worth \$4,180 from near Tionaga station in the District of Sudbury. In 1924 and 1925 no production was reported. A deposit in Langmuir township, south of Night Hawk lake, was worked in 1918, when 60 tons of ground barite were shipped. It is owned by Canada Night Hawk Mines, Limited.

The great market for barite in the industrial areas of Canada is the paints and pigment industry. This trade desires a very fine grade of material, between 200- and 300-mesh, which must be perfect as regards purity and colour. In 1923, according to a report of the Dominion Bureau of Statistics, the Canadian paint trade consumed more than 2,000 tons of ground barite. Rubber goods took 480 tons and other industries much lesser amounts. The total consumption was then given as 2,747 tons, and in later years must have increased to some extent. The pure white variety, water-floated, is worth about \$40.00 per ton.

Feldspar

The mining of feldspar from pegmatite dikes in Ontario is in part a seasonal occupation, in which the major portion of the mining is performed during the summer months. The operations are in the form of quarrying to which the large outcrops of spar readily lend themselves. During the calendar year 1926 there were 22,783 tons of feldspar shipped, of which 3,100 tons were milled in Ontario, and the total value, including that added by grinding, was \$199,102, or an increase of \$58,043 over the total selling value in 1925, when 17,404 tons worth \$141,059 were marketed. The Frontenac Floor and Wall Tile Company of Kingston is the largest grinder of feldspar.

During 1926 some 20 companies and individuals mined and shipped spar, most of which was marketed in Rochester, N.Y., Ohio and Pennsylvania. The largest output by any company was 3,782 tons, and the average for all producers was 1,266 tons. Employment was given to 274 workers who received \$131,460 in wages. Shippers in 1926 are noted below:—

FELDSPAR SHIPPERS, 1926

Name	Location of Deposit	P.O. Address
Anderson, J. G.	Lot 15, con. A, Head tp., and Wanapitei in Dryden tp.	Lucknow.
Bathurst Feldspar Mines, Ltd.	Bathurst tp.	230 King St. E., Toronto.
Consolidated Feldspar Mines, Ltd.	Lot 1, con. II, Ratter tp.	29 Melinda St., Toronto.
Craig, T. H.	Verona.	Verona.
Elizabeth Feldspar Mines, Ltd.	Mileage 115, C.P. Ry. near Dill.	Toronto, 36 King St. E.
Feldspars, Ltd.	Lots 1 and 2, con. XIII and lot 1, con. XII, Loughborough; lots 1 and 2, con. XIII, and lots 1 and 2, con. XII, Portland; lot 1, con. I and lot 2, con. II, Bedford tp.	Toronto, 293 Bay St.
Feldspar Mines Corp'n., Ltd.	Lot 11, con. VII, Monteagle tp.	Toronto, 1507 Bank of Hamilton Bldg.
Genesee Feldspar Co., Ltd.	Hybla.	Rochester, N.Y., 82 Augustine St.
Gilpin Corporation.	Lot 3, con. III, Bedford tp.	Brunswick, Me., Box 205.
Industrial Minerals Corporation.	Wilberforce and Eau Claire.	Toronto, 805 Bank of Hamilton Bldg.
Hasselbring and Myhill.	Lot 7, con. XIII, Storrington tp.	Sault Ste. Marie, 612 Queen St.
Hurlburt, G. W.	Lot 7, con. XIII, Storrington tp.	Toronto, 304 C.P.R. Bldg.
Maine Feldspar Co.*	Lot 3, con. III, Bedford tp.	Brunswick, Me., Box 205.
Northern Feldspar Mines, Ltd.	Lot 2, con. II, Dill tp.	Sudbury, Box 166.
O'Brien and Fowler.	Lot 29, con. III, Mattawan tp.	Ottawa, 114 Wellington St.
Orser, S. H.	Verona.	Perth Road.
Perth Feldspar Co., Ltd.	Lots 19 and 20, con. IX, Bathurst tp.	Ottawa, Central Chambers.
Rock Products Company.	Lot 20, con. IX, Bathurst tp.	Toledo, O., 450 Nicholas Bldg.
Verona Quarries, Ltd.	Lots 1 and 2, con. XIII, Loughborough tp.	Hamilton, Box 354.
Wanup Feldspar Mines, Ltd.	Dill tp.	Wanup.

*Formerly Gilpin Corporation.

The market for ground or prepared feldspar in the industrial parts of Ontario and Quebec was given as slightly less than 3,700 tons per annum in 1923, when business was at a low ebb. Of this the enamelware, porcelain and pottery trade consumed 2,520 tons, while soaps and washing compounds

accounted for 560 tons, and the balance was used in the manufacture of abrasive wheels, glass, roofing, floor and wall tile, and paints. The consumption of this ground material has undoubtedly increased during the past few years and might be safely estimated at more than 5,000 tons at the present time.

Fluorspar

Due to the influx of United States fluorspar Ontario producers, except during the war period, have been unable to compete in the limited market available in Canada. The material is used in the iron and steel industry as a flux, in lead refining plants, also in enamel, porcelain, pottery and glass manufacturing. The market available in eastern Canada for both crude and refined fluorspar is not great, and would not amount to much more than 500 tons per year.

During 1925 only 12 tons of crude fluorspar worth \$200 were reported as marketed by the Industrial Minerals Corporation of Toronto, all of which came from a deposit near Wilberforce and was recovered in conjunction with quartz mining. No fluorspar was reported as shipped in 1926.

Graphite

Graphite marketed in 1926 was 2,266 tons valued at \$158,994 as against 2,345 tons worth \$134,213 during the previous year. The total Ontario production was by the Black Donald Graphite Company, near Calabogie in Renfrew county. In 1925, the output was augmented by two other companies, the Timmins Graphite Mines in North Burgess township, and the Graphite Refining Company at Port Elmsley which shipped from stock. The bulk of the product was consigned to United States points.

Average prices for Ceylon graphite rose during 1925 by two cents per pound and at the end of the year were quoted at 6.8 cents. Lump, which sold for 9.0 cents, showed an increase of three and three-quarter cents. The prices at the end of 1926 were seven cents per pound for Ceylon and for Madagascar flake.

The following extract from the annual review number of the Engineering and Mining Journal, January 22, 1927, summarizes the world's situation as regards the industry:

In the graphite industry there were no new developments of particular importance during 1926. Each of the last five years has shown a progressive advance toward world stabilization, and the industry during the last year has followed the trend toward as complete an adjustment as is often obtained in international mineral products."

Gypsum

Operations in 1926 were confined to those of the Ontario Gypsum Company, Limited, with head office at Paris. Mines and mills are located at Caledonia and Lythmore, Haldimand county. During 1926, 97,402 tons were mined, of which 58,832 tons were calcined. Sales were as follows: crushed, 37,769 tons; fine ground, 1,110; calcined, 3,098; and consumed in the manufacture of various products, 48,010 tons; or a grand total of 89,987 tons valued at \$496,059. In 1925, sales amounted to 82,020 tons worth \$491,833.

During the period only the Caledonia plant was active, while the Lythmore works shipped from stock. The first-mentioned plant was in operation for 303 days during which time \$245,663 were paid to 45 mine and 143 mill workers.

The detail of the gypsum industry, including mining, milling and manufacturing, has been described in Volume XXXIV, Part 2, issued in 1925.

Iron Pyrites

During 1926, small shipments of iron pyrites were made from Ontario mines, although none of the mines were operated. The mineral occurs at widely separated points from eastern Ontario to the region north of Lake Superior. Until 1926, Gulf sulphur was so cheap in price that acid manufacture from iron pyrites became unprofitable, but the rise in price in the year has given many idle deposits a potential value. The utilization of the waste sulphur dioxide gases from the Mond nickel-copper smelter at Coniston, near Sudbury, for the manufacture of sulphuric acid, has in part cut into the field formerly held by the producers of pyrites ore. Heretofore the two most important operators in Ontario producing iron pyrites for the manufacture of acids, were the Grasselli Chemical Company, Limited, and the Nichols Chemical Company, Limited. The former made a small shipment to the United States during the year from the Caldwell mine near Flower Station, while the latter company kept their Northpines mine unwatered and ventilated, but made no shipments.

Ontario pyrites usually carries from 30 to 40 per cent. sulphur, and the bulk of the output heretofore was exported to the United States. The demand for pyrites has fallen off since the Great War, when production exceeded \$1,000,000 in valuation both in 1917 and 1918 due to the abnormal demand in Canada and the United States. The total production was 371 tons worth \$4,912 in 1926 as against 685 tons valued at \$8,799 in the previous year.

Notwithstanding the detrimental factors mentioned above, a search for deposits of iron pyrites was in evidence. During the year the Holdsworth claims, situated two miles from Hawk Junction on the Michipicoten branch of the Algoma Central Railway, was optioned by the Grasselli Chemical Company. Diamond-drilling indicated a large lens of iron pyrites, three cores of which averaged 46 per cent. sulphur and 43 per cent. iron.

Mica

Production in Ontario is mainly from the area south and west of the city of Ottawa in Lanark and Frontenac counties, where small deposits are worked spasmodically by individuals, in addition to more regular operation by a few organized companies. Since very little preparation of the crude crystals in the form of thumb-trimming and splitting is necessary to put the material in a marketable form, and also because many small dealers buy and sell in addition to operating and trimming, it has become necessary in order to avoid duplication to consider the final sales as production. On this account it has been difficult to keep accurate records.

A tabular statement of mica sales during 1925 and 1926 follows:—

MICA SALES, 1925-26

Variety	1925		1926	
	Quantity, Tons	Value \$	Quantity, Tons	Value \$
Rough-cobbed.....	142	21,971	55	11,724
Thumb-trimmed.....	67	45,266	39	10,543
Splittings.....			22	27,822
Scrap.....	1,396	15,424	765	8,997
Total.....	1,605	82,661	881	59,086

The average prices during 1926 did not vary greatly from those of the previous year and were as follows: Scrap, \$11.50 per short ton, splittings 62 $\frac{3}{4}$ cents per pound, while rough-cobbed mica varies widely in price according to the size of crystals. Thumb-trimmed prices were as follows:—

SIZE	PRICE PER LB.	SIZE	PRICE PER LB.
1" by 1".....	8c. to 14c.	2" by 3".....	26c.
1" by 2".....	10c. to 22c.	2" by 4".....	40c. to 65c.
1" by 3".....	20c. to 28c.	3" by 5".....	\$1 00

During the period only 87 tons of the crude ore were reported as mined. Employment was given to 42 men who received \$25,371 in wages.

Following is a list of mica shippers:—

MICA SHIPPERS, 1926

Name of Owner or Producer	Location or Name of Mine	P.O. Address of Manager, etc.
Kent Bros. & Estate J. M. Stonness.....	Bedford tp.....	Kingston.
Lee, W. W.....	Bedford tp.....	Bedford Mills.
Loughborough Mining Co., Ltd.....	Loughborough tp.....	Sydenham.
Martin, A. G.....	South Burgess tp.....	Ottawa, 236 Besserer St.
Bennett, H. V.....	South Elmsley tp.....	Perth.
Lee, W. W.....	.....	Bedford Mills.
Stonness, C. A.....	.....	Westport.
Wilson, Richard.....	.....	R.R. 2, Hartington.
Smith, D.....	.....	Perth.
Ennis, E.....	.....	Perth Road.
McNaughton, G. W.....	.....	Stanleyville.
Wood, F. J.....	.....	Godfrey.
Trousdale, J. and Nellis, F.....	.....	Sydenham.

The lower prices being offered to the small producers of crude mica have, in a large measure, accounted for the decreased output of this mineral. A new feature in this industry in Ontario was the construction in 1926 of a mica-grinding plant at Bancroft, owned by the Orser-McKenzie Mica Milling Company. It is the first in Ontario for the production of different grades of ground mica. The mill commenced early in 1927 and is producing about a ton per day. A grinding plant is also in operation in Hull, Quebec.

The ground material finds a market in the surfacing of roofing materials and wallpapers, and as an ingredient in lubricants and rubber articles. About 600 tons of ground mica are consumed annually in Canada.

Mineral Waters

Below are tabulated records since 1919 of shipments of mineral waters with valuation in bulk form at the works:—

	1919	1920	1921	1922	1923	1924	1925	1926
Imperial gallons.....	276,833	127,150	308,647	209,072	227,030	201,670	183,012	208,400
Value.....\$	19,290	15,059	14,438	10,528	14,047	13,133	25,452	27,277

The companies producing mineral waters in 1926 were as follows:—

PRODUCERS OF MINERAL WATERS, 1926

Name of Owner, Firm, or Company	Location of Spring or Well	P.O. Address of Manager, etc.
Borthwick, W.....	Gloucester tp.....	10 Albert St., Ottawa.
Caledonia Springs Co., Ltd.....	Gloucester and Clarence tps.....	2716 St. Urbain St., Montreal, Que.
Deneault, F.....	Lot 22, con. IV, Clarence tp.....	Bourget.
Goderich Mineral Water Co.....	Goderich.....	Goderich.
Gurd & Co., Ltd., Charles.....	Caledonia tp.....	1016 Bleury St., Montreal.
Sanitaris, Ltd.....	Lot 27, con. XII, Pakenham tp.....	Arnprior.

Natural Gas

Production of natural gas in Ontario in 1926 from 2,126 wells was 7,776,496 thousand cubic feet, with a retail value of \$4,415,918, according to the report (Vol. XXXVI, Part IV) by R. B. Harkness, Natural Gas Commissioner. The selling price ranged from 35 cents to \$1.20 per thousand cubic feet. Production in 1925 was 7,257,274 thousand cubic feet. For fuller details the special report above mentioned should be consulted. Labour statistics follow*—

Schedule	No. Employees	Wages Paid
Gas producers reported.....	1,008	\$720,556
Gas distributors reported.....	121	133,166
Drilling Contractors.....	85	76,650
Total.....	1,214	\$930,372

*Includes a few small operators, estimated.

Peat

Peat Fuels, Limited, of Montreal, operated at the Alfred bog, lot 9, con. VII, Alfred township, Prescott county, during 1925 from June 15 to September 9. Peat sold was 1,370 tons at \$6.00 per ton. Shipments were consigned to Montreal, Ottawa, and points as far west as Peterborough. No operations were reported during 1926.

Petroleum

A report on "Petroleum in 1926," by the Natural Gas Commissioner, appears in Vol. XXXVI, Part IV. Statistical tables, which are repeated here for convenience, are taken from the above-mentioned report. Other tables are added, the data being supplied by the Dominion Bureau of Statistics.

CRUDE PETROLEUM PRODUCTION,* BY FIELDS, 1922-1926

Field	1922	1923	1924	1925	1926
	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.
Petrolia, and Enniskillen township..	64,935	64,158	60,916	53,166	55,485
Oil Springs.....	43,214	39,090	41,320	39,137	38,349
Moore township.....	7,275	4,790	4,483	8,195	2,438
Sarnia township.....	3,224	2,387	2,068	1,905	1,890
Plympton township.....	695	872	525	1,424	1,047
Bothwell.....	25,681	27,665	26,700	26,243	25,382
Dover, West } Tilbury.....	5,482	5,618	3,898	2,957	959
Tilbury East }	127	1,950			
Raleigh township.....	663	302	783	887	676
Onondaga township.....	489	237	456	261	361
Mosa township.....	11,959	10,319	8,862	8,397	7,868
Thamesville.....	384	567		289	2,376
Euphemia township.....				39	
Dawn.....	217				
Dunwich township.....	387	594	1,351	1,001	139
Romney township.....		849	2,955	1,235	
Total production..... Bbls.	164,732	159,399	154,317	144,249	136,971
Value..... \$	466,587	395,300	390,423	369,154	376,822
Average price per bbl..... \$	2 65	2 47	2 51¼	† 2 56	2 73

*Figures to July 1, 1925, supplied by the Supervisor of Petroleum Bounties at Petrolia.

†A bounty of 26¼ cents per barrel (35 Imperial gallons), or a total of \$20,152, was paid in addition by the Federal Government under the "Petroleum Bounty Act," up to July 1, when the Act ceased to operate.

CRUDE PETROLEUM AND REFINERY STATISTICS, 1922-1926

Schedule	1922	1923	1924	1925	1926
Crude petroleum production:					
Imp. gals.	5,756,602	5,598,985	5,401,102	5,024,770	4,693,999
*Value. \$	466,587	395,301	390,424	367,524	376,822
Imported crude, distilled:					
Imp. gals.	152,888,816	138,527,971	151,381,481	161,895,295	183,347,749
Value. \$	13,834,118	11,141,952	11,575,058	13,056,823	16,940
Canadian crude, distilled:					
Imp. gals.	5,612,645	5,837,827	5,123,683	4,859,148	5,017,500
Value. \$	462,346	450,467	394,398	358,245	422,159
Per cent. of total.	3.54	4.04	3.27	2.92	2.66
Products:					
Illuminating oil. Imp. gals.	36,650,134	33,175,063	28,816,322	18,677,629	8,088,787
Value. \$	4,077,350	3,758,185	3,055,188	2,222,569	1,266,577
Lubricating oil. Imp. gals.	14,556,150	11,584,423	12,011,116	13,297,275	16,025,753
Value. \$	2,558,278	2,107,530	2,009,732	2,364,320	3,540,786
Benzine, naphtha, gasoline. Imp. gals.	59,223,186	50,884,894	61,493,214	73,083,022	84,936,377
Value. \$	13,920,089	8,739,670	9,392,837	11,032,134	14,983,322
Still gas. M. cu. ft.		374,687	524,737	431,713	630,325
Value. \$		131,745	172,555	167,869	256,935
*Gas and fuel oil, tar, Imp. gals.	34,508,790	34,727,265	36,702,043	46,064,129	41,883,125
Value. \$	2,510,427	2,367,050	2,494,858	2,947,378	3,182,770
Paraffin wax and candles. lb.	12,063,768	10,484,436	9,112,143	15,502,029	9,858,490
Value. \$	329,147	484,416	551,434	734,322	648,303
Tar and grease. lb.	8,186,013	10,612,588	10,325,835	9,301,674	11,260,882
Value. \$	265,150	222,675	187,544	177,474	221,826
Acid oil. Imp. gals.		1,126,370	1,350,450	1,858,176	711,970
Value. \$		62,006	61,748	85,761	35,823
Acid and Petroleum coke. tons	38,016	31,505	36,200	31,501	45,774
Value. \$	263,034	249,425	226,005	212,085	265,841
Miscellaneous. \$			29,261	1,596	2,978
Total value of products. \$	23,923,475	18,122,702	18,181,162	19,945,508	24,404,801
Employees. Ave. No.	1,393	1,515	1,603	2,165	2,241
Wages paid. \$	2,018,765	2,265,307	2,453,082	2,702,034	2,876,150

*The value includes bounty paid to producers.

Refining of oil and the manufacture of oil refinery products were carried on during 1926 by three companies in Ontario, as follows:—

PETROLEUM REFINERIES, 1926

Company	Head Office	Plant
British American Oil Refineries, Ltd.	1312 Royal Bank Bldg., Toronto.	Toronto.
Canadian Oil Refineries, Ltd.	Toronto.	Petrolia.
Imperial Oil Refineries, Ltd.	445 South Christina St., Sarnia ...	Sarnia.
Great Lakes Oil Co., Ltd. (idle)	Wallaceburg, Ont.	Wallaceburg.
McCull Bros.	114 Don Esplanade, Toronto.	Toronto.

The average number of employees at the above refineries was 2,241, and the salaries and wages paid totalled \$2,876,150. Operations by McCull Bros. commenced in January, 1926. Considerable quantities of sulphuric acid, sulphur, caustic soda, soda ash, litharge, fullers earth and other materials were consumed, a summary of which appears in the subjoined table.

MATERIALS USED IN OIL REFINING OPERATIONS, 1926*

Schedule	Quantity	Cost at Works
Crude oil (domestic)..... Imp. gals.	5,018,500	\$422,159
“ “ (imported, U.S.A.)..... “	183,347,749	16,940,505
Sulphuric acid (not made by firms reporting)..... lb.	35,065,567	194,794
Sulphur (not used in acid manufacture)..... “	25,294	612
Caustic soda..... “	2,057,199	67,716
Soda ash..... “	216,600	3,896
Lime..... “	68,600	639
Litharge..... “	163,795	16,349
Fullers earth..... “	4,742,269	49,672
Compounding material.....		642,645
All other material.....		103,657
Shipping containers (barrels, cans, crates, etc.).....		1,526,069
Total.....		\$19,968,713

*Table supplied by the Dominion Bureau of Statistics.

A considerable number of by-products are produced in the refining of petroleum apart from the gasoline, kerosene and other heavier oils derived. In the Canadian practice some of these commodities are consumed in the plant operations and no direct income is received from them. The following table shows materials made for sale, as well as those made for the use of the companies:

PRODUCTS MADE IN OIL REFINERIES, 1926*

Schedule	For Plant Use		For Sale	
	Quantity	Value	Quantity	Value
Gasoline..... Imp. gals.	9,434	\$1,579	84,873,078	\$14,970,969
Petroleum spirits..... “			53,869	10,744
Kerosene..... “	25,859	3,845	8,062,928	1,262,712
Fuel and gas oils..... “	9,147,666	479,457	32,735,459	2,470,313
Lubricating oils..... “	14,940	3,326	16,010,813	3,537,460
Grease..... lb.	3,313	50	10,899,799	218,915
Tar..... Imp. gals.	35,770	2,861		
Petroleum coke..... tons	1,100	5,855	29,955	210,982
Wax and candles..... lb.			9,858,490	648,303
Other products—Sludge..... Imp. gals.	711,970	35,823		
Pitch..... tons	2,120	2,825		
Still gas..... M. cu. ft.	630,325	256,935		
Acid and black oil coke..... tons	11,552	38,490		
Linseed oil soap..... lb.			34,585	2,767
All others.....				211
TOTAL VALUE.....	\$24,164,452	\$831,046		\$23,333,406

*Table supplied by the Dominion Bureau of Statistics.

Although there were only four plants operating the capital actually employed was considerable. Cost of lands, buildings, plant, etc., supplies of stock on hand, cash, trading and operating accounts, amounted to \$20,441,740, or an increase of \$4,068,778 over the figures for 1925. The total cost of fuel for the four establishments was \$1,609,296, of which \$308,621 was derived in the process of manufacture, and included coke, still gas, sludge and pitch. The

cost of the coal consumed, both bituminous and anthracite, amounted to \$711,072. The electrical power included in the total cost above amounted to \$71,072, while the power of the steam boilers installed totalled 7,072 horsepower, the same as in the previous year.

The following table shows the quantity and value (less freight, exchange and sales tax) of crude oil and its refined products imported into Ontario in the year 1926. Practically all of this came from the United States. The information is furnished by the Department of External Trade and Commerce, Ottawa.

PETROLEUM AND REFINED PRODUCTS IMPORTED INTO ONTARIO
DURING 1926

Schedule	Gallons	Value
CRUDE PETROLEUM:		
Fuel and gas oils between .775 and .8235 specific gravity	30,723	\$ 6,769
Petroleum, .790 specific gravity or heavier for refining	184,595,902	12,228,044
Total	184,626,625	\$12,234,813
REFINED PETROLEUM:		
Gasoline lighter than 0.725 specific gravity (casing head gasoline)	30,237,083	\$ 4,197,210
" heavier " 0.725 " "	7,344,583	1,064,787
Kerosene and other illuminating oils	2,260,129	251,048
Lubricating and other oils	5,040,924	1,522,662
Fuel oil of 0.8235 specific gravity and heavier	8,295,190	603,735
Total	53,177,913	\$ 7,639,442
PETROLEUM PRODUCTS:		
Axle grease lb.	2,742,347	\$ 164,504
Vaseline, toilet and medicinal petroleum		106,883
Paraffin wax lb.	2,004,585	136,552
" " candles lb.	236,986	50,867
Other petroleum products gals.	1,143,428	213,265
Total		\$ 672,071
Total net value of petroleum and refined products		\$20,546,326
Duty paid on the above in 1926, calculated on existing tariff schedule		1,300,794
Sales tax at 4 per cent.		821,853
Freight, approximately		6,724,160
Total value delivered in Ontario		\$29,393,133

A comparison of this total with the value of the products of our Ontario refineries shows that over 34 per cent. of refined petroleum products consumed in Ontario or passing through Ontario is imported, but compared with the years 1924 and 1925 the effect of an additional refinery in Ontario is shown. There was a reduction of 7,534,289 gallons of gasoline in the imports. It is apparent that there is still room for more refineries in Ontario.

Quartzite, Quartz and Silica Brick

Statistics of the production of quartzite and quartz in this report refer to the shipments from the quarries. In former reports the output of silica brick was included with the others, but, as agreed with the Dominion Bureau of Statistics, the two items in this report are shown separately. Shipments of quartzite and quartz from Ontario quarries in 1926 amounted to 192,733 tons

having a value of \$339,304, while the output of silica brick numbered 1,306,773 worth \$56,441. In order to avoid duplication in value, \$9,800 is deducted from the gross value of the silica brick (\$66,241) to take account of the crude quartz used in the manufacture.

Some 123 wage earners were employed in the quarries to whom \$102,230 was paid in wages.

QUARTZITE, QUARTZ AND SILICA BRICK PRODUCERS, 1926

Name of Owner, Firm or Company	P.O. Address of Operator	Location of Quarry
*Algoma Steel Corporation, Limited...	Sault Ste. Marie.....	Mile 19, A.C. Ry.
Anderson, J. G.....	Lucknow.....	Wanup.
Dominion Mines and Quarries, Limited	Toronto, Canada Life Bldg.	East Neebish and Killarney
Industrial Minerals Corporation.....	Toronto, 805 Bank of Hamilton Bldg.	Wanup.
Mond Nickel Company.....	Coniston.....	Neelon tp.
Orser, S. H.....	Perth.....	Verona.
Rayner, G. W.....	Toronto, Lumsden Bldg.....	Hybla.
Wright & Company.....	Sault Ste. Marie.....	Deroche tp., Mile 19, A.C. Ry.

*Produces Silica Brick.

Salt

Revised figures for salt production by Ontario salt companies during 1926 give a total of 252,345 tons having a selling value of \$1,388,672, as against 226,315 tons valued at \$1,352,504 in the previous year. During the period nine companies operated ten active establishments and employed on the average 466 workers, of whom 32 were females, with a pay roll amounting to \$614,790. The salt industry is centred in the southwestern part of the Province (Bruce, Huron, Lambton and Essex counties), which is underlain by salt beds. Salt brine is pumped from wells, evaporated and graded. Included with the total output is the salt equivalent of brine used in chemical plants at Sandwich and Amherstburg, on the Detroit river, for the manufacture of bleaching powder, liquid chlorine, muriatic acid, caustic soda and soda ash.

The several grades and total tonnages, with value of salt, exclusive of packages, marketed for the past five years are tabulated as follows:—

SALT STATISTICS, 1922-1926

Schedule	1922	1923	1924	1925	1926
Land.....tons	6,585	3,713	4,612	5,125	3,965
Coarse....."	28,154	31,282	28,496	33,197	31,192
Fine....."	34,684	36,924	42,555	43,286	47,202
Table and Dairy....."	41,119	42,468	41,134	46,602	50,461
Pressed Blocks....."	2,489	3,431	3,572	4,605	6,505
Brine (salt equivalent)....."	63,710	80,099	83,059	93,500	113,020
Total sold or used....."	176,741	197,917	203,428	226,470	252,345
Value of products sold or used...\$	1,573,657	1,674,365	1,337,311	1,466,450	1,388,672
Employees*.....No.	409	479	439	467	466
Wages.....\$	539,813	508,525	482,263	555,729	614,790

*Employees of chemical works are not included.

Companies producing brine or salt in 1926 were as follows:—

OPERATING SALT COMPANIES, 1926

Name of Owner, Firm or Company	Location of Wells or Works	P.O. Address of Manager, etc.
Brunner, Mond Canada, Limited.....	Amherstburg*	Amherstburg.
Canadian Salt Company, Limited, The. {	Windsor.....	} Windsor.
	Sandwich*.....	
Dominion Salt Company, Limited, The	Sarnia.....	Sarnia.
†Elarton Salt Works Co., Ltd.....	Warwick.....	Watford, R.R. No. 5.
Exeter Salt Works Company, Limited..	Exeter.....	Exeter.
Goderich Salt Co., Limited.....	Goderich.....	Goderich.
Kincardine Salt Co., Ltd.....	Kincardine.....	Kincardine.
Western Canada Flour Mills Co., Ltd..	Goderich.....	Goderich.
Western Salt Company, Limited.....	Courtright.....	Courtright.
‡Wingham Salt Works.....	Wingham.....	Wingham.

*Chemical works using salt brine as raw material.

†This company went into liquidation on July 12, 1926.

‡Idle during 1926, and now owned by Wm. Davies Co., Ltd., Toronto.

Talc and Soapstone

Two talc mills were operated in 1926, namely, those of Geo. H. Gillespie Company and Asbestos Pulp Company, both of Madoc. No crude talc was marketed except that from Henderson Mines, Limited, at Madoc, which supplies the Gillespie mill. Sales advanced over 1925 both in tonnage and value as noted in the accompanying table. Refined talc ranged in price from \$9 to \$18 per ton according to grade, and was marketed in Canada, the United States, and England.

Included in the total is 110 tons of soapstone which was sawn and marketed by the Grace Mining Company from their property at Eagle lake, Kenora district. This product was consigned to pulp mills in Ontario. The Wabigoon Soapstone Company did some development on their properties in lot H.W. 133, con. II, Zealand township, near Wabigoon. There are also workable deposits near the south end of Wabigoon lake and on an island in the lake itself.

Following are statistics of talc and soapstone for the past five years—

TALC AND SOAPSTONE STATISTICS, 1922-1926

Schedule	1922	1923	1924	1925	1926
Ground talc shipped*..... tons	12,874	9,531	10,718	13,678	14,882
Total value shipments..... \$	178,397	125,124	130,577	174,116	178,986
Employees, mine and mill..... No.	46	57	40	51	50
Wages paid..... \$	53,295	36,647	37,075	47,971	47,083

*Includes 17 tons soapstone in 1923, 64 tons in 1925, and 110 tons in 1926.

STRUCTURAL MATERIALS AND CLAY PRODUCTS

General Remarks

Apart from the statistics of structural materials collected from each operator and which in the aggregate reflect the actual conditions of the industry, there are other factors bearing on the subject, concerning which information is available. The Dominion Bureau of Statistics publishes prices of wholesale commodities, index numbers of employment, and building permits granted. Information as to contracts awarded is published monthly in *MacLean Building Review*.

During the past three years the index numbers of wholesale prices of building materials in general declined from 159.1 in 1924 to 153.7 in 1925 and 149.4 in 1926, based on 100 in 1913. The index number of employment in the building and construction industries declined from 136.9 in 1924 to 130.46 in 1925 and increased again to 134.8 in 1926, as compared with 100 for January, 1920.

Building permits in sixty-three Canadian cities in 1926 were valued at \$156,386,607. Of this total thirty Ontario cities accounted for \$65,373,757 or 41.8 per cent., as noted in the following table abstracted from *A Review of Building Permits in Canada during 1926*, issued by the Dominion Bureau of Statistics :—

BUILDING PERMITS IN ONTARIO, 1920-26

Year	30 Ontario Cities, Value	Toronto Metropolitan Area (a) Value	Material Prices Index No. (b)	Wages Index No. (c)
1920.....	\$58,636,365	\$30,049,413	214.9 (d)	180.9 (d)
1921.....	59,315,845	31,979,346	183.2	170.5
1922.....	81,396,259	36,405,625	162.2	162.5
1923.....	74,673,080	39,530,877	167.0	166.4
1924.....	57,330,141	29,636,428	159.1	169.1
1925.....	59,888,867	32,408,636	153.7	170.4
1926.....	65,373,757	31,588,124	149.4	172.1

(a) Includes East and North York municipalities.

(b) Applies to average weighted index numbers for Canadian wholesale prices of building materials on the basis of 1913 = 100, as compiled by the Dominion Bureau of Statistics.

(c) Average index number of wages in Canadian building trades as compiled by the Federal Department of Labour.

(d) Peak year.

The value of Canadian construction contracts awarded for 1926, reported by *MacLean Building Review*, was \$372,947,900 as compared with \$297,973,000 in 1925. Ontario contracts in 1926 amounted to \$141,929,400. Building costs have been stable during the past few years, and material prices are considerably below the peak of 1920.

VALUE OF ONTARIO CONSTRUCTION CONTRACTS, 1922-1926

Classification	1922	1923	1924	1925	1926
Residential.....	\$60,718,000	\$55,879,000	\$43,090,000	\$47,529,600	\$52,084,100
Business.....	39,611,000	34,904,000	27,706,000	32,579,800	38,808,200
Industrial.....	10,245,000	10,668,000	7,017,000	3,754,700	21,126,900
Engineering....	56,054,000	54,701,000	58,228,000	37,381,000	29,910,200
Total.....	\$166,628,000	\$156,152,000	\$136,041,000	\$121,248,100	\$141,929,400

Cement

During 1926 three cement mills owned and operated by two companies were active in Ontario, namely, the Belleville (No. 5) and Port Colborne (No. 8) plants of the Canada Cement Company, and St. Marys Cement Company at St. Marys. The Hanover Cement and Stone, Limited, at Hanover, was closed down in September, 1925, after having been purchased by the Canada Cement Company.

The sales showed a slight decline in quantity in 1926 although the number of wage earners and wages paid increased. The quarry operations gave employment to 90 men while the mills were operated by 674 employees. The three plants were active for a total of 1,072 days, or an average of 357 days each.

Details of the Ontario cement industry in the last pre-war year (1913) and subsequently are given in the following table:—

PORTLAND CEMENT STATISTICS, 1913-1926

Year	No. of Operating Plants	Average No. Employees	Wages	Stock on hand Dec. 31st bbls.	Sales		Average Price per bbl. (350 lb.)
					Barrels	Value	
1913.....	13	1,382	\$ 955,729	450,213	3,802,321	\$ 4,105,455	\$ 1 08
1914.....	11	987	653,351	846,562	2,665,650	2,931,190	1 10
1915.....	7	692	425,170	755,799	2,302,242	2,534,537	1 10
1916.....	7	659	428,774	380,458	2,143,949	2,242,433	1 05
1917.....	6	589	538,355	567,261	2,063,231	2,934,271	1 42
1918.....	4	425	423,580	473,184	1,226,244	1,910,839	1 56
1919.....	5	647	722,029	278,188	2,022,575	3,659,720	1 81
1920.....	5	859	1,283,359	248,142	2,035,594	4,377,814	2 15
1921.....	5	883	1,228,460	174,686	2,723,072	6,425,266	2 37
1922.....	4	768	990,997	396,911	3,104,386	6,235,370	2 01
1923.....	4	852	1,084,711	452,378	3,296,428	5,855,590	1 77
1924.....	4	757	992,808	352,851	3,564,499	5,668,671	1 59
1925.....	4	700	921,643	339,541	3,462,358	5,253,911	1 52
1926.....	3	764	997,089	457,161	3,398,860	4,792,857	1 41

In the United States the factory price of hydraulic cements, per barrel of 380 pounds, averaged \$1.77 in 1925 and \$1.71 in 1926. It will be noted that the U.S. barrel is 8 per cent. larger than the Canadian, and when price comparisons are made this fact should not be overlooked.

Early in April the Canada Cement Company reduced the price of this commodity from \$1.72 to \$1.42 per barrel. A month later it made a further reduction to \$1.15 per barrel. As a result, the profits of the company were slightly down. The annual report for the twelve months ending December 31, 1926, contained the following:—

There was a reduction of about \$122,000 in operating profits after writing off a depreciation of about \$107,000 more than that of the calendar year 1925, and an increase of nearly three-quarters of a million in net working capital.

In the Province of Quebec the National Cement Company cut the price of cement ten to twenty cents per barrel in different localities. The Canada Cement Company, as mentioned above, met these reductions with the result of a general lowering in price to consumers.

Lime

The lime-burning industry in Ontario gave steady employment during the year to 414 men, who received \$397,988 in wages. The largest item in manufacturing costs was that of fuel which included coal, gas and wood costing \$396,128 during 1926.

The following table shows the lime statistics of the Province for the past five years:—

LIME STATISTICS, 1922-1926

Year	Lime Marketed or Used						Fuel Costs	Em- ployees	Wages
	Hydrated			Quicklime					
	Tons	Total Value	Per Ton	Bush. (70 lbs.)	Value	Ave. Price per bush.			
1922..	36,408	\$ 455,980	12 52	3,939,954	\$ 1,311,563	c. 33.3	\$ 312,825	425	\$ 408,731
1923..	41,727	519,840	12 46	4,810,421	1,373,823	28.5	556,321	542	549,613
1924..	35,989	438,607	12 19	4,391,050	1,401,545	31.9	394,195	396	402,295
1925..	41,610	477,585	11 47	5,115,882	1,566,540	30.6	375,220	409	436,867
1926..	39,217	457,978	11 68	5,402,261	1,593,468	29.5	396,128	414	397,988

Below are given the names of producers and the location of plants operated in 1926:—

LIME PRODUCERS, 1926

Name of Owner or Company	Location of Kilns	Head Office Address
Alabastine Co., Paris, The. (*)	Elora and Teeswater.	Paris.
American Cyanamid Co. (†)	Niagara Falls.	Niagara Falls.
Beachville White Lime Co., Ltd.	Beachville.	Beachville.
Biederman, Albert G.	Golden Lake.	Golden Lake.
Brunner Mond Canada, Limited. (†)	Anderdon tp., near Amherstburg.	Toronto, Bank of Commerce Building.
Cameron, W. M.	Carleton Place.	Carleton Place.
Chalmers Lime Works.	Owen Sound.	Owen Sound.
Christie, Henderson & Co., Limited.	Hespeler (*), Puslinch, Kelso.	Toronto, 201 Crown Office Building.
Canada Lime Co.	Coboconk.	Toronto, 26 Queen St. E.
Dominion Sugar Company. (†)	Chatham, Wallaceburg and Kitchener.	Chatham.
Gallagher Lime and Stone Co., Limited	Barton tp.	Hamilton.
Harvey, E., Limited.	Rockwood.	Guelph.
Jamieson, J. M.	Forester Falls.	Forester Falls.
Jamieson Lime Co.	Renfrew.	Renfrew.
Kirkley, Harry.	North Fredericksburgh.	Napanee.
Marshall, James.	Barton tp.	Hamilton.
Robertson Co., Limited, D.	Nassagaweya tp.	Toronto, 26 Queen St. E.
Standard White Lime Co., Limited.	Beachville, Guelph (*).	Guelph.
Standard Chemical Company, Ltd.	Eganville (*).	906 Drummond Bldg., Montreal, Que.
Toronto Brick Co., Limited.	Coboconk.	Toronto, 60 Victoria St.
Toronto Lime Co., Limited.	Dolly Varden.	Toronto, 26 Queen St. E.
Vogan, Samuel.	Warton.	Warton.
Weppeler, Henry.	Glenelg tp.	Priceville, R.R. No. 2.

*Hydrated lime plants.

†Product used in manufacture of chemicals.

The small lime-kiln for burning quicklime for local use is rapidly disappearing and giving place to larger and more up-to-date plants, several of which are now equipped for the production of hydrated lime. During 1926, the production showed a slight increase. The major portion of the hydrated material, or 27,119 tons, was consumed by the building trades. Quicklime finds its largest market in chemical manufacturing. The consumption percentages of the total shipments during 1926, in order of importance, were as follows: Chemical works, 62.8; building trades, 15.5; dealers, 7.4; sugar refineries, 5.3; pulp and paper, 3.4; and the balance, or 5.6 per cent., by glassworks, tanneries, smelters and other consumer

Sand-Lime Brick

Sand-lime brick for inside construction of buildings and also for foundations has been widely used during recent years, and has supplanted brick made from clay in many buildings, more particularly in Toronto and environs. An objection to this material, which is cheaper than clay brick, may be found in its application to walls subjected to dampness. Frequently a white powder or scum appears on the inside of foundation walls constructed of sand-lime brick. This is due to the crystallizing of hydrous sodium carbonate (Na_2CO_3) and also a trace of salt (NaCl). The scumming tendency may be largely overcome by quick drying which probably creates some chemical change in the constituents of the brick. Carbonates are soluble in water whereas sulphates in clay products and cement are not.

SAND-LIME BRICK PRODUCERS, 1926

Name of Company	Address	Location of Plant
*Caledon Brick Company, Limited.	240 Gilbert Ave., Toronto...	Toronto.
Canada Sand-Lime Pressed Brick Company, Ltd.	28 Symes Road, Toronto....	Toronto.
Don Valley Brick Works.....	114 Federal Bldg., Toronto..	Todmorden.
Harbour Brick Company, Ltd.....	408 Lumsden Bldg., Toronto.	Toronto.
Hinde Bros.....	134 Northlands Ave., Toronto	Toronto.
Leaside Brick and Sand Company, Ltd.	Wellington.	Leaside.
Shepard, Jas. G., and Company, Ltd.	Wellington.....	Wellington.
†Toronto Brick Company, Ltd.....	60 Victoria St., Toronto....	Scarboro.
West Lake Brick and Products Company, Ltd.	Wellington.....	West Lake, Prince Edward Co.
Willcox Lake Brick Co., Ltd.....	Richmond Hill.....	Willcox Lake.
York Sandstone Brick Co., Ltd.....	Gerrard and Victoria Park Ave.	East Toronto.

*This company ceased operations in March, 1926.

†Swansea plant idle in 1926.

In 1926 the output of sand-lime brick was 46,869 M. worth \$555,847 as against 66,506 M. valued at \$820,893 in 1925. These figures include the value of the lime consumed in manufacturing. In Table I the value of the lime has been deducted, thereby eliminating all duplication. The following table gives statistics for the past five years, also comparative values of common clay brick:—

SAND-LIME BRICK STATISTICS, 1922-1926

Year	No. of operating plants	No. of wage-earners	Wages	Shipments				Average value per M. common clay brick
				M.	Total selling value	Average value per M.	Value, lime deducted	
1922	9	178	\$222,579	48,449	\$786,772	\$16.24	.....	\$17.09
1923	7	203	233,991	59,080	887,960	15.03	.....	16.77
1924	10	186	195,116	54,410	603,275	11.09	\$512,361	16.94
1925	8	202	213,556	66,506	820,893	12.34	677,103	15.28
1926	8	178	171,747	46,869	555,847	11.86	461,376	15.18

Sand and Gravel

Although figures for sand and gravel production as given in Table 1 cover the output of the more important operators, it should be pointed out that because of the seasonal nature of the operations and lack of information many small operators of isolated pits have of necessity been omitted. During 1925 a total of 146 individuals and companies reported production of sand and gravel. In addition several companies were licensed to dredge some of the shoals and shore lines of the Great Lakes and Rivers. A considerable quantity of material was consumed also by the Highways Department and Northern Development Department on road construction. From the above sources there was produced in Ontario 4,899,580 tons worth \$2,117,461 in 1926, as against 3,913,292 tons valued at \$1,658,700 in 1925.

In compilation of provincial statistics of sand and gravel the material consumed by the railway companies in the Province has never been included for the reason that it is produced by the railways from their own pits and used by them as ballast, no sales having taken place. In the reports of the Dominion Bureau of Statistics this railway ballast is included as production, and this fact should be kept in mind in making any comparisons.

The output of sand and gravel during 1926 was as follows:

Schedule	Tons	Value
Private pit operators.....	2,728,198	\$993,441
Recovered by Licensees from Great Lakes and Rivers.....	1,391,381	1,066,242
Northern Development Dept. (Roads).....	780,000	57,778
	4,899,580	\$2,117,461

Following is a list of sand and gravel pit operators who marketed or used 1,000 cubic yards or more of these materials during the year:—

SAND AND GRAVEL OPERATORS, 1926.

Name of Owner or Company	Material G—Gravel S—Sand	Location of Deposits	Address
Adair, Dolson.....	S. and G.	Caledon tp., lot 24, con. V...	Caledon East.
Adelaide, Township of.....	G.	Adelaide tp., lot 3, con. V...	Arkona.
Armstrong Supply Co., Ltd.	G.	York St., Hamilton.....	Hamilton.
Ashton, Thos.....	S.	Victoria Park Ave.....	Toronto, 1354 Queen St. E.
Austin, H. B.....	S. and G.	Wellington co.....	Erin, Box 48.
Baxter, Jas.....	S. and G.	Dereham tp., lot 17, con. X...	
Bellyou, N. E.....	S. and G.	Murray tp., lot 6, con. I.....	Trenton, R.R. 4.
Benson & Patterson.....	S. and G.	Stamford.....	Stamford.
Bomberry, J. H.....	S. and G.	Dereham tp., lot 4, con. II...	Salford, R.R. 1.
Brantford, City of.....	S. and G.	Webster St., Brantford.....	Brantford.
Bruce, County of.....	S. and G.	Bruce county.....	Walkerton, Box 201.
Burrows, John.....	S. and G.	Widdifield tp.....	North Bay, 447 Klock Ave.
Cameron, Chas. M.....	S. and G.	Mosa tp., lot 3, con. I.....	Glencoe, R.R. 1.
Campbellford, Town of.....	S. and G.	Within town limits.....	Campbellford.
Caradoc, Township of.....	S. and G.	Caradoc tp., lot 24, 8 L.M.R.	Mt. Brydges.
Carleton, County of.....	S. and G.	(Lot 34, con. II, Osgoode. | Lot 22, con. I, N. Gower.	Ottawa.
Carroll Bros.....	S.	Humberstone tp., lots 3, 4, 5, 7, 8, 9, con. I.	Buffalo, N.Y., 490 Elli- cott Square.
Cascadden, W. C.....	S. and G.	Elgin co., lot 22.....	Aylmer, R.R. 1.
Chatham, Wallaceburg, & Lake Erie Railway Co.....	S. and G.	Raleigh tp., lot 129, Talbot Rd.	Toronto, 43 Victoria St.
Circurca, Nicholas.....	S. and G.	Preston.....	Preston
Conlin, H. L.....	S. and G.	Scarboro.....	Toronto, 129 Front St. E.
Cudmore, Mrs. Alice.....	S. and G.	Usborne, lot 29, con. IV.....	Hensall, R.R. 1.
Cudmore, J. Walter.....	S. and G.	Howard, pt. lot 12.....	Thamesville, R.R. 6.
Dept. Public Highways	S. and G.	Various pits.....	Toronto.
Dereham, Township of.....	G.	Dereham tp., lot 22, con. VI.	Mount Elgin, R.R. 1.
Dibble, Wm. H.....	S. and G.	Zorra E., lot 17, con. VIII...	Woodstock, R.R. 7.
Dodds, Thos.....	S. and G.	McKillop tp., lot 31, con. VII.	Seaforth, R.R. 1.
Dominion Concrete Co., Ltd.	S.	South Gower tp.....	Kemptville.
Dowler Bros.....	S. and G.	Gloucester tp., 4th con., Rideau Front.	Billings Bridge.
Durham Stone & Sand Co...	S. and G.	Durham.....	Toronto, 903 Reford Bldg.
Durr, L.A.....	S. and G.	McGillivray, lot 3, con. XIX.	Parkhill, R.R. 8.
Elgin County Highways.....	S. and G.	Elgin county.....	St. Thomas.
Ellins, W.....	S.	Etobicoke tp., lot 16, con. D.	Toronto, Scarlet Rd
Empire Limestone Co.....	S.	Sherkston.....	Buffalo, N.Y., 19 Hudson St.
Farris, Chas. S.....	S. and G.	Mosa tp., lot 1, con. I.....	Glencoe, R.R. 1.
Faulds, Morley.....	S. and G.	Southwold tp., lot 14, con. V.	Iona Sta., R.R. 4.
Ferguson, R. W.....	S. and G.	Leeds tp., E. ½ lot 7.....	Brockville, 72 Pearl St.
Fonthill, Village of.....	S. and G.	Thorold tp.....	Fonthill.
Foster, R. R.....	S.	Ottawa, Canal basin.....	Ottawa, 278 Echo Drive.
Frid Bros.....	S. and G.	Dundas Rd. and Macklin St.	Hamilton.
Fuller Gravel Co., Ltd.....	S. and G.	Fuller.....	Ivanhoe.
Gibson, James.....	S. and G.	Morris tp., lot 9, con. VI.....	Walton, R.R. 3.
Godson Contracting Co.....	S. and G.	Brock tp., lot 12, con. IV.....	Toronto, 203 Richmond St. W.
Guelph, City of.....	S. and G.	Guelph, Edinburgh Road....	Guelph.
Halliburton, John, & Sons..	S. and G.	Guelph tp., con. III.....	Guelph.
Halpenny, L. E.....	S. and G.	Arthur tp., lot 28, con. VI...	Arthur.
Harwich, Township of.....	S. and G.	Harwich tp.....	Blenheim.
Hewett, Herbert.....	S. and G.	Malahide tp.....	Aylmer, R.R. 4.
Hill, John D.....	S. and G.	.....	Woodstock, R.R. 6.
Hoffman, Jos.....	S. and G.	Kitchener.....	Kitchener.
Huron, County of.....	S. and G.	Huron county.....	Goderich.

SAND AND GRAVEL OPERATORS, 1926—Continued

Name of Owner or Company	Material G—Gravel S—Sand	Location of Deposits	Address
Hydro-Electric Power Commission	S. and G.	Nipigon.....	Toronto.
Independent Concrete Pipe Co., Ltd.	S. and G.	Blandford and E. Zorra tps..	Woodstock.
Johnston, G. F.....	S.	Westminster tp., lot 21, con. V.	Wilton Grove, R.R. 2.
Kent, County of.....	S. and G.	Raleigh, Oxford, Harwich, Romney tps.	Chatham.
Keyes, S. W.....	S. and G.	E. Oxford tp., lots 16, 17, con. XI.	Woodstock, R.R. 8.
Kilbourne, H.....	S.	Westminster tp., Wharncliffe Rd.	London, 145½ Wharncliffe Road.
Kingston Sand & Gravel Co. Lambton, County of.....	S. S. and G.	Kingston tp..... Enniskillen tp., lot 9, con. XIII.	Kingston, 183 William St. Sarnia.
LeViness, J. E.....	S.	Stamford.....	Niagara Falls, R.R. 3.
Lewis, Geo. A.....	S. and G.	.....	Ailsa Craig.
Lock, Thos.....	S. and G.	W. Nissouri tp., lot 18, con. II.	Thorndale.
Lovelace, Edwin J.....	S.	Pelham tp., lots 6, 7, con. VIII, IX.	St. Catharines, 1 York St.
McArdless, W. E.....	S. and G.	London tp., lot 24, con. X...	Ilderton.
McArthur, Estate of John and K. M.	S. and G.	E. Williams tp., lot 21, con. XVIII.	Ailsa Craig.
McArthur Engineering & Construction Co., Ltd.	S. and G.	Guelph, lots 3, 21, 22, Div. A.	Guelph, 15 Douglas St.
McAuley, P. L.....	S. and G.	Murray tp., lot 5, con. I.....	Trenton.
McColl Bros.....	S. and G.	Aldborough tp., lot 3, con. VI.	Rodney, R.R. 1.
Malahide, Township of.....	S. and G.	Malahide tp., lot 21, con. VI.	Aylmer.
Manning, Frank.....	S. and G.	S. Norwich, con. XI.....	Otterville.
Maple Sand, Gravel & Brick Co., Ltd.	S. and G.	Vaughan tp.....	Toronto, 454 King St. W.
Middlesex, County of.....	S. and G.	Various pits.....	London.
Mohawk Sand & Gravel Co.	S. and G.	Brantford tp.....	Brantford, Box 336.
Murray, J. J.....	S. and G.	Stamford.....	Niagara Falls, 1382 Bridge St.
Nevill, Thos., & Son.....	S. and G.	Malahide tp., lot 7, con. V...	Aylmer, R.R. 5.
Northumberland and Durham, United Counties of.	S. and G.	Several pits.....	Cobourg.
Oxford West, Township of..	S. and G.	W. Oxford tp.....	Woodstock, R.R. 1.
Park, John S.....	S. and G.	Biddulph tp., lot 30, con. II.	Lucan.
Parry Sound, Town of.....	S. and G.	.....	Parry Sound.
Pelton, Edgar.....	S. and G.	Zorra W., lot 20, con. III....	Embro, R.R. 1.
Peterborough, City of.....	G.	Cor. Rogers and Wilson Sts..	Peterborough, 133 Simcoe St.
Ponsford Estate, A. E.....	S. and G.	Yarmouth tp., lot 1, con. VII	St. Thomas, 605 Talbot St.
Putherbough, John.....	S. and G.	London.....	London.
Quick, Chas. R.....	S. and G.	London, Manor Park.....	London, 101 Briscoe St.
Quigley, B. C.....	S.	Saltfleet tp.....	Hamilton.
Quinn, H. A.....	S. and G.	.....	Peterborough, R.R. 9.
Ratcliffe, Ltd., E. B.....	G.	Barton tp., lot 1, con. III....	Bartonville.
Rivers, G. Russ.....	S. and G.	Adelaide.....	Watford.
Robinson, W. J.....	S. and G.	Stephen, lot 4, con. III.....	Crediton, R.R. 1.
Rogers, W. T.....	S. and G.	Toronto tp., lot 1, con. I....	Toronto, 510 Lumsden Bldg.
Sacred Heart College Sand & Supplies, Ltd.....	S. and G. S.	McKim tp., lot 5, con. IV... N. Dumfries tp.....	Sudbury, Box 1360. Toronto, 54 University Ave.
Sarjeant Co., Ltd., The....	S. and G.	Barrie.....	Barrie, Box 88.
Seebach, Ed.....	S. and G.	Ellice tp., lot 8, con. IV.....	Sebringville, R.R. 1.
Shannon, H. M.....	S. and G.	Richmond tp., lot 6, con. III.	Napanee, R.R. 5.
Shier, S. R.....	S. and G.	Usborne tp., lot 14, con. XV.	Kirkton.
Skinner, R.....	S. and G.	Usborne tp., lot 11, con. V...	Exeter, Box 81.

SAND AND GRAVEL OPERATORS, 1926—Continued

Name of Owner or Company	Material	Location of Deposits	Address
	G—Gravel S—Sand		
Smythe, Ltd., C.....	S.	Etobicoke tp.....	Toronto, 477 Runnymede Road.
Spratt, J. A.....	S. and G.	Gloucester tp.....	Billings Bridge.
Standard Paving, Ltd.....	S. and G.	Preston, Hamilton St.....	Kitchener, 107 David St.
Stewart, Fenwick.....	S. and G.	Stanley tp., lot 23, con. IV..	Clinton, R.R. 5.
Stewart, R. T.....	S. and G.	Sudbury.....	Sudbury, 116 Cedar St.
Sutherland, Hugh A.....	S. and G.	W. Zorra tp., lot 6, con. II..	Embro, R.R. 4.
Tack, Henry.....	S.	London tp.....	London, P.O. Sub. 1.
Thomson, Geo.....	S.	Widdifield tp.....	North Bay, 191 Cassels St.
Tuckersmith, Township of..	S. and G.	Tuckersmith, lot 26, con. IV.	Seaforth.
Turner, J. T.....	S. and G.	Stanley tp.....	Brussels, R.R. 3.
Van Alstine, C.....	S. and G.	Trenton.....	Trenton, Box 538
Wellington, County of.....	S. and G.	W. Luther, W. Garafraxa and Maryborough tps.	Guelph, Box 258.
White, Homer, & Co.....	S. and G.	Hallowell tp.....	Picton, Spring St.
Wilks, Geo.....	S.	Woodstock.....	Woodstock.
Willcox, Hervey.....	S.	Stamford tp., lots 4, 17.....	Niagara Falls, 985 Bridge St.
Wilson & Quinn.....	S. and G.	W. Garafraxa tp.....	Fergus.
Wilson, M.....	S. and G.	Vaughan tp., lot 25, con. IV.	Maple, R.R. 1.
Windsor Sand & Gravel Co.	S. and G.	Leamington.....	Walkerville.
Woodhull, F. M.....	S. and G.	Delaware tp., lot B, con. III.	Lambeth, R.R. 2.
Wright & Co.....	S.	Korah, sec. XIII.....	Sault Ste. Marie.
Yarmouth, Township of....	S. and G.	Yarmouth tp., lot 8, con. V..	St. Thomas.

Stone

The production of stone, limestone, sandstone, trap and granite during 1926 was 3,627,971 tons worth \$3,258,168 as against 3,023,594 tons valued at \$2,817,335 during the previous year. The increases reflect the general improvement in the construction industry throughout the Province. The number of employees rose from 1,170 to 1,400 during the period while wages paid increased from \$788,972 to \$990,008.

The following table shows the valuation of the several kinds of stone used or marketed during the past five years:—

VALUE OF STONE PRODUCTION, 1922-1926

Year	Limestone	Sandstone	Trap	Granite	Total
	\$	\$	\$	\$	\$
1922.....	2,547,485	9,454	167,630	245,357	2,969,926
1923.....	2,552,555	23,378	149,746	143,549	2,869,228
1924.....	2,551,291	30,038	133,743	74,296	2,789,368
1925.....	2,530,623	44,562	154,107	88,043	2,817,335
1926.....	2,908,520	41,892	212,613	95,143	3,258,168

During the past decade there has been a growing demand for special grades of broken stone in the manufacture of artificial wares and for stucco, dash, poultry grit, etc., using as raw material white dolomite, calcite and feldspar. An incomplete survey showed that a total of 3,524 tons worth \$14,405 were

consumed, and which, for compilation purposes, are included with limestone in the table above.

The figures of output during 1926 by varieties were: Limestone, 3,243,978 tons—\$2,894,115; sandstone, 8,656 tons—\$41,892; trap, 331,429 tons—\$212,613; granite, 40,384 tons—\$95,143, and miscellaneous, 3,524 tons, worth \$14,405.

Both high calcium and dolomitic limestones are to-day becoming valuable for an increasing variety of purposes, for example, in the paper industry pure limestone is required for the sulphate process, and dolomite for sulphite mills. Ground dolomite is used also in the manufacture of artificial stone in order to give the surface a glistening effect more or less similar to natural dressed stone. The term "granite" in the table includes crude monumental and building blocks, also paving blocks. The major portion of the limestone now consumed in Ontario goes into the construction of improved motor highways. Limestone was marketed as follows: Crude building and ornamental blocks 25,543 tons, \$131,409; fluxing 212,150 tons, \$189,715; for the manufacture of chemicals 5,043 tons, \$2,882; rubble and rip-rap 134,220 tons, \$100,528; and as crushed stone for roads and concrete 2,867,022 tons, \$2,469,581.

The following stone quarries were operated in 1926:—

SANDSTONE

Name of Owner, Firm or Company	Location	Address
Robertson & Company, Ltd., D....	Nassagaweya tp.....	Toronto, 26 Queen St. E.
Rogers & Company, Ltd., F.....	Glen Williams.....	Toronto, 1181-1189 Queen St. W.

TRAP

Name of Owner, Firm or Company	Location	Address
Chisholm Construction Company...	Field stone from farms....	Cornwall.
Fort William, City of.....	Rifle Range.....	Fort William.
Mond Nickel Company, Ltd.....	Coniston.....	Coniston.
Mountain Stone Company, Ltd.....	Mount McKay, Mission...	Port Arthur, Room 9, Bank of Hamilton Bldg.
Ontario Rock Company, Ltd.....	Belmont and Methuen tps., near Havelock.	Toronto, 410 Crown Office Bldg.
Parker, A. H.....	Lansdowne tp., lot 19, con. II.	Cornwall, 408 First St. E.
Wilford, F. R., and Company, Ltd..	Matilda tp., con. I (field stone).	Lindsay, P.O. Box 119.

GRANITE

Name of Owner, Firm or Company	Location	Address
Edgar Irvine Company, Ltd.....	Gananoque.....	Alexandria.
Gordon Granite Company.....	Gananoque.....	Toronto, 18 Toronto St.
Hall, R. Reece.....	McDougal tp.....	Parry Sound.
Horne, Wm.....	Butler.....	Winnipeg, 377 Balmoral St.
Morrison, Wm.....	Coehill.....	Coehill.
Pembroke, Town of.....	Alice tp., lot 25, range A..	Pembroke, Town Engineer.
Streets & O'Brien.....	Gananoque.....	Toronto, 47 Yonge St.

LIMESTONE

Name of Owner, Firm or Company	Location	Address
Barton, Municipality of	Barton tp.	Hamilton, Court House.
Beachville White Lime Co., Ltd.	Beachville.	Beachville.
Bolender Bros.	Haliburton.	Haliburton.
Bourgie, J. B.	Russell tp.	Embrun.
Brule & Sons, E. D.	Hogs Back.	Billings Bridge.
Canada Cement Company, Ltd.	Belleville and Port Colborne	Montreal, Box 290, Station B.
Canada Crushed Stone Corp'n., Ltd.	West Flamboro tp.	Hamilton, Sun Life Bldg.
Carleton, County of	Gloucester tp.	Ottawa, Court House.
Cloutier, Grenon.	Casselman.	Casselman.
Cook & Son, J. S.	Amabel tp.	Wiarton.
Dorchester N., Township of	North Dorchester tp.	Dorchester.
Ellen Cortnell, Estate of	Thorold.	Thorola.
Farmer & Sons, Geo.	Gloucester tp.	Ottawa, 45 Bertrand Ave.
Farr, Mrs. L. G.	Haileybury.	Haileybury.
Foster, R. R.	Merivale Road.	Ottawa, 278 Echo Drive.
Gallagher Lime & Stone Co., The.	Barton tp.	Hamilton, Upper James St.
Galt, City of	North Dumfries tp.	Galt, City Hall.
Gordon Crushed Stone Co., Ltd., The	Hagersville.	Toronto, 137 Confederation Life Bldg.
Gow, James.	Fergus.	Fergus.
Grant Bros. Construction Co., Ltd.	Cardinal.	Ottawa, 18 Rideau St.
Grenville Crushed Rock Co.	Oxford tp.	Merrickville.
Hagersville Contracting Co., Ltd.	Walpole tp.	Hagersville.
Hagersville Quarries, Ltd.	Walpole tp.	St. Thomas, 4 Flora St.
Humberstone, Tp. of	Humberstone tp.	Humberstone, R.R. 1.
Hydro-Electric Power Commission.	Stamford tp.	Toronto, 190 University Ave.
Holmes, F. T.	Mallorytown.	Kemptville.
Innerkip, Village of	East Zorra tp.	Innerkip, Box 218.
Keeling, James.	Owen Sound.	Owen Sound, 16th St. E.
Kingdon Mining Smelting & Mfg Co.	Galetta.	Montreal, 314 Beaver Hall Hill.
Kingston Penitentiary	Portsmouth.	Portsmouth.
Kirkfield Crushed Stone, Ltd.	Kirkfield.	Toronto, 136 Confederation Life Bldg.
Langton, Thos.	Medonte tp.	Coldwater.
Law Construction Company, Ltd.	Bertie tp.	Toronto, 625 Confederation Life Bldg.
Lincoln, County of	Clinton tp., lot 8, con. V.	St. Catharines.
Longford Quarry Company, Ltd., The	Rama tp.	Orillia, 6 Peter St.
Markus, Ltd., William.	Pembroke tp.	Pembroke.
McDonell, Dibblee & Covey.	Richmond and Wendover.	Montreal, 26 Victoria Sq.
McKay, Alex., Company, Ltd.	Owen Sound.	Toronto, 2 Browns Ave.
McDonald, A. N.	Oakville, (L. Ontario).	Bronte.
McGinnis and O'Connor.	Rossmore and Cataraqui.	Kingston.
McLean and Stidwell.	Yonge tp.	Cornwall.
Milligan, F.	Iroquois.	Iroquois.
Oliver Rogers Stone Company, Ltd.	Owen Sound.	Owen Sound, 841 4th Ave. E.
Ontario Stone Corporation, Ltd.	North Orillia tp.	Toronto, 611 Excelsior Life Bldg
Perkins, Geo. A.	Owen Sound.	Owen Sound.
Pirson, John.	Grantham tp.	Stevensville.
Provincial Secretary, Dept. of	Guelph tp.	Toronto, Parliament Bldgs.
Queenston Quarries, Ltd.	Niagara tp.	St. Davids.
Quinlan, Robertson & Janin, Ltd.	Crookston.	Montreal, 50 Notre Dame St. W.
Quinton & Brundige.	West of Brockville.	Jasper.
Robertson & Co., Ltd., D.	Nassagaweya tp.	Toronto, 201 Crown Office Bldg.
Robillard & Son, H.	Gloucester tp.	Ottawa, 195 Nicholas St.
Roddy, J. M.	Kingston.	Kingston, 293 Division St.
Routley, H. T.	Georgetown, Jarvis and Kincardine	Toronto, 9 Richmond E.
Standard White Lime Company, Ltd.	Beachville.	Guelph, 15 Douglas St.
Stormont, Dundas and Glengarry United Counties of.	Finch tp.	Cornwall, County Bldg.
St. Marys Crushed Stone Company, Ltd.	St. Marys.	Toronto, Bathurst St.
Thompson, W. G.	Orillia.	Orillia

LIMESTONE—*Continued*

Name of Owner, Firm or Company	Location	Address
Walker Bros.....	Stamford tp.	Thorold.
Webber, John.....	Dunn Street, Tract 22. . . .	Dunnville.
Welland County Roads.....	Humberstone tp.	Welland, Box 456.
Welland Ship Canal.....	Lincoln and Welland cos..	St. Catharines.
Wentworth, County of.....	Barton and Binbrook tps..	Hamilton, Court House.
Wentworth Quarries, Ltd.....	Saltfleet tp.	Vinemount.
Windmill Point Crushed Stone Co..	Bertie tp.	Toronto, 625 Confederation Life Bldg.
Winnipeg Roofing Company, Ltd.	Silver Mountain, Thunder Bay district.	St. Boniface, Man.

Clay Products

Brick and Tile.—Under a new classification, adopted in 1924 after consultation with the Canadian National Clay Products Association, it is possible to publish figures showing much greater detail than heretofore as to the kinds of brick produced by different processes of manufacture. Formerly the data on bricks differentiated between kinds only, and no statistics were available relating to “stiff” or “soft-mud” processes or to “dry-press.”

Pottery and Porcelain.—The output of rough pottery in the form of flower pots from Toronto, Hamilton and London during 1926 totalled 5,910,000, with a selling value of \$87,600 as against 6,200,000 worth \$86,000 in 1925. Glazed ware and insulators are also produced in Ontario by five companies, while four firms produced enamelled steel articles and two firms produce enamelled parts in stove production. Considerable quantities of ball clay, china clay, ground barytes, feldspar, quartz, flint and whiting, much of which is imported, is consumed by these manufacturing industries. Ball clay, china clay and whiting come mainly from Cornwall, England.

The Ontario Potteries Company, of Oshawa, the first whiteware pottery firm in Canada, operated in 1924 but closed down during the following year. China clay from England, ball clay from southern Saskatchewan, and Ontario flint and feldspar are the raw materials used. Another company, under the name of Smith Potteries, operated during 1926, but the output was small in value. The porcelain insulator industry, which has of late years grown in importance, depends largely on imported raw materials. Plants are located at Hamilton, Niagara Falls, Peterborough and Georgetown.

In the 1924 report of mineral production¹, mention was made of a deposit of fireclay and china clay located on the east bank of the Mattagami river immediately below Long rapids, which is fifty-five miles due north of Moonbeam station on the National Transcontinental railway. The deposit may be reached by a thirty-four mile winter road from the terminus of the T. and N.O. railway at Oil Can Portage, on the Abitibi river, and some of this material will doubtless be used when transportation improves.

Sewer Pipe.—Production of this variety of clay product is carried on by three companies in Ontario, with plants at Hamilton, Mimico and Swansea. The total sales value during 1926 amounted to \$835,206, as against \$893,443 during the previous year. All shapes and sizes were manufactured and the clay

¹Ont. Dept. of Mines, Vol. XXXIV, pt. 1, p. 37.

used was a special variety located at Aldershot, near Hamilton. Much of the product of these operations is disposed of by a selling agency in Toronto organized for that purpose, the Toronto Sewer Pipe Company, for which a charter was granted in 1920.

The following table shows in detail the quantities and values of the several kinds of clay products made and sold in Ontario:—

CLAY PRODUCTS MARKETED, 1926

Kind	Number or Quantity	Value	
		\$	
Brick—Soft, mud process	{Face.....	20,389,328	359,544
	{Common.....	35,474,027	522,803
Stiff-mud (wire cut) process	{Face.....	76,078,181	1,537,450
	{Common.....	12,109,670	206,242
Dry-press	{Face.....	26,461,287	539,854
	{Common.....	3,054,593	39,689
Fancy or ornamental brick (including special shapes, embossed and enamelled brick)...	373,641	20,047	
Sewer.....	6,397,029	111,620	
Tile, structural: Hollow blocks (including fireproofing and load-bearing tile)..... tons	76,794	710,595	
	Roofing tile..... no.	17,018	1,562
	Floor tile (quarries)..... sq. feet	195,011	43,854
Tile, drain..... no.	12,788,036	340,403	
Sewer pipe (including copings, flue linings, etc.)...tons.	48,176	835,206	
Pottery—From domestic clay..... no.	5,910,000	87,600	
Total Value.....	.....	5,356,469

The value of clay products marketed for the last pre-war year (1913) and subsequently are given below:—

VALUE OF CLAY PRODUCTS SOLD OR USED, 1913-26

Year	Brick		Pottery	Drain Tile	Sewer Pipe	Total
	Common	Pressed, Fancy, Building Tile, etc.				
1913.....	\$ 3,283,894	\$ 1,162,860	\$ 52,875	\$ 292,767	\$ 600,297	\$ 5,392,693
1914.....	2,336,207	894,381	25,720	277,530	571,750	4,165,597
1915.....	763,591	375,865	49,387	321,253	361,283	1,871,376
1916.....	509,559	495,895	87,025	275,471	216,749	1,584,699
1917.....	713,824	776,302	94,501	546,040	379,923	2,509,590
1918.....	665,454	592,286	88,275	309,899	362,536	2,018,450
1919.....	1,966,711	726,500	119,551	354,700	609,100	3,776,562
1920.....	2,209,265	1,178,656	127,049	359,373	860,811	4,735,154
1921.....	2,025,643	2,059,606	69,984	397,104	939,463	5,094,696
1922.....	2,614,120	2,899,205	88,889	368,180	973,824	6,944,218
1923.....	2,008,614	2,973,006	78,000	283,662	925,858	*6,270,615
1924.....	944,892	2,883,566	84,100	373,980	851,327	5,137,865
1925.....	733,693	3,074,780	86,000	360,710	893,443	5,148,626
1926.....	768,734	3,324,526	87,600	340,403	835,206	5,356,469

*Includes \$1,475 worth of silica cement.

SEWER PIPE AND POTTERY WORKS, 1926

Name of Company	Location of Plant and P.O. Address of Manager, etc.
SEWER PIPE	
Dominion Sewer Pipe and Clay Industries, Ltd.....	Swansea and Aldershot.
Hamilton & Toronto Sewer Pipe Co., Ltd.....	Hamilton.
Ontario Sewer Pipe & Clay Products, Ltd.....	Mimico.
POTTERY	
Davis & Son, John.....	601 Merton St., Toronto.
Foster Pottery Company.....	Main St. West, Hamilton.
Ferguson, A. W.....	794 Nelson St., London

BRICK AND TILE PLANTS, 1926

Name	Address	Product
Alvinston, Brick & Tile Co., Ltd.....	Alvinston, Box 26.....	Brick and tile.
Bannerman, Geo.....	Greenock, R.R. No. 1.....	Brick and tile.
Barnhardt, W. H.....	Stratford.....	Brick and tile.
Bartonville Pressed Brick Co., Ltd.....	Hamilton, 620 Lister Block	Brick.
Batchelor, Samuel.....	Proton Station.....	Brick and tile.
Bechtel Brick Co., Ltd., The.....	Waterloo.....	Brick.
Booth Brick & Lumber Company.....	New Toronto.....	Brick.
Brampton Pressed Brick Co., Ltd.....	Brampton.....	Brick.
Broadwell & Son, B.....	Kingsville, Box 137.....	Brick and tile.
Caledon Mountain Shale Products.....	Toronto, 600 Bay Street...	Brick.
Campbell, Neil F.....	West Lorne, R.R. No. 1...	Brick and tile.
Canadian Fireclay Products.....	Toronto, 60½ Adelaide St. East.	Tile.
Canadian Pressed Brick Co., Ltd.....	Hamilton, 63 Ottawa St. S.	Brick.
Cheeseman, Peter.....	Hamilton, 670 King St. W.	Brick.
Cooksville Shale Brick Co., Ltd.....	Toronto, 26 Queen St. E...	Brick and blocks.
Cooper, W. H.....	Hamilton, 312 Clyde Block	Brick.
Cornhill Sons, Ltd., James.....	Chatham, Grand Ave.....	Brick.
Crang, Jethro.....	Toronto, 22 Thorne Cres...	Brick.
Crawford Bros.....	Hamilton, 451 King St. W.	Brick.
Curtin, Frank.....	Lindsay, R.R. No. 4.....	Brick.
Curtis Bros.....	Peterborough, Box 809...	Brick and tile.
Dalton, M.....	Dresden, R.R. No. 3.....	Tile.
DeLaplante & Co., J. E.....	Coleman.....	Brick.
Deller & Son, Albert.....	Brownsville.....	Tile.
Deller Bros.....	Norwich, R.R. No. 2.....	Brick, blocks and tile.
Deller, Wm. H.....	Thorndale, R.R. No. 4.....	Brick and tile.
Dochart Brick, Tile and Terra Cotta Works.	Arnprior.....	Brick and tile.
Dolan, John.....	Watford, R.R. No. 2.....	Tile.
Dominion Sewer Pipe and Clay Industries.	Swansea.....	Brick special forms.
Donaldson, S. E.....	Harriston, R.R. No. 4.....	Tile.
Don Valley Brick Works, Ltd., The.....	Toronto, 114 Federal Bldg.	Brick and blocks.
Douglas Bros.....	Wilkesport.....	Tile.
Elliott, Chas.....	Bluevale.....	Brick and tile.
Elliott, Jas., Jr.....	Sault Ste. Marie.....	Brick.
Elliott, Wm.....	Glenannan.....	Brick and tile.
Fort William Brick Co.....	Fort William, 509 Victoria Avenue.	Brick.
Frid Bros.....	Hamilton, Dundas Rd. and Macklin St.	Brick.
Gammage, C. R.....	Dresden.....	Tile.
Gardiner, Wm.....	Blenheim.....	Brick and tile
Godfrey & Co., Thos.....	Carleton Place.....	Brick.
Grimsby Brick & Tile Co.....	Grimsby.....	Brick.
Hallatt & Son, H.....	Comber.....	Brick and tile.
Hallatt, Wm., Clay Products.....	Chatham, 4 Richards Block	Tile.

BRICK AND TILE PLANTS, 1926—Continued

Name	Address	Product
Halton Brick Co., Ltd.	Toronto, 28 Symes Rd.	Brick
Hamilton Pressed Brick Co., Ltd.	Hamilton, Kensington Ave. South.	Brick.
Hill, Aaron	Essex	Brick and tile.
Hill, A. W.	Coatsworth, R.R. No. 1	Brick, blocks and tile.
Hircock Bros.	Bowmanville	Brick.
Hitch, D. A.	Ridgetown, Box 236	Blocks and tile.
Hitch, Thos.	St. Thomas, Box 254	Brick, blocks and tile.
Hodder, Mrs. Jos. H., and Sons	Dutton	Tile.
Houston Co., Ltd., The	Tweed	Brick.
Howlett & Sons, Fred	Petrolia, Box 3	Brick, blocks and tile.
Huntsville Brick & Tile Works	Huntsville, Box 308	Brick and tile.
Interprovincial Brick Co., Ltd.	Toronto, 30 Toronto St.	Brick.
Jackson, W. B.	Brantford, 290 Rawdon St.	Brick and tile.
Jamieson Lime Co.	Renfrew	Brick and tile.
Janes, D. A.	Mt. Brydges	Brick and tile.
Jasperson, B.	Kingsville	Brick and tile.
Jervis, N. J.	Dorchester, R.R. No. 3	Brick and tile.
Johnston, Jas.	Pembroke, R.R. No. 3	Brick.
Kerr, Chas.	Goderich, R.R. No. 4	Brick and tile.
Koebel Bros.	St. Clements, Box 54	Brick and tile.
Kruse Bros.	Seaforth, R.R. No. 3	Brick and tile.
Labey & Son, Geo. A.	Foxboro	Tile.
Lindsay, Earl	Wallaceburg, R.R. No. 2	Tile.
Marsters, Wm. P.	Port Rowan	Brick and tile.
Martin, Thos. E.	Thamesville, R.R. No. 4	Brick and tile.
McComb, Chester	Denfield, R.R. No. 2	Brick and tile.
McCormick Bros.	Watford, R.R. No. 5	Brick and tile.
McEachern and Sons, N.	Highgate	Brick and tile.
McIvor Bros.	Cobourg, Box 636	Brick.
McMahon, Robert	Kerwood, R.R. No. 2	Tile.
Merkley's, Ltd.	Ottawa, 53 Queen St.	Brick, blocks and tile.
Middleton, Chas.	Wyoming	Tile.
Milton Pressed Brick, Ltd.	Milton	Brick.
Miner, M. F.	Kingsville	Tile.
Moscow Brick & Tile Works	Greenock, R.R. No. 1	Brick and tile.
Napanee Brick & Tile Works (J. Chapman)	Napanee, R.R. No. 3	Brick and tile.
National Fire Proofing Co., Ltd.	Toronto, 601 Dominion Bank Bldg.	Blocks and tile.
O'Dell & Sons, Wm.	Ingersoll, R.R. No. 1	Brick and tile.
Ollman Bros.	Hamilton, 111 Macklin St.	Brick.
Ontario Denison Tile Co., Ltd.	Windsor, 24 Wyandotte St.	Brick and tile.
Ontario Government (Department of Prov. Secretary)	Toronto (Mimico plant)	Brick, blocks and tile.
O'Reilly, T. E.	Ottawa, 320 Bay St.	Brick.
Ott Brick & Tile Mfg Co., The	Kitchener, 33 King St. E.	Brick and tile.
Ottawa Brick Mfg. Co., Ltd., The	Ottawa, 53 Queen St.	Brick.
Owen Sound Brick Co., Ltd., The	Owen Sound	Brick.
Parks, H. W.	Dresden, R.R. No. 2	Tile.
Paxton, Fred R.	St. Catharines, 242 Queenston St.	Brick.
Pembroke Brick Co., The	Pembroke	Brick.
Phillips & Son, Thos.	Lucknow, R.R. No. 2	Brick and tile.
Phippen & Field	Toronto, 150 Dawes Rd.	Brick.
Phinn Bros.	London, 238 Briscoe St.	Brick, blocks and tile.
Piggot & Co., Geo.	Toronto, 72 Guestville Ave.	Brick.
Port Rowan Brick & Tile Co.	Port Rowan	Brick, blocks and tile.
Price & Cumming	Toronto, 58 Wellington St. East.	Brick.
Price & Smith	Toronto, 458 Greenwood Ave.	Brick.
Richardson & Son, J.	Kerwood	Brick and tile.
Riselay Brick Co., Ltd.	Hamilton, Main St. W.	Brick.
Russell, Jos.	Toronto, 40 Blake St.	Brick.
Sadler, Frederick L.	Dublin	Brick and tile.
Shale Products, Ltd.	Inglewood	Brick.

BRICK AND TILE PLANTS, 1926—Continued

Name	Address	Product
Smith, Alex, & Son	Dutton, R.R. No. 2	Brick and tile.
Snelgrove, Andrew	Beaverton	Brick and tile.
Sproat, William M.	Seaforth, R.R. No. 4	Tile.
Sun Brick Co., Ltd.	Toronto, 1104 Bay St.	Tile.
Sutherland, W. A.	Parkhill, Box 293	Brick and tile.
Standard Brick Company, Ltd.	Toronto, 363 Broadview Ave.	Brick.
Staples Brick and Tile Co., Ltd.	Staples	Brick and tile.
Stratford Brick, Tile & Lumber Co.	Stratford	Brick and tile.
Steele, Edwin	Vankleek Hill	Brick.
Streetsville Brick Co., Ltd., The	Toronto, 26 Queen St. E.	Brick.
Stroh, M. C.	Conestogo	Brick and tile.
Superior Brick & Tile Co., Ltd.	Fort William	Brick and tile.
Tope, Richard, Estate of	Hamilton, 171 Queen St. S.	Brick.
Toronto Brick Company, Ltd.	Toronto, 60 Victoria St.	Brick.
Voakes and Son, D.	Ruscomb	Brick and tile.
Wagstaff, Albert H.	Toronto, 348 Greenwood Ave.	Brick.
Wagstaff, Charles	Lindsay, R.R. No. 4	Brick and tile.
Wallace & Son, R.	North Bay, 66 First Ave. E.	Brick.
Wein, Aaron	Crediton	Brick and tile.
Winch Bros.	Paisley	Tile.
Windsor Brick & Tile Co.	Windsor, Exchange Bldg.	Brick, blocks and tile.
Woodslee Brick & Tile Co.	Woodslee	Brick and tile.
Wright & Sons, Geo.	Comber, Box 56	Tile.

Mining Company Incorporations

A summary of mining companies incorporated and licensed in Ontario for the last pre-war year and subsequently is given hereunder—

ONTARIO MINING COMPANIES INCORPORATED AND LICENSED, 1913-1926

Year	Incorporated			Extra-Provincial Companies Licensed	
	No.	Nominal Capital	"No Par" Shares	No.	Capital for use in Ontario
		\$			\$
1913	119	78,000,000	.....	12	21,735,000
1914	80	39,030,000	.....	13	5,445,000
1915	59	42,005,000	.....	2	10,200,000
1916	83	109,079,500	.....	8	7,011,650
1917	100	117,183,000	.....	7	7,202,000
1918	59	49,800,000	.....	7	15,000,000
1919	149	223,600,000	.....	10	9,554,197
1920	119	146,094,000	.....	12	9,435,000
1921	67	105,715,000	.....	6	1,030,000
1922	91	181,040,000	.....	6	830,500
1923	88	179,295,500	.....	6	1,775,000
1924	85	156,485,000	.....	2	200,000
1925	70	107,400,000	9,010,000	3	162,510
1926	145	165,655,750	22,386,500	6	4,850,000

Under the provisions of the Ontario Companies Act, companies of extra-provincial incorporation are required to take out a license in Ontario and stipulate the amount of capital used in connection with mining enterprises where the land is situate within the Province.

MINING COMPANIES WITH SPECIFIED CAPITAL INCORPORATED IN ONTARIO
IN 1926

Name of Company	Head Office	Date of Incorporation	Capital
Andargo Mines Corporation, Ltd.	Toronto	Nov. 24	\$2,000,000
Bagamac Rouyn Mines, Ltd.	Haileybury	Dec. 18	4,000,000
Baldwin-Kirkland Gold Mines, Ltd.	Toronto	July 28	5,000,000
Beardmore Gold Mines, Ltd.	Toronto	Nov. 17	5,000,000
Bellevue Mines, Ltd.	Toronto	Dec. 28	1,000,000
Berry Kirkland Mines, Ltd.	Toronto	Apr. 7	150,000
Big Lake Mining Corporation, Ltd.	Toronto	Dec. 7	50,000
Blue Lake Sand & Gravel, Ltd.	Toronto	June 17	50,000
B. I. Mining Company, Ltd.	Toronto	July 16	2,000,000
Bourke-Red Lake Mining Development Co., Ltd.	Montreal	July 9	3,000,000
British American Fuel Corporation, Ltd.	Toronto	Oct. 26	*200,000
British Red Lake Mines, Ltd.	Toronto	July 6	300,000
Cabot Development Corporation, Ltd.	Toronto	Dec. 18	40,000
Consolidated Feldspar Mines, Ltd.	Toronto	Feb. 11	100,000
Cooper Gold Mines, Ltd.	Toronto	Feb. 11	2,000,000
Commodore Mines, Ltd.	Toronto	Oct. 1	40,000
Coulson Gold Mines, Ltd.	Toronto	Dec. 22	100,000
Crown Reserve Consolidated Mines, Ltd.	Toronto	July 17	3,000,000
Crucible Graphite Company, Ltd.	Toronto	Jan. 13	*400,000
Darling Gold Mines, Ltd.	Uxbridge	June 28	150,000
Demel Mines, Ltd.	Toronto	June 11	40,000
Diarch Silver Mines, Ltd.	Haileybury	Sept. 16	1,500,000
DeSantis Development Company, Ltd.	Timmins	Dec. 28	40,000
Douglas Fuel Company, Ltd.	Windsor	Dec. 8	40,000
Eldorado Gold Mines, Ltd.	Toronto	Feb. 10	3,000,000
Enright Mining Company, Ltd.	Elk Lake	May 3	3,000,000
Essex Oil Fields, Ltd.	Toronto	Apr. 17	60,000
Farrell Lorrain Mines, Ltd.	Toronto	Feb. 17	2,000,000
Farrell Rouyn Mines, Ltd.	Toronto	Apr. 27	2,000,000
Farquhar Mines, Ltd.	Sault Ste. Marie	May 7	40,000
Ferguson-Lorrain Mines, Ltd.	Haileybury	Aug. 6	2,000,000
Finch-Canadian Petroleums, Ltd.	Windsor	Jan. 19	500,000
Fisher Quebec Gold Mines, Ltd.	Toronto	Nov. 2	3,000,000
Forbes Galena Mines, Ltd.	Kingston	Jan. 15	*150,000
Friday Mines, Ltd.	Timagami	May 26	2,000,000
Golden Eagle Mining Company, Ltd.	Windsor	July 12	1,000,000
Gold Ridge Mining Company, Ltd.	Port Arthur	Mar. 12	40,000
Goudreau Exploration & Development Co., Ltd.	Sault Ste. Marie	Mar. 10	100,000
Graham Island Mining Company, Ltd.	Toronto	Jan. 19	2,000,000
Grimston Porcupine Gold Mines, Ltd.	Timmins	Jan. 28	1,000,000
Guinea Gold Mines, Ltd.	Kirkland Lake	Aug. 26	2,000,000
Haileybury-Mattagami Coal Mines, Ltd.	Haileybury	May 14	1,000,000
Harris Consolidated Mines, Ltd.	Toronto	Mar. 16	12,000,000
Hecla Coal, Oil & Mining Company, Ltd.	North Bay	June 1	1,000,000
Hilltop Gold Mines, Ltd.	Toronto	Jan. 21	5,000,000
Howey Gold Mines, Ltd.	Toronto	Mar. 12	5,000,000
Hudson-Mattagami Exploration & Mining Co., Ltd.	Toronto	Jan. 21	2,000,000
Hudson Red Lake Development, Ltd.	Toronto	Apr. 12	60,000
Huleroy Mines, Ltd.	Haileybury	July 30	40,000
Imelda Birch Lake Mines, Ltd.	Toronto	June 12	200,000
International Red Lake Gold Mines, Ltd.	Toronto	June 21	200,000
Katoomba Mining Interests, Ltd.	Toronto	May 15	50,000
Katrine Divide Gold Mines, Ltd.	Toronto	Jan. 29	3,000,000
Kayloar Mines Agency, Ltd.	Toronto	Oct. 9	500,000
Keewatin-Porphry Development Company, Ltd.	Toronto	Apr. 1	250,000
Keora Mines, Ltd.	Toronto	July 12	2,500,000
Keweenaw Silver Mines, Ltd.	Toronto	Sept. 16	1,000,000
Lang Red Lake Mines, Ltd., The	Toronto	June 18	100,000
Louis Walsh Coal Company, Ltd.	Port Arthur	Aug. 13	100,000
Lower Contact Silver Mining Company, Ltd.	Ottawa	Feb. 11	500,000
Macassa Mines, Ltd.	Toronto	Apr. 12	3,500,000
MacHewitt Gold Mines, Ltd., The	Port Arthur	Apr. 15	1,000,000
McArthur Gold Mines, Ltd.	Timmins	Dec. 7	500,000

*No par shares issued in addition. See list of "No Par" companies on page 59.

MINING COMPANIES WITH SPECIFIED CAPITAL INCORPORATED IN ONTARIO
IN 1926—Continued

Name of Company	Head Office	Date of Incorporation	Capital
McCallum Red Lake Mines, Ltd.	Toronto.	Apr. 12	\$2,000,000
McDonough Exploration and Development Co., Ltd.	Toronto.	Mar. 11	50,000
McMillan Gold Mines, Ltd.	Sudbury.	Dec. 31	2,000,000
McNeely Red Lake Holdings, Ltd.	North Bay.	Apr. 22	100,000
Malartic Mining Company, Ltd., The.	Toronto.	Mar. 13	100,000
Marclay Mines, Ltd.	Toronto.	June 7	3,000,000
Martic Mines, Ltd.	Toronto.	June 11	40,000
Metals Development, Ltd.	Toronto.	Apr. 8	2,500,000
Meteor Lake Placers, Ltd.	Ottawa.	June 14	150,000
Mineral Belt Mines, Ltd.	Grimsby.	Nov. 26	300,000
Monargo Mines, Ltd.	Ottawa.	Nov. 18	3,500,000
Myrtay Mines, Ltd.	Toronto.	Dec. 6	500,000
Narrow Lake Mining Company, Ltd.	Toronto.	Dec. 18	3,000,000
Neale Hollandia Lead Mines, Ltd.	Toronto.	Apr. 23	200,000
Neapatyre Minerals & Products, Ltd.	Fort William.	July 7	250,000
Northern Feldspar Mines, Ltd.	Sudbury.	Jan. 13	100,000
Northern Ontario China Clay Corporation, Ltd., The.	Toronto.	Apr. 21	6,000,000
Northern Ontario Coal Corporation, Ltd., The.	Toronto.	Apr. 21	2,500,000
Ontario-Alberta Oil Development Company, Ltd.	Toronto.	May 7	50,750
Ontario Salts & Chemical Company, Ltd., The.	Toronto.	May 18	40,000
Ontario-Woman Lake Mines, Ltd.	Toronto.	June 7	200,000
Oro Gold Mines, Ltd.	Toronto.	July 31	2,500,000
Ossian Gold Mines, Ltd.	Toronto.	Oct. 11	4,000,000
Ottawa Valley Mines, Ltd.	Ottawa.	Feb. 8	2,000,000
Parora Mines, Ltd.	Toronto.	May 20	1,000,000
Peterson Cobalt Mines, Ltd.	Toronto.	June 10	3,000,000
Peterborough Exploration Company, Ltd.	Peterborough.	June 10	100,000
Pioneer Mines, Ltd., The.	Toronto.	Feb. 1	3,000,000
Plata Mines, Ltd.	Toronto.	June 5	2,000,000
Powell Mining Properties (Rouyn), Ltd.	Toronto.	Aug. 28	3,000,000
Quinn Stone & Ore Company, Ltd.	Port Arthur.	Nov. 30	200,000
Red Lake Centre Mines, Ltd.	Toronto.	Mar. 19	300,000
Red Lacus Mines, Ltd.	Toronto.	Apr. 1	1,000,000
Red Lake Metals Corporation, Ltd.	Toronto.	Mar. 10	3,000,000
Red Lake Prospectors Syndicate, Ltd.	Ottawa.	Jan. 19	150,000
Ribago Copper Corporation, Ltd.	Haileybury.	Nov. 19	4,000,000
Sampson & Company, Ltd., C. E.	Toronto.	July 26	40,000
St. George Mines Securities, Ltd.	Toronto.	Feb. 10	100,000
St. Marys Crushed Stone, Ltd.	Toronto.	Mar. 23	50,000
Savant Mines, Ltd.	Toronto.	Nov. 24	40,000
Shook Coal Company, Ltd.	Toronto.	Aug. 26	25,000
Spence, Strattan Oil Company, Ltd.	Chatham.	May 27	300,000
Standard Exploration Company, Ltd.	Toronto.	June 19	40,000
Summerville Lead Mines, Ltd.	Toronto.	Jan. 11	600,000
Telluride Gold Mines, Ltd.	Toronto.	July 28	1,000,000
Temisko Mines Investments, Ltd.	Toronto.	July 23	*500,000
Thompson Cadillac Mines, Ltd.	Toronto.	Jan. 14	2,000,000
Thor Mines, Ltd.	Toronto.	Dec. 14	300,000
Thunder Bay Iron Mining Company, Ltd.	Port Arthur.	Oct. 11	500,000
Tyrrell Red Lake Mines, Ltd.	Hamilton.	May 27	3,000,000
Union Oil Company of Pennsylvania (Canada Division), Ltd.	Toronto.	Feb. 18	40,000
Wanup Feldspar Mines, Ltd.	Lucknow.	Oct. 15	100,000
Wiltsey-Coghlan Mines, Ltd.	Toronto.	Nov. 10	3,000,000
Wolcott-Fisher Mines Company, Ltd.	Niagara Falls.	June 4	100,000
Wolf Lake Mines, Ltd.	Toronto.	Apr. 14	1,500,000
Woman Lake Mining Corporation, Ltd.	Toronto.	May 29	1,000,000
Yakima Rico Mining Company, Ltd.	Haileybury.	Oct. 16	3,000,000
Young-Davidson Mines, Ltd.	Toronto.	Apr. 8	3,000,000
Total (121 companies)			\$165,655,750

*No par shares issued in addition. See list of "No Par" companies on page 59.

MINING COMPANIES INCORPORATED IN ONTARIO IN 1926 HAVING SHARES WITHOUT NOMINAL OR PAR VALUE*

Name of Company	Head Office	Date of Incorporation	No. of Shares
Abate Red Lake Development, Ltd.	Toronto	July 23	3,000
Baglow Red Lake, Ltd.	Toronto	Apr. 16	20,000
Bathurst Mines, Ltd.	Toronto	Dec. 8	2,000,000
British American Fuel Corporation, Ltd.	Toronto	Oct. 26	*100,000
Canada Radium Mines, Ltd.	Haliburton	May 25	2,500,000
Canadian Red Lake Development Company	Toronto	May 4	250,000
Cochenour Red Lake, Ltd.	Toronto	May 27	8,000
Conroyal Mines, Ltd.	Toronto	July 29	7,500,000
Crucible Graphite Company, Ltd.	Toronto	Jan. 13	*40,000
Daimpre Mining and Development Company, Ltd.	Toronto	Sept. 11	500
Dunlop Red Lake Syndicate, Ltd.	Toronto	Mar. 17	16,000
Federal Gold & Copper Mines, Ltd.	Toronto	Aug. 16	20,000
Foley Red Lake Gold Mines, Ltd.	Toronto	July 5	200,000
Forbes Galena Mines, Ltd.	Kingston	Jan. 15	*10,000
Great North Mines Corporation, Ltd.	Sault Ste. Marie	Nov. 22	5,000,000
Larose-Rouyn Mines, Ltd.	Toronto	Oct. 7	3,000,000
Lartic Mining Corporation, Ltd.	Toronto	Jan. 12	200,000
Mineral Areas, Ltd.	Toronto	Apr. 9	10,000
Mineral Explorations, Ltd.	Toronto	Apr. 26	15,000
Noroque Mines, Ltd.	Toronto	Feb. 15	1,000
Northern Red Lake Mines, Ltd.	Sioux Lookout	July 23	1,000,000
Norwesque Gold Mines, Ltd.	Toronto	Dec. 18	20,000
Ontario Gold Prospectors, Ltd.	Toronto	Apr. 7	10,000
Red Lake-Rouyn Gold Mines Exploration Co., Ltd.	Toronto	Mar. 25	150,000
Rouyn-Boischatel Development Company, Ltd.	Toronto	Apr. 10	250,000
Summit Oil Company, Ltd.	Welland	June 2	3,000
Temisko Mines Investments, Ltd.	Toronto	July 23	*50,000
Toronto Red Lake Exploration Syndicate, Ltd.	Toronto	Mar. 19	10,000
Total (28 companies)			22,386,500

*Also see list with specified capital. Four companies having both stated capital and "No Par" shares are included in both lists.

Companies of Extra-Provincial incorporation holding mining lands in Ontario are required under The Ontario Companies Act to take out a license and specify the amount of capital used in Ontario in connection with mining.

Following is a list of the companies so licensed in 1926:—

MINING COMPANIES LICENSED IN 1926 BY ORDER-IN-COUNCIL

Name of Company	Date of Incorporation*	Date of License	Capital for use in Ontario
Anglo-Canadian Mining & Refining Co., Ltd.	May 5, 1925	Jan. 20	\$1,000,000
Four Nations Reserve Mining Co., Inc.	Delaware	Aug. 25	2,500,000
North American Lead and Refining Co., Ltd.	Nov. 16, 1925	Dec. 7	100,000
Shield Development Co., Ltd., The	Nov. 17, 1926	May 21	200,000
Societe D'Electro-Chimie, D'Electro-Metallurgie et des Acieries Electriques D'Ugine, and Societe Electrometallurgique de Montricher	France	May 27	50,000
Treadwell Yukon Co., Limited	Delaware	May 18	1,000,000
Total (6 companies)			\$4,850,000

*Incorporations under *The Companies Act*, Revised Statutes of Canada 1906, Part 1 of Chapter 79. Where incorporation is outside of Canada the state or country is noted.

Mining Revenue

The revenue of the Department of Mines for the fiscal year ending October 31st, 1926, is given in detail hereunder:—

ORDINARY.		MAIN OFFICE	
Sand and Gravel—			
Royalties.....		\$106,197.27	
Licenses.....		4,430.28	
		<u> </u>	\$110,627.55
Casual Fees.....			786.66
Sale of Record Books—Unwrought Metal Sales Act.....			43.00
Boring Permits.....		4,855.00	
Contingencies.....			183.28
Explorations and Investigations.....			75.25
		<u> </u>	<u>\$116,570.74</u>
		BRANCHES	
Inspection—Cable Testing Fees.....			\$1,362.00
Assessment—Taxes			
Acreage.....		\$33,431.01	
Profit.....		410,974.17	
Gas.....		12,583.86	
		<u> </u>	<u>\$456,989.04</u>
Chemical and Assay—Fees.....			3,090.82
Mine Rentals			
Mining Leases.....		\$11,288.46	
Licenses of Occupation.....		4,783.50	
Gas Leases.....		50.00	
		<u> </u>	<u>\$16,121.98</u>
Miners—			
Licenses.....		\$69,351.71	
Permits.....		3,101.00	
Recording Fees.....		100,010.30	
Miscellaneous.....		3,145.40	
Rent of Office Building.....		65.00	
		<u> </u>	<u>\$175,673.41</u>
Draughtsman, North Bay—Fees.....			1,010.02
Natural Gas Commissioner—			
Permits.....		\$140.00	
Fees.....		746.95	
		<u> </u>	<u>\$886.95</u>
Temiskaming Testing Laboratories—Fees.....			23,752.02
Sulphur Fumes Arbitrator—Damages Collected.....			4,380.71
		<u> </u>	<u>\$683,266.93</u>
CAPITAL.			
Mining Recorders—Mining Land Sales.....			\$799,837.67
			<u>38,578.14</u>
			<u>\$838,415.81</u>

MINING LANDS SOLD AND LEASED IN YEAR ENDING OCTOBER 31, 1926*

District	Sales			Leases			Total		
	No.	Acres	Amount	No.	Acres	Amount	No.	A. res	Amount
Timiskaming....	211	7,816.98	20,694.75	116	4,273.75	2,402.56	327	12,090.73	23,097.31
Cochrane.....	79	3,049.16	7,437.19				79	3,049.16	7,437.19
Thunder Bay....	15	622.55	1,561.38				15	622.55	1,561.38
Sudbury.....	6	238.10	675.63	45	1,756.90	751.87	51	1,955.00	1,427.50
Algoma.....	14	498.59	1,288.23				14	498.59	1,288.23
Kenora.....	3	117.00	331.00				3	117.00	331.00
Nipissing.....	2	100.00	150.00				2	100.00	150.00
Elsewhere.....	7	288.00	813.00				7	288.00	813.00
Total.....	337	12,730.38	32,951.18	161	6,030.65	3,154.43	498	18,761.03	36,105.61

*These figures do not agree with corresponding items of the revenue statement above which records collections of moneys actually received during the fiscal year.

MINING CLAIMS RECORDED IN THE SEVERAL MINING DIVISIONS, 1907-1926

Mining Division	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Timiskaming.	7,860	1,650	1,343	1,021	922	516	1,326	215	222	156	269	184	244	329	159	328	971	735	634	438
Coleman.	291	270	150	40																
Sudbury.	456	254	1,859	1,131	2,309	776	483	237	233	464	262	168	673	267	319	701	436	559	546	1,367
Sault Ste. Marie	291	100	818	818	119	137	127	23	92	44	135	199	90	90	216	541	498	284	451	395
Port Arthur.	317	370	475	207	183	180	182	353	641	172	180	66	171	108	120	296	222	300	494	1,278
Kenora.	73	73	102	95	89	91		25	23	45	32	48	31	25	53	168	150	77	229	935
Parry Sound.	102	56		26	15	5		2		10	25	12	39	33	Closed					
Larder Lake.	3,813	540	180	84	1,252	541	1,575	718	915	783	160	423	1,015	712	918	2,344	1,736	1,219	890	1,532
Montreal River	866	1,321	2,573	344	98	126	63	28	2	56	294	293	134	81	143	174	400	471	291	100
Gowganda.			3,064	513	258	194	68	23	14	51	113	52	145	215	101	55	33	444	220	96
Porcupine.																	1,424	556	620	1,297
Kowkash.					3,756	538	496	240	262	401	236	48	136	192	273	760				
Red Lake.										160	135	2	9	21	3	148	206	438	150	28
Total.	11,996	4,634	9,746	5,792	9,001	3,104	4,320	1,864	2,427	2,342	1,841	1,495	2,687	2,073	2,305	5,515	5,976	5,083	4,525	13,293

STATEMENT OF MONEYS REMITTED BY MINING RECORDERS FOR THE FISCAL YEAR ENDING OCTOBER 31, 1926

Mining Division	Name of Recorder	Address	Purchase Price	Forest Reserve Permits	Miner's Licenses	Recording Fees	Miscellaneous Fees	Total
Sudbury.	Campbell, C. A.	Sudbury.	\$ 3,605.90	\$ 515.00	\$ 5,191.00	\$ 8,796.75	\$ 138.75	\$ 18,247.40
Porcupine.	Donaghue, W. A.	S. Porcupine.	7,153.90	210.00	5,241.00	4,851.00	406.50	17,862.40
Larder Lake.	Ginn, H. G.	Swastika.	18,402.80	20.00	5,748.00	9,966.00	734.75	34,871.55
Kenora.	Holland, H. E.	Kenora.	335.00		3,994.50	7,917.00	134.25	12,380.75
Timiskaming.	McAulay, N. J.	Haileybury.	2,470.40	395.00	8,351.00	3,920.75	219.40	15,356.55
Sault Ste. Marie.	Miller, W. N.	Sault Ste. Marie	1,420.98	125.00	2,677.00	4,363.25	100.00	8,686.23
Port Arthur.	McGregor, C. F.	Port Arthur.	1,077.75	1,141.00	5,314.00	7,395.50	157.50	15,085.75
Gowganda.	Coghill, J. M.	Elk Lake.	3,769.64	450.00	543.00	1,144.00	181.75	6,088.39
Montreal River.	Coghill, J. M.	Elk Lake.	1,324.57		684.00	1,180.00	153.50	3,342.07
Kowkash.	O'Kourke, M. F.	Tashota.		110.00	798.00	414.00	29.25	1,351.25
Red Lake.	Holland, H. E.	Goldpines.			7,673.00	48,744.00	889.75	58,281.75
Total.		Total.	40,535.94	2,966.00	46,214.50	98,692.25	3,145.40	191,554.09

SUMMARY OF BUSINESS TRANSACTED IN THE SEVERAL MINING DIVISIONS DURING THE CALENDAR YEAR, 1926

Schedule	Sudbury	Porcupine	Larder Lake	Sault Ste. Marie	Port Arthur	Kowkash	Timiskaming and Coleman	Gowganda	Montreal River	Kenora	Red Lake* Mar. 1-Dec. 31	Total
1. Letters received during year	3,364	2,706	7,273	1,075	3,851	327	2,078	557	993	3,216	2,757	28,197
2. Letters written during year	2,407	2,453	7,280	480	3,254	349	1,758	594	850	2,999	1,829	24,253
3. Miners' Licenses issued	659	725	612	278	614	59	661	18	42	680	1,235	5,583
4. Miners' Licenses renewed..	449	584	727	282	468	104	1,119	134	184	139	429	4,619
5. Mining Applications recorded.	1,367	1,297	1,532	395	1,278	28	438	96	100	935	5,827	13,293
6. Mining Applications cancelled	287	437	1,578	99	103	17	253	99	117	232	2,100	5,322
7. Agreements, Transfers, etc., recorded.	353	776	687	213	294	43	252	124	139	99	1,358	4,338
8. Receipts for Miners' Licenses, Permits, Recording Fees, etc.	16,585.65	18,512.75	21,142.84	6,262.26	17,555.50	1,225.00	12,326.90	2,336.50	2,275.00	11,036.50	60,444.75	169,703.65
9. Receipts as Purchase Money or Rental	3,805.38	5,721.48	18,769.51	1,465.71	1,484.00	.....	3,302.07	801.07	2,367.51	438.00	975.00	39,129.73
10. Claims of which surveyors' plans were filed	37	112	170	100	14	.....	21	9	10	5	522	1,000
11. Disputes entered	8	12	1	3	5	.....	.....	.....	1	13	26	69
12. Disputed cases decided by Recorders	.....	.....	.....	2	.....	.....	.....	.....	.....	7	.....	9
13. Appeals to Mining Court.	118	115	566	112	29	.....	63	55	67	32	9	19
14. Extensions of time granted	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	519	1,676
15. Certificates of Record granted	42	42	183	19	19	.....	41	23	33	4	236	642
16. Certificates of Performance of Work granted	42	50	214	16	14	.....	44	23	35	12	94	544
17. Claims for which papers were forwarded to the Department for issue of title	39	52	183	12	5	.....	38	16	33	4	9	391
18. Forest Reserve Permits issued	20	23	.....	17	115	10	42	38	.....	.....	.....	265
19. Substitute Miners' Licenses issued	5	28	.....	2	12	2	20	4	4	5	15	97

*Claims transferred from Kenora Mining Division were 143 on March 1, and 519 on June 10.

Mining Tax Act.—Under this act a graduated tax is levied on the net profits of mining companies in excess of \$10,000 per annum. The basic rate is 3 per cent.

The following statement, prepared by the Accounts Branch of the Department, gives details of the Profit Tax, collected under the supervision of G. R. Mickle, Mine Assessor, for the fiscal year ending October 31, 1926:—

DETAILS OF PROFIT TAX

GOLD—		
Dome Mines Company, Ltd.	\$21,177.46	
Hollinger Consolidated Gold Mines, Ltd.	216,353.61	
Lake Shore Mines, Ltd.	12,812.72	
McIntyre Porcupine Mines, Ltd.	8,710.85	
Teck-Hughes Gold Mines, Ltd.	5,277.59	
Wright-Hargreaves Mines, Ltd.	17,370.04	
Vipond Consolidated Mines, Ltd.	686.46	
		\$282,388.73
SILVER—		
Castle-Trethewey Mines, Limited.	\$6,471.21	
Keeley Silver Mines, Ltd.	17,586.14	
Lorrain Trout Lake Mines, Ltd.	2,000.48	
Menago Mining Co., Ltd.	222.55	
Mining Corporation of Canada, Ltd.	11,372.30	
Nipissing Mining Co., Ltd.	8,840.12	
		46,492.80
NICKEL-COPPER—		
International Nickel Co. of Canada, Ltd.	\$67,155.57	
Mond Nickel Co., Ltd.	14,899.84	
		82,055.41
MICA—		
Loughborough Mining Company.		37.23
Total.		\$410,974.17

Departmental Correspondence

The volume of correspondence necessary for the work of the Department in all its branches is considerable. Figures supplied by the Files Branch show that for the fiscal year ending October 31, 1926, communications received through the several offices numbered 39,094, and communications sent out, 38,000.

Correspondence in connection with the office of the Minister of Mines is not included, nor is that pertaining to applications for patent or lease of mining lands—the latter files being kept in the Department of Lands and Forests.

Branches of the Department, including offices of the Mine Assessor, Mining Court, Inspector of Mines, Publications and Statistics, had communications totalling 10,807 incoming and 14,162 outgoing.

Temiskaming Testing Laboratories

This plant, which is equipped for sampling and assaying, has been operated by the Ontario Department of Mines since July, 1921, under the management of A. A. Cole, Mining Engineer of the T. & N. O. Railway Commission, and George Dickson, Superintendent.

The following is a financial report for the year 1926, with comparative figures for previous years beginning with 1922:—

COMPARATIVE FINANCIAL STATEMENT OF THE TEMISKAMING TESTING LABORATORIES, 1922-1926

Schedule	1922	1923	1924	1925	1926
Cash receipts.....	\$18,096 19	\$18,699 22	\$26,032 20	\$19,922 37	\$20,302 51
Earnings.....	17,749 51	20,117 81	25,417 61	20,041 08	21,119 98
Expenditures.....	19,173 19	19,781 25	23,206 66	20,043 31	20,658 19
Operating Profit or Loss	L \$1,424 68	P \$336 56	P \$2,200 95	L \$2 23	P \$461 79

Following is a brief statement of the work of the year:—

Assaying.—Gold, 3,637 samples; silver, 2,769; copper, 716; silver bullion, 423; cobalt, 106; arsenic, 10; nickel, 47; zinc, 102; lead, 31; miscellaneous, 25; moisture determination, 30.

Ore Testing.—Cyanide tests requiring use of plant and equipment for 23 days.

Silver Ore Milled and Sampled.—2 lots weighing 969,04 tons.

Gold Ore Milled and Sampled.—3.48 tons.

Base Bullion Melted.—121 bars containing 113,451.47 gross ounces of silver.

Gold Ore Purchased.—34.70 tons for which \$449.92 was paid.

Cobalt-Silver Residues Shipped to Deloro.—27 cars weighing 860.86 tons in which was contained 73,960 ounces of silver, and cobalt, running from 4.38 to 7.81 per cent.

Gold Ore Shipped to Hollinger Mine.—48.6 tons containing \$44.44 per ton in gold and 25.31 ounces in silver—value received, \$2,268.96.

Provincial Assay Office

As an aid in the development of the mineral resources of Ontario an assay office was established in July, 1898, by the Bureau (now Department) of Mines, at Belleville. For convenience the office was moved to 5 Queen's Park, Toronto, in November, 1911.

The Provincial Assayer, W. K. McNeill, reports as follows for 1926:—

FREE ASSAYS UNDER THE PROVISIONS OF THE MINING ACT OF ONTARIO

Mining Division	Samples received for Free Assays during 1926												Total		
	Gold	Silver	Copper	Iron	Cobalt	Lead	Zinc	Tin	Nickel	Tungsten	Platinum	Manganese		Soda	Potassium
Eastern Ontario*	20	4	...	1	...	1	1	...	...	...	...	...	1	1	29
Fort Frances*	49	3	1	1	...	...	...	...	...	...	2	...	...	...	56
Kenora	5	3	...	...	...	...	...	...	...	...	...	...	...	...	8
Kowkash	2	1	...	...	...	2	...	1	...	...	...	...	...	...	6
Larder Lake	74	7	16	...	...	7	7	4	1	1	...	...	...	...	117
Mississagi Reserve*	2	1	...	...	...	1	1	...	...	...	...	...	...	...	5
Montreal River	2	12	...	...	2	...	...	...	...	...	...	...	...	...	16
Parry Sound*	2	...	...	...	...	...	...	...	...	...	...	...	...	2	4
Porcupine	36	3	...	...	...	1	...	...	...	...	...	...	...	...	40
Port Arthur	49	11	3	4	...	2	3	...	...	...	...	1	...	...	73
Red Lake	279	12	3	1	...	1	2	1	...	1	...	...	...	...	300
Sault Ste. Marie	67	6	3	...	...	1	18	4	2	1	...	1	...	...	103
Sudbury	27	10	7	1	...	2	9	...	...	...	...	...	...	...	56
Timiskaming	16	5	1	2	2	2	...	1	1	...	2	...	...	...	42
Total	632	94	35	10	4	20	41	11	5	2	5	2	1	3	865

*All records for these Divisions are kept at the office of the Deputy Minister of Mines, Toronto.

The Assay Office has been in operation without interruption during the entire year and the usual variety of work has been done with the assistance of T. E. Rothwell, Chemist and Assayer, also Robert Stewart and Reginald Eyre, Laboratory Assistants.

The following is a statement of the samples submitted by the general public for which the regulation fee was charged, and also those submitted by geologists and officers of the Department of Mines. Assays per month ranged in number from 147 to 260.

CUSTOMS ASSAYING AND GENERAL WORK, 1926.

Gold.....	1,416 samples.
Silver.....	314 samples.
Copper.....	80 samples.
Lead.....	62 samples.
Zinc.....	44 samples.
Iron.....	21 samples.
Radium.....	14 samples were submitted on which reports were issued. A number were radio-active.
Silica.....	7 samples.
Ochres.....	4 samples.
Nickel.....	4 samples.
Potash.....	4 samples.
Platinum.....	7 samples.
Miscellaneous.....	14 samples of other minerals were tested. These included 3 each of graphite and tungsten; 2 of cobalt; 1 each of arsenic, tin, antimony, sulphur, molybdenum and water.
Identification.....	112 samples were received by mail and reports issued. A large number were brought directly to the Laboratory; of these no record was kept.
Rocks.....	27 samples were submitted by geologists of the Department of Mines for complete analysis.
Total.....	2,137

The schedule of charges, effective June 1, 1926, for the Provincial Assay Office and Chemical Laboratory is as follows:—

TARIFF OF FEES FOR ANALYSIS AND ASSAYS

1. Assays:		Fee
Gold.....		\$1 50
Silver.....		1 50
Gold and silver in one sample.....		2 50
Platinum minerals.....		5 00
Gold and platinum minerals in one sample.....		7 00
Separation of platinum minerals.....		Prices on application.
2. Iron Ores:		
Iron (metallic).....		\$1 50
Silica.....		1 50
Iron and insoluble residue.....		2 50
Ferrous oxide.....		2 00
Phosphorus.....		3 00
Sulphur.....		2 50
Iron, sulphur, phosphorus and insoluble.....		8 00
Manganese.....		3 00
Titanium.....		4 00
Complete analysis.....		Prices on application.
3. Limestones, Dolomites, Marls, Clays, Shales:		
Determination of:		
Insolubles.....		\$1 50
Silica.....		2 50
Ferric iron.....		3 00
Ferrous iron.....		2 00
Alumina.....		3 00
Lime.....		2 00
Magnesia.....		2 50
Potash.....		5 00
Soda.....		5 00
Alkalies (in one sample).....		6 00
Water (combined).....		2 00

Moisture.....	\$1 00
Carbon dioxide.....	2 00
Sulphur.....	2 50
Phosphorus anhydride.....	3 00

4. *Examination of Clay, Shale, or Cement Rock for Cement Manufacture:*

Determination of:

Silica, Iron oxide, Alumina, Lime, Magnesia, Sulphur, and Volatile matter.....	Prices on application.
--	------------------------

5. *Coke, Coal, Peat, etc.:*

Determination of

Moisture.....	\$1 00
Volatile combustible.....	1 50
Fixed carbon.....	1 50
Ash.....	1 50
Sulphur.....	2 50
Phosphorus.....	3 00
Calorific value (B.t.u.).....	5 00
Ultimate analysis.....	Price on application.

6. *Mineral Waters*..... Price on application.

7. *Ores and Minerals:*

Determination of:

Alumina.....	\$3 00
Antimony.....	4 00
Arsenic.....	3 00
Bismuth.....	4 00
Cadmium.....	4 00
Chromium.....	5 00
Cobalt.....	5 00
Nickel.....	5 00
Cobalt and Nickel in same sample.....	6 00
Copper.....	2 00
Fluorite.....	4 00
Lead.....	2 00
Molybdenum.....	4 00
Manganese.....	3 00
Tin.....	4 00
Zinc.....	3 00

8. *Rocks, Complete Analysis*..... Price on application.

9. *Slags, Sand, etc*..... Price on application.

10. *Identification of Minerals and Rocks not Requiring Chemical Analysis*..... Free.

11. *Test for Radio-Activity*..... Free.

Any analytical work not specified in this list will be undertaken on application to the Provincial Assayer.

The pulp of each sample is retained for future reference.

TERMS

Money in payment of fees, sent in by registered letter, post office order, postal note, or express order, and made payable to the Provincial Assayer, must invariably accompany sample to ensure prompt return of certificate, as no examination is commenced until the regulation fee is paid.

DIRECTIONS

Samples will be dealt with in the order of their arrival. In every instance specimens and samples should be accompanied by statement specifying the precise locality from which they were taken.

Crushed samples representing large quantities, or samples less than five pounds weight may be sent by mail as third-class matter. Samples not exceeding eleven pounds in weight may be sent by parcel post. The name and address of sender should be written plainly on

each parcel. Instructions, with money in payment of fees, should be contained in a separate letter. Samples may be sent by express, charges prepaid.

Sample bags addressed to this laboratory for sending ore pulp by mail may be obtained free on application; also canvas bags for shipping.

Samples should be addressed as follows:

PROVINCIAL ASSAY OFFICE,
East Block, Parliament Bldgs.,
TORONTO, ONT.

Diamond-Drilling

Diamonds.—About the middle of the last century engineers first took advantage of the intensive hardness of diamonds, by far the hardest known abrasive, for drilling operations. The method of application, now in common use, is the diamond-drill which consists of a boring crown set with diamonds and fixed at the end of a system of hollow rods. The drill is brought to bear on the rock with even pressure and at a speed of 400 to 500 revolutions per minute.

The size of diamonds used depends on the diameter of the crown, the range in size being from $\frac{3}{4}$ to 6 carats. Diamond core drills are made in a wide range of diameters from $1\frac{3}{4}$ inches up to 20 inches, the large sizes being used for borings in coal mines and oil wells. Carbons (black Brazilian diamonds) because of their hardness and toughness, are usually used for this work. The specific gravity of the diamond is 3.5 but as carbons are more or less porous, the specific gravity of usable stones ranges from 3.3 to 2.9, the denser stones usually being of higher grade. Carbons are graded into four qualities on a specific gravity basis and prices vary accordingly. Prices also vary according to size and shape of the stones. The best grades and larger sizes are the cheapest in the long run, particularly for exacting work.

Development.—An index of the activity in one method of prospecting and the estimation of the extent of ore deposits may be found in the statistics of diamond-drilling carried on during the year. There were some fifteen companies actively engaged in drilling during 1926. Reports were received from fourteen, covering their operations within the Province, while an estimate was made for the one concern not reporting. As the work carried on by this latter company was quite limited, the resulting statistics may be assumed as correct.

In all 1,986 holes were drilled by 71 machines with a total of 385,932 feet of core recovered, or 70.85 miles. As might be expected the major portion of the work reported was by the well-established and larger gold mines at Porcupine where 1,470 holes were drilled with a total of 198,441 feet of core recovered. The Sudbury nickel-copper and new zinc fields of that area followed with 145 holes and 79,352 feet of core. The drilling in this section was much deeper than in other places in that fewer holes gave a much larger footage of core saved.

The total number of wage-earners was 254 to whom \$330,930 were paid. Much of this work is highly specialized, more particularly the diamond-setting, or those who set the borts or black diamonds in the bits, while the drill-runners themselves must be highly trained. At the time of writing there is a shortage of diamond-setters.

A diamond-drilling crew ordinarily comprises one diamond-setter, one runner, one helper and one to attend to engines used for power, or a minimum of four, but usually five men to a shift.

Statistics of operations in the several fields follow:

ONTARIO RECORD OF DIAMOND-DRILLING IN 1926

Area	Number of holes	Feet of core
Porcupine.....	1,470	198,441
Sudbury.....	145	79,352
Kirkland Lake.....	185	50,493
Red Lake.....	48	18,000
Michipicoten.....	40	10,742
Gowganda.....	13	6,138
Cobalt.....	35	6,030
Renfrew County.....	20	4,745
Beardmore Area.....	7	3,506
South Lorrain.....	6	2,212
Kent County*.....	5	1,950
Lightning River.....	4	1,438
Goudreau.....	4	1,095
Nipigon.....	1	290
Miscellaneous.....	3	1,500
Total.....	1,986	385,932

*Testing for oil.

Complete answers as to the actual number of machines in use were not supplied by the operators, but a close estimate places the number at 71 for the whole Province.

DIAMOND-DRILL OPERATORS IN ONTARIO IN 1926

Name	Ontario Address	No. of drills active
Chisholm, D. D.....	Timmins.....	3
Dome Mines, Ltd.....	South Porcupine.....	4
*Hollinger Consolidated Gold Mines, Ltd.....	Timmins.....	6
Miller Lake O'Brien Mine.....	Gowganda.....	1
McIntyre Porcupine Mines, Ltd.....	Schumacher.....	3
Mitchell, W. J., Diamond-Drill Company, Ltd.....	Cobalt.....	6
Morissette, N.....	Haileybury.....	2
Ontario Diamond-Drilling Co., Ltd.....	Sudbury.....	8
Reed & Ryan.....	Timmins.....	10
Smith & Travers.....	Sudbury.....	15
Sterling Diamond-Drilling Co.....	Excelsior Life Bldg., Toronto.....	2
Sudbury Diamond-Drilling Co., Ltd.....	Sudbury.....	8
Sullivan Machinery Co., Ltd.....	37 Colborne St., To- ronto.....	1
*Vipond Consolidated Mines, Ltd.....	302 Bay St., Toronto.	1
Wabigoon Bay Gold Mines.....	Dryden.....	1
Total.....		71

*Work performed on these properties was done by contract; F. Badeski, Timmins, contractor.

CLASSES FOR PROSPECTORS, 1926-1927

By W. L. Goodwin

Introduction

After making preparations in Toronto during the month of October, the campaign was opened in Renfrew on November 9. The classes were held in seventeen places, covering Ontario from Renfrew in the East to Kenora in the West and as far north as Cochrane and Sioux Lookout. The last class in Cartier was completed on May 27. Both in preparing the materials and in carrying on the classes, I had the efficient assistance of M. J. Splane, of Haileybury. For securing places of meeting and for other assistance in organizing and advertising the classes, I am indebted to many friends, particularly the following:

J. L. Murray, Mayor, Renfrew.
R. P. Watt, Clerk-Treasurer, Renfrew.
I. Samson, Mayor, Sudbury.
C. A. Campbell, Mining Recorder, Sudbury.
Lorne Burk, Treasurer, Blind River.
W. N. Miller, Mining Recorder, Sault Ste. Marie.
J. W. Curran, Sault Ste. Marie.
Mayor Barker, North Bay.
C. G. Watson, Department of Mines Draughting Office, North Bay.
Mayor Hamilton, Haileybury.
N. J. McAulay, Mining Recorder, Haileybury.
W. J. McLean, Mgr. Hotel Haileybury, Haileybury.
Mayor Weeks, Englehart.
H. Geo. Ginn, Mining Recorder, Swastika.
Rev. J. F. Anderson, Kirkland Lake.
J. Atwell Hough, Crown Lands Agent, Matheson.
R. J. Ennis, Mgr. McIntyre Mines, Schumacher.
Jas. Shewan, Chief Acct. McIntyre Mines, Schumacher.
A. M. Dewar, Iroquois Falls.
R. C. Mortson, Cochrane.
A. C. Vaughan, Sioux Lookout.
Railway Young Men's Christian Association, Sioux Lookout.
Mayor Francis, Port Arthur.
Bruce L. Morrison, Port Arthur.
Mayor Crawford, Fort William.
Mayor Fife, Kenora.
J. D. C. Smith, Mining Recorder, Kenora.
Railway Young Men's Christian Association, Cartier.

Attendance

The attendance at the classes was as follows:—

Places	Average for Day Classes	Average for Evening Classes	Registered for Day Classes
Renfrew.....	11	26	26
Sudbury.....	18	25	37
Blind River.....	28	48	68
Sault Ste. Marie.....	31	52	60
North Bay.....	27	44	48
Haileybury.....	26	31	49
Englehart.....	14	30	33
Kirkland Lake.....	16	81	31
Matheson.....	15	21	32
Schumacher.....	17	35	29
Iroquois Falls.....	26	19	41
Cochrane.....	12	24	27
Sioux Lookout.....	24	54	46
Port Arthur.....	22	49	53
Fort William.....	7	53	16
Kenora.....	15	25	26
Cartier.....	12	29	21
Total.....	321	646	643

In addition to the routine work of the classes, addresses were given by invitation to clubs, boards of trade, etc. In these addresses there was an opportunity to discuss sound methods of forwarding the development of our mineral Industries by backing the prospector.

During the season 1926-27 it has been possible to give more attention to instruction in prospecting methods. Most of the older prospectors have now attended the classes, and a considerable number of young men are working into the business. These find the instruction given in the classes a good foundation upon which they can build by private reading and study of specimens. The business of prospecting is becoming more attractive as its organization grows. It is also more and more apparent that the prospector must be made part of the whole organization for the development of new mines and that he must be able to make a living out of the business while searching for prospects.

A great many prospectors have in the past paid little attention to anything but gold. The search for the base metals has been rather neglected. For several years the instruction in the classes has been directed largely towards fitting men to prospect for copper, zinc and lead.

An interesting part of the work for 1925-26 included suggestions as to favourable areas for prospecting. This bore fruit last summer in the opening up of the Lake Savant area. Prospectors have been recommended to give attention to territory not too far from transportation. There is much of such territory easily reached that has either never been prospected or only cursorily examined. The discoveries of last summer show that re-examination of easily accessible areas may be more fruitful than seraches made further afield.

MINING ACCIDENTS IN 1926

By

Chief Inspector of Mines, T. F. Sutherland, Toronto; Inspectors, Geo. E. Cole, Timmins; D. G. Sinclair, Sudbury; J. G. McMillan, Cobalt; A. R. Webster, Toronto.

Accidents during 1926

During the year 1926 at the mines, metallurgical works, quarries, clay, sand, and gravel pits regulated by the Mining Act of Ontario, there were 2,248 accidents reported to the Department up to January 15, 1927. Twenty-eight of these accidents were fatal, resulting in the death of thirty-two men. This is a decrease from 1925 of ten men killed. In 1925, nine men were killed at the quarries, clay, sand, and gravel pits; and in 1926, six men were killed in these operations.

Distribution	Fatal	Non-fatal	Total
Mines, underground.....	16	1,405	1,421
Mines, surface.....	3	473	476
Metallurgical works.....	3	161	164
Quarries.....	3	142	145
Clay, sand, and gravel pits.....	3	39	42
Total.....	28	2,220	2,248

Fatal Accidents

A comparison of fatal accidents for the last five years is given in the following table:—

Distribution	1922	1923	1924	1925	1926
Mines, underground.....	15	21	23	30	20
Mines, surface.....	3	3	1	1	3
Metallurgical works.....	0	4	2	2	3
Quarries, clay and sand pits.....	12	2	14	9	6
Total.....	30	30	40	42	32

By months, the fatalities occurred as follows:—

January.....	4	July.....	2
February.....	6	August.....	5
March.....	6	September.....	2
April.....	2	October.....	1
May.....	1	November.....	1
June.....	1	December.....	1
Total.....			32

Classifying the fatalities according to the industry gives the following:—

Nickel mines and metallurgical works.....	4
Silver mines and refineries.....	5
Gold mines and mills.....	14
Lead mines.....	3
Quarries.....	3
Clay, sand, and gravel pits.....	3
Total.....	32

ANALYSIS OF FATALITIES AT MINES, 1921-1925

Cause	1922	1923	1924	1925	1926
	per cent.	per cent.	per cent.	per cent.	per cent.
Falls of ground.....	11.11	25	25	19.35	17.39
Shaft accidents.....	44.44	16.66	29.16	19.35	26.09
Explosives.....	11.11	20.83	16.66	25.8	43.48
Miscellaneous underground.....	16.66	25	25	29.03	.....
Surface.....	16.66	12.5	4.16	6.45	13.04

TABLE OF FATAL ACCIDENTS IN MINES, METALLURGICAL WORKS AND QUARRIES, AND GRAVEL, SAND, AND CLAY PITS, 1901-1925

Year	Persons killed at metallurgical works and mines	Persons employed at metallurgical works and producing mines	Persons employed at non-producing mines (estimated)	Total persons employed	Fatal accidents per 1,000 employed
1901.....	13	4,135	550	4,685	2.77
1902.....	10	4,426	450	4,876	2.05
1903.....	7	3,499	400	3,899	1.79
1904.....	7	3,475	400	3,875	1.8
1905.....	9	4,415	500	4,915	1.83
1906.....	11	5,017	750	5,767	1.9
1907.....	22	6,305	1,140	7,445	2.93
1908.....	47	7,435	1,750	9,185	5.11
1909.....	49	8,505	2,000	10,505	4.66
1910.....	48	10,862	2,000	12,862	3.73
1911.....	49	12,543	2,000	14,543	3.37
1912.....	43	13,108	2,000	15,108	2.84
1913.....	64	14,293	2,000	16,293	3.93
1914.....	58	14,361	1,500	15,861	3.6
1915.....	22	13,114	1,500	14,614	1.51
1916.....	51	14,624	2,000	16,624	3.07
1917.....	36	16,791	1,000	17,791	2.02
1918.....	32	14,726	500	15,226	2.1
1919.....	39	11,926	1,000	12,926	3
1920.....	29	10,486	1,000	11,486	2.61
1921.....	24	8,436	1,000	9,436	2.54
1922.....	30	9,500	1,500	11,000	2.72
1923.....	30	10,500	1,500	12,000	2.5
1924.....	40	11,000	1,500	12,500	3.2
1925.....	42	11,500	1,500	13,000	3.23
1926.....	32	11,500	1,500	13,000	2.46

The occupation and nationality of the men killed are set out in the following table:—

Occupation	English-speaking	Finn	Ukranian	Czecho-Slovak	Italian	Belgian	Croatian	Jugo-Slav	Total
Miner.....	2	1			1	1	1		6
Labourer.....	5		1						6
Shaftman.....	4	2	1						7
Sledger.....				1					1
Foreman.....	3								3
Fireman.....	1								1
Shoveller.....	2								2
Brakeman.....	1								1
Cagetender.....	2								2
Scaler.....								1	1
Crusher operator.....	2								2
Total.....	22	3	2	1	1	1	1	1	32

The ages of the men killed were as follows:—

Age	17-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	Total
Number killed.....	2	5	2	9	7	3	2	1	1	32

Infection

Records show that infection followed in 246 cases out of a total of 2,220 non-fatal accidents in 1926.

Location	No. of accidents	Accidents followed by infection	Per cent. infection
Mines, underground.....	1,405	184	13
Mines, surface.....	473	39	8.2
Metallurgical works.....	161	12	7.4
Quarries.....	142	9	6.3
Clay, sand, and gravel pits.....	39	2	5.1
Total.....	2,220	246	11

Accidents from Explosives

Cause	Number of accidents	Number injured	
		Fatal	Non-fatal
Struck by rock from blast.....	3		3
Premature explosion.....	2		2
Delayed too long lighting fuse.....	3		3
Drilled into explosive.....	7		7
Sledging, struck explosive.....	2	1	1
Returned to delayed blast.....	2	1	1
Loading holes.....	4	6	2
Picked into explosive.....	6	4	3
Total.....	29	12	22

Prosecutions

Before Magistrates Atkinson, on March 3, 1926, the Kirkland Rand, Limited, were convicted of negligence in not properly protecting men working in the shaft. Information was laid under Subsection 221, Section 164, Part IX, of the Mining Act of Ontario.

An appeal was entered by the company, and the decision of the magistrate was upheld.

MINES OF ONTARIO IN 1926

By

Chief Inspector of Mines, T. F. Sutherland, Toronto; Inspectors, J. G. McMillan, Cobalt; D. G. Sinclair, Sudbury; Geo. E. Cole, Timmins; A. R. Webster, Toronto,

As an introduction to a description of the mines and metallurgical plants of the province, it will probably be found advantageous to give a list of the same. The list which follows is alphabetically arranged, both for metals or minerals extracted, and also for the names of the companies concerned. The inclusion of any given property in this list does not necessarily imply that it is a producing one, or that it is being worked at the present time. The table contains the names of all operating properties and works inspected in 1926.

Lists of the principal stone quarries and clay pits are added at the end.

MINES AND METALLURGICAL WORKS

OPERATOR	MINE	MANAGER	ADDRESS
ASBESTOS			
Porcupine Asbestos Corporation, Ltd.	Porcupine Asbestos	Paul Ogilvie.....	Box 1030, Timmins.
CHINA CLAY			
Hudson-Mattagami Exploration & Mining Co., Ltd.	Hudson-Mattagami	C. M. McCarthy...	8 Bank of Toronto Bldg., Toronto.
COAL			
British-Colonial Coal Mines of Canada, Ltd.	British-Colonial..	Alex. Wilson.....	Larchwood.
Hudson-Mattagami Exploration & Mining Co., Ltd.	Hudson-Mattagami	C. M. McCarthy...	8 Bank of Toronto Bldg., Toronto.
COPPER			
Amity Copper Gold Mines, Ltd.....	Johnston.....	Sidney A. Pain.....	Boston Creek.
Potter Doal Mines, Ltd.....	Potter Doal.....	Carl Erickson.....	Matheson.
DOLOMITE			
Crystallite Stone Products Co.....	Crystallite.....	P. Stringer.....	Bancroft.

MINES AND METALLURGICAL WORKS—Continued

OPERATOR	MINE	MANAGER	ADDRESS
FELDSPAR			
Bathurst Feldspar Mines, Ltd.	Bathurst	Ira Marks	Perth.
Consolidated Feldspar Mines, Ltd.		Morgan U. Kemerer	29 Melinda St., Toronto.
Cotnam, G. C. L.	Cotnam	Lamarche Bros.	Pembroke.
Craig, T. H.	Craig		Verona.
Crystal Feldspar Co.	Crystal	P. J. Dwyer	Hybla.
Dewar, Duncan, & Gibson, W. H.	Aylen	Duncan Dewar	Pembroke.
Elizabeth Feldspar Mines, Ltd.	Elizabeth	Alex. McPhee	Sudbury.
Ferril, J. T.	Ferril		Bird's Creek.
Genesee Feldspar Co., Inc.	Genesee	P. MacDonald	Hybla.
Kemerer, Morgan U.		C. Stoklosar	Hybla.
Mackey Feldspar Co.	Mackey	Rudolph Carniel	Mackey.
McQuire-Robinson Radium & By-Products Co., Ltd.	McQuire	P. W. Checkley	Mackey.
Northern Feldspar Mines, Ltd.	Northern	A. Weisman	Sudbury.
O'Brien & Fowler, Ltd.	O'Brien & Fowler		Mattawa.
Perth Feldspar & Mining Co., Ltd.		A. Campbell	Perth.
Purdy, George	Purdy		Eau Claire.
Rock Products Co., The	Rock Products	W. A. Hannah	Toledo, Ohio.
Verona Quarries, Inc.	Verona	C. A. McMahan	Verona.
Wanup Feldspar Mines, Ltd.	Wanup	E. Holditch	Sudbury.
Weisman, A.	Weisman		Sudbury.
GOLD			
Ankerite Gold Mines, Ltd.	Ankerite	W. H. Seaman	Box 535, South Porcupine.
Argonaut Consolidated Mines, Ltd.	Argonaut	D. R. Thomas	Argonaut.
Baldwin Gold Mining Co., Ltd.	Baldwin	T. Travaille-Williams	Kenogami Lake.
Barry Hollinger Gold Mines, Ltd.	Barry Hollinger	R. M. Treloar	Boston Creek.
Bennett Mining Co., Ltd.	Bennett	C. W. Bennett	Sesekinika.
Bennett Mining Co., Ltd.	Smith Labine	C. W. Bennett	Sesekinika.
Blue Quartz Gold Mines, Ltd.	Blue Quartz	N. O. Carpenter	Matheson.
British Canadian Mines, Ltd.	Foley	Charles Baycroft	Mine Centre
Canadian Associated Goldfields, Ltd.	Associated Goldfields	T. A. Graves	Larder Lake.
Champion Gold Mines, Ltd.	Champion	Chas. Brent	Kenora.
Cline Canadian Gold Mines, Ltd.	Cline	James Cline	Goudreau.
Coniaurum Mines, Ltd.	Newray	John Redington	Schumacher.
Conroyal Mines, Ltd.	Kirk Gold	Hugh Jardine	Kirkland Lake.
Consolidated West Dome Lake Mines, Ltd.	Dome Lake	D. M. McPhail	Box 523, South Porcupine.
Cooper Gold Mines, Ltd.	Cooper	J. C. Kirkland	Wawa, via Hawk Junction.
Cooper Gold Mines, Ltd.	Minto	J. C. Kirkland	Wawa, via Hawk Junction.
Crown Reserve Consolidated Mines, Ltd.	Crown Reserve	N. T. Everet	Kirkland Lake.
De Santis Development Co., Ltd.	De Santis	Peter de Santis	Box 1299, Tim- mins.
Dome Mines, Ltd.	Dome	H. P. de Pencier	South Porcupine.
Four Nations Reserve Mining Co., Inc.	Four Nations	Victor E. Lundberg	Kenogami Lake.
Furness Gold Mines, Ltd.	Furness	J. C. Houston	907 Kent Bldg., Toronto.
Gold Hill Mines, Ltd.	Gold Hill	D. H. Angus	Haileybury.
Gosselin Syndicate	Gosselin	Placide Gosselin	Timagami.
Goudreau Gold Mines Co., Ltd.	Goudreau	Colin S. Johnston	Goudreau.

MINES AND METALLURGICAL WORKS—*Continued*

OPERATOR	MINE	MANAGER	ADDRESS
<i>GOLD—Continued</i>			
Harkness Hays Gold Mining Co., Ltd.	Harkness Hays...	W. Dean Hays.....	Schreiber.
Hewitt Mining Co., Ltd. (negotiating for purchase)	Hewitt.....	.....	Room 39, Carleton Chambers, Ottawa.
Hill Top Gold Mines, Ltd.....	Hill Top.....	Henry Reamsbottom	Boston Creek.
Hollinger Consolidated Gold Mines, Ltd.	Hollinger.....	A. F. Brigham.....	Timmins.
Howey Gold Mines, Ltd.....	Howey.....	D. G. H. Wright...	Red Lake.
Kirkland Hunton Mines, Ltd.....	Hunton.....	John McPhee.....	Kirkland Lake.
Kirkland Lake Gold Mining Co., Ltd.	Kirkland Lake...	W. M. Sixt.....	Kirkland Lake.
Kirkland Rand, Ltd.....	Kirkland Rand...	W. R. Osborne.....	Kirkland Lake.
Kirkland Townsite Gold Mines, Ltd.	Kirkland Townsite	Sidney A. Pain.....	Kirkland Lake.
Lake Shore Mines, Ltd.....	Lake Shore.....	E. B. Knapp.....	Kirkland Lake.
Macassa Mines, Ltd.....	Macassa.....	A. J. Keast.....	Kirkland Lake.
McCarthy Webb Goudreau Mines, Ltd.	McCarthy Webb.	M. B. R. Gordon...	Goudreau.
McIntyre-Porcupine Mines, Ltd.....	McIntyre.....	R. J. Ennis.....	Schumacher.
McMaster Mining Syndicate.....	McMaster.....	Harry McMaster...	Rose Grove.
McMillan Gold Mines, Ltd.....	Elliott.....	E. J. McMillan...	Sudbury.
Manley O'Reilly Gold Mines, Ltd...	Manley O'Reilly..	Walter A. J. Manley & William O'Reilly	Boston Creek.
March Gold, Ltd.....	March.....	E. S. McEwen.....	Box 533, South Porcupine.
March Gold, Ltd.....	Maidens-McDonald	E. S. McEwen.....	Box 533, South Porcupine.
March Gold, Ltd. (under option)....	Clucas-Booker...	E. S. McEwen.....	Box 533, South Porcupine.
New York Porcupine Mines, Ltd.....	Martin.....	Harry W. Darling..	Box 489, Timmins.
New York Porcupine Mines, Ltd.....	Scott Veteran...	Harry W. Darling..	Box 489, Timmins.
Night Hawk Peninsular Mines, Ltd..	Night Hawk Peninsular	.....	371 Bay St., Toronto.
Northland Gold Mines, Ltd.....	Northland.....	J. J. Byrne.....	Kirkland Lake.
Ore Chimney Mining Co., Ltd.....	Ore Chimney....	J. M. Wolchuck...	Northbrook.
Ossian Gold Mines, Ltd.....	Ossian.....	Ralph Hurd.....	Swastika.
Ostrom Gold Mines, Ltd.....	Meco-Catharine..	George E. Silvester.	Boston Creek.
Ostrom Gold Mines, Ltd.....	Ostrom-Catharine	George E. Silvester.	Boston Creek.
Pawnee-Kirkland Gold Mines, Ltd..	Pawnee-Kirkland.	J. J. Byrne.....	Kirkland Lake.
Porcupine Paymaster Mines, Ltd....	Paymaster.....	H. E. Clement.....	Box 508, South Porcupine.
Power & Mines Corporation, Ltd....	Grace (Michipicoten)	E. D. Brewer.....	Michipicoten River.
Queen Lebel Gold Mines, Ltd.....	Queen Lebel....	E. B. Wood.....	Kirkland Lake.
Shield Development Co., Ltd.....	Huronian.....	J. G. Harkness....	Kashabowie.
Sylvanite Gold Mines, Ltd.....	Sylvanite.....	C. E. Rodgers.....	Kirkland Lake.
Teck-Hughes Gold Mines, Ltd. (The)	Teck-Hughes....	D. L. H. Forbes....	Kirkland Lake.
Tough-Oakes Burnside Gold Mines, Ltd.	Tough-Oakes Burnside	Alan Stuart.....	Kirkland Lake.
Vernor, A. C.....	Holding.....	A. C. Vernor.....	Shiningtree.
Vipond Consolidated Mines, Ltd.....	Vipond.....	Robert E. Dye.....	Timmins.
Walsh-Katrine Gold Mines, Ltd.....	Walsh-Katrine...	Hugh Walsh.....	Crown City.
Wright-Hargreaves Mines, Ltd.....	Wright-Hargreaves.	James E. Grant....	Kirkland Lake.
GRAPHITE			
Black Donald Graphite Co., Ltd....	Black Donald....	John Patno.....	Calabogie.

MINES AND METALLURGICAL WORKS—*Continued*

OPERATOR	MINE	MANAGER	ADDRESS
GYPSUM			
Ontario Gypsum Co., Ltd.....	Caledonia.....	A. J. Parkhurst....	Caledonia.
Ontario Gypsum Co., Ltd.....	Lythmore.....	A. J. Parkhurst....	Caledonia.
LEAD			
Forbes Galena Mines, Ltd.....	Frontenac.....	J. M. Forbes.....	36 Central Cham- bers, Ottawa.
Heck, George.....	Heck.....	W. B. Rundle.....	Burridge.
Kingdon Mining, Smelting & Manu- facturing Co.	Kingdon.....	R. R. Rose.....	Galetta.
LEAD AND ZINC			
Dominion Resources Syndicate.....	.....	E. J. Cowain.....	Madoc.
Neale Hollandia Lead Mines, Ltd....	Hollandia.....	W. J. Neale.....	Bannockburn.
North American Lead & Refining Co., Ltd.	Ogema.....	D. C. Kemerer.....	Dorion.
Treadwell Yukon Co., Ltd.....	Errington.....	Joseph Errington...	Toronto.
MICA			
Loughborough Mining Co., Ltd.....	Lacey.....	G. W. McNaughton.	Sydenham.
Orser & Wilson.....	Orser & Wilson...	.....	Bancroft
NICKEL AND COPPER			
International Nickel Co. of Canada, Ltd.	Creighton.....	J. L. Agnew.....	Copper Cliff.
International Nickel Co. of Canada, Ltd.	Frood.....	J. L. Agnew.....	Copper Cliff.
Mond Nickel Co., Ltd.....	Frood Extension..	A. D. Carmichael..	Box 480, Sudbury.
Mond Nickel Co., Ltd.....	Garson.....	A. L. Sharp.....	Garson.
Mond Nickel Co., Ltd.....	Levack.....	F. J. Eager.....	Levack.
Mond Nickel Co., Ltd.....	Worthington.....	W. J. Mumford....	Worthington.
SILVER			
Beaver Auxiliary Mines, Ltd.....	Beaver.....	H. L. Donaldson...	Elk Lake.
Bellellen Silver Mines, Ltd.....	Bellellen.....	John Mathewson...	Silver Centre.
Blair Gowganda Silver Mines, Ltd....	Blair Gowganda..	Murray D. Kennedy	Gowganda.
Canadian Lorrain Silver Mines, Ltd..	Canadian Lorrain.	Hugh McMillan....	Silver Centre.
Capitol Silver Mines, Ltd.....	Capitol.....	Angus D. Campbell.	Bestel.
Casey Mountain Operating Syndicate, Ltd.	Casey Mountain..	R. G. Williamson...	Judge.
Castle-Trethewey Mines, Ltd.....	Castle-Trethewey.	Angus D. Campbell.	Bestel.
Clifton Consolidated Mines, Ltd.....	Provincial.....	Maurice E. Young..	Cobalt.
Cobalt Argyros Mines, Ltd.....	Hargreaves & Co- balt merger	C. H. Heron.....	Cobalt.
Cobalt Contact Mines, Ltd.....	Cobalt Contact...	J. M. C. Dunlop...	Cobalt.
Cobalt Contact Mines, Ltd.....	Green-Meehan...	J. M. C. Dunlop...	Cobalt.
Cobalt Contact Mines, Ltd.....	Hunter.....	J. M. C. Dunlop...	Cobalt.

MINES AND METALLURGICAL WORKS—*Continued*

OPERATOR	MINE	MANAGER	ADDRESS
SILVER— <i>Continued</i>			
Cobalt Contact Mines, Ltd.	Red Rock	J. M. C. Dunlop	Cobalt.
Cobalt Twentieth Century Mining Co., Ltd.	Cobalt Twentieth Century	S. S. Sager	North Cobalt.
Coleroy Gowganda Mines, Ltd.	Coleroy	John W. Shaw	Gowganda.
Coniagas Mines, Ltd.	Coniagas	F. D. Reid	Cobalt.
Crescent Silver Cobalt Mining Co., Ltd.	Crescent	S. W. Barber	Guelph.
Doherty-Easson Mining Synd., Ltd. (under option)	Penn-Canadian	J. C. Houston	Haileybury.
Enright Mining Co., Ltd.	Devlin	Horace F. Strong	Haileybury.
Fenning, Louis, <i>et al.</i>	Beaver (Thunder Bay)	Louis Fenning	Stanley.
Friday Mines, Ltd.	Friday	J. R. Sproat	1103 Washington Blvd. Bldg., Detroit, Mich.
Genesee Mining Co., Ltd.	Genesee	F. L. Steenman	Cobalt.
Gowganda-Duggan Silver Mines, Ltd.	Gowganda-Duggan	Neil Morrison	Gowganda.
Gowganda Keora Silver Mines, Ltd.	Keora	Thomas Reilly	Gowganda.
Hamilton, J. W., <i>et al.</i>	Hamilton	Frank Clement	Gillies Depot.
Haultain Mining Co., Ltd.	Haultain	F. A. S. Carnegie	Gowganda.
Hector Silver Mines, Ltd.	Hector	W. J. Adair	Haileybury.
Keeley Silver Mines, Ltd.	Keeley	M. C. H. Little	Silver Centre.
Kerr Lake Mines, Ltd.	Kerr Lake	Robert R. Brown	Cobalt.
Keweenaw Mines, Ltd. (under option)	Red Jacket	L. K. Fletcher	Haileybury.
Keweenaw Mines, Ltd. (under option)	York O'Brien	L. K. Fletcher	Haileybury.
Kirk Budd Mining Co., Ltd.	Kirk Budd	Cecil Cave	Cobalt.
Lakeside Lorrain Silver Mines, Ltd.	Lakeside Lorrain	M. P. MacDonald	Silver Centre.
La Rose Mines, Ltd.	Violet	G. E. H. Booth	Cobalt.
Lorrain Consolidated Mines, Ltd.	Lorrain Consolidated	Horace F. Strong	Haileybury.
Lorrain Trout Lake Mines, Ltd., under management of Mining Corporation of Can., Ltd.	Trout Lake	M. F. Fairlie	Cobalt.
McKinley-Darragh-Savage Mines of Cobalt, Ltd.	McKinley	H. C. McCloskey	Cobalt.
McKnight, Alex., <i>et al.</i> (lessee)	Giant Silver Nugget	Owen Enright	Cobalt.
McLeod, John H. (lessee)	Foster	John H. McLeod	Giroux Lake.
Meteor Development Co., Ltd.	Meteor	H. L. Wilson	Cobalt.
Mickle Silver Mines, Ltd.	Mickle	Harry Coles	Elk Lake.
Millcrest Mining Co., Ltd.	Millcrest	W. H. Fairburn	Bestel.
Mining Corporation of Canada, Ltd.	Mining Corporation	M. F. Fairlie	Cobalt.
Mining Corporation of Canada, Ltd.	Crompton	M. F. Fairlie	Cobalt.
Mining Corporation of Canada, Ltd.	Frontier	M. F. Fairlie	Cobalt.
Mining Corporation of Canada, Ltd.	H. S. 310	M. F. Fairlie	Cobalt.
Mining Corporation of Canada, Ltd.	Little Keeley	M. F. Fairlie	Cobalt.
Newton Lorrain Syndicate	Newton	R. O. Morrow	Silver Centre.
Nipissing Mining Co., Ltd.	Nipissing	Hugh Park	Cobalt.
Nipissing Mining Co., Ltd.	Nipissing Lorrain	Hugh Park	Silver Centre.
Northern Extension Mining Co., Ltd.	Agaunico	R. McNaughton	Cobalt.
O'Brien, M. J., Ltd.	Miller Lake O'Brien	H. G. Kennedy	Bestel.
O'Brien, M. J., Ltd.	O'Brien	J. G. Dickenson	Cobalt.
Ontario Solid Silver Mines, Ltd.	Solid Silver	James A. McRae	Cobalt.
Paragon Hitchcock Mines, Ltd.	Paragon Hitchcock	Joseph P. Welsh	Elk Lake.
Parora Silver Mines Co., Ltd.	Parora	Joseph M. Hickingbottom	Cobalt.
Peterson Cobalt Mines, Ltd.	Peterson	D. J. Russell	Cobalt.

MINES AND METALLURGICAL WORKS—*Continued*

OPERATOR	MINE	MANAGER	ADDRESS
<i>SILVER—Continued</i>			
Plata Mines, Ltd.....	Hylands-Johnston-Gardiner	L. K. Fletcher.....	Gowganda.
Reinhardt, Carl (lessee).....	Crown Reserve...	Carl Reinhardt.....	Cobalt.
Shaw, John W., <i>et al</i> (lessee).....	Chambers Ferland	Joseph Gaynor.....	Cobalt.
Silver Bullion Mines, Ltd.....	Silver Bullion....	Murray D. Kennedy	Gowganda.
Silver Sill Mining Co., Ltd.....	Silver Sill.....	Horace F. Strong...	Haileybury.
Tonopah Canadian Mines Co. (under option)	Gamble.....	Ernest Craig.....	Gowganda.
Tonopah Canadian Mines Co. (under option)	Hart.....	Ernest Craig.....	Gowganda.
Tonopah Canadian Mines Co. (under option)	Morrison.....	Ernest Craig.....	Gowganda.
Tonopah Canadian Mines Co. (under option)	Walsh.....	Ernest Craig.....	Gowganda.
Trainmen Silver Mining Co., Ltd....	McAndrew.....	John J. McAndrew.	Cobalt.
Victory Silver Mines, Ltd.....	Victory.....	W. D. Taylor.....	Cobalt.
Wigwam Silver Mines, Ltd.....	Wigwam.....	John W. Sanderson.	Gowganda.
W. J. Nine Silver Mines, Ltd.....	W. J. Nine.....	Leonard Smith.....	Gowganda.
SOAPSTONE			
Grace Mining Co., Ltd.....	Grace.....	W. J. Richards.....	Kenora.
Wood, H. H.....	Wood.....	H. H. Wood.....	Mine Centre.
TALC			
Asbestos Pulp Co., Ltd.....	Asbestos Pulp....	Roy Taylor.....	Madoc.
Gillespie, Geo. H., Co., Ltd.....	Henderson.....	Geo. H. Gillespie...	Madoc.
METALLURGICAL WORKS			
Algoma Steel Corporation.....	Blast furnace....	Jas. H. Bell.....	Sault Ste. Marie.
Cobalt Reduction Co., operated by Mining Corporation of Canada, Ltd.	Silver refinery....	M. F. Fairlie.....	Cobalt.
Deloro Smelting and Refining Co., Ltd.	Silver refinery....	S. B. Wright.....	Deloro.
International Nickel Co. of Canada, Ltd.	Blast furnace....	Donald MacCaskill.	Copper Cliff.
International Nickel Co. of Canada, Ltd.	Nickel refinery....	H. W. Walter.....	Port Colborne.
Mond Nickel Company, Ltd.....	Blast furnace....	John F. Robertson..	Coniston.
Steel Company of Canada, Ltd.....	Blast furnace....	H. G. Hilton.....	Hamilton.

QUARRIES

COUNTY	OPERATOR	ADDRESS	LOCATION	PRODUCT
Algoma district	Dominion Mines & Quarries, Ltd.	Little Current	Killarney	Quartzite.
"	Dominion Mines & Quarries, Ltd.	McLennan	East Neebish island	Quartzite, coarse and screened.
Bruce	Alabastine Co. of Paris, Ltd.	Teeswater	Lot 14, con. VI, Culross	Hydrated lime.
Carleton	Belanger, Victor	Hawkesbury	Gloucester tp.	Limestone for roads.
"	Robillard, H., and Sons	Quarries, via Ottawa	Gloucester tp.	Limestone for roads.
Cochrane district	Northern Development Department, Ontario Government	Cochrane	Lamarche tp.	Crushed rock for road surfacing.
Essex	Brunner Mond Co. of Canada, Ltd.	Amherstburg	Lots 6, 7, 8, con. I; lots 2, 3, con. II, Anderson	Limestone for chemical works.
Frontenac	Freeman, I. G.	106 Cowdy St., Kingston	Kingston tp.	Building stone.
"	Regiopolis College	T. Gallivan, R.R. 1, Kingston	Bracken farm, Frontenac tp.	Building stone.
"	Roddy, J.	Kingston	Kingston tp.	Building and crushed limestone.
"	Silica Sand Co., Ltd.	Geo. M. Thompson, Box 264, Kingston	Lots 19, 20, con. I, Pitts- burgh	Sandstone.
Grenville	Grenville Crushed Stone, Ltd.	J. P. Bains, Oxford Mills	Lots 8, E. ½ 9, con. IV; S. ½ lot 8, con. III, Oxford	Crushed and screened limestone for ballast.
Grey	Chalmers, Stewart	Owen Sound	Owen Sound	Lime.
"	Keeling, James	1179 16th St., Owen Sound	8th St., Owen Sound	Building stone.
"	Lapierre & Checkley	Owen Sound	Owen Sound	Limestone for building.
"	McKay, Alex. L.	E. Rowbottom, Owen Sound	Owen Sound	Building stone; crushed stone.
Haldimand	Oliver Rogers Stone Co.	Owen Sound	Owen Sound	Building stone; crushed stone.
"	Gordon Crushed Stone Co., Ltd.	Hagersville	Walpole tp.	Crushed stone.
"	Hagersville Contracting Co.	Hagersville	Lots 13, 14, con. XIII, Walpole	Crushed stone for roads and concrete.
"	Hagersville Quarries, Ltd.	Hagersville	Lot 13, con. XIII, Wal- pole	Crushed stone for roads and concrete.
Halton	Christie Henderson Co., Ltd.	Kelso	Lot 4, con. V, Nassaga- weya	Grey lime.
"	Hurst & Rogers	1193 Queen St. W., To- ronto	Lot 26, con. X, Esquesing	Building stone.
"	Logan, Hugh	Glen Williams	Lot 27, con. IX, Esques- ing	Building stone.
"	Robertson, D., & Co.	Milton	Esquesing tp.	Lime and building stone.
"	Routley, H. T.	R.R. 1, Georgetown	Con. VII, Esquesing	Crushed stone.

QUARRIES—Continued

COUNTY	OPERATOR	ADDRESS	LOCATION	PRODUCT
Halton	Toronto Lime Co., Ltd.	Limehouse.	Esquesing tp.	Lime and building stone.
Hastings	Canada Cement Co.	Point Anne.	Point Anne.	Limestone for cement.
"	Canada Crushed Stone Co.	George Rayner, Bancroft.	Dungannon tp.	Marble.
"	Quinlan & Robertson.	Crookston.	Lot 10, con. X, Huntingdon	Building stone.
Kenora district.	Horne, William.	Butler, via Ignace.		Monumental stone and paving blocks (granite).
Lanark.	Cameron, James.	Fallbrook.	Lot 4, con. XI, Drummond	Pegmatite for road material.
"	Cameron, William.	Carleton Place.	Lot 24, con. XI, Drummond	Lime.
Leeds	Gordon, David J.	Gananoque.	Lot 11, con. II, Leeds.	Red granite.
"	Leeds and Grenville County.	J. J. Webster, R.R. 4, Lansdowne	Lot 17, con. IV, front of Leeds and Lansdowne	Crushed stone.
"	McAdam, James.	Box 173, Gananoque.	Lots 10, 11, 12, Con. I, Leeds	Paving blocks and cut stone.
"	Street & O'Brien.	Box 73, Gananoque.	Lot 6, con. II, Leeds.	Granite paving blocks.
Lincoln.	Queenston Quarry Co.	St. Davids.	St. Davids.	Crushed, monumental, sawn limestone.
"	Wickett, James A.	Geo. E. Stocker, 16 Salter St., Toronto	Grantham tp.	Crushed stone.
Norfolk	Routley, H. T.	Jarvis.	Lot 19, con. XIV, Towns- end	Crushed stone.
Ontario	Longford Crushed Stone, Ltd.	Longford Mills.	E. part lots 23, 24, Front range, Rama tp.	Crushed stone.
Oxford.	Beachville White Lime Co.	Beachville.	Beachville.	Stone, lime, agricultural lime.
"	Standard White Lime Co.	Beachville.	Beachville.	High calcium, magnesium, and hydrated lime.
Perth.	St. Marys Cement Co.	St. Marys.	Blanchard tp.	Limestone for cement.
"	Thames Quarry Co.	St. Marys.	St. Marys.	Limestone.
Peterborough.	Ontario Rock Co.	Preneveau.	Lot 7, con. VI, Belmont.	Crushed trap.
Prescott.	Bissonnette, A.	Alfred.	Longueuil tp.	Limestone.
"	McDonald, Neil A.	R. Allard, L'Orignal.	Longueuil tp.	Limestone.
Renfrew.	Jamieson Lime Co.	Renfrew.	Lot 5, con. II, Horton.	Crystalline limestone and lime.
"	McDonald & McLeod.	Pembroke.	Wilson's farm, Pembroke	Crushed rock.
"	Markus, William.	Pembroke.	Lot 12, con. I, Pembroke	Limestone.
Russell.	McDonnell, Dibblee & Covey.	Clarence.	Con. I, Clarence.	Limestone.
Simcoe.	Langton, Thomas.	Coldwater.	Lot 19, 20, con. XII, Medonte	Crushed stone.
"	Ontario Stone Co.	R.R. 4, Orillia.	Lot 10, con. IV, N. Orillia	Crushed stone.

Sudbury district.....	MacNamara Construction Co.....	Sudbury.....	Rumford.....	Crushed stone for roads.
".....	Mond Nickel Co., Ltd.....	Coniston.....	At Coniston smelter.....	Quartzite for flux.
Thunder Bay district.....	Fort William, City of.....	Cyril Symmes, City Engineer, Fort William	At foot of Mt. McKay.....	Road material.
Thunder Bay district.....	Mountain Stone Co.....	J. F. Hewitson, 9 Bank of Hamilton, Port Arthur	S. 1/2 lot 10, con. V, lot 11, con. III, Bucke (leased)	Limestone.
Timiskaming district.....	Abitibi Pulp & Paper Co.....	August Johnson, Haileybury	Coboconk.....	Limestone.
Victoria.....	Canada Lime Co.....	Coboconk.....	Lot 49, con. IX, Eldon.....	Crushed limestone.
".....	Kirkfield Crushed Stone Co.....	Kirkfield.....	Coboconk.....	Lime.
Waterloo.....	Toronto Brick Co.....	Coboconk.....	Hespeler.....	Hydrated lime.
Welland.....	Christie Henderson Co.....	Ridgeway.....	Lot 21, con. III, Bertie.....	Crushed rock for roads.
".....	Bertie Township.....	Stevensville.....	Port Colborne.....	Crushed limestone for roads.
".....	Bertie Township.....	Port Colborne.....	Lot 5, con. I, Wainfleet.....	Limestone for cement.
".....	Canada Cement Co.....	Port Colborne.....	Lot 13, con. V, Bertie.....	Limestone for roads.
".....	Law Construction Co.....	Ridgeway.....	Lot 8, con. VII, Bertie.....	Crushed stone.
".....	Pirson, John.....	Stevensville.....	Lots 31, 32, con. IX, Stamford	Limestone for flux and paper mills.
".....	Walker Bros.....	Thorold.....	Nicol tp.....	Hydrated lime and agricultural lime.
Wellington.....	Alabastine Co. of Paris.....	Elora.....	Lots 2, 3, con. I, Puslinch	Hydrated lime.
".....	Christie Henderson Co.....	R.R. 2, Puslinch.....	Fergus.....	Crushed limestone.
".....	Gow, James.....	Fergus.....	Rockwood.....	Limestone and lime.
".....	Harvey, E., & Son.....	Rockwood.....	Rockwood.....	Lime.
".....	Ontario Lime Co.....	J. Harvey, Rockwood.....	Guelph.....	Crushed limestone for roads.
".....	Ontario Reformatory.....	Box 1448, Guelph.....	Wellington tp.....	Hydrated lime.
Wentworth.....	Standard White Lime Co.....	Guelph.....	Lot 13, con. VII, Barton	Crushed and screened limestone.
".....	Barton Township.....	Mount Hamilton.....	Dundas.....	Crushed and screened limestone and building stone.
".....	Canada Crushed Stone Corp., Ltd.....	Dundas.....	Lot 14, con. VI, Barton.....	Limestone and lime.
".....	Gallagher Bros.....	R.R. 2, Hamilton.....	Lot 14, con. VII, Barton	Limestone and lime.
".....	Marshall, James.....	Hamilton.....	Ancaster.....	Building stone.
".....	Middleton, J.....	Ancaster.....	Lot 4, con. V, Saltfleet.....	Crushed and screened limestone.
".....	Wentworth Quarry Co., Ltd.....	Vinemount.....		

CLAY PITS

COUNTY	OPERATOR	ADDRESS	LOCATION
Halton	Caledon Mountain Shale Brick Co.	Credit Forks.	Lot 10, con. IX, Caledon.
"	Halton Brick Co.	Terra Cotta.	Lot 28, con. II, Esquesing.
"	Interprovincial Brick Co.	Milton Heights.	Milton Heights.
"	Milton Pressed Brick Co.	Plant No. 1, Milton.	Lot 1, con. I, Esquesing.
"	Milton Pressed Brick Co.	Plant No. 2, Milton.	Con. I, Esquesing.
Lincoln	Toronto Brick Co.	Milton.	Lot 14, con. I, Trafalgar.
"	Grimby Brick & Tile Co.	Grimby.	Lot 22, con. I, Clinton.
"	Paxton & Bray.	240 Queenston St., St. Catharines.	Queenston St., St. Catharines.
Peel	Brampton Pressed Brick Co.	Brampton.	Lot 9, Centre Rd., Chinguacousy.
"	Caledon Mountain Shale Products.	Credit Forks.	Lot 10, con. IV, Caledon.
"	Cooksville Shale Brick Co.	Cooksville.	Con. III, Toronto.
"	Interprovincial Brick Co.	Terra Cotta.	Lot 29, con. V, Chinguacousy.
"	Milton Pressed Brick Co.	Streetsville.	Streetsville.
"	Streetsville Pressed Brick Co.	Streetsville.	Streetsville.
Perth	Barnhardt, W. H.	Streetsville.	Streetsville.
"	Stratford Brick, Tile & Lumber Co.	Stratford.	Stratford.
Thunder Bay district.	Fort William Brick & Tile Co.	Fort William.	Fort William.
Waterloo	Ott Brick & Tile Co.	Kitchener.	Kitchener.
Wentworth	Bartonville Pressed Brick Co.	620 Lister Bldg., Hamilton.	Bartonville.
"	Canadian Pressed Brick Co.	Bartonville.	Bartonville.
"	Crawford Bros.	King and Macklin Sts., Hamilton.	King and Macklin Sts., Hamilton.
"	Dominion Sewer Pipe and Clay Industries, Ltd.	Mimico.	E. Flamborough tp.
"	Frid Bros.	Macklin St., Hamilton.	Dundas Rd. and Macklin St., Hamilton.
"	Hamilton Pressed Brick Co.	Kensington Ave. S., Hamilton.	Kensington Ave., Hamilton.
"	Hamilton Toronto Sewer Pipe Co.	R. H. New, Wentworth Ave., Hamilton.	E. Flamborough tp.
"	New, Edward.	133 George St., Hamilton.	Ancaster Rd.
"	Ontario Sewer Pipe Co.	Mimico.	E. Flamborough tp.
York	Butwell, Richard.	Humber Bay.	Humber Bay.
"	De Lapiante, J. E.	Coleman.	Humber Bay.
"	Don Valley Brick Works.	Don Valley.	Dawes Rd., Toronto.
"	Morley, W.	Coleman.	Don Valley, Toronto.
"	Mt. Dennis Brick Works.	2 Ruthven Place, Mt. Dennis.	Dawes Rd., York tp.
"	Ontario Paving Brick Co.	353 Weston Rd., Weston.	Mt. Dennis.
"	Phippen and Field.	150 Dawes Rd., Toronto.	Weston Road, Weston.
"	Pickett (Geo.) Co.	Mt. Dennis.	Dawes Road, York tp.
"			Mt. Dennis.

York.....	Pigott & Co.....	Eglinton Ave., Mt. Dennis.....	Mt. Dennis.
"	Price & Cummings.....	Humber Bay.....	Humber Bay.
"	Price & Smith.....	Greenwood Ave., Toronto.....	Greenwood Ave., Toronto.
"	Russell, Joseph, Estate.....	40 Blake St., Toronto.....	Blake St., Toronto.
"	Standard Brick Co.....	Greenwood Ave., Toronto.....	Greenwood Ave., Toronto.
"	Sun Brick Co.....	52 Toronto St., Toronto.....	Don Valley, Toronto.
"	Toronto Brick Co.....	Sun Life Bldg., Toronto.....	Greenwood Ave., Toronto.
"	Wagstaff, A. H., & Co.....	Greenwood Ave., Toronto.....	Greenwood Ave., Toronto.

ASBESTOS

Porcupine Asbestos Corporation, Limited

This company has an authorized capital of \$2,000,000 divided into shares of \$1 each, par value.

The officers and directors of the company are: Lyon Cohen, president; Milton Hersey, vice-president; Lawrence Cohen, managing director. The directors are: Lyon Cohen, Lawrence Cohen, H. Bronfman, and Milton Hersey, all of Montreal; and S. G. Eplett of Timmins. Jas. G. Ross of Montreal was consulting engineer. Work at the property was directed by Paul Ogilvie. The mine address was Box 1030, Timmins, Ont.

The property is situated in the township of Deloro, district of Cochrane, and comprises claims Nos. 8,415, 8,709, and 9,745 situated centrally in the township.

Operations were carried on from March 1 to August 15, 1926. The power line from the Ankerite mine to the asbestos property was completed and the plant operated by electrically driven machinery. A Chicago pneumatic compressor, type NSB, 14 by 12 inches, was driven by a 75 h.p. induction motor, and a 3 h.p. motor drove a Fairbanks-Morse centrifugal pump.

The rock was mined in an open pit, and drilling was done with two tripod and two pluggers. The rock was hoisted from the pit by a swing derrick operated by a double-drum contractor's hoist driven by a 35 h.p. induction motor. A steel box, capacity $1\frac{1}{2}$ cubic yards, is used to carry the rock, which was being handled at the rate of 150 cubic yards a day. Most of the crude asbestos was hand-picked in the pit, and a further saving was made by cobbing and hand-picking in a cobbing shed.

After being hoisted from the pit, the rock was dropped into side-dump cars and hauled to the cobbing shed by an 8-ton gasoline-driven locomotive.

The asbestos occurs in narrow veins in small fracture zones running nearly north and south in a large mass of dark-green serpentine. The open pit also takes this direction, and at the time of suspending operations the pit had reached a depth of 60 feet, a width of 50 feet, and a length of 130 feet. A determined effort was made to develop a commercial body of asbestos, but it was found that while the quality of the asbestos was equal to that of the Quebec deposits, there was not a sufficient quantity of the fibre to make the venture a paying one. The average length of fibre saved was one inch, and it was of No. 1 quality. In composition the Deloro asbestos is very much like that of Quebec except that the alumina and iron content are lower and the combined water higher, making it more adaptable for spinning and general manufacture.

A comparison of the Quebec and Deloro asbestos was made by the Milton Hersey Company of Montreal:—

	Deloro chrysotile	Quebec chrysotile
	per cent.	per cent.
Silica.....	40.85	40.49
Alumina.....	.60	1.27
Ferric oxide.....	1.02	2.53
Magnesia.....	41.40	41.41
Lime.....	trace	.....
Combined water.....	14.64	14.06
Organic matter.....	trace	.....

The mining operations were done on a contract basis by D. Verocchio, of Montreal.

CHINA CLAY

Hudson-Mattagami Exploration and Mining Company, Limited

An account of the operations of this company is given under the heading "Coal."

COAL (Anthraxolite)

British-Colonial Coal Mines of Canada, Limited

Mining operations on the property of the British-Colonial Coal Mines of Canada, Limited, lot 10, concession I, township of Balfour, district of Sudbury, were discontinued early in the spring of 1927, at which time the incline had reached a depth of approximately 240 feet.

These operations were conducted under the superintendence of Alex. Wilson, Larchwood, who employed a crew of five men during the activities.

Hudson-Mattagami Exploration and Mining Company, Limited

This company has been carrying on prospecting work for several years in the area about the Mattagami river below Smoky Falls. Efforts for a time were directed to the development of some china-clay deposits located on the east bank of the river a short distance below Long rapids.

In the winter of 1925-26, a campaign of drilling was carried on in the township of Kipling half a mile south of the boundary of Sanborne township. The syndicate held properties on both sides of the river some 6 miles below Long rapids. Here the river passes through clay banks which reach to a height of 60 feet above the water's edge. Along the shores have been found slabs of float of a lignitic nature. The drilling was done on the east bank of the river to explore for coal seams. Two holes were drilled to depths of 60 and 114 feet, and seams of coal varying from 2 to 7 inches were reported.

In March and April, 1926, an attempt was made on the west shore to sink a shaft, 8 by 16 feet, to explore the ground. Considerable difficulty was experienced, owing to water and the clay walls. The size of the shaft had to be reduced to 6 by 12 feet, and eventually it reached a depth of 62 feet, having passed through some 40 feet of clay impregnated with material of a carboniferous nature. It was reported that a seam of 2 feet in thickness had been encountered at the bottom of the shaft.

In May another shaft, 6 by 8 feet, was started some 30 feet away from the other. This had to be reduced to 3 by 5 feet; a depth of 65 feet had been reached in the shaft when it was abandoned.

When visited in August both shafts were filled with water to the level of the river, but the collars of the shafts were some 25 feet above the water's level. During the winter and spring there were 24 men at work at the property. C. M. McCarthy of Toronto was in charge of the work. Plant and supplies were brought in by winter road, a distance of 60 miles, from mile 68 on the Island Falls branch of the Temiskaming and Northern Ontario Railway. At the property there was a Sullivan portable air compressor, 5 by 5½ inches, gas driven, and a 12 h.p. V.T. boiler.

In August, 1926, an attempt was being made to explore the ground to the west of the river by means of a core-drill, but the drillers experienced great difficulty in getting any depth over 85 feet, which was not enough to intersect any seams encountered in the shafts sunk near the river.

No further work was to be considered until after the railway was constructed from Kapuskasing to Smoky Falls. Supplies could then be brought to the property over a road 12 miles in length.

The head office of the syndicate is at 8 Bank of Toronto Building, Toronto.

COPPER

Amity Copper Gold Mines, Limited

Amity Copper Gold Mines, Limited, with a capital of \$3,000,000, in shares of \$1 par value, was formed to operate the Johnston property, south half, lot 5, concession VI, Pacaud township, district of Timiskaming, at Boston Creek station.

An option was taken on this property by Sidney A. Pain and associates in October. A mining plant, consisting of a hoist and a 320 cubic foot air compressor, driven by a gasoline engine, was installed. A 50-foot shaft was sunk in November. The vein was crosscut at 30 feet at this level, and 60 feet of drifting was done. The shaft was continued to a depth of 130 feet early in the year, and the vein crosscut at a distance of 35 feet; and 300 feet of drifting was done at this level in the first quarter of 1927. Diamond-drilling was begun in April. Ten men were employed in the mining operations.

Potter Doal Mines, Limited

This company was incorporated in Ontario on January 11, 1927. The authorized capital is 3,000,000 shares of no par value, of which 2,227,456 were issued. The claims owned by the company include 34 in Munro township (L. 17,028-32, 17,034-37, 17,165-68, 17,175-76, 17,179-80, 17,182-85, 17,187-89, 17,265-71, 17,392-94) and seven in Warden township (L. 17,167, 17,169-70, 17,177-78, 17,181, 17,186). These claims lie about 16 miles northeast of the town of Matheson, in the fifth and sixth concessions of Munro and the first concession of Warden, district of Cochrane.

The officers of the company are: C. A. Gentles, president; D. M. Hogarth, vice-president; C. D. H. McAlpine, secretary-treasurer; Carl Erickson, manager. The directors of the company are: C. A. Gentles and A. J. Agar, of Toronto; D. M. Hogarth, of Port Arthur; and R. S. Potter, of Matheson. The head office of the company is at 302 C.P.R. Building, Toronto, and the mine office address is Matheson, Ont.

The original discovery on the claims was made on November 19, 1926, by Paul E. Doal, of Matheson, along the north boundary of what is now claim L. 17,180, which comprises the southeast quarter of the north half of lot 7, concession VI, Munro township. Following the incorporation of the company, work was started in January, 1927, and the following frame buildings were erected: office, 14 by 20 feet; cookery, 16 by 24 feet; storehouse, 14 by 20 feet; core-house, 10 by 16 feet.

In February four diamond-drill holes, totalling 660 feet in depth, were drilled by the Sudbury Diamond Drilling Company. Work was also carried on along the outcrop of the ore body, and 28 tons of ore was mined, drilling being done with hand steel. The ore was hauled to Matheson and shipped to Cateret, N.J., to the U.S. Smelting and Refining Company. Returns from the shipment gave the following values in metals: copper, 15.22 per cent.; zinc, 4.15 per cent.; silver, 2.70 ounces to the ton; and gold, 0.045 ounces to the ton.

The ore body occurs as a lenticular mass in a contact between two very basic basalt flows and is associated with intrusions of diabase and diorite.¹ In the ore, chalcopyrite and pyrrhotite are banded with sphalerite. The walls of the ore body are well defined and have a dip of N. 70°. The outcrop where the discovery was made shows a width of 8 feet, and prospecting showed that this width continued over a length of 30 feet and then tapered off. The strike of the ore body is N. 68° W.

When the property was inspected on March 25, 1927, there was no machinery. The management had no immediate plans for sinking a shaft. It was proposed to make an electrical survey of the claims, and the work was to be undertaken by the Lundberg-Swedish-American Prospecting Corporation.

Sixteen men were employed.

DOLOMITE

Crystallite Stone Products Company

The Crystallite Stone Products Company, of Hamilton, operated the dolomite mine on lots 3 and 4, concession XII, Herschell township, Hastings county, from April 17 to December 24, 1926, and shipped 1,467 tons of dolomite to Hamilton. They employed an average of six men.

P. Stringer, Bancroft, is manager.

FELDSPAR

Bathurst Feldspar Mines, Limited

This company started to operate a feldspar property on lot 16 and the north half of lot 15, concession VIII, Bathurst township, Lanark county, in October, 1926, and shipped about three cars per week.

They employed about 12 men. Ira Marks, Perth, is manager.

T. H. Craig

T. H. Craig mined and shipped feldspar from May 1 to the end of the year. The property is on lots 1 and 2, concession X, Loughborough township. The average number of men employed was nine.

J. T. Ferril

J. T. Ferril operated a feldspar mine on lot 27, concession III, Monteagle township, Hastings county, for a short time in 1926.

He employed five men while operating and shipped about 350 tons of rough feldspar to the Crystallite Stone Products Company, of Hamilton.

Genesee Feldspar Company

The Genesee Feldspar Company, of Rochester, operated its property in concession VII, Monteagle township, Hastings county, throughout the year. They also opened up a mine on lot 14, concession VIII, of the same township, from which they shipped two cars of feldspar.

¹For a description of the geology of the area, see P. E. Hopkins, *The Beatty-Munro Gold Area, Ont. Bur. Mines, Vol. XXIV, pt. 1, 1915.* See also Map No. 28b, Gold Area between Lakes Abitibi and Night Hawk, which accompanies Vol. XXVIII, pt. 2.

The total amount shipped during the year was about 4,800 tons. The average number of men employed was 25.

George E. Worth, Rochester, is manager; and P. MacDonald, Hybla, is mine superintendent.

Rock Products Company

This company operated for eleven months near Balderson on lot 20, concession IX, Bathurst township, employing an average of 16 men.

W. A. Hannah is manager.

Verona Quarries, Incorporated

This company operated a feldspar property throughout 1927 on lot 1, concession XIII, Portland township, with an average of 14 men. The pit is about 60 feet deep and produced about 2,000 tons during the year.

C. A. McMahan is manager.

GOLD

Ankerite Gold Mines, Limited

This company is capitalized at \$2,000,000, divided into shares of \$1 par value each. The company owns three claims, M. E. 60-62 in the township of Deloro, district of Cochrane. Work for the most part has been confined to claim M. E. 60.

Early in 1926 the Ankerite Gold Mines, Limited, was formed to acquire the assets of the North American Gold Corporation, which owned the group of claims known as the Ankerite. In the new company the Porcupine Goldfields Development and Finance Company, Limited, holds an 86 1/3 per cent. interest, and the balance belongs to the North American Gold Corporation.

The officers of the Ankerite Gold Mines, Limited, are as follows: H. R. Norsworthy, president; F. R. Weekes, vice-president; J. E. Dorion, secretary-treasurer. H. E. Doelle was manager until March 20, when he was succeeded by W. H. Seaman. The directors of the company are: H. R. Norsworthy, F. R. Weekes, and J. E. Dorion, all of Montreal; C. E. C. Smith, National Club, Toronto, and W. S. Walton, Royal Bank Building, Toronto. The head office is at the Canada Cement Building, Montreal. The mine address is Box 535, South Porcupine, Ont.

Mining work was actively carried on during the year 1926 and milling operations began on June 19, 1926.¹ The No. 2 shaft, the main working shaft, was completed to a depth of 620 feet on March 3, 1926. This is a four-compartment shaft, two compartments being used for hoisting rock and a third as a cage-way for men and materials.

¹For flow-sheet and description of mill, see Ont. Dept. Mines, Vol. XXXV, pt. 1, 1926, p. 95.

The following is a summary of the development work done in 1926:—

	Feet	Cubic feet
Sinking	154	.....
Station-cutting.....	.....	5,448
Raising.....	326	.....
Drifting.....	832	.....
Crosscutting.....	580	.....
Total.....	1,892	5,448

During the year the average number of men employed was 101, of whom 14 were employed in the mill, 65 in the mine, and general 29.

Argonaut Consolidated Mines, Limited

This company operated their property in Gauthier township, district of Timiskaming, in 1926 with a working force of 100 men. The officials of the company are: J. H. Rainville, president; F. A. Labelle, first vice-president; J. A. Naud, second vice-president and general manager; Louis A. Marchand, treasurer; A. Brodeur, secretary; D. R. Thomas, general superintendent. The head office is at 145 St. James St., Montreal.

The following is from the report of the general superintendent for 1926:—

The interior shaft was sunk from the 750-foot to the 1,000-foot level in the first quarter of the year. On April 15 crosscutting was started on the 1,000-foot level, and on the 875-foot level a few days later. In July stopes Nos. 815 and 1,014 were opened up, and early in August stope No. 1,018 was found. From July to the end of the year, the two new levels produced 10,677 tons of ore, or 30.4 per cent. of the year's production.

In addition to 227 feet of shaft-sinking, mine development included 99 feet of station-cutting, 4,678 feet of drifting and crosscutting, and 4,139 feet of diamond-drilling.

The production from 35,081 dry tons milled was \$142,816.22 in gold and silver, and \$38,245.42 in copper, or an average of \$5.27 per ton, of which \$4.06 was for the gold and \$1.09 for the copper content.

The amalgamation and flotation process was continued in use with improved results. The average ratio of concentration was 41.6:1.

Expenditures amounted to \$339,721.54, or \$9.68 per ton milled, divided as follows: mining, \$3.05; development, \$3.11; milling, \$1.75; marketing, 78 cents; and general expense, 99 cents

Barry Hollinger Gold Mines, Limited

This company operated their property in Pacaud township, district of Timiskaming, during 1926 with an average force of 70 men. The company has an authorized capital of \$3,000,000 in shares of \$1 par value. H. C. Crowe is president, and Robert Fennell, 807 General Assurance Building, Toronto, is secretary-treasurer; L. B. Smith was succeeded as superintendent, late in the year, by R. M. Treloar.

The shaft was deepened 377 feet to the 1,000-foot level, and two new levels were opened at 800 and 1,000 feet. Lateral work comprised: drifts, 724 feet; crosscuts, 325 feet; raises, 59 feet; stations, 2,990 cubic feet; and slashing, 3,040 cubic feet. On the 800-foot level, No. 7 vein was crosscut at 265 feet from the shaft, and an ore shoot 140 feet long was opened up with two high-grade patches, 40 feet in length, at either end.

These developments resulted in ore reserves of 12,800 tons in No. 7 vein, which has a width of from 4 to 6 feet, and 6,666 tons in No. 5 vein.

The 50-ton concentrating mill treated 3,908 tons in the first four months of the year. The mill was then enlarged to 100 tons' capacity and converted to a cyanide mill, which treated 9,802 tons of ore of a value of \$7 to \$8 per ton in the last three and a half months of the year.

The compressor was changed from steam to electric drive, and a third 150 k.v.a. transformer was added to the electrical equipment. The steam hoist was replaced by a new double-drum electric hoist.

Bennett Mining Company, Limited

This company has an authorized capital of \$2,000,000, divided into shares of \$1 par value each.

The officers of the company are: W. F. Bennett, president and managing director; Murray Gordon, vice-president; C. E. Johnson, secretary-treasurer. The directors are W. F. Bennett, Murray Gordon, H. V. Bourlier, A. Denison, J. W. Cooper, all of Toronto; W. G. Neal, Walton; and Karl K. Homuth, Preston. The head office of the company is at 1 St. Clair Avenue West, Toronto.

The claims owned by the company in Maisonville township, district of Timiskaming, comprise Nos. 3,687-89, L.15,770-72, L.16,094-99, twelve in all. Four more claims were staked immediately to the west. The company also has nine claims in McVittie township and two in the Gillies limit in the Cobalt area. The main group of claims on which work is now being done includes the Smith Labine claims, three in number, comprising parts of lots 9 and 10, concession II, Maisonville township, district of Timiskaming.

Work on the claims in Maisonville township was carried on throughout the year 1926. The shaft, located at about the centre of claim No. 3,688, was continued to a depth of 530 feet. Levels were cut out at the following depths: 125, 250, 375, and 500 feet. Crosscutting had commenced at the 500-foot level early in 1927.

During the year 25 men were employed.

Blue Quartz Gold Mines, Limited

This company has an authorized capital of \$3,000,000, divided into shares of \$1 par value each. The officers of the company are: H. C. Crowe, president; Jas. A. Tuck, vice-president; Miss A. V. Marat, secretary-treasurer. The directors are: H. C. Crowe, Jas. A. Tuck, and J. Bennet, all of Toronto; J. H. W. Crowe, Birmingham, England; and H. Hibbard, Gillingham, England. The head office of the company is at 1104 Northern Ontario Building, Toronto. On May 1, 1926, N. O. Carpenter succeeded J. G. McGregor as superintendent at the mine, which is located in Beatty township, district of Cochrane. The mine office is at Matheson, Ont.

From May 1 to December 31, 1926, the following work was done: drifting, 55 feet; crosscutting, 535 feet; sinking, 118 feet; raising, 4 feet. There were 1,320 tons of ore hoisted.

The winze, 1,000 feet northwest of the main shaft, was sunk from the 500- to the 625-foot level and crosscutting done to pick up the extension of what is known as the 502W ore body at the 500-foot level. It is stated that on the 602W ore body 15,350 tons have been developed having a value of \$15 per ton and averaging 6 to 8 feet in width.

Early in 1927, the winze was being sunk to the 750-foot level and crosscutting was to follow to explore the extension of what is known as 602E and 602W, developed on the 625-foot level.

In 1927, it is proposed to enlarge the main shaft from two to three compartments, from the 200-foot level to the surface, and to continue the main shaft to the 1,000-foot level. Below the 200-foot level, the shaft has three compartments to the 500-foot level.

The average number of men employed during the year was 28. Hector McQuarrie was mine captain.

British Canadian Mines, Limited

Underground work on the Foley mine near Mine Centre was suspended on June 3, 1927.

At the time of writing (August, 1927), a small force is being maintained overhauling the plant and doing a small amount of prospecting in the surrounding area under the supervision of Chas. Baycroft.

The development work accomplished in the mine since the review published in the Thirty-fifth Annual Report of the Department of Mines consists of: 2,450 feet of drifting and crosscutting on the 850-foot level; 380 feet of drifting on the 600-foot level; 390 feet of drifting and crosscutting on the 400-foot level; 643 feet of drifting and crosscutting on the 200-foot level; 168 feet of shaft raise above the 400-foot level; a station cut on the 200-foot level preparatory to holing through the shaft-raise from the 400-foot level.

Canadian Associated Goldfields, Limited

This company operated their property at Larder lake in McVittie township, district of Temiskaming, during 1926 with a working force of 30 men. T. A. Graves is manager.

A new headframe was erected to accommodate three compartments, and the shaft was enlarged from the 360-foot level to the station. The stations on the 115-, 235-, and 360-foot levels were enlarged to take care of double tracks. A total of 1,200 feet of drifting and crosscutting was done during the year, mainly on the 750- and 1,000-foot levels.

The power-house was enlarged, and an 1,800 cubic foot air compressor installed.

The mill building, 132 feet by 175 feet, was completed and the following equipment installed: an 8-foot Marcy ball mill; tube mill, 5 by 16 feet; thickeners, 40 by 14 feet; and agitators, 22 by 18 feet.

The ore is crushed in a jaw crusher at the shaft head and passes to the ball and tube mills for fine grinding over a belt elevator. The latter is close-circuited with a Dorr classifier. After grinding, the ore goes to a dewatering thickener, then to two agitators for cyanidation and three additional clarifying thickeners for washing. Precipitation is by Crowe vacuum and Merrill press.

Champion Gold Mines, Limited

No mining was done at the Champion mine in Kenora district during 1926.

During the summer of 1926, the workings were dewatered, under the direction of Chas. Brent, president and general manager of the company, for examination purposes.

Coniaurum Mines, Limited

This company has a capitalization of \$5,000,000, divided into 1,000,000 shares of \$5 par value. The officers of the company are: R. W. Leonard,

president; A. L. Bishop, vice-president; Fraser D. Reid, general manager; J. J. Mackan, secretary-treasurer. The directors are: R. W. Leonard and A. L. Bishop, St. Catharines; Fraser D. Reid, Cobalt; Alex. Longwell, W. G. Watson, J. E. Day, and J. Y. Murdoch, Toronto.

The mines are in the township of Tisdale, district of Cochrane. The mine office address is Schumacher, Ont. The head office of the company is at St. Catharines, Ont.

The balance sheet taken from the financial report for the year 1926 shows the following:—

ASSETS

CAPITAL ASSETS (Coniaurum mine):

Cost of property.....	\$2,197,903.21	
Mine development.....	615,447.35	
	<u>\$2,813,350.56</u>	
Machinery and plant.....	116,636.84	
Camps and buildings.....	60,490.15	
Construction work in progress.....	811.79	
Camp equipment.....	2,170.37	
Assaying and engineering equipment.....	873.82	
Office equipment.....	1,002.45	
	<u>\$2,995,335.98</u>	
Investments.....		300,689.72
Current assets.....		55,820.33
Deferred charges.....		632.53
Discount on stock.....		1,650,000.00
		<u>\$5,002,478.56</u>

CAPITAL AND LIABILITIES

Capital stock, authorized and issued.....	\$5,000,000.00	
Current liabilities.....	2,478.56	
	<u>\$5,002,478.56</u>	

The following statement of the working account is also taken from the financial report for the year ending December 31, 1926:—

DEBITS

Head office administration.....	\$9,595.33	
Mines office and supervision.....	19,162.37	
Mining.....	233,367.16	
Maintenance.....	3,768.07	
Camp expense.....	2,490.07	
Lands and roads.....	54.59	
Legal expense.....	1,222.90	
Transportation and travelling.....	897.17	
Taxes and royalties.....	2,275.26	
Fire insurance.....	2,406.46	
Accident insurance.....	6,686.63	
Employees' bonus.....	377.64	
	<u>\$282,304.15</u>	

CREDITS

Interest on investments and bank deposit.....	\$10,393.78	
Rents.....	496.00	
Cash discounts.....	185.82	
Net cost of mine development for the year transferred to mine development account.....	271,228.55	
	<u>\$282,304.15</u>	

The mine development account gives the following:—

DEBITS	
Balance, January 1, 1926, forward.....	\$342,586.49
Adjustment re previous year's operations.....	1,632.31
Net cost of mine development for the year transferred from working account.....	271,228.55
	\$615,447.35

CREDITS	
Cost of development to date transferred to balance sheet.....	\$615,447.35

The following development work was done during the year 1926:—

Drifting.....	Feet 1,774
Crosscutting.....	5,362
Raising.....	897
Winzes.....	312
Shaft-sinking.....	524
Shaft-timbering.....	522
Diamond-drilling.....	2,663

The total development work done to January 1, 1927, including work done by the Coniagas Mines, Limited (working under Newray option), is:—

Drifting.....	Feet 5,269
Crosscutting.....	14,662
Raising.....	1,163
Winzes.....	312
Shaft-sinking.....	1,616
Shaft-timbering.....	1,602
Diamond-drilling.....	20,904
Total tons of waste hoisted.....	Tons 118,912
Total tons of ore hoisted.....	10,795

A summary of the ore developed by drifting from the commencement of operations to January 1, 1927, is as follows:—

ORE DEVELOPED BY DRIFTING TO JANUARY 1, 1926

Level	Vein No.	Location	Length	Width	Assay	Remarks
400-foot...	5	Old workings....	feet 175	feet 15	\$6.13	Developed by old company. Computed by mill test.
700-foot...	2	E. & W. 9.....	270	4.1	12.60	Face and back sampled.
	5a	N. & S. 5 vein...	65.5	3.4	5.99	" " "
	5	W. 9 X.C.....	29	5.4	5.08	" " "
1,000-foot...	5	E. & W. 9.....	95	6.3	5.73	" " "
	5	" 9.1.....	36	4.3	5.29	" " "
	7	" 10.....	291	4	5.21	" " "
	7	" 11.....	95	3.75	8.50	" " "
	9	" 10.....	47	3.2	66.90	" " "
	9	W. 10.....	65	2.8	8.53	" " "
	10	E. & W. 12.....	182	4.8	7.83	" " "
500-foot...	10	Old work.....	184	7.6	7.00	Computed from Kerr Lake Mining Company's assay plan of Gol- dale.
Total...			1,534.5			

ORE DRIFTED ON DURING THE YEAR 1926

Level	Vein No.	Location	Length	Width	Assay	Remarks
			feet	feet		
1,000-foot...	11	E. & W. 11.1.....	95	2.85	\$3.20	.....
	12	E. of dike.....	12	2.5	6.83	Face and back sampled.
	12	W. of dike.....	135	3.1	6.56	" " "
	12a	E. 11.1.....	173	3.1	19.57	" " "
1,125-foot...	5	E. & W. winze.....	6	3	2.50	Cut by X.C.
	9	E. & W. winze.....	32	2	4.83	13 feet length of winze; 19 feet drift.
1,250-foot...	9	W. 10.....	15	3	10.57	Changed from 7 W. 10.
	8	E. & W. M-2.....	116	3.8	6.61	.....
1,500-foot...	1	W. 10.....	81	2.8	7.95	.....
	7	E. & W. 10.....	145.5	3.1	7.67	.....
Total...			810.5			.....

ORE DEVELOPED FROM JANUARY 1 TO MARCH 31, 1927

Level	Place	Length	Width	Assay
		feet	feet	
1,500-foot.	7 W. 10.....	204.5	2.5	\$10.87 (No. 2 lens)
	7 W. 10 E. head.....	21	2.7	7.08
	7 W. 10 N.H. G.E.....	25	3.3	41.48
	8 E. & W. 11.....	90	3	6.32
Total...		340.5		

Operations during 1926 included the completion of development on the 1,000-foot level, the sinking of the main shaft to a depth of 1,500 feet, and the exploration of the 1,250- and 1,500-foot levels.

The projected programme for 1927 is to explore the three mineralized zones of fracture at the 1,250- and 1,500-foot levels and to deepen the main shaft to 2,000 feet preparatory to deeper development.

It is anticipated that when the year 1927 is further advanced sufficient ore will be disclosed to ensure the continuous operation of a 500-ton mill, which will be proceeded with if justified.

During the year 1926 a machine shop, 32 by 30 feet and 17 feet high, and a carpenter shop, 36 by 26 feet and 16 feet 4 inches high, were erected. The average number of men employed during the year was 80, of whom 45 were in the mine and 35 on the surface.

Operations at the mine are under the direction of John Redington, superintendent, and Douglas Jones, mine captain.

Conroy Mines, Limited

This company is a reorganization of Kirk Gold Mines and has an authorized capital of 7,500,000 shares of no par value. J. A. Morden is president; J. S. Knechtel, vice-president; A. E. Barratt, secretary-treasurer. G. E. Harrison and J. H. Macabe, of Toronto, were added to the directorate during the year. The head office is at 910-11 Kent Building, Toronto. Hugh Jardine is manager, and 30 to 40 men are employed at the property, which is in Lebel township, district of Timiskaming.

During the year the shaft was deepened by 265 feet, and stations were cut at the 425- and 550-foot levels. Seventy feet of work was done on the 300-foot

level; and early in 1927, 55 feet of drifting was done and a 458-foot crosscut driven on the 300-foot level south.

During 1925 and 1926 a total of 3,755 feet of diamond-drilling was done in six holes. These holes were drilled to the following depths: 900, 800, 350, 980, 305, and 420 feet.

Consolidated West Dome Lake Mines, Limited

This company has an authorized capital of \$5,000,000, each share of a par value of \$1. It owns 360 acres in the southeast portion of Tisdale township, district of Cochrane.

The officers of the company are: Sir Henry M. Pellatt, president; Wm. H. Kinch, first vice-president; Charles L. Sherrill, second vice-president; F. L. Hutchinson, secretary-treasurer; Duncan M. McPhail, manager. The directors of the company are: Sir Henry M. Pellatt, Richard L. Baker, J. A. Murray, Chas. L. Sherrill, and Frank G. Stevens, all of Toronto; Wm. H. Kinch and Frank L. Babst, of Buffalo, N.Y.; A. A. McKelvie and F. L. Hutchinson, of New Liskeard, Ont.

Mining and milling operations were carried on continuously throughout the year 1926, the ore produced coming from the 6th to the 12th levels.

ORE PRODUCTION

Level	Tons
600-foot.....	3,000
750-foot.....	6,500
900-foot.....	3,000
1,050-foot.....	22,446
1,200-foot and winze.....	2,000
Total.....	36,946

The development work done during the year 1926 was confined entirely to the exploration of No. 3 vein. A winze was sunk 150 feet from the 1,050-foot level to the 1,200-foot level at a point 425 feet east of the crosscut from the main shaft. Sixty-five feet of drifting was done, and 2,000 tons of ore assaying \$15 was taken out of the winze.

Drifting to the extent of 535 feet was done to the east on No. 3 vein at the 1,050-foot level. An ore shoot 400 feet long was opened up, making 980 feet of ore opened up on this level. No work has been done on the upper levels as far as this ore shoot, and it is not yet known whether this is a continuation of an ore body that was mined from the 60- to the 400-foot level in the old Dome Lake mine in the early days, or whether it is the apex of an ore shoot from a lower horizon.

During the year 1926 the following work was done:—

MINING AND DEVELOPMENT

Levels	Drifting	Raising	Sinking	Station-cutting
	feet	feet	feet	
600-foot.....		90		
600-foot substation.....	70			
750-foot.....		30		
900-foot.....	344	180		
900-foot substation.....	120			
1,050-foot.....	669	80	162	7 by 7 by 80 feet
1,200-foot.....	65			12 by 22 by 14 feet
Total.....	1,268	380	162	4,816 cu. ft.

MILLING

Total tons milled.....	36,946
Average daily tonnage.....	101.2
Gross value ore milled.....	\$239,348.86
Total loss in tailings.....	18,590.26
Net value recovered (gold, \$219,670.67; silver, \$1,087.93).....	220,758.60
Average value per ton.....	6.478
Average recovery per ton.....	5.975

From August 23, 1924, to December 31, 1926, the mill has treated 83,563 tons of ore and produced \$519,059.32 gold bullion. This production has come entirely from No. 3 vein.

The following statements are taken from the auditors' report in the report to shareholders for the year ending December 31, 1926:—

OPERATING ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1926

REVENUE:	
Gold bullion.....	\$220,670.59
Rental of equipment.....	1,430.20
Cook camp revenue.....	292.99
Sale of scrap.....	100.00
	\$222,493.78
Expense in excess of revenue.....	46,996.49
	\$269,490.27
EXPENSE:	
Mining costs, including plant repairs and maintenance.....	\$154,852.80
Milling charges.....	52,031.36
Mine office expense and management.....	8,609.99
General expense, head office.....	9,706.88
Head office management.....	4,999.92
Transfer fees.....	1,999.92
Insurance and workmen's compensation.....	10,774.18
Taxes.....	4,135.82
Gold bullion marketing charges.....	2,578.25
Travelling expense.....	1,024.36
Interest and exchange.....	876.42
Depreciation.....	17,900.37
	\$269,490.27

EXPENDITURE ON DEVELOPMENT AND PRODUCTION LESS REVENUE

	Expenditure	Revenue	Excess of expenditure over revenue
Period ending December 31, 1922.....	\$21,391.62	\$144.30	\$21,247.32
Year ending December 31, 1923.....	89,690.35	631.20	89,059.15
Year ending December 31, 1924.....	219,224.29	61,768.22	157,456.07
Year ending December 31, 1925.....	289,178.07	240,134.50	49,043.57
Year ending December 31, 1926.....	271,013.78	224,017.29	46,996.49
Total.....	\$890,498.11	\$526,695.51	\$363,802.60

NOTE: The mill commenced production on August 23, 1924.

During the year 1926 the average number of men employed was 80, of whom 55 were employed in the mine, 11 in the mill, and 14 general.

The balance sheet for the year ending December 31, 1926, shows the following:—

ASSETS

Current assets.....	\$16,240.36	
Deferred charges.....	11,423.91	
Property accounts:		
Mine property.....	3,494,985.76	
Buildings, depreciation provided for.....	54,315.09	
Plant and equipment, depreciation provided for.....	104,097.29	
Expenditure on development and production, less revenue.....	363,802.60	
Other assets:		
Commission on sale of stock.....	37,999.50	
Discount on sale of capital stock.....	1,069,999.60	
		\$5,152,864.11

LIABILITIES

Current (including \$5,566.66 due to officers and directors).....	\$39,094.21	
Special Suspense Account "A".....	113,769.90	
Capital stock (5,000,000 shares of \$1).....	5,000,000.00	
		\$5,152,864.11

Regarding the item "Special Suspense Account," the following is taken from the report of the president to the shareholders:—

Your directors are unable to recommend to you the adoption of the auditors' report, as they have not been able to satisfy themselves as to the item of \$113,769.90, shown as a liability under the heading "Special Suspense Account."

When the agreements, under which this company was incorporated and acquired the assets of Dome Lake and West Dome, were entered into, it was understood and agreed between the parties that Mr. C. H. Manaton should be appointed secretary-treasurer of the company and have charge of the head office business of the company. Acting in that capacity, he from time to time submitted to your directors statements exhibiting the financial affairs of the company. In none of these statements was any mention made of this item, but on receipt from Mr. Manaton of his statement as of 31st August, 1926, certain details were requested from Mr. Manaton, including his trial balance. On the trial balance so obtained there appeared a credit item, "Special Suspense Account, \$113,769.90," and Mr. Manaton in his letter of October 25, 1926, to the present secretary, gave the following explanation of this item:—

"SPECIAL SUSPENSE: Varied amounts paid into the company by myself when no money was available for upkeep will be written off to 'Development Account'."

A meeting of the directors was held in December, 1926, at which Mr. Manaton was requested to explain to the directors this item, which he refused to do, stating that the information should be obtained from the auditors of the company.

The auditors' report was obtained as soon as possible, in which they reported that Mr. Manaton claimed that the said sum of \$113,769.90 represented advances made by him personally to the company. Your directors were not satisfied with this explanation and accepted the resignation of Mr. Manaton and appointed the Trusts and Guarantee Company, Limited, transfer agents for the company, to replace the former transfer agents.

The present transfer agents report irregularities in the company's stock ledgers, but there has not been sufficient time to enable your directors to come to any conclusion as to the extent of the irregularities, and recently Mr. Manaton has made the statement that the item in question is the proceeds of the sale of the shares of certain shareholders entrusted to him.

A thorough investigation of the company's stock ledgers and the operations of Mr. Manaton must be made to ascertain to what extent, if any, there has been an over-issue of shares, and what part, if any, of the said \$113,769.90 represents the sale of shares so over-issued.

Your directors, therefore, recommend that the annual meeting of the shareholders be adjourned to the 10th of May, 1927, to enable the necessary investigation to be made and satisfactory plans completed to finance the company.

Cooper Gold Mines, Limited

This company has an authorized capital of \$2,000,000 in shares of a par value of \$1.

The head office of the company is Suite 52, Trusts and Guarantee Building, 302 Bay Street, Toronto. The officers and directors of the company are: W. H. Stafford, president; J. Mackintosh Bell, managing director and consulting engineer; A. S. Hamilton, secretary; E. H. Blake and R. S. Denning, directors.

The mine offices are at Wawa, via Hawk Junction, Ont. The staff at the mine is composed of J. C. Kirkland, manager; E. P. Edwards, assayer and engineer; J. Knox, Jr., underground superintendent; and W. L. Loughrin, accountant.

The holdings of the company consist of the Minto and Cooper block of claims, both in township 29, range 23, Algoma district, 22 claims in all.

Underground development has been confined to the Minto block. Underground operations were commenced on May 6, 1926. Day and night shifts of eight hours each were worked during all lateral work, and two drills were used in this work. While sinking No. 2 shaft, three shifts were worked and three drills operated. All lateral work was suspended during the sinking operations.

The following is a summary of the development work completed on the property up to and including April 30, 1927:—

No. 1 Shaft, which is located on the middle east side of claim No. 3,134, was completed by former operators. It is a two-compartment shaft, 11 by 5 feet, inclined at approximately 45 degrees. The vertical depth is 95 feet, and the inclined, 120 feet. The development work done by this company was at the 87-foot (vertical) level.

NO. 1 SHAFT DEVELOPMENT

	Feet
Station-cutting	90 (drifting equivalent)
North drift.....	794
South drift.....	1,024
Total.....	1,908

No. 2 Shaft, which is located in the middle of claim No. 3,132, was commenced in October, 1926, and completed in January, 1927. It is a vertical, three-compartment shaft 14 feet 6 inches by 6 feet (outside timbers), and is 340 feet deep. Stations were cut at 121, 221, and 321 feet, leaving a 19-foot sump.

NO. 2 SHAFT DEVELOPMENT

	Feet
FIRST LEVEL (121 feet):	
Station-cutting.....	20
Crosscutting.....	14
SECOND LEVEL (221 feet):	
Station-cutting.....	21
Crosscutting.....	187
North drift.....	81
South drift.....	80
THIRD LEVEL (321 feet):	
Station-cutting.....	35
Crosscutting.....	91
North drift.....	205
South drift.....	201
TOTAL STATION-CUTTING.....	76
TOTAL DRIFTS AND CROSSCUTS.....	859

In addition to the above underground development work, 2,533 feet of diamond-drilling was done on claim No. 3,132 of the Minto block and 1,346 feet on claim No. 3,090 of the Cooper block.

Crown Reserve Consolidated Mines, Limited

This company operated its property at Larder Lake, McVittie township, district of Timiskaming, for the first six months of 1926 with a working force of 23 men. N. J. Evered is manager.

A total of 1,104 feet of drifts and crosscuts were driven on the 425- and 550-foot levels.

De Santis Development Company, Limited

The De Santis Development Company, Limited, of Timmins, was formed to acquire and develop claims known as the De Santis group in the southwest corner of Turnbull township, district of Cochrane. The group comprises the following claims: P. 8,604, 8,722, 8,741, 8,743-45, 9,167, 9,176.

The company is capitalized at \$40,000, divided into shares of \$100 par value each. The officers of the company are: Ferreri Biagio, Timmins, president, and Guiseppe Guistini, Timmins, secretary. The address of the company is Box 1299, Timmins, Ont.

Early in 1927 preparations were made for the sinking of a shaft on claim P. 8,604 where a quartz vein containing gold was discovered in 1920. This vein is described as follows:¹—

The vein lies in a small body of granite which intrudes gabbro on the south and is cut by a large diabase dike on the west. This dike parallels and is 6 feet distant from the vein, which strikes N. 13° W. and dips vertically. The vein proper is 170 feet long and pinches out at the south end. At the north end, however, the granite is fractured, and stringers extend from the vein to the edge of the outcrop, a distance of 50 feet. The maximum width is 4 feet, widening to 5 feet at the bottom of an 8-foot pit near the centre of the vein.

Near the north end of the vein, a branching vein two and one-half feet wide strikes S. 38° E. It consists of quartz and pink and white calcite, apparently unmineralized, and shows perfect comb structure with projecting crystals of quartz.

The main vein contains pyrite and chalcopyrite in fractures in the quartz. The sulphides are most abundant along the walls, and along the east wall a width of 4 to 6 inches is particularly well mineralized. Much finely disseminated native gold was observed in this high-grade streak, both in the sulphides and in the quartz. About half a ton of this material was taken to Timmins by dog-sled during the winter of 1924 and was stored preparatory to a mill run.

A shaft, 5½ by 9 feet, was sunk to a depth of 125 feet, at which level 45 feet of crosscutting was done. Work was discontinued on June 15, 1927. The plant consists of two vertical tubular boilers, 12 and 15 h.p.; one Canadian Ingersoll-Rand compressor, straight-line type, capacity 110 cubic feet per minute; and one 6- by 8-inch Jenckes hoist. The buildings are all of log construction and include a power-house, 20 by 40 feet; a cookery, 20 by 30 feet; sleeping camp, 20 by 30 feet; and storehouse, 18 by 24 feet.

During sinking operations 15 men were employed and were directed by Peter de Santis.

Dome Mines, Limited

The authorized capital stock of the Dome Mines, Limited, consists of 1,000,000 shares of no nominal or par value, of which 46,666 are held under an agreement in trust for the company; the dividends on these shares are returned to the treasury of the company.

The mine is in the township of Tisdale, district of Cochrane. The directors of the company are: Jules S. Bache and Morton F. Stern, New York; Alex. Fasken and R. F. Segsworth, Toronto; G. C. Miller and R. W. Pomeroy, Buffalo, N.Y.; Dwight B. Lee, Detroit, Mich.; and Innis P. Allen, Rochester, N.Y.

On December 10, 1926, W. S. Edwards, a former director of the company and one who had much to do with the original staking and afterwards the promotion of the company, died.

¹Kamiskotia Gold Area, Ont. Dept. Mines, Vol. XXXIV, pt. 6, 1925, p. 59.

The executive officers of the company are: Jules S. Bache, president and treasurer; H. P. De Pencier, first vice-president and general manager; Morton F. Stern, third vice-president; Alex. Fasken, secretary; C. W. Dowsett was general superintendent until May 1, 1927, when he resigned to go to South Africa; E. P. Goetz, assistant treasurer and assistant secretary; C. C. Calvin, assistant secretary; John B. Robinson, assistant secretary. The offices of the executive and financial departments are at 42 Broadway, New York, and the Toronto office is at 36 Toronto Street.

In the annual report to the shareholders for the year ending December 31, 1926, the balance sheet shows the following:—

ASSETS

CAPITAL:		
Mining claims and properties.....	\$3,483,793.36	
Plant, etc., at depreciated values as per appraisal plus additions since.....	2,961,646.76	\$6,445,440.12
CURRENT.....		1,805,440.67
DIVIDEND ASSURANCE FUND consisting of:		
Cash in bank.....	\$22,852.02	
Government, railway, and other bonds at cost.....	2,196,579.25	2,219,431.27
		\$4,024,871.94
PREPAYMENTS AND DEFERRED CHARGES.....		22,701.74
		\$10,493,013.80

LIABILITIES

CAPITAL AND SURPLUS:		
Capital: Authorized 1,000,000 shares of no nominal or par value, all authorized to be issued for the properties and assets of the old company, the Dome Mines Company, Limited, at \$7 per share.....	\$7,000,000.00	
Surplus.....	1,313,007.94	\$8,313,007.94
CURRENT:		
Accounts, salaries, and wages payable.....	\$105,358.30	
Accrued income and other taxes.....	173,091.66	
Dividend payable January 20, 1927.....	\$500,000.00	
Less: Dividends on shares held in trust for the company as above.....	23,333.00	476,667.00
Unclaimed capital repayment and dividends.....	35,575.52	\$790,692.48
RESERVES:		
Operating equalization.....	\$35,263.15	
Amortization of premium on bonds.....	4,522.77	
Depreciation plant and equipment.....	1,349,527.46	\$1,389,313.38
		\$10,493,013.80

The net excess of current assets over current liabilities (including dividend payable January 20, 1927, amounting to \$476,667) is the sum of \$3,234,179.46, which includes the sum of \$2,219,431.27 set apart as a dividend assurance fund, as compared with the sum of \$3,489,083.97 for the excess of current assets over current liabilities in 1925, which included the sum of \$2,065,993.07 set apart for the dividend assurance fund.

The operating and profit and loss account for the year ending December 31, 1926, showed the following:—

EXPENDITURE

		Cost per ton milled
OPERATING AND MAINTENANCE:		
Mining, including hoisting.....	\$717,036.17	\$1.290
Development.....	757,706.94	1.364
Crushing and conveying.....	80,615.45	.145
Milling.....	500,891.30	.901
Bullion expense.....	20,866.90	.038
Fire protection.....	9,121.83	.016
Warehouse expense.....	10,093.22	.018
Auditors' expense.....	2,645.13	.005
Administrative expense—mine office.....	117,754.36	.212
Administrative expense—executive office.....	20,425.09	.037
Provincial and municipal taxes.....	53,476.47	.096
Insurance.....	25,167.31	.045
	<u>\$2,315,800.17</u>	<u>\$4.167</u>
Reserve for Dominion of Canada and U.S. income war tax...	90,966.33	.164
	<u>\$2,406,766.50</u>	<u>\$4.321</u>
Profit for year.....	1,784,834.24 ¹	
	<u>\$4,191,600.74</u>	

REVENUE

EARNINGS:		
Amalgamation bullion.....	\$2,380,118.43	
Cyanidation bullion.....	1,559,971.70	
	<u>\$3,940,090.13</u>	
Non-operating revenue.....		251,510.61
		<u>\$4,191,600.74</u>

APPROPRIATION ACCOUNT

Reserved for depreciation of buildings, plant, etc.....	\$442,797.96	Surplus Dec. 31, 1925.....	\$2,019,664.92
Expenditure Howey Gold Mines, Limited, written off.....	113,417.11	Bonus to mine management and staff for 1925.....	16,905.00
Dividends Nos. 34, 35, 36.....	1,430,001.00	Additional Dominion.....	11,703.15
Dividend No. 37 payable Jan. 20, 1927.....	476,667.00	Profit for year ending Dec. 31, 1926.....	1,784,834.24
Surplus Dec. 31, 1926.....	1,313,007.94		
	<u>\$3,775,891.01</u>		<u>\$3,775,891.01</u>

During the year under review there were four dividends paid amounting to \$1,906,668.

The following information is taken from the report of the general manager:—

During the year, 656,521 tons were hoisted, of which 555,700 was ore and was sent to the mill and treated; 100,821 tons was waste which was dumped on the surface.

The 555,700 tons milled yielded bullion worth \$3,940,090.13, the average yield being \$7.0903 per ton, as compared with \$8.2349 per ton for the previous year. The tonnage milled is 104.81 per cent. of that of the previous year.

The yield of ore for the years 1925 and 1926 are as follows:—

Source	No. of tons		Value per ton	
	1925	1926	1925	1926
Stopes.....	487,448	522,410	\$8.614	\$7.3877
Development.....	42,752	33,290	6.295	5.6674
Total.....	530,200	557,700	\$8.452	\$7.2846

¹Profit for 1925 was \$2,053,008.78.

The ore drawn from Dome Extension ground during the year was 76,456 tons, valued at \$505,591.58, or \$6.6128 per ton.

Stoping was carried on at all levels from the 3rd to the 15th, except at the 4th and 5th. No development of any consequence was done above the 14th level, and most of the work done on this latter level has not located any continuous ore body.

At the 15th level, No. 3 (main) shaft and No. 4 winze were connected, and crosscuts and drifts from this connection opened up ore indicated in holes diamond-drilled from the 13th and 14th levels. Stopes Nos. 1,506-8 were expected to connect with ore bodies Nos. 1,404 and 1,405 on the 14th level. These workings are all in the sediments except the western end of drift No. 1,502, which is in Keewatin greenstone for 670 feet from the station; east of this there is 20 feet of porphyry before the sediments are reached.

At the 16th level, connection is also made between No. 3 shaft and No. 4 winze. Some ore has been developed, notably in the east end of drifts Nos. 1,606 and 1,607. Diamond-drilling from this level, northwest of No. 4 winze, indicated ore between the 17th and 18th levels.

To develop the ore intersections shown in the drill holes, a three-compartment, vertical winze, No. 5, was sunk from the 16th level at a point 1,200 feet east of No. 3 shaft to a depth of 338 feet, with stations at the 150- and 300-foot levels, known as the 17th and 18th. The winze is in greenstone to within a few feet of the bottom, where the porphyry is encountered at the south side. The porphyry is 375 feet south of the winze at the 16th level.

Diamond-drilling has been done from the 17th-level station, and one hole, No. 982, started to the south and dipping below the level cut ore; all of the intersection, 296 feet, is in the sediments except the last 26 feet, which is in porphyry. Crosscuts were driven on the 17th and 18th levels, and some ore was developed on the 17th.

No. 5 winze is equipped for sinking considerably deeper and will permit exploring a large area to the east in Dome Extension territory.

SUMMARY OF DEVELOPMENT WORK FOR YEAR 1926

Level	Drifts	Cross-cuts	Drift cross-cut slashing	Raises and winzes	Box-holes	Raise and winze slashing	Stations	Shafts	Total	Diamond drilling
	feet	feet	feet	feet	feet	feet	feet	feet	feet	feet
3rd	48	46	21						115	309
5th	30		4						34	
6th	178		12	5	159				354	
7th	32	43	20	190	49	2			336	2,312
8th	233	134	41	146	52	3			609	910
9th	402	183	32	249	387	23			1,276	1,690.5
10th	394	241	41	549	456	20			1,701	1,683
11th	90	69	18	96	94				367	648
12th	399	54	5	271	455	22			1,206	1,416
13th	982	6	80	406	737				2,211	2,856.5
14th	1,238	913	179	380	467	18			3,195	7,296.5
15th	2,556	406	359	226	830	66	31		4,474	4,291.5
16th	3,135	508	624	536		86	566	253	5,708	13,218.5
17th	114	186	22	9			73	150	554	619
18th		223					79	38	340	
Total ...	9,831	3,012	1,458	3,063	3,686	240	749	441	22,480	37,250.5

The cost of development work was \$1,364 per ton milled, as against \$1.413 for the preceding year. In the charges were included outside development done during the year, an expenditure of \$56,270.88 in a total of \$757,706.94.

Diamond-Drilling.—During the year 37,250.5 feet of diamond-drilling was done, as compared with 38,939.94 in the previous year.

Ore Reserves.—In his remarks on the ore reserves, the general manager states that the development work has failed to open up a tonnage of ore equal to that milled during 1926 and the indications do not leave much hope that the coming year will see any improvement in this respect, unless the development campaign discloses larger ore bodies than those that have been found during the past two years.

The broken ore in the stopes has been reduced somewhat and now stands at 575,000 tons, as compared with 620,000 tons for the previous year. Including this broken ore, it is stated that there is two years' ore supply remaining in the mine.

Exploration.—During the year the Howey property at Red lake, held under option, was examined, and 18 diamond-drill holes, totalling 7,335.25 feet of drilling, were put down. The results obtained were not considered sufficiently encouraging to justify a continuance of the option.

The claims of the Red Lake Prospectors Syndicate to the west of the McIntyre claims on Red lake were also thoroughly prospected, and the option was dropped.

The claims farther west in the same area staked by the company's prospectors were also examined, and some surface work was done; it is the intention to do further work.

The Mill.—The following are the results of the mill operation for the year:—

	Total value	Value per ton
Heads, 555,500 tons.....		\$7.2846
Amalgamation bullion.....	\$2,380,118.43	4.2831
Cyanidation bullion.....	1,559,971.70	2.8072
Total.....	\$3,940,090.13	\$7.0903

NOTE: For the previous year the value per ton of bullion was \$8.2349.

The tonnage milled was 25,500 greater than for 1925, the increase being largely the result of higher temperature gained by live steam in the mill water.

The milling costs for 1926 were \$0.901 per ton, as compared with \$0.925 for 1925.

During the year 1926 the average number of employees was: mine, 475; mill, 56; surface, 160; total, 691.

Operating costs amounted to \$4.167 per ton milled, as compared with \$4.467 for the preceding year. The reduction was partly due to some ore having been drawn from the broken ore reserves, and this has partly been offset by the mining in small shoots from intermediate levels.

Four Nations Reserve Mining Company, Incorporated

This company is a Delaware corporation which owns mining claims L.14,821, 12,178, and 10,554 in Grenfell township, district of Timiskaming. The company

has a capital of \$2,500,000, in shares of \$1 par value. The officials of the company are: Victor E. Lundberg, president; R. A. Elliott, first vice-president; Jacob Friedman, second vice-president; Samuel Matz, treasurer; Frederick Hinnners, secretary; Charles Vogel, assistant secretary. The head office of the company is at 1440 Broadway, New York.

The company began operations on the property, which is situated one mile northwest of Kenogami station, in May, 1926, with a force of 3 men, which was increased during the summer and fall months to a working force of 37 men. A mining plant, consisting of a 150 h.p. boiler, a 500 cubic foot air compressor and a 10- by 12-inch cylinder hoist, was installed. A bunk-house, 24 by 30 feet; a cook camp, 24 by 30 feet, a power-house, 30 by 40 feet; and a 45-foot headframe were erected.

A two-compartment shaft had been sunk to a depth of 26 feet when operations were suspended from November 30 until the following August.

Gold Hill Mines, Limited

This company has a capital of \$3,000,000 in shares of \$1 par value. The directors of the company are: D. H. Angus, president; E. W. Kearney, vice-president; C. F. Tuer, secretary-treasurer; H. J. Scott and George Tough. The head office is at Haileybury, Ont. The property is in Catharine township, district of Timiskaming. Dan Hughes is mine captain, and 30 men are employed.

The following buildings were erected: a steel shop, 22 by 28 feet; a transformer house, 8 by 12 feet; a two-storey cook camp, 28 by 36 feet; a 70-foot headframe, and an addition to the power-house.

The shaft was sunk from 400 to 800 feet in depth, and four new levels were established. Lateral development included 640 feet of drifts, 291 feet of cross-cuts, and a 14-foot raise.

The mine was closed down for the first two months of 1927 for the installation of a 125 h.p. boiler, a 1,250 cubic foot air compressor, and a double-drum hoist, following which work was begun on excavating the foundations for a 75-ton mill.

Gosselin Syndicate

The Gosselin Syndicate operated their property in Cassels township, five miles northeast of Timagami station. Placide Gosselin is manager, and five men are employed.

The work done on this property during the year 1926 consisted of 90 feet of sinking in a winze on a 60-degree incline, 14 feet of drifting, and a few test pits, 3 or 4 feet deep. The shaft is 73 feet deep, and a winze has been sunk 225 feet on a 55-degree incline. Drifts have been started from the latter at depths of 35 feet, 45 feet, and 210 feet.

Goudreau Gold Mines Company, Limited

Mining and milling operations at the property of this company, in township 28, range 26, district of Algoma, were discontinued on May 31, 1926.

Surface exploration and a diamond-drilling campaign is being undertaken during the summer of 1927 under the supervision of Colin S. Johnston.

Harkness Hays Gold Mining Company, Limited

The officers and directors of this company are: E. Edward Bickel, New York, president; W. Dean Hays, Schreiber, general manager and chairman of the board of directors; Hallett Addoms, New York, secretary-treasurer; H. Harkness, Fort William, and W. F. Langworthy, Port Arthur. The mine is about two miles east of Schreiber on the main line of the Canadian Pacific Railway.

During 1926, work on the adit level was carried on by hand-drilling. In January, 1927, an Ingersoll-Rand, gasoline-driven compressor, 310 cubic feet per minute, a drill sharpener, and rock drills were added to the equipment.

When the property was visited on August 1, 1927, work on the adit level was temporarily suspended and surface exploration only was being done.

A total of approximately 1,200 feet of drifting and crosscutting had been completed on the adit level.

The work is under the direction of W. Dean Hays, general manager. Six men were employed at the time of writing.

Hewitt Mining Company, Limited

This company was incorporated under the Ontario Companies Act in 1927, with an authorized capital of \$1,000,000, divided into 200,000 shares of a par value of \$5 each.

The officers of the company are: Alexander M. Wood, president; Ralph Hewitt; Solomon Zeitlin, secretary. The directors are: Alexander M. Wood, New York; Ralph Hewitt, Ottawa; Solomon Zeitlin and Abraham Pollack, New York. The head office of the company is Room 39, Carleton Chambers, Ottawa, Ont.

The company is negotiating for the purchase of the following claims: T.R.P. 2,995 and 12,038 in McArthur township and T.R.P. 2,987 and 6,057 in Bartlett township, district of Timiskaming. These claims lie about 20 miles south of South Porcupine, township of Tisdale.

Early in 1927 work was done on claim T.R.P. 6,057 and a pit sunk to a depth of 30 feet. Nine men were employed.

Hill Top Gold Mines, Limited

This company has a capital of \$5,000,000 in shares of \$1 par value. The directors of the company are: A. Marland Woolnough, president; A. C. Thornburn, vice-president; George Tough, managing director; A. J. Young, Toronto, secretary-treasurer; and George Wilkie. In the first half of the year, the company acquired the north half of lot 10, concession V, and the south half of lots 10 and 11, concession V, Catharine township, district of Timiskaming; while a mining plant was being installed, they began the sinking of a shaft by hand on August 1. Henry Reamsbottom was manager, and 20 to 30 men were employed.

Commodious camp buildings were erected, as well as a power-house, 32 by 48 feet, and a 45-foot headframe.

The plant consists of two boilers of 30 and 50 h.p., a 325 cubic foot air compressor, and a 6- by 8-inch Jenckes hoist.

The shaft was continued to the first level at 140 feet, and 7 feet of drifting was done from the station at that depth.

Hollinger Consolidated Gold Mines, Limited

The authorized capital of this company is \$25,000,000 in 5,000,000 shares of \$5 par value each; 4,920,000 shares of these were outstanding on December 31, 1926.

The officers of the company are: Noah A. Timmins, president; L. H. Timmins, vice-president; John B. Holden, secretary and treasurer; A. F. Brigham, general manager; and John Knox, assistant general manager. The directors are: Noah A. Timmins, L. H. Timmins, Wilfred L. McDougald, Jules R. Timmins, and Leo H. Timmins, all of Montreal; John B. Holden and Wilson Bell, of Toronto. The mine and head office are at Timmins, Ont., and the general office is at 602 Royal Bank Building, Toronto.

The following information is taken from the sixteenth annual report of the directors to the shareholders covering operations for the year ending December 31, 1926:—

ASSETS		
CAPITAL:		
Mining properties.....		\$22,493,785.17
Plant, brought forward from 1925.....	\$622,567.20	
Additions during 1926.....	835,207.45	
	\$1,457,774.65	
Less depreciation for 1926.....	1,174,170.87	
		283,603.78
Investments in other companies, less depreciation for 1926.....		62,999.30
Tailings disposal site, less depreciation for 1926.....		33,667.20
		\$22,874,055.45
DEFERRED.....		920,349.63
CURRENT:		
Cash on hand.....	\$1,190,246.20	
Bullion in transit.....	386,698.66	
Accounts receivable.....	97,128.13	
Bonds and debentures.....	10,160,768.01	
Accrued interest on investments.....	151,617.68	
	\$11,986,458.68	
		\$35,780,863.76
NOTE: In the bonds and debentures is included the amount of \$5,125,000 for 6 per cent. first mortgage serial gold bonds, par value \$5,225,000, of the Abitibi Electric Development Company, Limited. The values assigned to these securities represent the actual cost of the power development at Island Falls.		
LIABILITIES		
CAPITAL STOCK:		
Authorized.....	\$25,000,000.00	
In treasury.....	400,000.00	
	\$24,600,000.00	
CURRENT:		
Wages unpaid and accounts payable.....		570,804.36
Reserve for taxes, Dominion of Canada and town of Timmins.....		439,217.20
SURPLUS:		
Balance of account from 1925.....	\$9,776,762.48	
Profits from January 1 to December 31, 1926.....	7,392,215.05	
	\$17,168,977.53	
Less—Dividends.....	\$5,805,600.00	
Plant depreciation.....	1,174,170.87	
Tailings site depreciation.....	12,625.20	
Investments in other companies and properties written down.....	5,739.26	
	6,998,135.33	
Net surplus carried forward.....		\$10,170,842.20 ¹
		\$35,780,863.76

¹The net surplus for the year 1925 was \$9,776,762.48.

The profit and loss statement is taken from the general manager's report covering operations for the year ending December 31, 1926:—

SOURCES OF INCOME:		1926	1925
Gold and silver produced.....		\$14,780,636.60	\$15,786,405.04
Interest on investments, etc.....		876,164.18	342,850.66
		<u>\$15,656,800.78</u>	<u>\$16,129,255.70</u>
DISPOSAL OF INCOME:		1926	1925
General charges.....	\$954,519.29	\$791,615.95	
Milling charges.....	1,599,854.44	1,745,259.86	
Mining charges.....	5,076,505.60	5,292,152.81	
		<u>7,630,879.33</u>	<u>7,829,028.62</u>
Operating profit.....		\$8,025,921.45	\$8,300,227.08
Paid out in dividends.....		5,805,600.00	4,378,800.00
		<u>\$2,220,321.45</u>	<u>\$3,921,427.08</u>
DEDUCT (taxes):			
Ontario.....	\$216,353.61		
Timmins.....	35,000.00		
Tisdale.....	1,006.90		
Dominion of Canada and Timmins.....	381,345.89		
		<u>\$633,706.40</u>	<u>\$693,246.44</u>
DEPRECIATION:			
Plant.....	\$1,174,170.87		
Tailings disposal site.....	12,625.20		
Investments in other companies and properties written down.....	5,739.26		
		<u>1,192,535.33</u>	<u>1,481,177.75</u>
Added to surpluses.....		\$394,079.72	\$2,159,910.72

The yearly average costs are given as follows:—

DISTRIBUTION OF GENERAL CHARGES

Account	Sundries	Labour	Stores	Total	Per ton milled
General miscellaneous charges and administration.....		\$483,334.45	\$137,890.84	\$621,225.29	\$0.3215
Surface services.....		50,783.09	41,550.83	92,333.92	.0478
Insurance.....	\$16,202.34			16,202.34	.0084
Marketing bullion.....	65,231.16			65,231.16	.0338
Workmen's Compensation.....		159,492.00		159,492.00	.0825
Discount on U.S. exchange.....	34.58			34.58	.....
Milling charges.....		629,613.07	970,241.37	1,599,854.44	.8278
Mining charges.....		3,186,983.42	1,889,522.18	5,076,505.60	2.6268
Total.....	\$81,468.08	\$4,510,206.03	\$3,039,205.22	\$7,630,879.33	\$3.9486

The total cost per ton of ore milled in 1925 was \$4.0565.

The Mine.—The development progress during the year 1926 was as follows:—

Level	Shafts	Drifts	Cross-cuts	Raises	Diamond-drilling	Timbering		Excavation
						Shafts	Stopes	
	feet	feet	feet	feet	feet	feet	feet	tons
Surface.....					4,891			
100-foot.....		860	64		1,656	55		
200-foot.....		1,843	1,766		7,846	100	1,239	30
300-foot.....		2,675	1,843		8,632	100	660	
425-foot.....		1,835	1,216		8,825	125	937	358
550-foot.....		1,741	1,303	95	7,342	125	609	30
675-foot.....		1,683	662		9,032	125	814	40
800-foot.....		2,036	2,977		6,404	125	1,241	192
950-foot.....		1,567	968	45	3,740	150	1,204	
1,100-foot.....		1,054	234		5,485	150	264	
1,250-foot.....		1,070	3,088		6,199	150	721	806
1,400-foot.....		1,693	3,240	76	10,356	150	1,706	216
1,550-foot.....	5	3,827	6,029		9,326	168	2,858	847
1,700-foot.....	150	6,299	7,655		7,631	300	184	1,563
1,850-foot.....	150	4,077	5,573	168	8,790	300	1,127	3,734
2,000-foot.....	331	3,311	5,853	15	7,556	380	80	5,927
2,150-foot.....	501		1,939	25	1,306	417	159	1,565
2,300-foot.....	174			35		157		275
2,450-foot.....	150					150		320
2,600-foot.....	150					150		315
2,750-foot.....	248		89			288		625
2,900-foot.....	175		189			169		415
3,050-foot.....	150		129			150		272
3,200-foot.....	150		34	111		141		425
Total.....	2,334	35,571	44,851	570	115,017	4,125	13,803	17,955

The total sinking, drifting, crosscutting, and raising for 1926 was 83,326 feet, and for 1925 was 68,926 feet.

At January 1, 1927, the central shaft had reached a depth of 2,388 feet. The main shaft was at 2,168 feet; No. 11 at 2,174 feet; and No. 19 (Schumacher) at 2,082 feet. Some 1,500 feet east of the central shaft, No. 23 shaft is being sunk from the 2,000-foot level to the 2,750-foot level to assist in developing the central section of the mine at lower levels. No. 21 shaft was sunk to a depth of 3,200 feet from surface, and at 3,160 feet crosscutting was done to connect with the central shaft. This connection is to be followed by raising to complete the central shaft to the same depth. No. 21 shaft was started at the 1,550-foot level.

At the beginning of 1927 stoping was being done at a depth of 1,850 feet, a beginning being made at the 2,000-foot level.

MINE PRODUCTION

Level	Broken ore in mine, Jan. 1, 1926	Ore broken during 1926	Ore removed during 1926	Broken ore in mine, Dec. 31, 1926
	tons	tons	tons	tons
Above 100-foot.....	3,947	19,974	17,851	6,070
Above 200-foot.....	65,195	157,961	124,493	98,663
Above 300-foot.....	36,442	98,785	83,080	52,147
Above 425-foot.....	134,860	115,586	165,019	85,427
Above 550-foot.....	66,530	176,823	145,982	97,371
Above 675-foot.....	58,607	82,124	86,642	54,089
Above 800-foot.....	38,224	70,734	72,065	36,893
Above 950-foot.....	81,596	146,060	114,009	113,647
Above 1,100-foot.....	321,884	87,087	281,542	127,429
Above 1,250-foot.....	214,731	182,145	279,877	116,999
Above 1,400-foot.....	93,647	378,130	248,643	223,134
Above 1,550-foot.....	4,360	252,184	151,850	104,694
Above 1,700-foot.....	.....	71,566	64,835	6,731
Above 1,850-foot.....	.....	81,320	67,597	13,723
Above 2,000-foot.....	.....	26,673	26,673	.....
Total, 1926.....	1,120,023	1,947,152	1,930,158	1,137,017
Total, 1925.....	.....	2,192,130	1,929,528	.....

During the summer months of 1926 a considerable quantity of sand filling was removed from the surface and taken to the mine for filling in stopes from which ore had been removed. In the fall and winter of 1926 preparations were made to handle sand and gravel from claims in the northeast portion of the township of Tisdale. The material is loaded by steam-shovel into a hopper and is carried on a belt-conveyor to buckets at a tramway, by which the sand and gravel is taken to a dumping station near the central shaft. Arrangements are also made to dump this filling material, when required, at various points, from which it is carried by belt-conveyor or tram to dumping stations which are convenient to the veins. The tramway is $3\frac{1}{2}$ miles in length.

At the central shaft there are now installed two hoists, each consisting of a cylindrical drum, divided so as to accommodate the ropes for the ascending and descending skips, which work in balance. The drum is 12 feet in diameter and 12 feet in width. The hoists are designed for a depth of 3,200 feet and are capable of an hourly output of 280 tons, the net weight per lift being 14,000 pounds.

The net weight of each skip is 4 tons, and the maximum rope speed is 3,000 feet per minute. A tachograph records each trip, the rope speed during the trip, and the signals. Each hoist is equipped with Lilly controls for overwind and overspeed.

The drums are driven through single reduction gearing by 2,000-horsepower motors of the wound rotor type and reversible induction, 2,200 volts, 3-phase, 25 cycles. They are specially designed to withstand the mechanical and electrical stresses incident to reversible winder duty.

SUMMARY OF ORE RESERVES

Vein No.	Tons	Value per ton	Estimated gross value Dec. 31, 1926	Estimated gross value Dec. 31, 1925
Veins over \$10:				
97.....	334,680	\$19.79	\$6,624,731	\$6,348,582
200.....	3,682	16.54	60,882	60,882
100.....	2,183	15.28	33,362	.....
220.....	3,947	14.40	56,837	.....
84.....	264,635	14.32	3,788,888	5,330,005
86.....	113,500	13.40	1,521,208	3,240,248
48.....	6,588	11.92	78,500	78,500
1.....	108,744	11.23	1,221,492	1,051,895
44.....	56,339	11.18	629,686	224,932
58.....	130,814	11.14	1,456,689	1,339,121
5.....	18,615	10.95	203,758	241,022
111.....	20,884	10.93	228,164	271,352
11.....	12,966	10.83	140,382	115,654
92.....	70,792	10.80	764,461	1,070,522
38.....	8,759	10.70	93,748	69,335
50.....	103,403	10.61	1,097,293	1,186,246
13.....	19,783	10.60	209,659	191,249
47.....	13,463	10.58	142,471	142,471
66.....	78,506	10.46	820,825	401,619
17.....	1,792	10.43	18,691	.....
18.....	9,262	10.40	96,367	.....
101.....	80,393	10.35	831,992	432,113
15.....	83,745	10.35	866,375	1,219,231
63.....	155,569	10.31	1,603,531	1,421,881
14.....	33,564	10.29	345,500	345,500
10.....	19,598	10.28	201,410	208,820
61.....	8,698	10.11	87,962	87,962
96.....	1,096	10.00	10,960	33,300
Total.....	1,766,000	\$13.16	\$23,235,824	\$25,112,442
Veins, \$10 to \$8:				
56.....	84,213	\$9.98	\$840,240	\$553,976
114.....	76,588	9.96	762,977	.....
65.....	112,575	9.96	1,121,772	1,370,453
8.....	10,567	9.78	103,371	103,371
26.....	28,575	9.78	279,476	229,242
107.....	291,938	9.64	2,813,674	1,872,325
91.....	231,509	9.53	2,207,019	2,611,543
51.....	81,965	9.39	769,819	855,064
87.....	26,509	9.32	247,159	151,174
2.....	101,044	9.12	921,504	939,048
85.....	329,622	9.11	3,004,103	3,272,795
88.....	55,529	9.06	503,080	533,742
55.....	457,812	9.02	4,128,255	5,428,671
16.....	15,152	8.94	135,511	102,277
33.....	113,070	8.91	1,007,038	964,982
68.....	35,611	8.86	315,681	263,040
4.....	46,001	8.78	403,821	346,940
37.....	27,811	8.71	242,215	207,600
52.....	59,482	8.70	517,359	585,502
95.....	222,114	8.62	1,913,698	1,652,545
9.....	59,018	8.57	505,776	304,256
12.....	153,729	8.57	1,316,766	1,662,288
53.....	212,516	8.51	1,807,934	2,142,049
54.....	139,967	8.42	1,179,008	1,397,717
59.....	52,954	8.25	436,714	343,622
99.....	15,086	8.04	121,360	110,389
116.....	.....	.....	.....	100,007
Total.....	3,040,957	\$9.08	\$27,605,330	\$28,104,618
Veins, \$8 to \$6:				
113.....	20,380	\$7.86	\$160,088	\$147,449
64.....	1,096	7.60	8,330	8,330

SUMMARY OF ORE RESERVES—*Continued*

Vein No.	Tons	Value per ton	Estimated gross value Dec. 31, 1926	Estimated gross value Dec. 31, 1925
<i>Veins, \$8 to \$6—Continued:</i>				
150.....	5,363	\$7.37	\$39,518	\$41,811
226.....	54,336	7.22	392,295	762,135
90.....	1,535	7.20	11,052	11,052
82.....	5,841	7.20	42,055	79,326
115.....	21,560	7.14	153,893	47,884
39.....	7,914	7.12	56,331	125,020
19.....	26,359	7.00	184,579	.....
201.....	8,552	7.00	59,864	.....
3.....	13,028	6.82	88,829	104,677
153.....	3,657	6.43	23,528	.....
7.....	8,431	6.34	53,452	55,398
45.....	4,291	6.20	26,604	26,604
67.....	3,629	6.11	22,173	.....
Total.....	185,972	\$7.11	\$1,322,591	\$1,409,686
Total ore reserves.....	4,992,929	\$10.45	\$52,163,745	\$54,626,746
Surface outcrops.....	80,280	7.50	601,730	663,343
Add probable ore in veins under \$6..	2,706,025	4.92	13,316,258	9,778,710
Total.....	7,779,234	\$8.49	\$66,081,733	\$65,068,799

The Mill.—Milling results were as follows:—

Ore milled.....	tons	1,932,559
Average value per ton.....		\$7.99
Gross value.....		\$15,449,437.60
Deduct loss in tailings.....		668,801.00
Net value recovered.....		\$14,780,636.60
Average tons per day.....		5,295
Per cent. of possible time run.....		93.8
Tons per 100 per cent. running time.....		5,568
Solution precipitated per ton of ore.....		1.45
Value per ton in tailings.....		\$0.35
Cyanide consumed per ton of ore.....	lbs.	0.464
Zinc consumed per ton of ore.....	lbs.	0.079
Zinc consumed per ton of solution.....	lbs.	0.055
Lime consumed per ton of ore.....	lbs.	2.168
Lead nitrate per ton of ore.....	lbs.	0.015
Average value of pregnant solution.....		\$5.30

In the mill the stamps have given way entirely to rod and ball mills, of which there are eight rod mills, 26½ by 14½ feet, and one ball mill, 7 by 6 feet.

For finer grinding the ball mill is followed by two tube mills, 6 by 16 feet; five of the rod mills each have two tube mills, 6 by 16 feet, following, and three rod mills have each two tube mills, 5 by 20 feet, following. All these tube mills are in closed circuit with duplex Dorr classifiers. Pebbles are used in the tube mills.

The rod mill feed has one-half of one per cent. on 1-inch, 2 per cent. on ¾-inch, and 79 per cent. through half-inch square-mesh screen. The discharge from the rod mill has 10 per cent. on 14-mesh, 16 per cent. on 20-mesh, and 32 per cent. through 200-mesh. The classifier overflow has approximately 63 per cent. through 200-mesh and goes direct to concentration.

The sulphides are removed on concentrating tables, of which there are 38 single-deck and 141 double-deck Deister tables. A low-grade tailing is taken from the tables. The same pulp and the same tonnage is passed to each table.

The concentrate is reground in two tube mills, 4 by 16 feet, and two tube mills, 5 by 20 feet, using $1\frac{1}{4}$ -inch iron balls. The concentrate is reground so that 99 per cent. will be minus 200 mesh and less than 0.05 per cent. remains on 150-mesh.

The reground concentrate is next thickened and agitated for 16 hours, in a solution with $1\frac{1}{4}$ pounds NaCN per ton.

The table tailings are thickened to approximately 52 per cent. solids and agitated for 16 hours in a solution of 0.75 pounds of NaCN per ton.

All agitator tails are combined and treated in one of three ways:—

1. Double Oliver filtration with repulping;
2. Three-step decantation followed by Oliver filtration; or
3. Moore filtration. (This is not at present in use.)

In the agitation section, 20 Pachuca tanks, 15 feet by 45 feet, with 45-degree bottom, are installed. They handle 4,200 tons per day. The remainder of the agitation consists of 11 Dorr type, 20 by 24 feet; 4 Dorr type, 14 by 20 feet; 2 Dorr type, 30 by 20 feet; and 2 Dorr type, 22 by 20 feet.

The decantation plant consists of seven 3-step rows of single-tray thickeners, 40 by 14 feet. Standard counter-current practice is followed, barren solution and secondary filter effluent being added to the last tank of each row. Pulp is delivered to the secondary filters, 52 per cent. solids.

The primary Oliver filters number six and are 14 by 16 feet. The discharge from these is repulped and passed to secondary filters, which consist of twelve 14- by 16-foot drum filters. Barren solution is used for washing the cake of the primary filters and in repulping the discharge.

Cake from the secondary filters is collected on a 36-inch belt-conveyor, repulped with water in a beater, and pumped, as will also be the Moore filter cake, to the tailings disposal site.

The Moore filtration consists of two 3-tank and 2-basket units and has a capacity of 1,000 to 1,100 tons. Each basket has 60 leaves, 6 feet 4 inches by 6 feet 10 inches.

Employees.—The average number of men employed during the year was 2,482 (for 1925, the number was 2,668), distributed as follows:—

MINERS:		MECHANICS:		GENERAL:	
Exploration.....	31	Operation.....	124	Mill and refinery.....	270
Development.....	408	Maintenance.....	177	Engineering staff.....	78
Production.....	1,132	Construction.....	73	Clerical staff.....	54
				Miscellaneous.....	135
<hr/>		<hr/>		<hr/>	
Total, 1926.....	1,571	Total, 1926.....	374	Total, 1926.....	537
Total, 1925.....	1,742	Total, 1925.....	381	Total, 1925.....	545

Kirkland Hunton Mines, Limited

This company operated the property in Teck township, district of Timiskaming, during the year with an average force of 20 men. The officials are Leo Erenhaus, president; Simon N. Stein, vice-president; William B. McPherson, 171 Yonge Street, Toronto, secretary-treasurer.

The inclined winze was continued to a depth of 300 feet, and a total of 1,050 feet of drifts and crosscuts were driven on the 675-foot level. A second winze was put down to a depth of 50 feet on this level. A crosscut of 130 feet was driven on the 1,250-foot level.

Six diamond-drill holes were put down from February to June, 1927. No. 1 was drilled 879 feet at 75 degrees north from the station; No. 2, 347 feet north

at 75 degrees; No. 3, 988 feet south from the station at 45 degrees; No. 4, 995 feet horizontal on the 675-foot level; No. 5 was drilled 635 feet horizontal on the 375-foot level; and No. 6 was drilled horizontal on the 125-foot level.

Kirkland Lake Gold Mining Company, Limited

The authorized capital of this company is \$5,000,000 in shares of \$1 par value, 1,000,000 of which are preferred shares. A total of 986,112 preferred shares and 3,972,226 common shares are outstanding. The directors are: D. B. Hanna, president; J. B. Tyrrell, vice-president and managing director; W. D. McPherson, R. G. O. Thompson, and A. C. Matthews. R. Graham is secretary, and the head office is at 810 Lumsden Building, Toronto. W. M. Sixt is superintendent, and from 50 to 75 men are employed at the mine, which is in Teck township, district of Timiskaming.

The agreement entered into with the Anglo-French Exploration Company of London, England, on March 22, 1924, by which that company controlled operations, has been terminated by mutual agreement.

The following summary of operations for the year is taken from the managing director's report:—

The main or central shaft was sunk from a depth of 2,073 feet to 2,408 feet, or 34 feet below our 2,350-foot level, which is actually 2,374 feet below the collar of the shaft.

The shaft was timbered from the 1,975-foot level down to the 2,350-foot level, and stations were cut at the 2,100-, 2,225-, and 2,350-foot levels, after which ladders, pipes, and electric cables were installed in the manway.

Crosscuts were driven southward on the above levels to the "main break," which continues to dip southward at an angle of about 85 degrees to the horizontal, and from these crosscuts and from those above them, drifting was prosecuted eastward towards the eastern boundary of our property, while on the lower two levels drifting was prosecuted westward as well as eastward.

Ore, often of very high grade, was encountered on all these levels, most of that on the lower levels being west of the crosscuts from the shaft.

All the evidence at hand points to the conclusion that in this section especially the ore already developed is the top of an ore body of very substantial proportions, the main body of which will be made accessible as the deeper levels are reached and opened.

Development work during the year was as follows:—

	Feet
Shaft-sinking.....	335.1
Crosscutting.....	1,065.79
Drifting.....	2,368.09
Station-cutting.....	113.4
Total.....	3,883.38

In accordance with our agreement with the Chaput-Hughes Mines, Limited, mentioned in our report of last year, the long crosscuts running southward from the shaft at the 1,600-foot level were continued for 37 feet to the north boundary of the Chaput-Hughes mining claim, after which drifts and crosscuts were driven in that property for 1,585 feet, in fulfilment of our agreement. This makes a total of 5,468 feet, or more than a mile, of crosscutting, drifting, and sinking accomplished by our staff and miners during the year on these two contiguous mining properties.

When the mill was started up again in October last, we were satisfied that we could keep it continuously supplied with ore with the certainty of steady profits. During the three months that it has been in operation, we have continued development of the mine to the limit of our power capacity and at the same time we have made a very handsome profit from operations, so that we start the year 1927 without indebtedness and with a substantial sum in cash or bullion to our credit.

The ore raised during the year was drawn from the various levels as follows:—

	Tons
1,850-foot.....	263
1,975-foot.....	2,944
2,100-foot.....	5,514
2,350-foot.....	1,076
Total.....	12,743

Although the mill had evidently received careful attention, both while it was running and after it was closed down, repairs and additions were found necessary. The whole plant was therefore overhauled, necessary repairs and additions were made, and everything was put in readiness for operation, but still we had no place where we could deposit our mill tailings. However, permission was finally obtained from the Mining Commissioner to run our tailings into Kirkland lake. As soon as this permission was granted, a 6-inch wire-wound wooden pipe, 3,200 feet long, was constructed on trestles from the mill to the lake. This pipe is now carrying away the tailings from the mill satisfactorily, and by its installation, all question of the disposal of our tailings has undoubtedly been solved for a long time to come.

In order to provide an efficient and permanent water supply for the mines in the area the township of Teck laid a 10-inch water main from the town of Kirkland Lake to our mine, assuring us of an abundant supply of water for the mill and also for fire protection, as well as providing pure water for domestic purposes, which latter is such an important factor in safeguarding the health and efficiency of the workmen.

The mill was started on October 1 and has continued to run smoothly and satisfactorily since that date. The tonnage treated has increased, until in December it attained an average of 150 tons a day, the total tonnage milled for the three months being 10,829 tons, from which was obtained gold to the value of \$126,999.66.

In the Kirkland Lake area, and in fact throughout the pre-Cambrian regions of northern Canada, gold is associated with red acid syenite and porphyry, syenite being the more abundant and prominent of these two rocks in the western portion of the Kirkland Lake gold field, and the extent and width of these acid rocks is closely related to the extent and richness of the gold-bearing veins associated with them.

On the surface of the company's mine property, syenite did not occur except in very narrow stringers, though it is recorded in the government reports as occurring on the claims to the east, but it was encountered in our No. 1 or eastern shaft at a depth of 108 feet, and in our main or central shaft, which is 550 feet west of No. 1 shaft, at a depth of 500 feet, giving it a pitch westward of 71 feet in 100, or an angle of 36 degrees to the horizontal in this distance.

Wherever there was an opportunity to examine it, ore was found to begin about 150 feet below the top of the syenite and to continue thence downwards, forming an irregular ore shoot pitching downward and westward in the vein on the "main break." From this ore shoot \$1,079,009.01 of gold was extracted prior to the year 1925, and there is still rich ore at the west end of the shoot below the 1,100-foot level.

In descending the main shaft, the band of syenite becomes quite narrow at a depth of about 1,300 feet and continues narrow to 1,900 feet, where it suddenly expands to a width of 160 feet, and from there downwards it continues to expand until at 2,350 feet it is at least 220 feet wide, with the north side not yet reached.

In connection with this expansion in width of the syenite, which pitches from the east westward as it does above, rich gold ore has now been found from the 1,600-foot level near the eastern boundary of our property on every level down to the 2,350-foot level, where it runs 800 feet west of that boundary, and throughout this distance we are, in my opinion, just at the top of the main ore-bearing zone.

Kirkland Rand, Limited

This company operated its property in Teck township, district of Timiskaming, until December 18, with a working force of about 25 men. W. F. Empey is president, and W. R. Osborne, superintendent.

A total of 876 feet of drifting and crosscutting was done on the 800-foot level after the fiscal period ending June 15, 1926.

Kirkland Townsite Gold Mines, Limited

This company operated for the six months' period, April to September, inclusive. The board of directors comprises R. H. Lyman, president; V. A. Gordon, secretary-treasurer; Frank E. Davison, Harry Oakes, F. W. Duncan, G. A. Bagshaw, and E. H. Horne. Sidney A. Pain is manager, and 20 men were employed. The property is in Teck township, district of Timiskaming.

The shaft was sunk to the 550-foot level by July 1, and to the 585-foot level in September. Three short diamond-drill holes, totalling 840 feet, were drilled underground in July.

Lake Shore Mines, Limited

This company has a capital of \$2,000,000 in shares of \$1 par value. The directors of the company are as follows: Harry Oakes, president; William H. Wright, vice-president; Louis Oakes, Albert Wende, and Ernest Martin. The head office is at Kirkland Lake, Ont. E. B. Knapp is superintendent, and 280 men, on an average, are employed. The mine and mill are in Teck township, district of Timiskaming.

The superintendent reports as follows for the fiscal year ending June 30, 1927:—

During the year 214,335 dry tons of ore were treated, yielding bullion to the amount of \$3,105,047.85. This shows an increase of 88,659 tons milled over last year with a corresponding increase of bullion of approximately \$870,000.

TOTAL PRODUCTION SINCE THE COMMENCEMENT OF MILLING OPERATIONS IN 1918

Period	Months	Tons milled	Bullion production
Mar. 1, 1918, to Nov. 30, 1918.....	9	14,948	\$369,680.31
Dec. 1, 1918, to Nov. 30, 1919.....	9	11,907	294,513.72
Dec. 1, 1919, to Nov. 30, 1920.....	12	18,889	483,701.93
Dec. 1, 1920, to Nov. 30, 1921.....	12	21,681	460,186.37
Dec. 1, 1921, to June 30, 1923.....	19	36,825	833,664.89
July 1, 1923, to June 30, 1924.....	12	24,223	578,242.59
July 1, 1924, to June 30, 1925.....	12	96,838	1,812,494.66
July 1, 1925, to June 30, 1926.....	12	125,676	2,235,184.40
July 1, 1926, to June 30, 1927.....	12	214,335	3,105,047.85
			\$10,172,716.72
Plus exchange premiums.....			145,537.30
Total.....			\$10,318,254.02

Mining and Development.—During the year, 294,854 tons of ore were broken, of which 270,381 came from mining and 24,473 tons from development. Of this amount, 214,335 dry tons were hoisted and milled, the balance being added to the broken ore reserves which now amount to 262,053 tons with an assay value of \$5,079,130.50.

► An inclined winze was sunk from the 1,000-foot level to the 1,200-foot level on No. 2 vein, showing the usual values as found on this vein.

The main shaft has been deepened to the 1,600-foot level, and stations have been cut each 200 feet, with a loading pocket at the 1,550-foot level.

A vertical raise has been put up from the 800-foot level to the 200-foot level in preparation for the new shaft, the size of which will be approximately 14 by 17 feet.

SUMMARY OF ORE AND WASTE HOISTED

Level	Ore	Waste
200-foot.....	0	740
400-foot.....	30,780	1,117
600-foot.....	97,395	1,537
800-foot.....	89,870	2,009
1,000-foot.....	1,801	2,988
1,200-foot.....	257	3,876
1,400-foot.....	357	3,429
1,600-foot.....	41	6,393
Total.....	220,501	22,089

DEVELOPMENT FOOTAGE FOR YEAR

Level	Drifts	Cross-cutting	Raises	Shafts	Winze	Total footage	Diamond-drilling	Box-holes	Station-cutting	Sump
	feet	feet	feet	feet	feet	feet	feet	cu. ft.	cu. ft.	cu. ft.
200-foot....		94.5	27			121.5				
400-foot....	102.5		975			1,077.5		6,720	3,360	
600-foot....		172.76	1,626.5			1,799.26		2,058		
800-foot....	520.9	44.2	1,422.5			1,987.6		13,203		
1,000-foot....	290.35		72		225	587.35	553	600	5,471	
1,200-foot....	44	66.5		183.34		293.84			8,782	1,155
1,400-foot....				200		200			3,662	
1,600-foot....	15			222		237			23,687	
Total....	972.75	377.96	4,123	605.34	225	6,304.05	553	22,581	44,962	1,155

The total development and exploration work from the beginning of operations to the present time are as follows:—

	Feet
Drifting.....	24,104.73
Cross-cutting.....	5,067.53
Raising.....	9,546
Sinking.....	2,254
Winzing.....	225
Diamond-drilling.....	13,663.5
Ore passes.....	889.73
	Cubic feet
Station-cutting.....	103,664
Box-holing.....	99,009
Sump.....	18,001

Milling.—The addition to the mill building was completed during the year and a third ball and tube mill unit installed. Additional filters have been erected, and mill run tests made on primary filtration show sufficient success to warrant the installation of further filters.

A Hummer screen is now in closed circuit with the ball mills and works out with very satisfactory results.

General.—The close of the year sees the completion of the hoist-room on No. 1 shaft, a concrete powder magazine, and a new installation of the substation to a more central location.

One modern cottage has been completed, also a 25-by 60-foot greenhouse for the use of the accommodation building.

A tile assay office is now under construction.

Macassa Mines, Limited

The authorized capital of this company is \$3,500,000 in shares of \$1 par value, of which 2,600,006 have been issued. The directors are: Harry Oakes, president; Willis A. Matson, vice-president; Arthur G. Slaght, Gordon C. Edwards, and Robert A. Bryce, managing directors. Larmour Soliague, of 217 Bay Street, Toronto, is secretary-treasurer. A. J. Keast is superintendent, and 30 to 35 men were employed.

The company was incorporated April 12, 1926, and work began two weeks later. The old buildings of the Elliott-Kirkland Mines in Teck township, district of Timiskaming, were repaired, and a 1,011 cubic foot air compressor and electric hoist and motors added to the plant.

The superintendent reports as follows for the fiscal year ending March 31, 1927:—

The first work consisted of assuring ourselves that the major portion of the development work would be done on the main break of the camp. Crosscuts north and south, the north on the 300-foot level and the south on the 500-foot level, decided this; and after the completion of these crosscuts the vein fracture near the shaft was developed westwards on the 300-, 400-, and 500-foot levels, the greater part of the work being done on the 500-foot. This fracture splits into two just west of the shaft, and both of these were developed.

While values were erratic and low on the whole, the development has shown an improvement in the formation with depth. Likewise, deep diamond-drilling indicated an increase in the favourable ore-bearing rocks, the syenites, etc., between 900 and 1,200 feet in depth.

A summary of the work accomplished is as follows:—

Crosscutting, 1,513 feet; drifting, 2,693 feet; raising, 21 feet; surface diamond-drilling, 7,014 feet in 14 holes; underground diamond-drilling, 767 feet in one hole. Waste hoisted, 10,470 tons.

The property closed down two months later on May 31, 1927, after an additional 198 feet of drifting and 408 feet of crosscutting had been done.

McIntyre-Porcupine Mines, Limited

The authorized capital of this company is \$4,000,000, divided into 800,000 shares of a par value of \$5, of which 798,000 are issued.

The officers of the company are: J. P. Bickell, president; W. J. Sheppard, vice-president; M. P. Van Der Voort, secretary; Balmer Neilly, treasurer. The directors are: J. P. Bickell, Toronto; W. J. Sheppard, Waubaushene; J. B. Tudhope, Orillia; D. H. McDougall, Stellarton, N.S.; Jos. Errington, Toronto.

R. J. Ennis is general manager. The mines and plant are at Schumacher in the township of Tisdale, district of Cochrane. The head office of the company is at the Standard Bank Building, Toronto. A by-law was submitted at the annual meeting in June, 1927, to change the head office of the company from Toronto to the mine office at Schumacher.

During the year the company acquired by staking and by options certain claims in the Kamiskotia area and in Warden township and carried out exploration work on these properties.

The fifteenth report of the company covers a period of nine months due to a change in the fiscal year authorized at the annual meeting in 1926. The report covers operations for a period ending March 31 instead of June 30.

The balance sheet for the period ending March 31, 1927, shows the following:—

ASSETS		
Current.....		\$2,031,899.87
Investments.....		819,993.23
Fixed.....		7,572,847.87
Deferred charges.....		83,127.90
Total.....		<u>\$10,507,868.87</u>
LIABILITIES		
Current.....		\$291,322.68
Reserves.....		3,025,638.67
Capital.....		3,990,000.00
Surplus.....		3,200,907.52
Total.....		<u>\$10,507,868.87</u>

The surplus for the previous period of twelve months was \$3,176,805.88. The current assets include Dominion of Canada bonds valued at \$1,238,375. The fixed assets show that during the nine months' period ending March 31, 1927, there was \$519,775.18 expended on additions to plant and equipment.

Among the liabilities, the reserves show a charge of \$2,876,651.64 for depreciation of plant, equipment, and development expenditures on Porcupine properties.

The profit and loss statement as for June 30, 1926, to March 31, 1927, shows the following:—

Earnings—bullion recovery.....		\$2,957,060.97
Operating costs.....	\$1,460,731.12	
Administrative and general expense.....	137,953.89	
Total operating costs—before providing for taxes and depreciation.....		\$1,598,685.01.
Operating profit—before providing for taxes and depreciation.....		\$1,358,375.96
Non-operating revenue.....		77,470.02
		\$1,435,845.98
Appropriations for municipal, provincial, and Dominion taxes for current nine-month period.....		58,673.19
Net profit for the nine-month period—before depreciation provision—transferred to surplus account.....		\$1,377,172.79

The net profit for the previous year was \$1,721,382.51.

During the period three dividends of 5 per cent. each were paid, aggregating \$598,500. Other deductions from the surplus account include:—

Development undistributed—written off.....	\$332,924.19
Tailings disposal rights purchased from Goldale Mines, Limited.....	20,000.00
Workmen's Compensation Board special assessment for silicosis.....	24,477.78
Provision for depreciation, buildings and equipment.....	381,585.18

The surplus as at March 31, 1927, was \$3,200,907.52, as compared with \$3,176,805.88 at June 30, 1926.

The fifteenth report also gives the following information.—

MINING

	Tons
Ore broken in stopes.....	329,080
Ore from development.....	68,509
Total ore.....	397,589
Ore hoisted.....	384,242
Waste hoisted.....	73,013
Total ore.....	457,255

Broken ore reserves in the stopes amount to 328,474 tons of \$7.95 ore, an increase of 13,347 tons. The application of horizontal cut-and-fill methods of stoping in some areas on the lower levels, in which the shrinkage method of stoping is not satisfactory, will tend to reduce dilution of ore and also the necessity for a large reserve of broken ore.

SUMMARY OF ORE HOISTED

Level	Tons	Assay	Value
1,125-foot.....	8,281	\$7.80	\$64,697
1,250-foot.....	14,269	9.25	132,233
1,375-foot.....	21,301	7.75	164,783
1,500-foot.....	24,465	5.50	135,074
1,625-foot.....	31,606	7.15	226,138
1,750-foot.....	48,685	7.90	386,427
1,875-foot.....	20,576	9.95	204,489
2,000-foot.....	58,799	8.50	498,893
2,125-foot.....	14,055	11.85	166,296
2,250-foot.....	31,343	6.65	208,366
2,375-foot.....	38,336	6.25	238,807
2,500-foot.....	29,086	9.80	284,848
2,625-foot.....	25,303	10.15	256,461
2,750-foot.....	10,447	4.60	48,330
2,875-foot.....	7,690	4.90	37,620
Total.....	384,242	7.95	3,053,462

Development

The sinking of No. 11 shaft was completed to the 4,131-foot level early in March, 1927, a total of 1,195 feet during the nine months' period. With the hoisting equipment installed it was expected to have the shaft fully equipped and sufficiently connected with the No. 6 (main) shaft workings to go into commission early in September, 1927. These connections will be at the 1,875-, 2,375-, and 2,875-foot levels, the two former being completed.

During the period under consideration better facilities for disposal of waste increased the development and made it possible to handle 10 per cent. more ore with the hoisting equipment at the main shaft.

No. 3 Vein.—Stopes produced 53,815 tons of ore with an average grade of \$11. On the levels from the 1,500- to the 2,125-foot, a total footage of 1,921 feet of drifting was accomplished, of which 1,500 feet was in ore of medium grade.

No. 5 Vein.—Stopes produced 31,840 tons of ore with an average grade of \$7.20. On the 1,625-foot level, an easterly extension of this vein was developed and 260 feet of drifting showed \$7 ore over a width of 8 feet.

No. 7 Vein.—Stopes produced 141,491 tons of ore with an average grade of \$8.40. A total footage of 3,243 feet of drifting was done on this vein from the 1,125- to the 2,875-foot levels. Approximately 1,600 feet was in ore of \$7.50 grade over 8½ feet, and 600 feet below \$6. Diamond-drilling disclosed a parallel series of lenses lying to the north of the main vein between the 2,375- and 2,750-foot levels. The total length in which the lenses occur is about 300 feet, and several intersections of above average grade ore occur over widths of 12 feet.

No. 8 Vein.—Stopes produced 14,564 tons of ore with an average grade of \$8.15. On the 1,250- and 1,375-foot levels, 603 feet of ore, averaging \$9.50 over 8½ feet, were developed.

No. 9 Vein.—Stopes produced 46,241 tons of ore with an average grade of \$9.70. A total of 1,628 feet of development was done at the 1,250-, 1,750-, 2,500-, and 2,625-foot levels, of which 1,560 feet were in ore of \$6.50 grade over a width of 9 feet.

No. 10 Vein.—Stopes produced 44,967 tons of \$5 ore. A total footage of 2,531 feet was done on all levels from the 1,750- to the 2,750-foot; 1,050 feet was in ore of \$5 grade. The easterly section of the vein showed marked improvement on the 2,875-foot level, 480 feet of ore averaging \$8.60 over 8½ feet in width.

No. 12 Vein.—This vein was not developed during the period.

No. 14 Vein.—This vein was intersected by 18 Q crosscut in Plenaurem ground, lying to the east and 250 feet south of No. 12 vein. Seven hundred feet of ore, averaging \$8.10 over 8½ feet, was developed. This vein is part of the Jupiter system, and its development is considered one of the important features of the work of the period.

SUMMARY OF DEVELOPMENT AND EXPLORATION, JULY 1, 1926, TO MARCH 30, 1927

Period	Drifts	Cross-cuts	Raises	Winzes	Shafts	Stations	Sumps	Pockets and passes	Total footage	Total excavation	Diamond-drilling
	feet	feet	feet	feet	feet	cu. ft.	cu. ft.	cu. ft.	feet	cu. ft.	feet
1.....	1,369	510	19	.....	143	2,152	.....	.....	2,041	2,152	1,736
2.....	1,467	627	.....	.....	127	11,975	.....	.....	2,221	11,975	2,018
3.....	1,395	632	.....	.....	117	6,285	.....	.....	2,144	6,285	1,809
4.....	1,470	698	.....	.....	128	6,207	.....	.....	2,296	6,207	1,928
5.....	1,114	663	27	.....	134	6,482	.....	.....	1,938	6,482	1,815
6.....	1,285	443	49	.....	130	5,224	.....	.....	1,907	5,224	1,536
7.....	1,529	313	58	.....	190	.....	.....	.....	2,090	.....	1,762
8.....	1,309	177	36	.....	198	.....	.....	.....	1,720	.....	1,521
9.....	1,449	483	23	.....	28	8,578	.....	.....	1,983	8,578	1,619
Total.....	12,387	4,546	212	.....	1,195	46,903	.....	.....	18,340	46,903	15,744
Previous years	84,545.8	37,692.3	9,399.4	579.7	11,424.9	487,969	36,823	133,102	143,642.1	657,894	147,337.5
Total to date	96,932.8	42,238.3	9,611.4	579.7	12,619.9	534,872	36,823	133,102	161,982.1	704,797	163,081.5

ESTIMATED ORE RESERVES

	Tons	Assays	Value
McIntyre claims.....	699,696	7.80	\$5,446,021
McIntyre Extension claims.....	210,309	9.90	2,087,747
Jupiter claims.....	362,778	9.30	3,370,018
Plenaurem claims.....	74,641	8.35	624,928
Broken ore in stopes.....	328,474	7.95	2,601,506
Total.....	1,675,898	8.43	\$14,130,220

NOTE.—In the estimate of ore reserves allowance has been made for dilution of broken ore by wall rock.

For the year ending June 30, 1926, the estimated ore reserves were 1,443,111 tons of an average value of \$9 and a total value of \$13,443,111.

ANALYSIS OF MINING COSTS PER TON MILLED

	Stoping	Drifting	Cross-cutting	Raising	Stations and sumps, No. 11 shaft	Sinking, No. 11 shaft	Total cost	Cost per ton
Labour.....	\$359,412.51	\$91,538.66	\$41,633.44	\$2,141.07	\$10,160.45	\$96,279.32	\$601,165.45	\$1.5598
Explosives.....	60,454.69	44,124.14	17,486.07	908.67	468.21	10,513.28	133,955.06	.3476
Supplies.....	53,816.67	11,719.00	4,263.43	168.60	492.08	11,914.88	82,374.66	.2137
Power.....	24,600.46	8,947.35	3,637.59	355.44	1,178.17	9,221.94	47,940.95	.1244
Timbering.....	74,863.90		3,623.52		8,853.53	70,844.32	158,185.27	.4105
Shaft repairs and alterations.....	3,369.31					345.91	3,715.22	.0096
Steel sharpening.....	22,778.24	14,501.28	4,777.56	322.51	453.86	7,897.30	50,730.75	.1316
Drill repairs.....	10,612.01	5,708.23	1,470.31	134.45	3.60	2,777.47	20,706.07	.0537
Surveying and engineering.....	12,295.58	3,953.75	1,152.08	151.32	92.15	1,139.28	18,784.16	.0487
Sampling and assaying.....	23,752.16	4,387.49	1,370.72			137.63	29,648.00	.0769
Pumping and ventilating.....	13,062.14		185.86		190.61	6,025.20	19,463.81	.0505
Tramming.....	40,362.00	7,369.06	2,205.19	80.90			50,017.15	.1298
Surface tramming.....			1,376.69		792.59	13,355.55	15,524.83	.0403
Hoisting.....	68,191.43	12,531.04	8,039.71	130.97	2,631.58	39,463.01	130,987.74	.3399
Total.....	\$767,571.10	\$204,780.00	\$91,222.17	\$4,393.93	\$25,316.83	\$269,915.09	\$1,363,199.12	\$3.5370
Less: Charged to undistributed development.....			30,209.57		25,316.83	269,915.09	325,441.49	.8444
Exploration.....	\$767,571.10	\$204,780.00	\$61,012.60	\$4,393.93			\$1,037,757.63	\$2.6926
Examination of prospects.....							28,193.40	.0732
Total Unit cost per ton..	\$1.9916	\$0.5313	\$0.1583	\$0.0114			\$1,065,951.03	\$2.7658
							8,661.23	.0224
							\$1,074,612.26	\$2.7882

The cost per ton milled during the operating year 1925-26 was \$3.0874.

Milling

During the nine months under review, the mill treated 385,409 tons of ore, of an average value of \$8.08 per ton, or a gross value of \$3,113,500.07, as compared with 460,909 tons of an average value of \$8.72 per ton, and a gross value of \$4,020,326 for the operating year 1925-26. The bullion recovered in 1926-27 was \$2,957,060.97 and contained 142,100 fine ounces of gold and 35,125 fine ounces silver.

PRODUCTION SINCE THE COMMENCEMENT OF MILLING OPERATIONS IN 1912

Period	Months	Tons milled	Value per ton	Gross value	Recovery per ton	Total value
1912.....	12	14,500	\$7.00	\$101,555.16	\$5.25	\$76,166.38
1913.....	12	31,979	7.85	251,314.45	7.05	225,752.25
Jan. 1, '14, to Mar. 31, '15	15	85,654	8.87	760,232.16	8.39	718,331.71
Apr. 1, '15, to Mar. 31, '16	12	105,758	7.71	815,345.49	7.38	779,990.94
Apr. 1, '16, to June 30, '17	15	195,307	10.00	1,954,793.28	9.55	1,864,914.28
July 1, '17, to June 30, '18	12	178,327	10.05	1,793,197.55	9.61	1,714,258.00
July 1, '18, to June 30, '19	12	179,874	9.78	1,759,627.40	9.29	1,671,646.03
July 1, '19, to June 30, '20	12	188,835	11.52	2,175,891.31	11.02	2,080,178.44
July 1, '20, to June 30, '21	12	171,916	11.67	2,005,672.00	11.08	1,904,326.36
July 1, '21, to June 30, '22	12	193,971	10.69	2,074,088.40	9.99	1,937,105.07
July 1, '22, to June 30, '23	12	240,615	9.96	2,397,303.00	9.35	2,249,741.63
July 1, '23, to June 30, '24	12	360,140	9.69	3,488,863.00	9.14	3,291,178.22
July 1, '24, to June 30, '25	12	400,259	9.43	3,774,068.00	8.86	3,546,637.52
July 1, '25, to June 30, '26	12	460,909	8.72	4,020,326.00	8.25	3,804,774.90
July 1, '26, to Mar. 31, '27	9	385,409	8.08	3,113,500.07	7.67	2,957,060.97
Total.....		3,193,453	\$9.55	\$30,485,777.27	\$9.03	\$28,822,062.70

MILLING COSTS

	Labour	Supplies	Repairs and maintenance	Power	Total	Cost per ton
Ball milling.....	\$7,099.95	\$19,257.88	\$627.00	\$9,226.98	\$36,211.81	\$0.0904
Tube milling.....	5,403.98	49,175.47	1,728.33	22,332.37	78,640.15	.2040
Classification.....	4,954.07	3,268.78	426.30	2,908.68	11,557.83	.0300
Pumping and elevating...	5,704.58	4,688.17	118.30	3,235.83	13,746.88	.0357
Agitation.....	5,704.58	855.14	102.60	4,496.75	11,159.07	.0290
Thickening.....	5,704.58	2,281.91	782.50	1,690.17	10,459.16	.0270
Clarification.....	7,817.67	2,912.16	183.60	1,308.05	12,221.48	.0317
Precipitation.....	5,704.58	11,928.41	163.00	1,613.76	19,409.75	.0504
Reagents.....		48,652.31			48,652.31	.1262
Filtration.....	8,134.53	3,477.91	499.60	2,717.63	14,829.67	.0385
Refining and assaying....	10,184.12	6,528.22	205.20	382.10	17,299.64	.0449
Heating.....		5,551.68	98.10		5,649.78	.0147
Tailings disposal.....		2,462.52	2,058.86	1,915.22	6,436.60	.0167
Mill alterations.....	1,192.02	1,272.09			2,464.11	.0064
Total.....	\$67,604.66	\$162,312.65	\$6,993.39	\$51,827.54	\$288,738.24	\$0.7492

The milling costs for the year 1925-26 were \$0.8322.

OPERATING COSTS

	Total	Per ton milled
Exploration.....	\$28,193.40	\$0.0732
Development.....	270,186.53	.7010
Breaking and stoping.....	767,571.10	1.9916
Examination of prospects.....	8,661.23	.0224
Total mining costs.....	\$1,074,612.26	\$2.7882
Crushing and transportation.....	52,497.57	.1362
Milling.....	288,738.24	.7492
Heating and maintenance—buildings and camps.....	34,753.39	.0902
Mercantile store and welfare expenses.....	10,129.66	.0262
Management, bullion marketing, and general expense—mine office.....	56,721.48	.1472
Administration and general expense—head office.....	67,936.29	.1763
Insurance, general.....	13,296.12	.0345
Total.....	\$1,598,685.01	\$4.1480

The total operating cost for the year 1925-26 was \$4.6025.

The average number of men employed during the nine months was 782, of which 614 were employed in the mine, 65 in the mill, and 173 general.

McMaster Mining Syndicate

During 1926, this company operated their property near Rose Grove in Boston township, district of Timiskaming, with a force of seven men. Harry McMaster is manager, and A. H. Wallace, mine captain.

Crosscuts had been driven 480 feet northwest and 190 feet southeast on the 250-foot level by November, when operations were transferred to the west side of the railway, and test-pitting was done to find bed rock.

A camp building, 16 by 18 feet; an office, 16 by 24 feet; a smithy, 15 by 20 feet; and a power-house, 18 by 35 feet, were erected on the new site.

The sinking of a new shaft began in February, 1927.

McMillan Gold Mines, Limited

This company was incorporated under the Ontario Companies Act on the 31st of December, 1926, with a capital of \$2,000,000, divided into 2,000,000 shares of \$1 each.

The officers of the company are: Dr. John H. Banks, New York, president; G. A. Foote, Sudbury, vice-president; Chas. B. Goldsborough, New York, secretary. The directors are: Rufus L. Patterson, John H. Banks, Chas. B. Goldsborough, J. W. Boardman-Milligan, all of New York; J. G. Henry, G. A. Foote, and E. J. McMillan, Sudbury.

The company holds 28 claims in the township of Mongowin, district of Sudbury, on which exploratory work by diamond-drilling was done under the McMillan Development Company.

A two-compartment shaft was started on the property in the spring of 1927, which when visited on June 3 had reached a depth of 200 feet with a station cut at the 125-foot level.

The development programme of the company calls for the sinking of this shaft to a depth of 550 feet and the prosecution of lateral work on the 125-, 225-, 325-, 425-, and 525-foot levels.

E. J. McMillan is the mine superintendent and employed a force of 32 men at the time the property was visited.

Manley O'Reilly Gold Mines, Limited

This company has a capital of \$3,500,000 in shares of \$1 par value. John Riffer is president; John Conroy, vice-president; and Samuel W. Summerville, secretary-treasurer. The head office is at 19 Main Street, Hamilton, Ont. Walter A. J. Manley and William O'Reilly are joint managers, and 15 men are employed. The property is in Skead township, district of Timiskaming.

Drifts and crosscuts totalling 600 feet were driven on the 200-foot level, and in the last quarter of the year the shaft was sunk from 240 feet to 375 feet and a level established at 350 feet.

Early in 1927 the power-house was enlarged to 32 by 28 feet, and a 90 h.p. boiler, 550 cubic foot air compressor, and an 8- by 10-inch Rand hoist were added to the plant.

A new company, Manor Gold Mines, Limited, with a capital of \$5,000,000 and having the same board of directors, was formed by reorganization in 1927.

March Gold, Limited

This company is capitalized at \$3,500,000, divided into shares of \$1 par value each. The former capitalization was \$1,500,000 in shares of 10 cents par value each. The change was ratified on June 15, 1927.

The officers of the company are: Henry Kobler, president; Bert Conderman, vice-president; Bernard N. Hyman, secretary; Frank J. C. Bull, treasurer. The directors are: Henry Kobler, Bernard N. Hyman, Frank J. C. Bull, Charles Schmidt, Clarence H. Leo, Gustave R. Loesch, Henry J. Tiedt, Samuel B. Darlich, all of Buffalo, N.Y.; and Bert Conderman, of Hornell, N.Y. E. S. McEwen was superintendent from June 23, 1926, following Logan Ball. The head office of the company is 331 White Building, Buffalo, N.Y. The mine address is Box 533, South Porcupine, Ont.

The company have holdings in the central north portion of Deloro township, district of Cochrane. Four claims, H.R. 823, 833, 899, and 900, are owned outright. With the completion of a payment in March, 1928, the company will own the Maidens-McDonald claims, H.R. 832 and 926, originally owned by the Coniagas Mines, Limited. Two claims, H.R. 844 and 845, the Clucas-Booker group, are held under option.

Mining operations were carried on throughout the year 1926. The No. 3 shaft on H.R. 833 was sunk from 240 feet to 330 feet, and levels were established at 170 and 300 feet. Stopes were started on the No. 3 vein, which had been located in 1925 by diamond-drilling. This did not prove successful. With the negotiations for purchase of the Maidens-McDonald claims on March 19, 1926, crosscutting was commenced from No. 3 shaft to the northeast at the 300-foot level and north at the 170-foot level, and Nos. 5 and 6 veins were opened up on claim H.R. 832. These veins, which are 5 to 7 feet in width, are parallel and 35 to 40 feet apart. They strike N.W. 15° S.E. and dip 65° N. Drifting was done both ways on these veins.

The following is a summary of the development work done to February 15, 1927:—

Level	Drifting	Crosscutting	Raising
	feet	feet	feet
170-foot.....	910	360	15
300-foot.....	690	660	75
Total.....	1,600	1,020	90

There was also 90 feet of sinking done at No. 3 shaft and 155 feet of sinking in the inclined shaft on claim H.R. 832. This inclined shaft had been sunk to a depth of 100 feet on a dip of 65° following the No. 5 vein. Connections were made with the levels of the No. 3 shaft.

On July 4, 1926, the mill was started on rock stoped from No. 3 vein, and after operating one month was closed down until November 17, 1926, when it was started again on ore stoped from veins Nos. 5 and 6.

The Company continued milling operations until February 15, 1927, and suspended mining operations on March 15, 1927, intending to resume at an early date.

The mill building is 155 by 50 feet, of frame structure covered with tar paper and composition shingles; the roof is covered with heavy felt, hair insulator, and galvanized iron.

From the mine, rock is hoisted and dumped into a 100-ton bin in the shaft-house and is fed to a 15- by 24-inch jaw crusher and then to a set of 12- by 30-inch rolls. It is next conveyed to a 400-ton bin in the mill, and thence as a one-inch product to a Hardinge mill, 6 feet by 36 inches, using 6-inch forged-steel balls. The pulp then passes to a duplex Dorr classifier, the overflow going to a 5- by 18-foot tube mill and the underflow to a 30-foot, double-tray thickener. The tube mill operates in closed circuit with the classifier. Agitation follows thickening, in 7 Pachucas, 9-foot diameter and 17 feet high. The Oliver filter is 10 feet wide and 12-foot diameter.

Sand clarifying is used instead of a clarifying press. Two steel tanks, 12-foot diameter, are used; they are fitted with a grid bottom and a covering of cocoa-matting and fine canvas with a top of 6 to 8 feet of clean sand.

The Crowe vacuum process is used with zinc dust precipitation and is followed by a 36-inch Perrin square press.

The capacity of the plant is 150 tons a day.

The electric motors include the following: 150 h.p. slip ring motor for ball mill; 100 h.p. slip ring motor for tube mill with flexible couplings and fitted with herringbone gears; 50 h.p. induction motor for crusher; 30 h.p. induction motor for an 11- by 12-inch compressor; 20 h.p. induction motor for rolls; two 10 h.p. induction motors for centrifugal pumps; six 7½ h.p. induction motors for centrifugal, vacuum, and solution pumps; four 5 h.p. induction motors for diaphragm pumps and thickener, classifier and ball mill feeder, a triplex pump, a belt conveyor, and an Oliver filter; four 3 h.p. induction motors for Oliver filter, and boosters; 2 h.p. induction motor for Ricks vacuum pump.

Water supply for the mill and plant is obtained from McDonald lake, where a 3-inch centrifugal pump, driven by a 20 h.p. induction motor, discharges into a 6-inch wood stay pipe line, 4,465 feet in length. Eighty-five gallons a minute are obtained in this service.

Electric power for motors and lighting is obtained from the lines of the Northern Canada Power Company. All motors in mine and mill are 550 volts. Pumping from the mine is done by a 7- by 10-inch Gould triplex pump, driven by a 20 h.p. induction motor.

Additions to buildings include a carpenter, machine, and blacksmith shop, 30 by 75 feet, a dry-house, 40 by 25 feet, with accommodation for 100 men. The machine shop is equipped with a 20-inch drill press, 18-inch lathe, 24-inch shaper, 6-inch pipe machine, power hack and emery wheels. A 1½ h.p. motor is used to drive the machinery. The blacksmith shop includes a Leyner drill sharpener, oil furnace, and forge.

The assay office is equipped with a 5 h.p. motor to drive the pulverizer and jaw crusher.

During the year 95 men were employed: 52 in the mine, 10 in the mill, and 33 general. Geo. Schmeltzle was mine captain, and S. C. Sterling, mill superintendent.

New York Porcupine Mines, Limited

This company has a capitalization of \$2,500,000 in shares of \$1 par value each. The head office of the company is at 211 H. & R. Building, Syracuse, N.Y. The officers and directors of the company are as follows: Edward G. Ten Eyck, president; Smith T. Fowler, vice-president; Thos. K. Smith, secretary; Michael E. Monahan, treasurer; Henry M. Sage, Michael Lemp, Joseph Montgomery, Arthur C. Meade, and Willard H. Knapp, directors. Harry W. Darling, Box 489, Timmins, Ont., is consulting engineer.

The company owns the Scott Veteran claim, south half of lot 10, concession IV, township of Tisdale, district of Cochrane, and the Martin claim, which is the south half of lot 4, concession I, township of Tisdale. Work was carried on at the Martin claim from April, 1926, to the end of the year. Shaft-sinking was resumed June 10, 1926, and the shaft sunk from a depth of 30 feet to 272 feet. Stations were cut at 125 and 250 feet. At the lower level, 65 feet of crosscutting was done to the north and 65 feet to the south from the shaft, which has three compartments, two 4 feet 8 inches by 4 feet 8 inches, and one 4 feet 8 inches by 4 feet.

Twenty-eight men were employed under Andrew E. Taylor as mine captain.

Night Hawk Peninsular Mines, Limited

This company suspended operations at the mine at Night Hawk lake, Cody township, district of Cochrane, on May 31, 1926. The workings have been kept pumped out during the year.

The head office of the company is at 371 Bay Street, Toronto, and the executive offices at 87 Vandergrift Building, Pittsburgh, Pa.

Northland Gold Mines, Limited

This company operated their property in Gauthier township, district of Timiskaming, with a force of 25 men. The authorized capital of the company was increased early in 1927 from \$2,000,000 to \$2,750,000. The board of directors comprise H. P. Hermance, president; J. J. Byrne, vice-president and managing director; M. J. Stearns and W. A. Newell, Ogdensburg, N.Y.; and O. B. Earle, Toronto. W. A. Thompson is secretary-treasurer, and the head office is at the mine, Kirkland Lake, Ont.

The following is a summary of development for the year: sinking, 500 feet; drifting, 420 feet; crosscutting, 950 feet; stations, 7,801 cubic feet; sump, 1,680 cubic feet; slashing, 1,548 cubic feet.

Sinking was resumed at the 500-foot level in November, and the shaft continued to a depth of 1,000 feet early in April, 1927.

Ore Chimney Mining Company, Limited

The Ore Chimney Mining Company, Limited, operated the gold mine near Northbrook in Frontenac county during the year with an average of 30 men.

The winze was completed to a depth of 125 feet below the 400-foot level and the level opened up at 500 feet. About 90 feet of drifting was done northeast and southwest on this level.

Power is supplied to the mine by the company's hydro-electric plant on the Skootamatta river.

A. E. Fletcher, Northbrook, is president, and J. M. Wolchuck is manager.

Ossian Gold Mines, Limited

This company has a capital of \$2,000,000 in shares of \$1 par value. Dr. Bennetto, of 20 Douglas Street, Guelph, Ont., is vice-president and general manager. The property is in the township of Ossian, district of Timiskaming.

During the year 1925, 5,000 feet of diamond-drilling was done on this property in 19 holes. Surface work was begun towards the end of December. A 60 h.p. boiler and a 300 cubic foot air compressor was added to the plant in January, 1926. Crosscuts were driven 85 feet east and 75 feet west on the 100-foot level, and 500 feet of drifting was done in the early months of the year. Ralph Hurd was manager, and 20 men were employed.

Ostrom Gold Mines, Limited

This company was formed in April, 1925, with a capital of \$5,000,000, to take over the properties of the Ostrom-Catharine Development Company and the Meco-Catharine Development Company in lots 6 and 7, concession IV, and lots 8 and 9, concession III, of Catharine township, district of Timiskaming.

The directors of the company are: George E. Sylvester, president; Le Roy Johnston, vice-president; Boyd A. C. Caldwell, Maurice Welsh, H. S. Welsh, E. R. Ostrom, F. P. McRostie. The head office is at Toronto, and the mine office at Boston Creek. George E. Sylvester is manager, and 8 men are employed.

Two log camps were built in 1922, and surface work began on these claims in 1923 and was continued in 1924. In 1926, 2,293 feet of diamond-drilling was done in nine holes, and a shaft was put down 60 feet on a 66-degree incline.

A mining plant, comprising two 60 h.p. boilers, a 612 cubic foot two-stage air compressor, and a 10- by 12-foot hoist was installed; a 40-foot headframe; a power-house, 30 by 42 feet; and an office, 30 by 21 feet, were erected early in 1927.

Pawnee-Kirkland Gold Mines, Limited

This company owns claims L.S. 464-67 in Lebel township and one claim in Teck township, district of Timiskaming. The company has a capital of \$3,000,000 in shares of \$1 par value. The directors are: C. F. Jordan, president; E. L. Wettlaufer, vice-president; W. S. Walton and O. B. Earle, Toronto; George W. Morris, Buffalo, N.Y.; and M. C. Smith, Burlington, Ont. Roy W. Weldon is secretary. The head office is at 504 Kemp Building, Toronto. J. J. Byrne is manager.

Operations began in November on the claims south of the King-Kirkland with the building of roads. A 90 h.p. boiler, a 340 cubic foot air compressor, and a 7- by 10-foot hoist were moved to the property in December and installed in January. A power-house and office building were erected, and shaft-sinking began February 1, with a force of 26 men and 5 wood-cutters.

Porcupine Paymaster Mines, Limited

The authorized capital of this company is \$2,000,000, divided into shares of \$1 par value. These shares are assessable. The thirteenth assessment was called on October 15, 1926. The company is controlled by the Premier Paymaster Mines Company, which has a capitalization of \$3,000,000, divided into shares of \$1 par value each. Of these, 1,400,000 are issued.

The holdings of the company are in Deloro township, district of Cochrane, and comprise ground formerly owned by the Standard Gold Mines, Limited, and the McLean Gold Mines, Limited. These claims lie along the north border of Deloro township.

The officers of the company are: E. H. Walker, president; J. A. Frohock, first vice-president; A. S. Fuller, second vice-president; R. M. Davis, secretary-treasurer; H. E. Clement, general manager. W. W. Hudson was superintendent until April 1, 1927. The directors of the company are: E. H. Walker, J. A. Frohock, A. S. Fuller, and D. B. Pattison. The head office of the company is at 79 Milk Street, Boston, Mass. The mine address is Box 508, South Porcupine, Ont.

Mining operations were carried on throughout the year 1926, and milling was commenced on April 24, 1926.¹

To permit of increased tonnage in the mill, a new shaft, No. 3, was started in the fall of 1926 and was made by raising from the 400- and 300-foot levels. The new shaft lies 400 feet to the west of No. 2, which has for some years past been the main working exit. Nos. 2 and 3 shafts are now connected at the 300-

¹For flow-sheet and description, see Ont. Dept. Mines, Vol. XXXV, pt. 1, 1926, p. 123.

and 400-foot levels. It is the intention, when No. 3 shaft is in operation, to use No. 2 for men and material as well as for development below the 400-foot level.

No. 3 shaft has four compartments, each 4 feet 10 inches by 5 feet 9 inches. The outside measure of the timbers is 12 by 14 feet. Two compartments will be used for skips to be operated in balance and to have a capacity of $2\frac{1}{4}$ tons each.

At No. 3, a headframe 90 feet high has been erected (July 1, 1927) and a Canadian Ingersoll-Rand double-drum, electrically driven hoist installed. The drums are 42 inches in diameter, with 30-inch face. The motor is 100 h.p., and the hoisting speed 750 feet per minute. The lifting capacity of the hoist is 8,000 pounds.

At No. 2 shaft a Canadian Ingersoll-Rand double-drum hoist has also been installed. While of the same type as that at No. 3, its drums are 48 inches in diameter, with 36-inch face. With a 75 h.p. motor it has a hoisting speed of 600 feet per minute. Its lifting capacity is 10,000 pounds.

The following is the development work done during the year 1926:—

Level	Diamond-drill holes	Drifting	Crosscutting	Raising
	feet	feet	feet	feet
Surface.....	3,090	.....	.....	.....
100-foot.....	2,134	98.2	371.4	108.4
200-foot.....	.....	.....	.....	174.7
300-foot.....	814	187.9	232	100
Total.....	6,038	286.1	603.4	383.1

At the Ankerite 475-foot level, there was 336 feet of drifting done from September 30 to December 31, 1926. The company is also carrying on development on claim L.O. 323, which lies east of the Ankerite mine. This work is being done by the Ankerite Gold Mines, Limited, under an arrangement with the Porcupine Paymaster, from the 475-foot level of the Ankerite mine.

During the year an addition was made to buildings for the accommodation of employees. An excellent two-storey dormitory, 104 by 28 feet, was built and includes recreation and reading rooms as well as bathrooms on both floors. The walls and partitions are insulated with Insulex.

During the year the average number of men employed was 135, of whom 75 were employed in the mine, 12 in the mill, and 48 general. M. Donovan was mine captain, and Ronald A. Vary, mill superintendent.

Following is a statement of assets and liabilities of the Premier Paymaster Mines Company, the controlling company, as of December 31, 1926:—

ASSETS

INVESTMENTS:

1,999,994 shares Porcupine Paymaster Mines, Ltd. (total issued and outstanding, 2,000,000 shares).....	\$2,570,000.00	
Advances to Porcupine Paymaster Mines, Ltd., for the purchase of additional claims.....	250,280.28	
		\$2,820,280.28
Porcupine Paymaster Mines, Ltd.—current account.....		1,533,381.38
Furniture and fixtures.....		2,504.61
Notes receivable.....		146,039.31
Accounts receivable.....		7,442.65
Cash.....		111,693.06
Deferred charges.....		3,160.00
		<u>\$4,624,501.29</u>

LIABILITIES

CAPITAL STOCK:

Authorized, 3,000,000 shares.	
Unissued, 1,598,527 shares.	
Issued and outstanding, 1,401,473 shares.....	\$1,401,473.00
Capital surplus.....	3,223,028.29
	<hr/>
	\$4,624,501.29

Power and Mines Corporation, Limited

Incorporated under the laws of the Dominion of Canada with an authorized capital of \$1,500,000, divided into 300,000 shares of preferred stock of a par value of \$5 each and 1,500,000 shares without par value, the Power and Mines Corporation, Limited, was granted a license under the Extra Provincial Corporations Act, dated January 5, 1927, authorizing it to carry on business in the Province of Ontario and to use within the province capital to the extent of \$100,000.

The directors are: Jacob A. Jacobs, president, Thomas Jones, Nap. G. Kirouac, Sir Frederick C. W. Loomis, R. A. Darwin, and Granville Gilmore, all of Montreal.

The operations of the company at the Grace mine in the Michipicoten area, district of Algoma, are under the management of E. D. Brewer. W. E. Simpson, Swastika, is consulting engineer.

Deepening of the old shaft was commenced at the 300-foot level on April 17, 1927.

When the property was visited on July 15, 1927, the shaft had been completed to the 400-foot level, a station and sump cut, and approximately 200 feet of drifting and crosscutting completed on that level.

On the surface the following additions and alterations had been made to the plant: a frame compressor and hoist-house erected; a 1,050 cubic foot, Sullivan, Angle Compound compressor installed; a new headframe and mill trestle built, a log powder magazine, 16 by 20 feet; cap and fuse house; two new log camps, and a log cabin.

Thirty-two men were employed on the property at the time of this visit, nine of whom were employed underground.

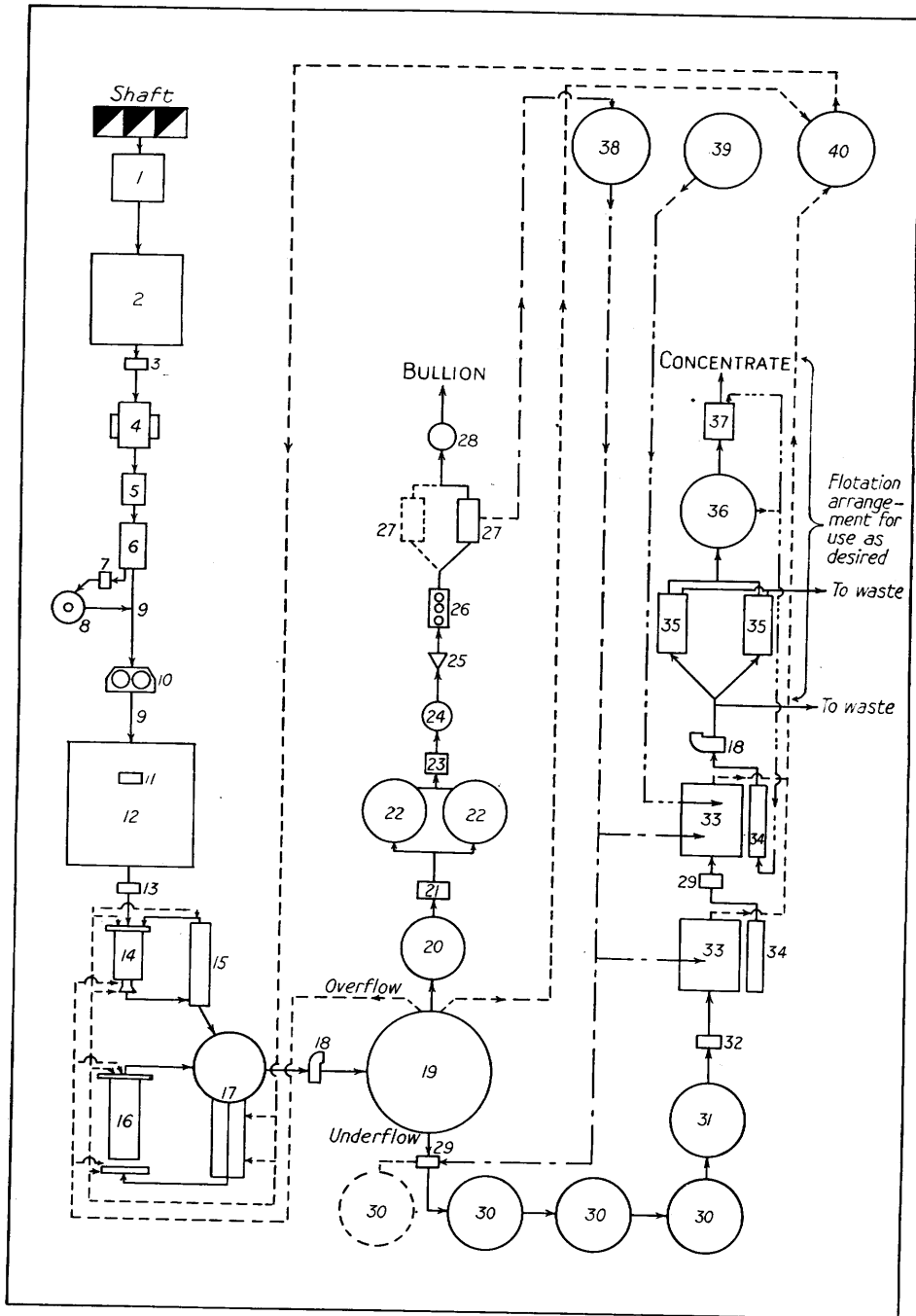
Shield Development Company, Limited

The Shield Development Company, Limited, operating the Huronian mine, Moss township, district of Thunder Bay, is capitalized at \$200,000, divided into 2,000 shares of \$100 each.

The officers and directors are: Norman R. Fisher, president; F. W. Tofield, secretary-treasurer; J. D. Paterson, Alistair Fraser, C. S. Gzowski, and C. N. Monsarrat, all of Montreal.

During the summer of 1926 the plant mentioned in the last Annual Report of the Department of Mines was installed, the mine dewatered, and lateral work commenced on the bottom level of the old shaft (approximately 120 feet). This work, drifting to the northeast and southwest, has been continued to date, operating on a single shift per day.

Twenty men are employed at the mine, four of whom constitute the underground force. J. G. Harkness is mine superintendent.



SYLVANITE GOLD MINES FLOW-SHEET,
September 1, 1926.

REFERENCE

1. Grizzly, 12 by 12 feet.
2. 200-ton bin.
3. Magnetic pulley, 36 by 12 inches.
4. Allis-Chalmers jaw crusher, 15 by 24 inches.
5. Bucket elevator.
6. Revolving screen, 4 by 8 feet.
7. Magnetic pulley, 18 by 12 inches.
8. 6-inch gyratory for screen oversize.
9. 18-inch conveyor belt.
10. Allis-Chalmers crushing rolls, 42 by 16 inches.
11. Tripper.
12. 600-ton bin.
13. 20-inch conveyor belt, ratchet feed.
14. Marcy rod mill, 5 by 10 feet.
15. Dorr Simplex classifier, 3 by 18 feet.
16. Allis-Chalmers tube mill, 5 by 16 feet.
17. Bowl classifier, 6 feet by 31 feet 8 inches by 18 feet.
18. 3-inch Wilfley sand pump.
19. Dorr thickener, 36 by 12 feet.
20. 24-leaf clarifying tank, 12 by 10 feet.
21. Gould vacuum pump, 8 by 10 inches.
22. Pregnant solution tank, 14 by 14 feet.
23. Steady head tank.
24. Crowe vacuum, 3 by 8 feet.
25. Zinc feeder.
26. Aldrich triplex pump, 5 by 6 inches.
27. Merrill filter press, 20-frame, 36-inch.
28. Monarch furnace, No. 275.
29. Dorr duplex suction pump, No. 4.
30. Dorr agitator, 18 by 20 feet.
31. Filter feed storage tank.
32. Dorr duplex pressure pump, No. 4.
33. Oliver filter, 12 by 12 feet.
34. Repulper.
35. Flotation machines, 12 feet, double, K. & K.
36. Settling tank, 17 by 12 feet.
37. Oliver filter, 6 by 6 feet.
38. Barren solution storage, 16 by 16 feet.
39. Water storage, 16 by 16 feet.
40. Mill solution storage, 16 by 16 feet.

Sylvanite Gold Mines, Limited

Sylvanite Gold Mines, Limited, township of Teck, district of Timiskaming, has an authorized capital of \$3,500,000 in shares of \$1 par value. The directors of the company are: Edward L. Koons, Buffalo, president; William L. Marcy, vice-president; Clark L. Ingham, treasurer; Ralph Hochstetter, Oliver Cabana, Jr., Albert Wende, and James Y. Murdock, directors. William S. Walton, 603 Royal Bank Building, Toronto, is secretary. The head office is at Kirkland Lake, Ont., and the Buffalo office at 619 Erie Bank Building, Buffalo, N.Y. C. E. Rodgers is superintendent, and the working force was increased from 35 to 70 men.

Lateral development for the fifteen months' period ending March 31, 1927, included drifts, 3,104 feet; crosscuts, 3,656 feet; raises, 200 feet; and 8,708 feet of diamond-drilling. The tonnage hoisted was 21,000 tons, and 700 feet of stopes were prepared and timbered.

The construction of a 200-ton cyanide mill was begun May 10, and the mill went into operation a year later, in May, 1927. The mill is of steel frame construction, and the equipment is shown on the accompanying flow-sheet. The plant is of steel construction and has been designed for exceedingly fine grinding as an aid to extraction of the gold from the telluride ores which occur at Kirkland Lake. Rod and tube mill grinding, in closed circuit with Dorr classifiers, is followed by thickening, agitation, and double filtration. Provision has been made for flotation, either before or after cyanide treatment, if this is found advisable.

Teck-Hughes Gold Mines, Limited

The Teck-Hughes Gold Mines, Limited, Teck township, district of Timiskaming, has an authorized capital of \$5,000,000, in \$1 shares, of which 4,747,144 shares are issued. The officers of the company are: Charles L. Denison, president; Albert W. Johnston, vice-president; George C. Miller, secretary; William C. Himrod, treasurer; K. P. Emmons, assistant treasurer. The directors are: Charles L. Denison, Albert W. Johnston, and J. F. Thompson, New York; Robert W. Pomeroy, George C. Miller, Conrad E. Wettlaufer, and W. W. Reilley, Buffalo. D. L. H. Forbes is general superintendent, and on an average, 270 men are employed.

The general superintendent reports for the fiscal year ending August 31, 1926, as follows:—

During this period 79,564 dry tons of ore were treated, from which bullion amounting to \$1,461,366.99, or \$18.37 per ton, was recovered. The gross revenue was \$1,510,616.05, or \$18.99 per ton. The total direct operating cost was \$700,004.98, or \$8.80 per ton; depreciation on fixed plant amounted to \$58,977.74, or \$0.74 per ton, making the total of direct and indirect charges \$758,982.72, or \$9.54 per ton. The net operating profit was \$751,633.33, or \$9.45 per ton. After setting up a reserve of \$33,193.12 for federal taxes, the net surplus was \$718,440.21.

Following is a statement of operating costs in detail:—

	Total cost	Cost per ton
Development and exploration.....	\$234,827.87	\$2.95
Mining.....	204,893.54	2.58
Milling.....	141,188.31	1.77
General expense.....	119,095.26	1.50
Total of direct charges.....	\$700,004.98	\$8.80
Depreciation on fixed plant.....	58,977.74	0.74
Total direct and indirect charges.....	\$758,982.72	\$9.54

Construction work charged to capital account absorbed \$136,834.96. Of this amount, \$89,150.62 was spent on plant additions and \$47,684.34 on new dwellings and camp buildings. Development work amounted to 8,753.3 feet as follows:—

	Sept. 1, 1925, to Aug. 31, 1926	Total to date
	feet	feet
Drifting.....	5,915.1	23,063.7
Crosscutting.....	1,835.3	10,691.8
Raising.....	926.4	2,340.6
Winzing.....	6	1,098.9
Shaft-sinking.....	70.5	2,748.9
Total.....	8,753.3	39,943.9

Development work produced 23,457 tons of ore that was treated in the mill, 279 tons of low-grade that was stock-piled, and 6,569 tons of waste rock hoisted to surface dumps. About 15 per cent. of the total development work was on levels from the 6th to the 10th, and new ore in important amounts was found on the 7th, 8th, and 10th levels. Following is a summary of development along the No. 3 vein system on the three new levels below the 10th:—

Level	Exploration on No. 3 vein system	Total drifting	Drifting in ore	Total crosscutting	Crosscutting in ore
	feet	feet	feet	feet	feet
11th.....	870	1,564	836	293	25
12th.....	1,095	1,970	1,477	339	62
13th.....	896	1,728	1,424	884	162
Total.....	2,861	5,262	3,737	1,516	249

The No. 3 vein system on the new levels was found to have widths up to 90 feet and to contain two and frequently three parallel veins or ore bodies. Those on the north and south sides of the vein system are the more important in length and richness, while the intermediate ore bodies, although usually of lower grade, have in many instances considerable width but are quite irregular in outline.

Diamond-drill exploration amounted to 6,911 feet. This together with former drilling makes a total of 10,402.7 feet of diamond-drill exploration to date. Of the recent borings the most important were three inclined, downward-pointing holes drilled from the 13th level and traversing the No. 3 vein system at about equal intervals down to 2,300 feet in a vertical plane normal to the vein at the central shaft. All three of these holes gave satisfactory geological evidence of the downward continuation of the vein system, and cores of varying gold assay were obtained in all three holes from the intersections with the vein system. The geological information obtained from this diamond-drilling is reliable, but no particular importance is attached to the core assays other than as evidence of the continuation of the vein system down to great depth below the present lowest workings.

After deep level development and exploration had given some of the gratifying results referred to above, further steps in the direction of gradual expansion consistent with known ore resources were taken. Work was commenced early in the summer preparing for further shaft-sinking, camp enlargement, and the construction of a first unit of an entirely new mill adjacent to the central shaft. Some of the results from this work in increased earnings are expected in the early part of 1927.

The shaft was completed to a depth of 2,270 feet, and the 19th level established at 2,230 feet by August 1, 1927. Hoisting is done by skips of 56 cubic feet or two tons' capacity in balance. Ore passes feed to loading pockets 30 feet above the 14th level. A 15- by 30-inch jaw crusher is being installed between the 13th and 14th levels.

The first half of the new 300-ton mill went into operation in February and the second half in August, 1927. The crushing plant includes a 15- by 30-inch jaw crusher, a No. 6 fine reduction McCully gyratory crusher. Grinding is

done in cyanide solution. Rod mills are used for coarse grinding and ball tube mills for fine grinding. Bowl classifiers are used for separation of the finished product followed by Dorr thickeners, agitators, and Pachuca tanks. Filtration is by three-stage American filters.

A 10-ton high-grade pilot flotation and cyanide plant for treatment of high-grade ore is under construction, together with the second mill unit of 300 tons capacity.

New equipment includes a 1,200 cubic foot Bellis and Morcon air compressor, a new carpenter shop, and a trestle bridge to carry the waste dump westward across the creek.

Tough-Oakes Burnside Gold Mines, Limited

This company has an issued capital of 5,000,000 shares of \$1 par value. The directors of the company are: F. H. Phippen, president; James Y. Murdock, vice-president; A. Burt, treasurer; Arnold Ivy, W. H. Beatty, W. D. Wilson. M. Musselman is secretary, and the head office is at 217 Bay Street, Toronto. Alan Stuart is manager, and 115 men are employed. The mine is in the township of Teck, district of Timiskaming.

The following is taken from the manager's report for the fifteen months' period ending March 31, 1927:—

At January 1, 1926, the lowest level of the mine was at 1,100 feet. At March 31, 1927, two new levels had been opened up at 1,225 feet and 1,345 feet by means of a winze sunk 343 feet on the incline. Other underground development included for the period 3,837 feet of crosscuts; drifts, 3,001 feet; raises, 130 feet; winzes, 254 feet; stations and ore pockets, 114 feet.

The net revenue from bullion produced from 57,616 tons milled was \$353,015.54. With the exception of 3,387 tons taken from the surface dump, the whole of the mill tonnage was obtained from current stopings and development operations. Of this, 33,857 tons were drawn from 1104/1004, 904/902 vein systems below the 800-foot level, 9,117 tons from Nos. 1, 2, and 11 vein systems above the 550-foot level, and 10,950 tons from development.

The capacity of the mill was increased to take care of from 210 to 220 tons per day by the addition of a set of 32- by 14-inch rolls and a Hardinge super-thickener to take care of the additional tonnage passing through the decantation plant.

An electric hoist was installed at the No. 3 incline. A new heating plant and boiler-house and a new change-house to accommodate 80 men were erected at No. 3 main shaft.

Vipond Consolidated Mines, Limited

This company is capitalized at \$2,500,000, divided into shares of \$1 par value each. This is an increase of \$500,000 over that of the previous year. Of the authorized capital stock, 2,250,000 shares are issued.

The officers of the company are: F. H. Hamilton, president; John H. Black, vice-president; J. Mackintosh Bell, managing director; R. S. Dening, secretary. The directors are: F. H. Hamilton and Sir A. Hamilton Grant, London, England; James W. Bain and John H. Black, Toronto; J. Mackintosh Bell and W. H. Stafford, Almonte; and R. T. Shillington, Haileybury. The head office of the company is at Suite 52, Trusts and Guarantee Building, Toronto.

During the year under review (ending July 31, 1927), four adjoining claims formerly known as the Porcupine Crown and Thompson Krist properties were purchased from British Porcupine Mines, Limited, for 250,000 shares of the Vipond Consolidated Mines, Limited. The property now consists of eight claims containing approximately 320 acres. The company now also controls (by virtue of owning 889,613 shares out of a total issued capital of 1,150,000) the Inspiration property of three claims. These are all situated in the southwest portion of Tisdale township, district of Cochrane. Together with these, the Vipond company has a three-quarter interest in the Ridgeley claims, six in number, lying immediately east of the Coniaurum property.

The balance sheet for the year ending July 31, 1927, is given in the fifth annual report as follows:—

ASSETS	
CAPITAL:	
Mining claims and properties as per balance sheet July 31, 1924.....	\$1,432,442.84
Acquired during year ended July 31, 1927, from British Porcupine Mines, Limited.....	215,737.95
	\$1,648,180.79
Mine, mill, camp and office buildings, plant machinery and equipment as appraised July 31, 1924.....	\$301,240.87
Additions at cost for year ending July 31, 1925, and July 31, 1927.....	99,476.84
Additions at cost for year ending July 31, 1927, including British Porcupine Mines, Limited.....	54,207.20
	\$454,924.91
Shares in other companies at cost.....	102,540.27
	\$2,205,645.97
CURRENT:	
Including cash on hand and in banks; provincial and railway bonds at cost; bullion en route and on hand; accounts and interest receivable, mining and milling supplies.....	250,383.01
DEFERRED:	
Including development expenditures undistributed; insurance and other prepayments.....	55,087.79
	\$2,511,116.77
LIABILITIES	
CAPITAL:	
Capital stock (authorized 2,500,000 shares at \$1 per share) issued and outstanding.....	\$2,250,000.00
Surplus.....	57,270.36
	\$2,307,270.36
CURRENT:	
Accounts and wages payable and accrued charges.....	41,362.99
RESERVES:	
For depreciation of buildings, plant, and machinery, and for Dominion income taxes and provincial production taxes.....	162,453.88
	\$2,511,116.77

The operating account shows the following:—

REVENUE	
Bullion proceeds, less exchange.....	\$704,899.87
Bond and bank interest earned.....	\$5,990.61
Miscellaneous recoveries.....	638.75
	6,629.36
	\$711,529.23

EXPENDITURE

Development.....	\$75,772.03	
Mining, including hoisting.....	244,331.52	
Crushing, conveying, and milling.....	127,856.29	
Shipping and marketing bullion.....	6,018.05	
General camp maintenance.....	10,531.19	
Administration and general expense, mine.....	28,604.19	
Administration and general expense, Toronto.....	7,148.16	
Transfer and directors' fees.....	19,446.89	
Insurance, including special compensation assessments.....	27,222.19	
Provincial and municipal taxes.....	5,013.91	
Balance carried down.....	159,584.81	\$711,529.23

The profit and loss appropriation account shows the following:—

DEBIT

Redemption of pre-production development costs.....	\$50,091.75	
Reserved for plant depreciation.....	40,041.72	\$90,133.47
Reserved for Dominion income taxes.....		2,751.47
Dividend, 3 per cent., paid April 15, 1927.....		67,500.00
Surplus July 31, 1927, carried to balance sheet.....		57,270.36
		\$217,655.30

CREDIT

Surplus, July 31, 1926.....	\$58,070.49	
Balance brought down.....	159,584.81	\$217,655.30

Mining.—During the operating period ending July 31, 1927, 95,700 tons of ore were hoisted, of which 82,949 tons were taken from the stopes, as compared with 64,676 and 46,299 tons for the previous year.

The cost of ore delivered to the primary crushing plant was \$2.55, as compared with \$2.48 for the previous year.

Development.—During the operating year ending July 31, 1927, the following development was carried out underground:—

Operation	Feet	Cost per foot	
		1926-27	1925-26
Drifting and crosscutting.....	3,043	\$13.67	\$12.28
Raising.....	672	17.40	16.43
Total footage.....	3,715		

A total of 14,435 feet was drilled with diamond-drill, the cost per foot averaging \$1.56, compared with 15,306 feet at \$1.61 per foot for the previous year.

Ore Reserves.—The total ore reserves as at July 31, 1927, were estimated to contain approximately 170,000 tons having a gross value of roughly \$1,400,000.¹ Of this amount, 50,893 tons of a gross value of \$409,318 were broken. It is pointed out in the fifth annual report that the ore reserves as at July 31, 1927, are less than the amount shown in the previous year's report by more than a million dollars—a figure greater than the amount of the pro-

¹Ore reserves, July 31, 1926, were estimated as 300,000 tons, valued at \$2,475,000, of which 55,000 tons were broken.

duction during the year together with the loss in extraction, in spite of discoveries of low-grade ore made in the newly acquired property. The drastic reduction is set down to two causes:—

1. Several of the more important blocks have, in process of extraction, failed to provide ore of the grade or quantity expected and on the evidence now available require reduction.

2. A considerable number of the less important blocks have been deleted entirely in view of the fact that on the information obtained during the year it is considered that the margin of profit is so small as to render the extraction of problematical value.

It is, however, shown that these figures make no allowance for any ore below the outcrop of vein No. 16 and in other localities where ore is known to exist but of which there are insufficient data available upon which to base calculations.

From the extensive exploration conducted at various horizons, down to and below the deepest level, the chances of discovery of important deposits are cited as becoming gradually restricted in the original four claims of the company; but it is added that a considerable number of relatively extensive areas, both in the original claims and in the ground purchased from British Porcupine Mines, Limited, from which, in certain instances, encouraging information has been obtained by diamond-drilling, warrant exploration. The Ridgeley claims are also considered as presenting speculative interest in view of the results being obtained in the adjoining Coniaurum property.

Milling.—The mill was in operation continuously throughout the year, and 95,799 tons of ore were treated, having an average value of \$8.21 per ton, as compared with 64,676 tons of an average value of \$9.74 for the previous year. From a gross value of \$786,568.74, the bullion recovered during the year ending July 31, 1927, was \$704,899.87

VALUE OF BULLION PRODUCED TO DATE

Bullion produced during 1925-26.....	\$704,899.87
Bullion produced during former years.....	2,336,420.85
Total.....	\$3,041,320.72

Costs of Production.—The costs of production, based on 95,799 tons milled, were as follows:—

	Cost per ton	
	1925-26	1926-27
Development.....	\$2.36	\$0.79
Ore extraction.....	2.48	2.55
Crushing, conveying, and milling.....	1.37	1.34
Shipping and marketing bullion.....	.08	.06
General camp maintenance.....	.19	.11
Administration at the mine.....	.46	.30
Head office expense.....	.09	.07
Corporate expense.....	.28	.20
Taxes.....	.02	.05
Insurance.....	.27	.29
Total.....	\$7.60	\$5.76

There were 150 men employed, distributed as follows: mine 100, mill 22, surface 28. Robert E. Dye was general superintendent, Alex. Hattie, mine captain, and John Davis, in charge of the mill. The mine office address is Timmins, Ont.

A. H. Woodman

A. H. Woodman, with one or two other men, was prospecting for gold during part of the summer of 1927 on lot 28, concession IX, Clarendon township, Frontenac county. They dewatered by hand an old pit, took samples, and did some hand-drilling. They had no plant and ceased work about August 4.

Wright-Hargreaves Mines, Limited

This company has an issued capital of \$2,750,000, in shares of \$1 par value, which it is proposed to change to 5,500,000 shares of no par value. The directors are: Oliver Cabana, Jr., president; Edwin Lang Miller, vice-president and secretary; Ralph Hochstetter, Charles G. Duffy, Oliver G. Donaldson, and John A. Kloepper. Gerard F. Miller is treasurer. The executive offices are at Liberty Bank Building, Buffalo, N.Y. James E. Grant is general manager, and 250 men are employed. The mine is in Teck township, district of Timiskaming.

The treasurer's report showed a profit on the year's operation of \$1,331,447.10, and other income amounting to \$61,299.32. The dividends paid amounted to \$618,750. The surplus, after deducting \$100,000 for taxes and \$114,000 for depletion, amounts to \$1,025,822.41.

The general manager reports as follows:—

During the year 153,392 tons of ore were treated, and the bullion recovered amounted to \$2,150,843.92, with an average value per ton of \$14.02. The mill operated 88.4 per cent. of its possible running time and treated an average of 420 tons per day. Analysis of operating cost, reproduced below, shows a total cost per ton milled, including expenditures for exploration and development, of \$5.34 per ton.

ANALYSIS OF OPERATING COSTS

	Total cost	Cost per ton milled
Development and exploration	\$107,306.76	\$0.700
Stoping	232,532.11	1.516
Tramming and hoisting	109,972.54	.717
Milling	184,381.72	1.200
Marketing bullion	13,973.98	.091
General charges	82,521.18	.538
Depreciation of plant and equipment	88,708.53	.579
Total	\$819,396.82	\$5.341

SUMMARY OF DEVELOPMENT AND EXPLORATION December 31, 1926

	Drifting		Shaft-sinking feet	Crosscutting		Diamond-drilling	
	ft.	in.		ft.	in.	ft.	in.
December 31, 1925	18,508	6	2,381	3,032	6	4,750	6
Fiscal year	3,772	0	827	635	0	602	0
December 31, 1926	22,280	6	3,208	3,667	6	5,352	6

The summary of total bullion production, including the value per ton treated as well as actual tons milled, since the commencement of operations in 1921, is herewith shown:—

Period	Months	Tons milled	Value per ton	Bullion produced
May to December, 1921.....	8	36,081	\$13.00	\$468,665.64
1922.....	11	66,181	11.52	762,752.84
1923.....	12	79,242	9.52	754,978.81
1924.....	12	84,487	12.89	1,088,725.53
1925.....	12	147,939	12.93	1,913,401.82
1926.....	12	153,392	14.02	2,150,843.92
Total.....	.....	567,322	\$12.59	\$7,139,368.56

Mining and Development.—The underground operations for the year just past embraced a campaign of stoping on the upper and intermediate levels on both the north and south veins, together with a programme of sinking to the lower levels.

On the north break (No. 1 shaft) within the past few weeks, we completed our shaft-sinking programme to the 1,500-foot level. During the period of sinking, stations were cut at the 1,375- and 1,500-foot levels. The drifting done on the levels mentioned has proved a continuity of our high-grade north vein and to date has shown the same high-grade values and widths as encountered above.

The main shaft (No. 3, south break) was sunk to the 1,375-foot level, and stations were cut at the 1,125-, 1,250-, and 1,375-foot levels. The results encountered in cutting the stations and drifting were very encouraging, showing higher values and greater length and width than that experienced on the 1,000-foot level. Recently a station was cut at the 1,375-foot level, and the vein at this point showed 17 feet of \$15 ore. A crosscut was run between No. 1 and No. 3 shafts on the 1,250-foot level, and another crosscut is being run at the present time on the 1,500-foot level to join No. 1 and No. 3 shafts. This will greatly facilitate the handling of ore.

On the whole, our past year's development underground was very encouraging, auguring well for the future by placing in sight more values than have been shown heretofore, as well as having proven up our property to 1,500 feet in depth.

Milling.—During the past year there was no concerted effort made to increase our tonnage per day, but our efforts were rather toward a study of perfecting our existing method of operations. In consequence, our tonnage for the year was practically the same as that of 1925. However, a few changes were made toward bettering conditions.

A classifier was installed for the purpose of returning the coarse product to the ball mills, which greatly facilitated our grinding. Also, one of our primary thickeners was replaced with a super-thickener, which increased our primary thickening capacity and thereby relieved a cause which at times reduced our milling capacity on account of the inability to settle all the ore ground.

We carried on considerable research work in connection with the flotation of our telluride ores, with the object of obtaining the greatest extraction possible. Flotation cells were installed, as well as a roasting furnace, the result of which has shown considerable saving in tons of concentrates.

Construction.—Owing to the limited hoisting and air pressure capacity, we were unable to do very much exploration work. In order to overcome this condition, a Nordberg hoist was installed the latter part of the summer, with a capacity of 3,000 feet. This addition has greatly relieved our hoisting situation.

Further, a 2,500-foot Belliss and Morcom compressor has been ordered for delivery this month. This will speed up things by doubling our air capacity and will enable us to do much more development and exploration work, especially in our east and west claims adjoining Sylvanite and Lake Shore, respectively, which are practically untouched. Both these claims are larger than the one we are now working on.

An ore pocket is being put in at the 1,250-foot level, No. 3 shaft (main shaft), and two skips have been purchased and will be operating shortly.

An addition to the power-house was made, and foundations were put in for the new 2,500-foot compressor. An addition was made to the mill building, to accommodate the flotation equipment. A new headframe was erected on No. 1 shaft, to accommodate the new Nordberg hoist installed last summer. The dry-house was enlarged to accommodate the increasing number of our workmen. The capacity of our refinery was doubled by adding another bullion furnace.

To sum up, our year's programme has been very encouraging, both as to underground development and milling, as well as the indications shown for continued enlargements in the future.

GRAPHITE**Black Donald Graphite Company, Limited**

The mine and mill of the Black Donald Graphite Company, Limited, are situated on Whitefish lake, Brougham township, Renfrew county, 14 miles from Calabogie. The post office address of the company is Calabogie.

The company is capitalized at 300,000 shares of \$100 par value. The officers are: R. F. Bunting, president and treasurer; R. A. Telfer, Calabogie, Ont., secretary; John Patno, general superintendent.

Owing to improved market conditions the mill worked on double shift for the first ten months of the year, milling 4,532 tons of ore and producing 415 tons of flake, 209 tons of crystalline, and 1,642 tons of amorphous graphite. Most of the ore came from the 250-foot level. The open pit part of the incline shaft was retimbered during the last three months of the year, and in 1927 the work of sinking a vertical, three-compartment shaft to a depth of 300 feet was begun.

Eighty men are employed.

GYPSUM**Ontario Gypsum Company, Limited**

The Ontario Gypsum Company, Limited, operated during the whole year, employing an average of 192 men.

The year's production showed a slight increase, 97,402 tons of ore being mined and milled. The products consisted of hardwall plaster, gypsum board, blocks, and stucco finish, also crushed gypsum, 37,769 tons of which was shipped to manufacturers of cement.

The gypsum block plant, previously owned by the Ebsary Gypsum Company, continued to manufacture roof, floor, and partition tile.

Underground workings were extended 1,700 feet west, 1,950 feet east, and 1,550 feet north; 139,100 cubic feet of ore were mined from rooms, and 35,200 cubic feet from pillars.

A. J. Parkhurst is general superintendent, L. V. Robinson is assistant general superintendent, and John Renwick is mine captain.

LEAD**George Heck**

George Heck commenced operations on a lead property on lot 17, concession VI, Bedford township, Lanark county, in the summer of 1927.

On August 8, the pit was about 30 feet deep. The vein was about 14 inches wide at one place, but pinched out. It was said to be showing again in the bottom of the pit, which could not be seen owing to broken rock from the last blast.

The plant consists of one 22 h.p. boiler and hoist with derrick.

W. B. Rundle, Burr ridge, is superintendent.

Kingdon Mining, Smelting and Manufacturing Company

The plants of this company near Galetta, in the township of Fitzroy, Carleton county, were in continuous operation throughout the year 1926.

The main shaft was sunk an additional 126 feet, from 1,075 to 1,201 feet. A station was cut at the 1,150-foot level, equipped as are the 900- and 1,025-foot stations with a locomotive shed where the storage-battery locomotives on these levels may be overhauled and the batteries charged.

Crosscutting from the shaft to the vein on the 1,150-foot level, a distance of 222 feet, was completed.

A total of 3,622 feet of drifting was done throughout the mine, as follows:—

Level	Drift	
	East	West
	feet	feet
650-foot.....	154	44
775-foot.....		805
900-foot.....	722	856
1,025-foot.....	537	504
1,150-foot.....		

Stoping during the year was carried on chiefly on the 650-, 775-, 900-, and 1,025-foot levels.

The dry stopers previously used in the stopes were largely replaced during the year by self-rotating water stopers.

An Ingersoll-Rand cross-compound compressor, 900 cubic feet per minute, driven by a 150 h.p. General Electric synchronous motor was added to the compressor equipment.

A skip-hoist, built by Canadian Vickers, Montreal, geared to a 250 h.p. Crocker Wheeler motor, was installed. The 7-inch diameter drum of this hoist is divided into two compartments, one 4 feet wide, carrying the skip-rope, and the other 3 feet 6 inches wide, carrying the counterweight cable.

A new blacksmith shop, a storehouse, and a new powder magazine were erected.

Extensive alterations were made in the mill, the chief pieces of new equipment installed being two James Vibropact screens, four James jig cells and a 5- by 6-foot Hardinge mill. An elevator tower was built and equipped to facilitate tailings disposal.

At the smelter the Scotch hearth was in continuous operation, in addition to which the blast furnace was blown in on October 25 and ran for 16 days on grey slag from the hearth operations.

R. R. Rose is mine superintendent; J. U. MacEwan, smelter superintendent; R. E. Vear, mine captain; and C. A. Chisholm, engineer.

LEAD AND ZINC

North American Lead and Refining Company, Limited

The North American Lead and Refining Company, Limited, operating the Ogema mine in Dorion township, Thunder Bay district, is capitalized at \$600,000. The officers and directors of the company are: H. V. Pogue, president; R. E. Kemerer, vice-president; A. M. Duns, secretary-treasurer; H. E. Knobel, consulting engineer and resident director; D. C. Kemerer, manager.

During the summer of 1926, the company confined its operations to surface exploration on the three claims comprising the Ogema group. During the

winter of 1926-27, the plant was taken into the property, which is approximately 9 miles from Dorion stations on both the Canadian Pacific and Canadian National railways. The plant consists chiefly of a Chicago pneumatic compressor, 300 cubic feet per minute, driven by a 50 h.p. oil engine; a 6- by 8-inch hoist; a 20 h.p. boiler; and blacksmith shop equipment.

When the property was visited on July 28, 1927, the old adit level had been repaired and a two-compartment shaft raised from that level to the surface, a distance of 80 feet; a headframe had been erected and operations underground were being confined to cleaning out and enlarging an old winze below the adit level to conform with the dimensions of the shaft raised above the level. It is proposed to continue this shaft to the 375-foot level to permit lateral work being done at the 125-, 250-, and 375-foot levels. An automobile road was under construction connecting with the Nipigon Highway at Dorion.

A force of 17 men was employed at this time.

Treadwell Yukon Company, Limited

This company was incorporated under the laws of the state of Delaware. The authorized capital stock is \$11,500,000, divided into 1,500,000 shares of common stock of a par value of \$1 each and 100,000 shares of preferred stock of a par value of \$100 each. A license under the Extra Provincial Corporations Act, dated May 18, 1926, authorized the company to use within the Province of Ontario capital to the extent of \$1,000,000.

The following brief history, up to September 15, 1927, of the operations of the company at the Errington Mines, Creighton township, Sudbury district, was supplied by G. M. Wiles, general superintendent of the company's operations.

The Errington Mines, located in Sudbury district, six miles from the town of Chelmsford, are being developed by the Treadwell Yukon Company, whose main office is in San Francisco.

The presence of ore-bearing sulphides within the boundary of the ground now controlled by the Treadwell Yukon Company has been known for many years, and it is only through recent advance in metallurgical practice that these ores can now be regarded as commercial.

In 1900, Mr. Joseph Errington directed some prospecting work on one of the few outcrops and found good ore, but his principals refused to consider the property because of the complex nature of the ore. Later considerable surface work was done on an outcrop appearing on what is called the Ollier Lot. Still later a diamond-drill hole encountered ore at a point about 3 miles east from the point where Errington did his first work; this diamond-drill work was done in a search for anthracite coal, but at a depth of about 600 feet ore sulphides were encountered. Mr. Errington afterward acquired the drill cores and recognized in them the same ore that appeared in his early operations and also on the surface workings on the Ollier Lot; he thereupon conceived the idea of possible continuous ore occurrence throughout all the intervening area. With this idea in mind he acquired options on a large area of ground and then submitted the whole proposition to his mining associates in Canada, but as they had no interest in base metal operations the idea did not appeal to them. Mr. Errington then presented the whole matter to the Treadwell Yukon Company who, after having the ground examined, took over Errington's options in July, 1925, and proceeded immediately on an extensive diamond-drilling campaign, which lasted about a year. Approximately 50,000 feet of drilling was done, but the work was too widespread to permit of accurate interpretation of the results. However, they did justify a campaign of underground exploration work. Ground for the first shaft was broken in July, 1926. Since that time the shaft has been sunk to the 300-foot level, and about 5,000 feet of drifting and crosscutting has been done. Ground for shaft No. 2 was broken in May of this year (1927), and the sinking of this shaft is now under way. Considerable money has been spent for camp facilities necessary to take care of a crew of 200 men for offices, shops, surface equipment, a water-supply system, assay office, etc.

Ground has been broken for the No. 1 mill, and its erection is now under way. This mill will be more or less experimental, since the best process of the treatment of the ore will have to be very carefully studied and worked out. The mill should be in operation by the end of the year.

At present (September, 1927) the company is completing the installation of electrical plants at Nos. 1 and 2 shafts, the work of sinking No. 1 shaft and

the lateral work mentioned above having been carried out under steam power. A transmission line, connecting with the Wahnapiatae Power Company's system at the Murray mine, has been constructed; a transformer building has been erected at the mine; and electric hoists and compressors are being installed at the shafts.

Joseph Errington, Toronto, is manager, and G. M. Wiles, general superintendent.

MICA

Loughborough Mining Company, Limited

This company operated the Lacey mine on lot 11, concession VII, Loughborough township, continuously during the year. About 3,000 pounds of mica per week was mined from the stopes at the open pit. They employed an average of 13 men. The officers are: M. F. Westover, Schenectady, N.Y., president; G. W. McNaughton, Sydenham, manager; R. Smith, superintendent.

NICKEL AND COPPER

International Nickel Company, Incorporated

This company owns all the capital stock of the International Nickel Company of Canada, Limited.

The officers and directors of the parent company remain as reported in the Thirty-fifth Annual Report of the Department of Mines.

The following information is extracted from the twenty-fifth report of the company, dated March 1, 1927, and covers the fiscal and calendar year ending December 31, 1926:—

The report submitted herewith covers the fiscal and calendar year ended December 31, 1926. In making comparisons with the last report issued it must be recalled that the fiscal year has been changed to conform to the calendar year, and consequently the figures shown on the attached financial statement are for twelve months ended December 31, 1926, and for nine months ended December 31, 1925, respectively.

Total net earnings for the year of \$5,556,267.41 exceeded the total net earnings for the twelve months of 1925 by \$28,783.41. Sales of metallic nickel were less than during 1925, due primarily to a falling off in exports to Europe. There was also a decline in domestic sales of nickel in the final quarter of 1926, as compared with the last quarter of 1925. This apparent loss of business was due to the heavy purchases of nickel by consumers for stock in the fall of 1925, presumably anticipating the price increase of January 1, 1926. Buying of this character was not in evidence in the fall of 1926, as there was no price advance on contract renewals for 1927 deliveries.

During recent years, particularly in 1926, large quantities of nickel-steel armour and deck-plate scrap, resulting from the disarmament programme, were consumed by alloy steel-makers. The substitution of this nickel-bearing scrap for metallic nickel made inroads into your company's sales of nickel for alloy steel-making. There is every evidence that the bulk of this domestic scrap has been used and that normal consumption of metallic nickel by steel companies may be expected in the near future.

Sales of mill products (Monel metal and rolled nickel) increased substantially in volume and more than offset the loss of foreign and domestic nickel sales.

New applications of nickel and Monel metal are being constantly sought, and many new projects are receiving attention in your research laboratories. To obtain tangible results from work of this character necessarily takes much time and effort. Your management believes that the co-ordinated activities of the sales and development departments have increased and will continue to increase the company's business.

It is desirable to call your particular attention to the lists of uses of nickel and Monel metal shown on pages 14 and 15 of this report. It is within the power of the stockholders to render practical assistance to the company in exploiting the use of nickel and Monel metal.

Operations.—Mining and smelting operations at Copper Cliff were uniform and continuous throughout the year with the gratifying result that Bessemer matte was produced at lower cost than during any previous year.

As forecast in the last report, your management has been actively engaged in the initial stages of development of the Froid mine, where diamond-drilling has developed further large reserves of high-grade ore. The preliminary surface plant for sinking a permanent shaft on this property has been erected; and sinking on the new shaft, begun in September, 1926, is progressing satisfactorily. To complete this shaft, erect the permanent surface plant, and develop the ore body sufficiently for mining operations, will require several years and involve a substantial capital expenditure. It is the intention of your management to bring this mine into production during the ensuing five years. By following this policy, the Creighton mine ore reserves will be available for an increasing output of Monel metal for many years and the Froid ore, which carries much higher precious metal values than Creighton ore, will be refined for nickel. With its present refining process, your company will recover the platinum metals from the Froid ore and in consequence will derive additional profit from this operation.

During the past year the company's standard-gauge, steam-operated railway system at Copper Cliff, embracing 22 miles of track, has been electrified. By substituting low-cost, hydro-electric current from the company's Spanish River power-station for coal, a very substantial saving in operating expense has been gained.

An electrolytic department at Port Colborne, projected in 1925, was completed during the year and is now economically producing a large tonnage of high-purity nickel. Changes in furnace and converter practice have enabled your operatives to further reduce costs. The refinery was run continuously throughout the year at a rate regulated to meet consumption and to avoid an undue accumulation of metal stocks.

Operations at the Huntington works were uninterrupted; due to increased production, as a result of a greater volume of sales, operating costs were the lowest thus far shown at the company's rolling mill. Hot mill facilities became inadequate, and your management was authorized by the directors to double the capacity of this department and install additional cold-rolling and polishing equipment for high-finished sheets. The installation of this equipment will be completed and available for production in 1927.

As a result of a demand for high-finished, cold-rolled nickel and Monel metal strip, your management equipped a department during the past year to produce this form of material.

Your plants have all been maintained in a high state of efficiency, and changes in process and equipment have been made in each instance where there was an opportunity to effect lower operating costs or better the quality of the product.

Capital Expenditures and Adjustments.—For the fiscal year ended December 31, 1926, there were expended and charged to capital account sums aggregating \$2,339,796.87, as compared with \$3,995,476.53 for the nine months ended December 31, 1925. The distribution of capital expenditures was as follows: Copper Cliff, \$537,371.17; Port Colborne, \$615,317.19; Huntington works, \$1,173,080.47; Bayonne works and New York office, \$14,028.04.

Items of principal importance covered by the expenditures enumerated were the new Froid shaft and electrification of the railway system at Copper Cliff; extension of the electrolytic refinery at Port Colborne; new strip-mill department and additional mill equipment at Huntington.

Your board of directors approved the sale of the company's holdings in New Caledonia, since it was deemed undesirable to continue further the maintenance charges of these small tonnages of relatively inaccessible ore in view of the large ore reserves recently developed at the Froid mine.

Financial.—Annexed hereto are the consolidated general balance sheet and the profit and loss statement of the company and its subsidiaries, covering the year ended December 31, 1926, audited by Messrs. Price, Waterhouse & Company.

The operating profit for the twelve months was \$7,191,283.43, from which was deducted for depreciation of plants \$1,072,236.57 and \$456,624.60 for depletion of ore reserves, and \$106,154.85 for Orford works property expense, leaving a net profit for the twelve months of \$5,556,267.41, compared with a net profit of \$4,237,400.27 for the preceding nine months. After deductions for preferred dividends (\$534,756) and common dividends (\$3,346,768) and adjustment due to the disposal of the New Caledonia properties, amounting to \$296,353.66, the surplus on December 31, 1926, was \$16,680,482.46, an increase of \$1,378,389.75.

Earnings applicable to the common stock were \$5,021,511.41, equivalent to \$3 per share for the year.

The balance sheet shows that the additions to property account, less recoveries and value of foreign companies, were \$1,893,443.21 and that \$93,167.98 was written off for dismantlement and charged to the reserve fund. The total property account, after deducting depreciation and depletion of ore reserves, is \$53,424,609.02, as compared with \$53,060,026.98 on December 31, 1925.

The net current assets of \$15,531,017.19 are in excess of last year's figures by \$475,882.84.

Dividends.—Six dollars per share was paid on the preferred stock in four dividends of \$1.50 each, and \$2.00 per share was paid on the common stock in four quarterly instalments of 50 cents each.

Outlook.—No change in your company's policy of sales promotion is contemplated. Your distributors are now well organized and aggressively commercializing new applications originating through development and research.

The use of nickel for improving cast iron, mentioned in the last report, is advancing satisfactorily and in time should provide an outlet for a large tonnage of metallic nickel. Nickel steel is finding a place in new industries, thus augmenting the consumption of nickel by alloy steel makers.

Foreign sales, which constitute a substantial part of your company's business, fell off badly in 1926, but sales improved during the last quarter. Your management is now building up a foreign organization to develop the use of nickel in Continental Europe and Great Britain. By an adaptation of the methods now used successfully in America, this new development effort should result in a gradual but substantial increase of foreign business.

Sales of Monel metal and rolled nickel produced at the Huntington works continue to increase in volume, and the diversity of uses to which these products are put tends to stabilize this portion of your business. There is every reason to believe that the sales of mill products will continue to grow as rolled nickel and Monel metal become more widely known.

Generally speaking, your company has no serious problems to face in the immediate future. Products are constantly improving in quality, and operating costs are being satisfactorily lowered. Your management has every reason to believe that the company is still in a period of constructive expansion, which its established sales methods are well designed to promote and which should not be checked by anything less than acute and widespread business depression.

Shareholders.—The number of preferred shareholders was 1,433 on December 31, 1926, as compared with 1,472 on December 31, 1925. The number of common-share holders was 11,162 on December 31, 1926, as against 9,204 on December 31, 1925. The total number of shareholders at the close of the calendar year was 12,226, compared with 10,334 on December 31, 1925.

CONSOLIDATED GENERAL BALANCE SHEET, DECEMBER 31, 1926

ASSETS

	Dec. 31, 1926	Dec. 31, 1925
PROPERTY ACCOUNT:		
Properties owned and operated, including investments in stocks of Nickel Corporation, Ltd., and Société Minière Caledonienne as at December 31, 1925.....	\$65,219,783.08	\$61,311,289.10
LESS amount written off for dismantlement.....	93,167.98	86,982.55
	<u>\$65,126,615.10</u>	<u>\$61,224,306.55</u>
Additions less recoveries.....	\$2,339,796.87	
LESS foreign companies disposed of.....	446,353.66	
	<u>1,893,443.21</u>	<u>3,995,476.53</u>
	<u>\$67,020,058.31</u>	<u>\$65,219,783.08</u>
DEDUCT:		
Reserves:		
Depreciation of plants.....	\$9,857,662.30	8,878,593.71
Depletion.....	3,737,786.99	3,281,162.39
	<u>13,595,449.29</u>	<u>\$12,159,756.10</u>
INVESTMENTS:	<u>\$53,424,609.02</u>	<u>\$53,060,026.98</u>
Sundry securities.....	1,583,685.85	1,523,624.40
	<u>\$55,008,294.87</u>	<u>\$54,583,651.38</u>
CURRENT ASSETS:		
Inventories.....	\$9,701,477.38	8,386,181.37
Accounts and bills receivable.....	2,867,417.62	2,471,163.68
Interest receivable.....	54,246.38	77,355.81
Advances.....	129,756.76	150,957.11
Government securities.....	3,258,293.75	3,232,412.50
Loans on call (secured).....	600,000.00	1,800,000.00
Cash.....	960,686.97	1,198,417.14
	<u>17,571,878.86</u>	<u>\$17,316,487.61</u>
	<u>\$72,580,173.73</u>	<u>\$71,900,138.99</u>

LIABILITIES

CAPITAL STOCK:		
Preferred 6 per cent. non-cumulative (89,126 shares, \$100 par value).....	\$8,912,600.00	\$8,912,600.00
Common (1,673,384 shares, \$25 par value).....	41,834,600.00	41,834,600.00
	<u>\$50,747,200.00</u>	<u>\$50,747,200.00</u>
Ten-year serial 5 per cent. purchase money notes.....	2,300,000.00	2,844,444.44
CURRENT LIABILITIES:		
Accounts payable and pay-rolls.....	\$1,185,701.87	782,313.34
Bills payable.....		355,555.56
Taxes accrued.....	721,299.05	989,637.61
Dividends unclaimed.....	171.75	157.75
Preferred stock dividend No. 85 payable February 1, 1927.....	133,689.00	133,689.00
	<u>2,040,861.67</u>	<u>\$2,261,353.26</u>
FUNDS AND RESERVES:		
Insurance and contingent.....	811,629.60	745,048.58
SURPLUS:		
December 31, 1926, as per statement annexed.....	16,680,482.46	15,302,092.71
	<u>\$72,580,173.73</u>	<u>\$71,900,138.99</u>

CONSOLIDATED GENERAL PROFIT AND LOSS STATEMENT

(For Twelve Months Ended December 31, 1926)

	Dec. 31, 1926 (12 months)	Dec. 31, 1925 (9 months)
EARNINGS OF ALL PROPERTIES after deducting manufacturing, selling expense, ordinary repairs, and maintenance.....	\$8,195,141.01	\$6,325,809.74
OTHER INCOME	167,621.33	102,291.22
Total income.....	<u>\$8,362,762.34</u>	<u>\$6,428,100.96</u>
DEDUCT:		
General office expense.....	\$560,774.91	406,770.81
Reserved for federal and franchise taxes (estimated provision).....	610,704.00	715,795.96
	<u>1,171,478.91</u>	<u>\$1,122,566.77</u>
Net operating income.....	\$7,191,283.43	\$5,305,534.19
DEDUCT:		
Orford Works property expense.....	\$106,154.85	80,788.09
Depreciation and depletion (provision for).....	1,528,861.17	979,845.83
Foreign companies not included.....		7,500.00
	<u>1,635,016.02</u>	<u>\$1,068,133.92</u>
Profit for the year.....	\$5,556,267.41	\$4,237,400.27
DIVIDENDS:		
Preferred.....	\$534,756.00	401,067.00
Common.....	3,346,768.00	1,673,384.00
	<u>\$1,674,743.41</u>	<u>\$2,162,949.27</u>
Balance, January 1, 1926.....	15,302,092.71	13,139,143.44
	<u>\$16,976,836.12</u>	<u>\$15,302,092.71</u>
Adjustment on disposal of foreign companies.....	296,353.66	
SURPLUS, December 31, 1926.....	<u>\$16,680,482.46</u>	<u>\$15,302,092.71</u>

Creighton Mine

Mining operations of the International Nickel Company of Canada, Limited, at Creighton mine were continuous throughout the year 1926.

The bulk of the production was obtained from the mining of stopes and pillars between the 14th and 16th levels. Other stoping, producing a considerable tonnage, was done on the 20th, 23rd, and 26th levels.

Development work, consisting of drifting, crosscutting, raising, and box-holing was done throughout the mine.

A fan was installed on the 30th level to facilitate the ventilation of the lower levels, where recent development work has opened up ore in portions of the mine considerably removed from the older workings. This fan, driven by a 100 h.p. motor is drawing approximately 90,000 cubic feet of air per minute through the workings and delivering it to the bottom of No. 3 shaft whence it finds its return to surface.

The average force employed at Creighton during the year was 456 men.

The mine staff consists of W. J. Rolfe, superintendent; Chas. Lively, mine foreman; J. E. Treasure, assistant mine foreman; John Symons, master mechanic; A. Mackenzie, chief electrician; and R. H. Keast, head surveyor.

Frood Mine

During the summer months of 1926 a small amount of ore was mined on the 3rd level through No. 1 shaft at the Frood mine and shipped to Copper Cliff for test purposes.

This work, employing a crew of about 16 men, was in charge of J. W. Brown.

Towards the end of September preliminary work on the sinking of the new main shaft (No. 3 shaft) was commenced. After sinking about 40 feet with temporary rigging, the concrete collar was placed and the sinking-plant and headframe installed. Work was resumed at the face on December 11, 1926, using the regular sinking-plant.

This shaft, a vertical shaft, in the footwall of the deposit is divided into four main compartments longitudinally, each 14 feet 4 inches by 6 feet in the clear. One end compartment is subdivided to give a skip hoistway in one corner, a pipe and cable compartment in the other corner, with a ladderway between.

The shaft is 16 feet by 28 feet, 2 inches, outside the timbers. All plates, dividers and corner posts are 10- by 10-inch, the intermediate posts 6- by 10-inch, and all guides 4- by 8-inch, British Columbia fir. The sets are placed on an interval of 7 feet, centre to centre.

For hoisting during the sinking operation, two 3-ton skips, run in balance, are being used in addition to a man cage. These conveyances are all equipped with 30-foot extension runners, which permit them being lowered directly to the face, below the permanent timbering.

When equipped for permanent operations, the shaft will allow the use of two man and supply cages with a deck area, 5 feet by 13 feet 4 inches, two ore skips, 5 by 5 feet in cross-section, and a rock skip of the same section, which will operate in balance with a counterweight.

The sinking operations are in charge of J. P. Hussey.

Copper Cliff Smelter

Three blast furnaces, three converters, the Wedge furnace and reverberatory plant were in continuous operation throughout the year.

The smelter-yard tracks, as well as all tracks connecting with the Canadian Pacific and Algoma Eastern railways and the company's tracks to the Frood mine, were electrified during the year, all standard-gauge steam locomotives being replaced with electrics.

There were no changes during the year in the staff in charge of smelter operations.

Mond Nickel Company, Limited

The Canadian staff of the Mond Nickel Company, Limited, at Coniston consists of: C. V. Corless, general manager; Oliver Hall, mines manager; John F. Robertson, smelter manager; W. H. De Blois, sales manager of sulphuric acid plant; L. J. Ingolfsrud, chief engineer; W. H. Soule, electrical superintendent; W. A. MacDonell, cashier; Frank Simms, purchasing agent; E. T. Austin, smelter superintendent; K. S. Clarke, superintendent of sintering and concentrating plants; and E. H. Jordan, superintendent of sulphuric acid plant.

Coniston Smelter and Plants

Three blast furnaces and three to four converters were in continuous operation at the Coniston smelter throughout the year 1926. The sintering plant, concentrator, and acid plant were also in continuous operation. No changes or additions were made in the equipment of these plants.

The quartzite quarry at Coniston produced 52,095 tons for converter flux. The average force employed at the Coniston plants was 653 men.

Frood Extension Mine

Development operations at the Frood Extension mine were carried out throughout the year 1926. The shaft was sunk an additional 294 feet from 1,736 to 2,030 feet, stations being cut at 1,850 and 2,000 feet. On the 1,700-foot level, the main crosscut was advanced 150 feet to the footwall, and 1,050 feet of drifting was completed along the footwall contact. Ten crosscut raises (at 45 degrees), Nos. 1, 3, 5, 7, 2, 4, 6, 8, 10, and 12, were driven from the footwall drift towards the hanging wall. The footage completed in these raises is approximately 1,200 feet. On the 2,000-foot level, 1,995 feet of drifting and crosscutting was completed.

A brick powder magazine was constructed on surface. This building measures 20 by 30 feet.

A. D. Carmichael is mine superintendent. A force, averaging 116 men, was employed on the property during the year.

Garson Mine

Operations at Garson mine were steady throughout the year under A. L. Sharp, mine superintendent.

Development totalling 3,359 feet, comprising 2,433 feet of drifting and crosscutting, 884 feet of raising, and 42 feet of winze, was completed during the period. The tonnage hoisted was practically the same as for 1925, being 367,294 tons in 1926 as compared with 322,059 in 1925.

The average force maintained was 295 men.

Levack Mine

Mining operations at Levack mine were continuous during the year 1926. The bulk of the production was obtained from stopes and development on the 7th level. A total of 9,462 feet of development work was completed. This consisted of 4,277 feet of drifting and crosscutting and 5,184 feet of raising. The total tonnage hoisted during the year was 448,257 tons, an increase of 36,696 tons over the previous year.

A new brick powder-magazine was constructed, having a capacity of two cars of explosives.

F. J. Eager is superintendent. The average force at the mine during the year was 318 men.

Worthington Mine

During 1926, 202,664 tons of ore and waste were hoisted at the Worthington mine. The shaft was sunk an additional 300 feet and a station cut at the 1,200-foot (8th) level. Other development completed during the period consisted of 750 feet of drifting and crosscutting and 35 feet of winze.

W. J. Mumford is mine superintendent, and the mine force during the year averaged 180 men.

SILVER

Beaver Auxiliary Mines, Limited

This company operated their property at Elk Lake, township of James, district of Timiskaming, during the first half of 1926 with a force of 30 men. H. L. Donaldson was manager, and William Fraser, contractor.

The shaft was sunk 485 feet below the 300-foot level to a point where a heavy flow of water was encountered, which prevented lateral work being carried on at the 800-foot level according to plan. In addition to the shaft-sinking, a total of 285 feet of crosscutting, 291 feet of drifting, 50 feet of station-cutting, and 12 feet of raising was done mainly on the 600-foot level.

A smaller force of men was employed intermittently during the latter half of the year up to December 4, when the property was closed down.

Bellellen Silver Mines, Limited

The company began unwatering the mine in South Lorrain, district of Timiskaming, on September 8, and mining was commenced on October 4. John Mathewson was superintendent, and 26 men were employed.

A 750 cubic foot air compressor and a 125 h.p. motor were installed. A total of 423 feet of drifts and crosscuts were driven, 320 feet being on the 3rd level and 103 feet on the 4th level of the mine; in addition a 67-foot raise was driven in the last quarter of the year.

In the first quarter of the year 1927, the work was continued under Harold Fancy, and 418 feet of drifting was done.

Blair Gowganda Silver Mines, Limited

This company owns a group of five claims, G.G. 4,077, M.R. 1,205-6, 2,298 and 1,006, in Nicol township, district of Timiskaming, north of Leroy lake. W. J. Blair, of Barrie, Ont., is president, and Murray D. Kennedy is manager.

The company did surface trenching on these claims with a force of five or six men during the summer of 1926. A small boiler and hoist was installed late in October, and a two-compartment shaft was sunk to a depth of 111 feet during the winter months.

Canadian Lorrain Silver Mines, Limited

The authorized capital of this company is \$3,000,000, of which 2,700,000 shares are issued. The board of directors comprises: F. H. Hamilton, president; J. A. Dunn, vice-president; J. Mackintosh Bell, managing director; W. H. Stafford, and H. Whittingham. R. S. Dening is secretary, and the head office is at 302 Bay Street, Toronto. The property is in South Lorrain, district of Timiskaming.

Hugh McMillan is manager, and 75 men were employed.

The following is taken from the managing director's report for the fiscal year ended February 28, 1927:—

Depth of the main shaft remained unchanged during the period under review. From that shaft there are working levels at the 80-foot, 150-foot, and 240-foot horizons. The deeper levels at 350 feet and 410 feet are reached by means of winzes. During the year a 50-ton mill was completed and put into operation, and a new and effective headframe was erected. Mining operations were continuous during the year, and the following work was carried out: winze sinking, 64 feet; raising, 242 feet; drifting and crosscutting, 5,271 feet; drifting in conjunction with Gilgreer mines, 665 feet.

The more important remunerative developments were those obtained in No. 5 vein at the 150-foot horizon, where the operations disclosed shoots of milling ore corresponding to the three shoots previously developed in the same vein at the 250-foot level. At the 150-foot level, shoot C was developed for a length of 67 feet, averaging at the level 105 ounces over 48 inches; shoot B for a length of 66 feet, averaging 86 ounces over 36 inches; and shoot A for a length of 15 feet, averaging 41 ounces over 31 inches. The E ore shoot on No. 17 vein at the 350-foot level was followed downwards by a winze, which was sunk to the 410-foot horizon. Good milling ore, averaging 80 ounces over 20 inches with high-grade patches, persisted for about 50 feet below the 350-foot level.

The mill went into commission during December for a tuning-in period, in which it was fed with material of inferior grade. The installation of the flotation unit, which greatly improved the extraction, was not completed until March. During the period, December 12 to February 28, 1927, 3,481 tons averaging 12.21 ounces of silver were treated, from which a 63.55 per cent. extraction was obtained. Production for the period based on actual smelter returns was 14,985 pounds of picked ore, returning 26,567.47 ounces of silver, and 981 pounds of cobalt and 123,626 pounds of concentrates, returning 27,020.35 ounces of silver. Prior to the commencement of milling operations, 31.11 tons of high-grade ore resulting from development operations were shipped, producing 90,560 ounces of silver and 3,579 pounds of cobalt, making the total net production for the period 200,825 pounds, from which returns were received for 144,148 ounces of silver and 4,560 pounds of cobalt.

The production for the period from March 1 to May 31, 1927 was 77,707 ounces of silver of an estimated value of \$43,646.75. The cost of operations was \$51,729.16. It was decided to cease stopping operations and to run the mill on dump rock, mine work being limited to exploration. This exploration during the month of June did not result in any important discoveries, and it was decided to close the mine. It is felt, however, that there remain many good chances for finding new ore bodies in various parts of the property, but the search for these must be considered as part of the systematic scheme of exploration extending probably over many months.

Capitol Silver Mines, Limited

This company had a force of 20 to 25 men engaged in surface work on mining claims H.S.363-65, 369, and 352 during the first half of the year. These properties are in Nicol and Haultain townships, district of Timiskaming.

Three diamond-drill holes were put down on the shaft on claim H.S.351, totalling some 2,000 feet. The management is the same as for the Castle-Trethewey Mines.

Casey Mountain Operating Syndicate, Limited

This company took an option in May on any two claims of the six claims owned by the Casey Mountain Mining Company, Limited, in Casey township, district of Timiskaming, 11 miles northeast of New Liskeard. The syndicate has a capital of \$150,000, in \$1 shares, and comprises R. G. Williamson, president; Stuart Scott, vice-president; H. H. Fockler, Newmarket, Ont., secretary-treasurer; D. W. Lepard, A. Cunningham, Toronto; H. C. Hall, William Hall, and J. W. Brown, Fort Qu'Appelle, Sask.; W. H. Wright, Balcares. An 8- by 10-inch cylinder hoist was installed, and on September 15 work began with a force of six men on the 235-foot level in No. 2 shaft. The southwest drift was continued 123 feet to a point 180 feet from the west crosscut, and a winze was begun at a point where some high-grade was found in the vein.

The workings on this level include crosscuts 100 feet east and 285 feet west, and drifts 125 feet south and 90 feet southwest, in addition to the drift mentioned.

Castle-Trethewey Mines, Limited

The authorized capital of this company is \$2,000,000 in shares of \$1 par value. The property is in Haultain township, district of Timiskaming. The board of directors comprises: J. P. Bickell, president; J. B. Tudhope, vice-president; W. J. Sheppard, S. R. Wickett, and D. H. McDougall. Balmer Neilly is secretary-treasurer. The head office of the company is at 602 Standard Bank Building, Toronto. R. J. Ennis is consulting engineer. H. G. Young, who was mine manager during 1926, was succeeded in the early part of 1927 by Angus D. Campbell. The mine and mill superintendents are E. H. Clemens and George Barkhouse.

The working force averaged 120 men during 1926.

The following is taken from the manager's report for the nine months' period, July 1, 1926, to March 31, 1927:—

PRODUCTION

Concentrates shipped, dry tons.....	258.9	
Ounces, per ton.....	2,946	
Total fine ounces silver recovered.....	762,861.47	
Average price obtained per ounce.....	\$0.5765	
Revenue from sale of silver.....		\$389,307.42
Cobalt produced, pounds.....	22,672	
Revenue from sale of cobalt.....		3,068.60
Total revenue.....		\$392,376.02

PRODUCTION SINCE COMMENCEMENT OF OPERATIONS

Period	Months	Tons milled	Ounces per ton recovered	Gross production, ounces	Gross value, silver and cobalt
Feb. 1, '22, to June 30, '22.....	5	Sorting		40,000	\$28,000.00
July 1, '22, to June 30, '23.....	12	Sorting		62,811	41,146.80
July 1, '23, to June 30, '24.....	12	7,607	46.03	350,147	229,656.95
July 1, '24, to June 30, '25.....	12	30,273	30.62	927,088	637,712.10
July 1, '25, to June 30, '26.....	12	34,425	29.03	999,234	683,601.48
July 1, '26, to Mar. 31, '27.....	9	29,136	26.18	762,861	426,928.53
Total.....		101,441		3,142,141	\$2,047,045.86

SUMMARY OF DEVELOPMENT

	Shafts	Drifts	Crosscuts	Raises	Winzes	Total
No. 3 shaft.....		4,943	1,948	781		7,772
No. 1 shaft.....	68		18			86
Total.....	68	4,943	1,966	781		7,858

Total footage of drifts, raises, and winzes..... 5,724 linear feet.
 Percentage of this footage in ore..... 14.3 per cent.
 Development produced 4,937 tons of 22.8-ounce grade ore.. 112,571 ounces.

SOURCES OF ORE FROM MINE

Source	Tons	Grade, ounces	Total, ounces
Development.....	4,937	22.8	112,571
Stopes.....	22,189	33.1	734,262
Mill dumps.....	2,015	20.0	60,300
Total.....	29,141	31.1	907,133

MILLING

Ore treated from mine.....	Tons	27,121
Ore treated from dumps.....		2,015
Total.....		29,136
Silver recovered.....	Ounces	762,861
Silver in tailings.....		55,297
Total.....		818,158

CONCENTRATES PRODUCED (ESTIMATED)

	Pounds	Ounces
Jigs.....	168,697	390,206
Sands.....	255,967	359,709
Slimes.....	93,176	21,285

OPERATING COSTS (9 MONTHS, 1926-27)

	Total cost	Per ton	Per ounce
Development.....	\$104,688.68	\$3.593	\$0.137
Mining.....	56,892.71	1.953	.074
Tramming and hoisting.....	18,393.98	.631	.020
Milling.....	43,120.71	1.480	.056
Shipping.....	8,065.34	.277	.016
Smelting and refining.....	18,086.53	.621	.024
General expenses—mine.....	12,169.89	.418	.016
Head office expenses.....	12,662.78	.435	.017
Maintenance, insurance, etc.....	5,136.99	.177	.006
Total.....	\$279,217.61	\$9.585	\$0.366

No. 1 Shaft, Claim R.S.C. 106

This shaft, which was the original prospect shaft of the mine, was reopened in March, 1927. It had been sunk some years ago through 140 feet of Keewatin rock into the underlying diabase. Most of the work was done from the 300-foot level close to the contact. Some silver was found in the veins explored at that time.

The shaft is now being deepened from the 300- to the 450-foot level, where the first exploration will be carried on. The old buildings on this claim were replaced and a new electrically driven compressor installed. The buildings now are: Switch-house and transformer station, hoist and power-house, headframe, cookery and sleep camp with accommodation for 25 men. The power plant consists of three 100 k.v.a., 1,200- to 550-volt transformers; a 750 cubic foot air compressor with 150 h.p. motor, and a 10- by 12-inch air hoist. The total cost of the buildings and plant was \$19,484.72. The operating costs, during this period, for pumping and cleaning out the workings and for sinking and cutting the station on the 450-foot level were \$8,516.62.

The claim is well located between the producing claims of the Miller Lake O'Brien and the Tonapah Canadian Mines and has most favourable prospects.

General

Other new construction consisted of a pumping station at Babbs lake, with buried 6-inch wood-stave water-line to the mine, the whole costing \$14,760.76; four new houses for the staff at \$12,092.60; and two new low-pressure boiler heating plants at \$6,097, to replace the old central-heating plant. The latter have already paid back their cost in saving in operation.

The development done, 7,858 linear feet in nine months, is large for the tonnage milled; but the nature of the diabase ore deposits demands the carrying out of a large amount of development. Ore is being mined from No. 10 vein, the richest vein on the property, on the 700-foot level over 600 feet below the overlying Keewatin rock, and conditions are favourable for the ore going deeper.

Cobalt Argyros Mines, Limited

Cobalt Argyros Mines, Limited, a subsidiary of the Lucky Tiger Combination Gold Mining Company, Limited, began operations under lease on December 1, 1925, on the Hargreaves and Cobalt Merger properties, Coleman township, district of Timiskaming, operating through Kerr Lake No. 3 shaft. C. H. Heron is manager, and 20 men were employed.

The drift on No. 3 vein was continued for 100 feet on the Hargreaves property and for 700 feet on the Merger property. A crosscut 200 feet long was driven on the latter and a raise was put up 90 feet on the former property.

A test pit was sunk 40 feet on mining claim No. 19,438, block 32, Gillies limit, district of Timiskaming, under an option on five claims belonging to Hill and Gibbons, at the end of the year.

An option was taken on the Mosher group of thirteen claims, two and a half miles southwest of Timagami station, and three diamond-drill holes were put down on mining claims Nos. 4,065 and 4,061 to depths of 292 feet, 192 feet, and 210 feet between March 14 and April 6, 1927. The option was relinquished.

Cobalt Contact Mines, Limited

Cobalt Contact Mines, Limited, operated the Green-Meehan and Red Rock properties, township of Bucke, district of Timiskaming, during the year with an average force of 48 men. J. M. Aitken is president; George Coles, vice-president; Alexander M. Hamilton, G. W. Adams, Clifford E. Smith, Frank Loring, and Sir Augustus Fitzgeorge, directors. James A. Stewart is secretary-treasurer, and J. M. C. Dunlop, manager. The head office of the company is at 8 Bloor Street East, Toronto.

The Cobalt Contact property in Bucke township was operated until May 6, when the option was relinquished, during which time 28 feet of shaft-sinking and 210 feet of drifting was done.

The option on the Law property to the north of the Contact mine was given up on January 10, after 65 feet of drifting had been added to the work of the previous year.

On the Hunter property 50 feet of shaft-sinking was done, making the shaft 70 feet deep.

The work on the Green-Meehan and Red Rock properties included 2,684 feet of drifts, 832 feet of crosscuts, 281 feet of raises, and a 20-foot winze. The tonnage stoped was 14,042 tons, with an additional 1,985 tons on the Cobalt Contact property.

A mill with a capacity of 60 to 100 tons, using concentration and flotation of slimes, was constructed. It began operating in July and treated 7,883 tons.

Cobalt Twentieth Century Mining Company, Limited

This company began work on July 13 on their property in the northeast corner of Coleman township, district of Timiskaming, with a force of three to four men. S. S. Sager, of 45 North Division Street, Buffalo, N. Y., is manager.

A 40-foot prospect shaft was enlarged to a depth of 25 feet. There are two other shafts on the property, one 165 feet and the other 350 feet in depth. In former years, some 200 feet of drifting had been done in No. 1 shaft and about 350 feet in No. 2 shaft at or near the bottom.

Coleroy Gowganda Mines, Limited

During 1926 this company operated their property at Leroy lake, in Nicol township, district of Timiskaming, with an average of 24 men. The officials of the company are: John A. McAndrew, president; E. V. Nisbet, secretary-treasurer; John W. Shaw, manager. The head office of the company is at 272 Bay Street, Toronto.

During the first half of the year, development work was continued on the 488-foot level and on a new level established at 563 feet by means of a winze. In August, sinking was resumed to deepen the shaft from 488 feet to 650 feet, and this was completed early in October. The east crosscut on the 650-foot level was driven 96 feet from the station, and No. 4 and No. 1 veins were cut at 50 and 100 feet from the shaft. No. 4 vein was followed 177 feet southwest and a branch vein for 13 feet. No. 1 vein was followed north for 133 feet and south for 132 feet. Some ore was found on the 650-foot level, which is considered the most promising horizon, and also in the winze from the 488-foot level.

A summary of the development for the fiscal year ending March 31, 1926, includes 1,749 feet of drifts, 233 feet of crosscuts, a 76-foot winze, 160 feet of shaft-sinking, and 50 feet of slashing.

New installations included a 720 cubic foot air compressor, a 125 h.p. motor, and a 60-gallon triplex electric pump on the 488-foot level.

Coniagas Mines, Limited

The following information is taken from the annual report of the Coniagas Mines, Limited, for the year ending December 31, 1926.

Coniagas

Mining operations were restricted to the removal of party walls on the east boundary of the property. This work was performed by the Nipissing Mining Company and resulted in the recovery of 87,140 ounces of silver as per assay.

A final clean-up of the mill floors and sumps yielded a total of 49,966 ounces of silver.

General salvage operations were continued, during which machinery and equipment were overhauled and sold or held for future use. Several houses owned by the company were sold and all surplus buildings dismantled and removed.

The total production of silver from the mine to December 31, 1926, amounted to 32,685,039 ounces. This includes approximately 500,000 ounces from the Trethewey property.

The following table is interesting as a summary of production and costs during the life of the Coniagas mill:—

Year	Tonnage milled	Total cost per ton, mining and milling	Ounces of silver produced	Total cost per ounce, mining and milling
1908	14,064	\$16.03	1,457,240	\$15.473
1909	19,038	11.25	1,407,288	15.218
1910	33,539	7.65	1,929,531	13.294
1911	52,320	6.34	3,789,273	8.800
1912	53,627	8.77	3,508,377	13.399
1913	54,890	8.79	3,572,398	13.503
1914	54,522	7.66	2,497,394	16.731
1915	55,437	6.39	2,002,053	17.692
1916	56,972	5.81	1,773,286	18.990
1917	60,929	5.74	1,344,267	26.014
1918	68,597	5.94	974,264	41.769
1919	71,744	5.56	940,267	42.396
1920	97,634	5.74	994,235	56.153
1921	113,279	4.58	1,301,515	39.869
1922	121,953	3.83	1,158,882	40.282
1923	140,774	2.70	1,309,792	28.978
1924	86,808	3.56	581,185	53.119
Total	1,156,127		30,541,247	
Per unit		\$5.5989		\$21.194

The Coniagas Reduction Company, Limited

Operations at the smelter during the year have been confined to the disposal of finished products, stores, equipment, etc., on hand at the time of cessation of operations in 1924.

Established in 1908 to treat the ores and concentrates produced from the Coniagas mine at Cobalt, as well as treatment of custom ores and concentrates, and to recover therefrom their constituent products (which ores and concentrates at the time were being sent to the United States for treatment and for which revenue was only received for the silver content), the following schedule of production at this plant for 17 years may be of interest:—

STATEMENT OF ORE TREATED AND METALS SHIPPED

Year	Mine ore and concentrates treated	Silver shipped	Metal content of cobalt products shipped	Metal content of nickel products shipped	Metal content of arsenic products shipped	Metal content of copper products shipped	Gold shipped
	tons	ounces	lbs. avdp.	lbs. avdp.	lbs. avdp.	lbs. avdp.	ounces
1908	175.2	55,391.1			84,246		
1909	1,144.4	1,639,762.5			483,006		
1910	1,788.9	2,820,118.1	12,987	685			
1911	2,869	5,642,803.1	36,178	9,092	1,328,991		
1912	2,376	5,267,046.6	154,552	60,078	903,463		
1913	2,499.5	5,014,010.6	281,622	147,914	537,877		
1914	1,932.9	3,613,341.9	273,530	144,010	1,209,694		
1915	2,165.3	3,465,946.0	96,670	92,438	944,282		
1916	3,183	3,952,672.1	324,430	35,687	745,937		
1917	3,452.5	2,978,415.6	247,312	100,636	524,958		
1918	2,281.7	2,390,737.4	227,763	232,802	1,040,890		
1919	1,867.9	1,741,841.2	158,292	108,044	1,308,937		
1920	1,289.7	896,355.9	217,902	112,042	746,479	47,015	
1921	1,412.9	1,486,857.0	58,346	7,279	278,425	33,571	19.29
1922	184.7	380,766.4	99,748	101,809	457,341	126,920	
1923	1,975.1	150,613.31	127,043.3	35,688.27	356,694.75		
1924		153,662.82	136,919.95	17,547.35	67,696.18	17,548.6	
1925		64,860.02	58,921.16	50,544.8	6,554.91	3,364.42	
1926		1,393.42		127,868.51	546,834	7,945.34	
Total	30,598.7	41,718,595.07	2,512,216.41	1,384,164.93	11,572,305.84	236,596.36	19.29

NOTE.—The gold (19.29 ounces) was recovered from refinery sludge at the termination of operations.

The financial statement of this company presented shows that, after deducting current liabilities, the quick assets at the end of the year amounted to \$700,289.53.

Prospecting in 1926

During 1926, the company continued an aggressive search for another mine in undeveloped parts of Northern Ontario and Quebec. Most of the effort was centred in the townships of Boischatel, Duprat, and Montbray, Quebec.

In Boischatel, fourteen claims owned by the company and also a large block of ground acquired under an option to purchase were prospected. On the latter block a discovery of disseminated chalcopyrite in a porphyritic andesite was made, but as this was a very low grade, the option was relinquished.

In Montbray and Duprat the company owns a large block of ground astride the township line separating the two townships and also a few detached claims. In the southwestern corner of Duprat on Coniagas claims A. 5,362 and A. 5,363, an interesting zone, striking N. 30° E. astronomic, was found during the summer. Along this zone chalcopyrite has been found at irregular intervals for a distance of 1,400 feet; the chalcopyrite is disseminated in thuyolite, and although fine specimens may be obtained the bodies so far found seem too low grade to be of commercial value. In addition to this main ore zone, chalcopyrite has been found at several other places, all of which warrant further work. A preliminary dip-needle survey was made of all the claims, and this will be continued in 1927. Although a considerable amount of work was done on this block, only a very small part of it has yet been trenched. Some of the showings are attractive enough to invite a diligent search for ore. Lines are now being cut, in preparation for an electrical survey to be made of part of these claims, by the Swedish American Prospecting Corporation.

The company has optioned a block of ten claims, two in Dasserat, seven in Boischatel, and one in Duprat. This ground was acquired because it lies adjacent to claims of our own upon which discoveries have been made.

In the Red Lake area, district of Patricia, a small crew of men performed the necessary assessment work on a group of claims staked by one of the company's prospectors. Nothing of importance has so far been found on this ground.

An option was given to March Gold, Incorporated, Buffalo, N.Y., to purchase, under an escrow agreement, the Maidens-McDonald claims for the sum of \$250,000 cash and 100,000 shares of stock of \$1 par value in their operating company, and under this option agreement your company has received \$100,000 cash and 100,000 shares of stock in the March Gold, Limited, in which company the title deeds of their property in the Porcupine area are vested. This company owns and operates a 200-ton mill on the property. The sale of these claims is considered advantageous to your company.

Enright Mining Company, Limited

The Enright Mining Company, Limited, took over the old Devlin property in the southeast corner of James township, district of Timiskaming, in March, 1926, comprising the east half of the south half of lot 1, concession I, and began repairing the buildings with a force of five men. The company has a capitalization of \$3,000,000 in shares of \$1 par value, of which 1,000,000 shares are issued. The board of directors comprises Senator Currie, of Montreal, president; E. S. Turner, managing director; and Arthur T. Forbes, secretary-treasurer. The head office is at 89 St. Francois Xavier Street, Montreal. Horace F. Strong of Haileybury is manager, and William Fleming, mine captain.

For the next four months, 15 to 18 men were employed repairing the plant and making roads, and underground work began on August 2, when the force was increased to 38 men, including 5 diamond-drillers and 10 wood-cutters. A total of 430 feet of drifting and crosscutting and 15 feet of winzing was done on the 100-foot level, and 280 feet of drifting on the 200-foot level, besides a certain amount of diamond-drilling.

Louis Fenning

Louis Fenning, on behalf of himself and associates in New York, was preparing to dewater the old workings of the Beaver mine, O'Connor township, district of Thunder Bay, when the property was visited on July 19, 1927

Considerable repairs to the existing two shafts above the adit level and to the timbering and tracks on the adit level had been made prior to this date, and a boiler was being set up to operate pumps and open up the two levels reported to be developed below the adit level. Three men were employed on this work.

While the work was undertaken primarily for examination purposes, it is understood that operations will be commenced immediately should the results of the examination prove encouraging.

Friday Mines, Limited

This company has a capital of \$2,000,000 in shares of \$1 par value. R. C. Vokes is president; W. H. Schaffer, vice-president; J. R. Sproat, secretary and manager. The head office is at 1103 Washington Boulevard Building, Detroit, Mich. The company owns three claims, Nos. 19,505, 12,825, and 12,826 on Lorrain lake in Lorrain township, twelve miles northeast of Timagami station.

The company began trenching and sinking test pits on the property in May with a force of four men. Three pits were sunk to depths of 12, 16, and 34 feet, and the vein was exposed on the surface for 400 feet. The property was closed after five months' operation.

Genesee Mining Company, Limited

In January, 1926, the company began operations on the property in Bucke township, district of Timiskaming, with a force of 11 men, and continued for two months. F. L. Steenman was manager.

A crosscut was driven southeast on the 350-foot level, and a shallow winze put down on No. 16 vein west of the former winze.

Gowganda-Duggan Silver Mines, Limited

This company resumed operations on their property in Donovan township, district of Timiskaming, with a force of 20 men on September 1, after a six months' shut-down. The officials of the company are: F. Macklin, Blenheim, president; Archie Fyfe, Orillia, vice-president; Joseph Montgomery, secretary-treasurer, Federal Building, Toronto. Neil Morrison is mine superintendent.

A 65 h.p. boiler was added to plant, the shaft was continued from a depth of 139 feet to a depth of 312 feet, and levels were established at 150 and 300 feet. During the first half of 1927, drifting was done on the 150-foot level 65 feet east and 60 feet west from a 20-foot crosscut. On the 300-foot level, 235 feet of crosscuts and 208 feet of drifts were driven.

Gowganda Keora Silver Mines, Limited

This company operated their property at Calcite lake, Lawson township, district of Timiskaming, except during the months of May, June, and July, until October 20, 1926. Thomas Reilly was manager, and 20 men were employed.

A larger hoist was installed and the following amount of lateral work done on the different levels: 120 feet of drifting and crosscutting on the 150-foot level, 290 feet and 60 feet of raising on the 195-foot level, and 330 feet of drifting and crosscutting on the 270-foot level.

The mill was operated during the first four months of the year and treated 260 tons of ore, making a total of 760 tons in all.

Keeley Silver Mines, Limited

This company has a capital of \$2,000,000 in shares of \$1 par value. The officers and directors are: F. H. Hamilton, president; J. Mackintosh Bell, managing director; W. H. Stafford, James W. Bain, John H. Black, R. T. Shillington, and E. Tuerk, directors. R. S. Dening is secretary-treasurer, and the Toronto office is at 302 Bay Street. The property is at Silver Centre, South Lorrain, district of Timiskaming.

M. C. H. Little is resident manager, and 135 to 140 men are employed.

In spite of the very serious drop in the price of silver, the profit for the year amounted to \$538,698.32, and the dividend rate of 24 per cent. per annum, including bonus, has been maintained. The net surplus stands at \$720,725.33.

The managing director reports as follows for the fiscal year ended February 28, 1927:—

The most satisfactory features of the operations during the past year are to be found in the facts that the monthly production of approximately 125,000 ounces of silver was maintained and that, in spite of the serious decline in the price of that commodity, the dividend requirements were more than earned.

Summary of Underground Operations.—During the year the following underground development has been carried out:—

	Feet	Cost per foot
Drifting and crosscutting (No. 3 shaft).....	7,922	\$14.62
Raising.....	738	18.22
Winze-sinking.....	104	63.58
Diamond-drilling.....	1,002	5.88

Some 25,082 tons of ore were hoisted. Of this amount, 21,237 tons were taken from the stopes; the remainder came from development.

The cost per ton of ore delivered to the primary crusher averaged \$4.46.

Results of Development.—The most important developments during the period under review were those obtained in the western part of the property, more particularly in No. 28 vein at the 11th level, 820 feet below the collar of No. 3 shaft. In this locality three shoots of ore, having an aggregate length of 166 feet and an average assay of 1,800 ounces over 6 inches, were developed. One of these shoots has been followed downwards, by means of a winze 75 feet deep, and good ore persisted to a depth of 58 feet. Development is now proceeding at the 12th or 895-foot level.

Mill Statistics.—During the year, 24,705 tons of ore were milled. Abbreviated statistics are as follows:—

Ore milled.....	24,705 tons.
Heads, average.....	24.3 ounces.
Tails, average.....	3.14 ounces.
Extraction, average.....	87.5 per cent.
Average running time.....	81.3 per cent.

Production.—Production for the year (based on actual smelter returns) was as follows:—

	Pounds, net	Silver, ounces	Cobalt, pounds
Picked ore.....	578,366.5	1,114,296.91	67,134
Concentrates.....	1,486,376	525,711.05	118,696
Total.....	2,064,742.5	1,640,007.96	185,830

The corresponding figures for the silver and cobalt produced during the previous year are 1,514,407 ounces and 181,054 pounds, respectively.

PRODUCTION DURING PREVIOUS YEARS

	Pounds, net	Silver, ounces	Cobalt, pounds
1913	322	872.7	.....
1914	2,327.4	3,183.03	.....
1918	145,048	39,557.25	1,061
1919	31,766	4,565.82	3,160.3
1920	119,770	8,253.44	9,896.86
1921	676,411.5	313,230.88	60,566.72
1922 and 1st 2 months 1923	2,286,497	1,140,961.56	196,927
Fiscal year 1923-24	1,973,832.75	1,600,739.68	171,357
Fiscal year 1924-25	2,668,241.75	1,880,351.88	228,450
Fiscal year 1925-26	2,077,548	1,514,407.48	181,054
Total	9,981,764.4	6,512,123.72	852,472.88
Fiscal year 1926-27	2,064,742.5	1,640,007.96	185,830
Total production to February 28, 1927	12,046,506.9	8,152,131.68	1,038,302.88

COST OF PRODUCTION

(Based on 24,924 tons of ore treated, producing 1,640,007.96 ounces of silver)

	Total cost	Per ton	Per ounce
Development	\$138,319.71	\$5.55	\$0.084
Ore extraction	94,739.40	3.80	.058
Ore sorting	7,587.79	.31	.004
Milling	44,078.37	1.77	.027
Shipping and marketing	70,404.68	2.83	.043
Administration	39,052.65	1.56	.024
General maintenance	36,457.27	1.46	.022
Head office expense	9,263.59	.37	.006
Corporate expense	24,084.99	.97	.015
Taxes	14,287.91	.57	.009
Total	\$478,276.36	\$19.19	\$0.292

Ore Reserves.—The total ore reserves opened up in the mine as at February 28, 1927, are estimated at approximately 22,000 tons, containing about 1,091,000 ounces of silver and 74,000 pounds of cobalt. These figures make no allowance for the new ore being developed from the bottom of the winze, 75 feet below the 820-foot horizon.

Kerr Lake Mines, Limited

This company has a capital of \$2,400,000 in shares of \$4 par value. The officers of the company are: Adolph Lewisohn, president; Sam. A. Lewisohn, vice-president; E. H. Westlake, 61 Broadway, New York, secretary-treasurer.

Robert R. Brown was manager, and 4 to 8 men were employed at the mine in Coleman township, district of Timiskaming.

The manager reports as follows for the fiscal year ending August 31, 1926:

Production from development work on adjacent and parallel veins to the south of the main east vein amounted to 13,200 pounds of ore, containing 9,035 ounces of silver. While the possibilities for high-grade production in this area are not entirely exhausted, development work failed to disclose ore of commercial grade and was discontinued.

Development work consisted of 30 feet of drifting and 129 feet of raising on the 90-foot level; 22 feet of drifting, 47 feet of crosscutting, and 125 feet of raising on the 140-foot level;

and 30 feet of drifting and 70 feet of raising on the sublevel between. Considerable open-benching and side-slashing was done on silver-bearing veins.

During the winter a group of claims was staked northeast of the centre of Dufresnoy township in the Quebec copper-gold area. These claims were located on formation alone and have been prospected with a limited amount of expenditure during the summer.

Keweenaw Mines, Limited

Keweenaw Mines, Limited, financed by the Noranda Mines, Limited, took an option on the York O'Brien and Red Jacket properties in the Gillies limit, district of Timiskaming, and began pumping out the old A6 shaft on December 15, 1926. Walter E. Segsworth is president; L. K. Fletcher, manager; and Frank Harrison, contractor.

The following buildings were erected: a hoist-house, 20 by 20 feet; a combined smithy and dry-house, 20 by 36 feet; a magazine and a 33-foot headframe. A 10- by 12-inch Jenckes hoist was installed, and mining began on January 22, 1927.

The property was operated until early in July, and 2,200 feet of drifts and crosscuts were driven, half of which were on the 110-foot level and half on sub-levels. Four raises were also driven, totalling 130 feet.

Kirk Budd Mining Company, Limited

The authorized capital of this company is \$1,000,000. The officials of the company are: Willard Jones, Utica, N.Y., president; P. Daymont, Utica, N.Y., secretary-treasurer; Cecil Cave, Cobalt, managing director. The company operated the property in Gillies limit, district of Timiskaming, from May 5 to June 1, with a force of six men and extended the drift 120 feet eastward on the 150-foot level. They also operated for five weeks, from September 15, driving another 100 feet.

Lakeside Lorrain Silver Mines, Limited

The company began unwatering the mine in the township of South Lorrain, district of Timiskaming, on May 17 and shut down a month later after continuing the shaft from 90 to 113 feet in depth.

W. R. Van Reynolds is president; Joseph Montgomery, secretary-treasurer; and M. P. MacDonald, manager. The head office is at 611 Federal Building, Toronto.

Surface trenching was carried on with a force of six men on claims H.R.136 and 147 during the last two months of the year.

La Rose Mines, Limited

This company has a capital of \$1,500,000 in shares of \$1 par value. The board of directors remains the same as last year. E. W. Nesbitt, Woodstock, is president; William Cameron, 36 King Street East, Toronto, secretary; and G. E. H. Booth, manager.

The company operated the Violet mine, Coleman township, district of Timiskaming, for the first seven months of 1926 with a force of 35 men. Development work, mainly on the 470-, 590-, 880-, and 930-foot levels, consisted of 605 feet of drifting, 210 feet of raising, and 30 feet of shaft-sinking. Stopping amounted to 1,007 cubic yards.

Shipments amounted to 5,821.73 tons, of which one ton was high-grade ore, of a net value of \$46,524.75.

Lorrain Consolidated Mines, Limited

This company operated their property in South Lorrain, district of Timiskaming, in the first five months of the year with a working force of 15 to 20 men. Horace F. Strong, of Haileybury, is consulting engineer. A total of 460 feet of drifts and crosscuts and 50 feet of raising was driven on the 175-foot level, after the report of the last fiscal year which ended on March 31, 1926.

McKinley-Darragh-Savage Mines of Cobalt, Limited

This company has a capital of \$2,500,000 in shares of \$1 par value. The mine and head office are at Cobalt, Ont. R. Home Smith is president, and the directors remain the same as last year. H. C. McCloskey is manager, and on an average 80 men are employed.

The silver recovered during 1926 from the mine and leases amounted to 408,531 ounces, and the silver recovered to date to 21,517,141 ounces. A total of 345,200 ounces was shipped. The average price received was 59.276 cents, and costs were 59.445 cents per ounce. Total costs were \$242,850.98, equivalent to \$5.68 per ton of ore mined, or 59.44 per ounce recovered. Mining costs were \$96,779.88, equivalent to \$2.26 per ton, or 23.69 cents per ounce. Milling costs were \$68,892.53, equivalent to \$1.61 per ton milled, or 21.9 cents per ounce.

Development footages were as follows: crosscuts, 268 feet; drifts, 600 feet; raises, 518 feet; winzes, 30 feet; a total of 1,416 feet. The total ore broken was 37,767 tons.

The Princess lease was allowed to expire on November 1; and the Right of Way lease, from which 4,200 tons of mill rock was obtained, was also dropped.

The mill treated a total of 42,739 tons, or an average of 108 tons per day. Average mill heads were 8.5556 ounces per ton, and mill tails, 1.213 ounces per ton. The percentage of extraction was 86, and the ration of concentration 84 to 1. The mill recovered 314,426 ounces of silver.

While the recovery of silver was only 8,000 ounces less than in the previous year, and costs were reduced 5.5 cents per ounce, the average price of silver was 9.6 cents less, and a small operating loss is shown for the year. Extensive development work was carried on during the year, but no ore bodies of a profitable nature were encountered; and the older workings have been gradually mined out.

Meteor Development Company, Limited

This company operated the Meteor property in Coleman township, district of Timiskaming, for the first six months of the year with a force of 12 men. W. A. Edwards, Bank of Weston, Weston, W.Va., is president, and George Wilson, secretary. H. L. Wilson is mine captain.

At No. 1 shaft, a crosscut was driven 60 feet south and a drift 150 feet east on the vein. At the west winze, a drift was driven 190 feet east on a mud seam, and crosscuts were driven 115 feet north and 212 feet south on the bottom level at a depth of 135 feet.

Mickle Silver Mines

Two mining claims in Mickle township, district of Timiskaming, adjoining the old Mapes Johnson mine on the west, were taken up by Mickle Silver Mines, and about 40 feet of sinking was done in the summer of 1926.

Harry Coles was superintendent.

Millcrest Mining Company

The company began surface work on their claims north of the Capitol property in Haultain township, district of Timiskaming, on October 15, 1925. These claims comprise Nos. 328-32.

The company has a capital of \$2,000,000, with 1,900,000 shares issued. The board of directors is as follows: Sir Henry Pellatt, president, J. A. Murray, H. Blain, Stuart B. Playfair, and A. F. Demary. The company's office is at 420 Bank of Hamilton Building, Toronto.

Small camp buildings were erected, and 16 men were employed in shaft-sinking in the first five months of the year.

In March a mining plant, consisting of a 330 cubic foot gasoline-driven air compressor and a 7- by 10-inch hoist was installed. About 200 feet of drifting was done on the 112-foot level following the completion of the shaft sinking.

W. H. Fairburn was manager, and A. J. Anderson, mine captain.

Mining Corporation of Canada, Limited

This company has an issued capital of \$8,300,250 in shares of \$5 par value. The directors and officers of the company are: J. P. Watson, president; W. R. P. Parker, first vice-president; G. M. Clark, second vice-president; E. H. Rose, J. G. Watson, A. B. Stodart, C. E. Trafford, directors; M. F. Fairlie, mine manager; G. C. Ames, secretary. The head office is at 1512 Bank of Hamilton Building, Toronto.

The average number of men employed at Cobalt was 180, of which 50 were employed in the mill of the Cobalt Reduction Company, a subsidiary of the corporation. The working force in South Lorrain averaged 155 for the year, of which 25 were employed in Lorrain Trout Lake mines, which are partly owned and under the management of the Mining Corporation.

The year's operations resulted in a net profit of \$511,186.50. Two dividends of \$207,506.25 each, amounting to 5 per cent. in all, were declared in 1926.

At the Cobalt properties, the greatly increased production over that of the previous year resulted in a reduction in ore reserves. The tonnage of such reserves at the end of the year was approximately 43,000 tons, with silver content of slightly over 1,000,000 ounces.

A group of claims comprising 218 acres on the east side of Cross lake has been optioned. Diamond-drilling has shown sufficiently interesting structure to justify further work, and the plans for this are under consideration.

The following is taken from the resident manager's report for 1926:—

In spite of increased exploration and development work at the Cobalt properties, new ore put in sight did not equal that extracted, and a falling off in ore reserves is to be noted. This is to be expected, as the areas favourable for development are rapidly being reduced.

At the South Lorrain properties, there were no major developments of high-grade ore, but much promising ground remains for exploration.

Silver production for the year, from all classes of ore, showed an important increase, being 2,210,053 ounces as compared with 2,032,105 ounces for the previous year. This increase was entirely in mill-grade ore from the Cobalt properties. The total tonnage of mill ore from the corporation's mines was 57,874 tons, as compared with 54,979 tons for the previous year.

PRODUCTION IN 1926

	Tons treated	Ounces produced
Cobalt properties.....	51,266	1,105,456
South Lorrain properties.....	6,940	1,104,597
Total.....	58,206	2,210,053

Included in the above production were the following items: 207.94 tons of high-grade ore containing 910,575.32 ounces of silver, which was shipped direct to the smelter; 108.05 tons of low-silver high-cobalt ore containing 5,568.23 ounces of silver, also shipped without treatment; 15.72 tons of fines containing 14,126.33 ounces of silver, treated in the Cobalt Reduction plant.

Production of cobalt ore was greatly curtailed owing to lessened demand, the total weight of cobalt metal paid for being 85,316 pounds as compared with 293,324 pounds in the previous year. This does not include cobalt metal contained in concentrates.

The details of tonnage treated, production, etc., from mill ore are given in the table below:—

Tons of mill ore treated.....	57,874
Assay value, ounces per ton.....	25.81
Ounces contained.....	1,494,001.05
Ounces returned by Reduction Company.....	1,279,783.12
Percentage returned under contract.....	85.66

Past Production.—The table below gives the production by years from the mines of the corporation. The aggregate amounted to 42,582,256 fine ounces at December 31, 1926.

PRODUCTION IN FINE OUNCES TO DECEMBER 31, 1926

	Cobalt mines	South Lorrain mines	Total
Prior to 1908.....	118,616		118,616
Year ended December 31, 1908.....	633,516		633,516
“ “ “ “ 1909.....	442,254		442,254
“ “ “ “ 1910.....	471,965		471,965
“ “ “ “ 1911.....	1,777,002		1,777,002
“ “ “ “ 1912.....	2,827,826		2,827,826
“ “ “ “ 1913.....	3,784,718		3,784,718
January 1, 1914, to March 31, 1914.....	866,622		866,622
April 1, 1914, to December 31, 1914.....	3,185,124		3,185,124
Year ended December 31, 1915.....	4,563,956		4,563,956
“ “ “ “ 1916.....	4,457,441		4,457,441
“ “ “ “ 1917.....	4,485,542		4,485,542
“ “ “ “ 1918.....	1,708,252		1,708,252
“ “ “ “ 1919.....	1,230,653		1,230,653
“ “ “ “ 1920.....	1,664,018		1,664,018
“ “ “ “ 1921.....	1,226,717		1,226,717
“ “ “ “ 1922.....	1,462,269		1,462,269
“ “ “ “ 1923.....	727,115	1,333,334	2,060,449
“ “ “ “ 1924.....	851,280	521,878	1,373,158
“ “ “ “ 1925.....	898,008	1,134,097	2,032,105
“ “ “ “ 1926.....	1,105,456	1,104,597	2,210,053
Total.....	38,488,350	4,093,906	42,582,256

Mining Operations

Cobalt.—There was produced and milled from the Cobalt properties a total of 51,266 tons of mill ore with head assay of 25.34 ounces per ton and silver content of 1,298,899 ounces. As in the previous year, the Cobalt Lake property supplied by far the largest proportion of the above tonnage. Unfortunately the proximity of the lake bottom prevents the complete extraction of profitable ore on eight of the producing veins on this property.

On the Cobalt Lake property, the ore shoot on No. 16 vein was extended a further 105 feet, making a total length of 430 feet of stoping ore. A drift on this vein was carried 125 feet further south but did not disclose ore of commercial grade.

The ore shoot on No. 11 vein was extended to a total of 290 feet, being an addition of 125 feet. The ore limits on this vein have also been established.

Veins Nos. 14, 15, 21, and 23, all branch veins of No. 16, were developed further to the west, and stoping carried out on them during the year.

A new vein, No. 28, parallel to No. 11, gave an ore shoot 130 feet in length. Number 30, a branch from this vein, was also discovered during the year and has been stoped for a length of 70 feet.

The 4th and 5th levels were reopened through No. 5 winze, and developments were satisfactory on veins Nos. 4 and 2 and the Fault vein. On the 5th level, a promising new vein, at present being developed, was cut near the south boundary. Another new vein exposed in diamond-drilling on the 5th level has so far been disappointing under development.

During the coming year a lower level will be opened by winze from the 5th level to develop the new vein mentioned above and to explore the ground west of the Cobalt lake fault. Also exploration will be carried out in the area between the Keewatin contact and the reverse fault to locate if possible the lower sections of No. 11 and No. 16 veins and their branches below the fault.

On the Townsite and City of Cobalt properties, stoping was carried out on No. 14 and No. 31 veins as well as on "C" and No. 34 and their branches.

During the year, further work will be carried out in the south section of the Townsite.

South Lorrain.—From the Frontier and Crompton properties, the following shipments of ore were made during the year: 6,608 tons of mill ore, with head assay of 29.52 ounces and silver content of 195,102.19 ounces; 15.72 tons of fines assaying 898.62 ounces and containing 14,126.33 ounces; 108.05 tons of cobalt ore assaying 51.53 ounces and containing 5,568.23 ounces; 207.94 tons of high-grade ore assaying 4,379.03 ounces and containing 910,575.32 ounces. The total silver content of all classes of ore was 1,125,372.07 ounces.

A remarkable improvement in the silver content of the high-grade ore is to be noted, the average assay per ton being 4,379.03 ounces, as compared with 2,755.69 ounces for the previous year.

Although there were no outstanding developments of high-grade ore at the South Lorrain properties, the following results of development work may be noted:—

On the Watson vein a high-grade ore shoot, 53 feet in length and with an average width of seven inches of 1,500- to 2,000-ounce ore, was exposed above the 3rd level. No stoping has been done on this ore. A considerable addition was made to a high-grade ore shoot previously developed above the 150-foot level. Another small shoot of high-grade was opened above the 5th level. In addition, a number of bodies of mill grade ore were developed both on the Watson and No. 1 veins, as noted in the quarterly reports.

Further work on the Wood's and Watson veins in the diabase formation was deemed inadvisable, and future exploration of these veins awaits the completion of the winze to the lower diabase-Keewatin contact. This winze on the Crompton property is being sunk from the 7th level of No. 3 shaft. Six hundred feet of sinking will have been completed in March. The new level will be 1,200 feet from surface. With the completion of sinking, crosscuts will be run to both the Wood's and Watson veins, and exploration of them carried out in both the diabase and Keewatin formations. The future of the Frontier and Crompton properties depends largely on the results of this work.

On the Little Keeley property, work on the 4th level was discontinued and for the past few months has been confined to drifting on the 6th level on No. 2 vein and an east branch vein. Although no commercial ore has yet been opened up, the strength and character of No. 2 vein offers excellent chances for successful development.

On claim H.S. 310, which is the centre of a group owned by the corporation, a shaft has been completed to a depth of 325 feet. These claims are located two and a half miles east of the Frontier near Lake Timiskaming. The geological structure is identical with that of the sedimentary area of Cobalt, and exploration by diamond-drill will be carried out in the sediments at an horizon about 50 feet above the Keewatin contact.

THE COBALT REDUCTION COMPANY, LIMITED

Concentrating Plant.—This plant ran 362 days during the year. An average of sixty-four stamps ran 529,183 out of a possible 556,360 stamp-hours, or 95.11 per cent. of the possible running time. The tonnage of mill ore treated in the low-grade plant was 73,422, against 85,581 tons in 1925.

This tonnage was shipped by:—

	Tons
The Cobalt mines of the Mining Corporation of Canada, Limited.	51,266
The South Lorrain mines of the Mining Corporation of Canada, Limited.	6,624
Lorrain Trout Lake Mines, Limited.	7,110
Sundry.	8,422
Total.	73,422

Comparative details of concentration treatment for 1926 and 1925 follow:—

	1926	1925
Tons treated.....	73,422	85,581
Average assay.....	\$24.78	\$24.71
Ounces contained.....	1,819,783.49	2,115,084.49
Tons concentrate produced.....	793.38	1,048.38
Average assay.....	\$1,301.97	\$1,108.83
Ounces contained.....	1,032,960.76	1,162,478.67
Percentage of extraction by table concentration.....	56.76	54.96

Flotation Plant.—All the slime produced by crushing and grinding and the table-tailing (after regrinding in tube mills) were treated by flotation.

Details of tonnage, extraction, etc., are given below:—

	1926	1925
Tons of slime treated.....	72,628.48	84,532.56
Average assay.....	\$10.83	\$11.27
Ounces contained.....	786,822.73	952,605.82
Tons of flotation concentrate produced.....	1,101.41	1,418.79
Average assay.....	\$566.72	\$542.45
Ounces contained.....	624,193.56	769,617.48
Percentage of extraction.....	79.33	80.79

SUMMARY OF MILLING OPERATIONS

	1926		1925	
	Total	Extraction per cent.	Total	Extraction per cent.
Tons of ore milled.....	73,422		85,581	
Average assay.....	\$24.78		\$24.71	
Ounces contained.....	1,819,783.49		2,115,084.49	
Table concentrate produced, ounces.....	1,032,960.76	56.76	1,162,478.67	54.96
Flotation concentrate produced, ounces.....	624,193.56	34.30	769,617.48	36.39
Total ounces produced.....	1,657,154.32	91.06	1,932,096.15	91.35

High-Grade Plant.—This plant was not operated during the year. The balance of the 1925 production of residues, amounting to 961 tons, was shipped during the year. Table concentrate, which in previous years had been treated in the high-grade plant, were shipped to the smelter.

General Costs.—The total cost of operations was \$296,836.60, against \$380,207.99 in 1925, the greater part of the reduction being caused by the closing down of the high-grade plant.

The cost of marketing the table and flotation concentrate produced, including freight, smelter treatment and refining charges, value of smelter deduction, etc., is included under "Operation" in the table below and amounted to \$115,633.80 in 1926, or \$1.57 cents per ton of ore treated.

The cost per ton of ore treated was \$4.043 against \$4.442 in 1925. A much larger proportion, than in 1925, of total ore treated came from the Cobalt mines of the Mining Corporation, resulting in a higher ratio of concentration and consequent reduction in smelter costs.

TOTAL COST OF OPERATION

	Labour	Material	Other	Total	Per ton
Administration and general Operation.....	\$6,187.62	\$913.60	\$8,154.60	\$15,255.82	\$0.208
Head office.....	63,786.29	41,183.77	163,503.41	268,473.47	3.656
			13,107.31	13,107.31	.179
Total cost of operation	\$69,973.91	\$42,097.37	\$184,765.32	\$296,836.60	\$4.043

Earnings.—The gross earnings were made up of customs charges to the Mining Corporation of Canada, Limited, and subsidiaries and treatment charges on purchased ore, etc.

The operating profit was:—

By earnings.....	\$335,851.24
Less total cost.....	296,836.60
Profit at plant.....	\$39,014.64

There were no capital expenditures during the year.

Net Profit.—The net profit was:—

By profit at plant.....	\$39,014.64
Less federal taxes.....	\$1,048.71
Written off plant.....	34,436.70
	35,485.41
Net profit.....	\$3,529.23

The above amount was paid out in dividends to the Mining Corporation of Canada, Limited.

LORRAIN TROUT LAKE MINES, LIMITED

This company has a capital of \$1,500,000 in shares of \$1 par value, one-third of which are owned by the Mining Corporation of Canada. The property in South Lorrain, district of Timiskaming, is operated in conjunction with the Frontier and Crompton properties by the Lorrain Operating Company, a subsidiary of the Mining Corporation of Canada, which employed from 135 to 170 men during the year, 25 of whom were employed in the Trout Lake mines.

The following is taken from the resident manager's report for 1926:—

Operations

No. 1 Shaft.—Further exploration at the 475-foot level was discontinued early in the year after several hundred feet of drifting. Development of ore on the 8th level of the neighbouring Keeley Silver Mines encouraged hope of improved results at greater depth, and preparations were made for further sinking. This became unnecessary when the Keeley company kindly offered to carry drifting south on to your property at an horizon 165 feet below the 475-foot level. This work proved unproductive of results. Later in the year when the Keeley had sunk to their 10th level, similar work was done for the company at that horizon, or 305 feet below the 475-foot level. This work, just recently completed, exposed a persistent vein carrying cobalt and nickel ore but low silver values. In view of inconclusive results, the company is not justified in sinking further from No. 1 shaft. There are still possibilities at the lower diabase-Keewatin contact, and such exploration may at a later date be done from No. 2 shaft.

On the upper levels at this shaft, further drifting was done on the Wood's and branch veins, but no new ore was developed. Crosscutting to the east was also unproductive.

Other work at No. 1 shaft during the year was confined to the stoping of previously developed ore. There still remains a small tonnage of mill-grade ore to be removed during the coming year.

No. 2 Shaft.—In the early part of the year, exploration work was confined to drifting on No. 2 and other branch veins on the 350-foot level. On No. 2 vein two short shoots of mill-grade ore were exposed, and these have not yet been developed further.

Later, a winze was sunk 150 feet to the 500-foot level, and drifting was again carried out on No. 2 vein and others. On this level, No. 2 vein was stronger and carried more cobalt, in places showing widths of 15 inches of solid cobalt ore. Silver values, however, were not important.

The winze was later deepened to 625 feet, which level is approximately 150 feet above the diabase contact. Drifting on this level has exposed two short shoots of commercial ore, the more important one showing a length of 31 feet with an average width of 7 inches of 800-ounce ore.

The greater strength of No. 2 vein and improved values shown on the 625-foot level encourages the hope of still greater improvement nearer the diabase contact and justifies the opening of another deeper level.

Production

Failure to develop new ore resulted in a marked falling off in production for the year. The total tonnage of mill ore shipped by rail to the plant of the Cobalt Reduction Company was 7,110 tons, with an average silver assay of 20.78 ounces per ton and silver content of 147,716 ounces. Production from this ore was 126,863 ounces of silver.

In addition, 9.39 tons of high-grade ore containing 16,536 ounces of silver was shipped direct to the smelter.

The total silver production for the year was 143,399 ounces, as compared with 436,302 ounces for the previous year.

Conclusion

With the opening up of a new deep level early in the year, drifting and crosscutting to the north and south can be carried out in Keewatin formation at a favourable horizon above the diabase contact.

While results of exploration work for the past year have been disappointing, there is great hope for improvement in the coming year in the new territory to be explored from No. 2 shaft.

Newton Lorrain Syndicate

The syndicate employed five men at their property in South Lorrain township, district of Timiskaming, installing a mining plant during the winter and resumed sinking operations in May with a force of 18 men under Andrew McGarry as superintendent. The syndicate has a capital of \$150,000 and is composed of a group of men from London, Ont., including J. B. Hay, trustee; R. O. Morrow, manager; Sam Ameara, John McHale, H. Heyman, G. Thompson, and R. Cairncross. The head office is at 331 Richmond Street, London, Ont.

The shaft was continued from 180 feet to a depth of 520 feet, and a level was established at 500 feet on which a crosscut was driven 100 feet south before the property closed down at the end of the year.

Nipissing Mining Company, Limited

Nipissing Mines Company, Limited, has a capital of \$6,000,000 in shares of \$5 par value. The directors of the company are: E. P. Earle, president and treasurer; Alexander Fasken, secretary; J. T. Crabbs, Richard T. Greene, August Heckscher, David Fasken, and Hugh Park. The head office is in the Excelsior Life Building, Toronto, and the New York office is at 165 Broadway. The mine and mill are in Cobalt.

The operating company is the Nipissing Mining Company, Limited, with a capital of \$250,000 in shares of \$100 par value. The directors are: David Fasken, president; E. P. Earle, vice-president and treasurer; Alexander Fasken, secretary; Richard T. Greene and Hugh Park. The operating officials are: Hugh Park, general manager; E. V. Neelands, manager; Cyril W. Knight, geologist; J. M. Carter, mill manager.

The net value of Nipissing shipments in 1926 was \$1,260,692.96, and the net income of the operating company was \$164,310.62. During the year there was paid in dividends \$720,000, making a total of \$28,320,000 to date, which is 472 per cent., or \$23.60 per share. The operating company's surplus at the end of the year was \$3,819,000, as compared with \$4,405,000 a year ago. On an average, 270 to 300 men are employed.

The general manager reports as follows for the year 1926:—

SHIPMENTS IN 1926

	Silver, fine ounces	Net value
Silver bullion.....	2,985,649.56	\$1,853,538.70
Residue.....	36,967.24	62,054.76
Total shipments.....	3,022,616.80	\$1,915,593.46
Less custom bullion.....	1,056,317.18	654,900.50
Shipments of Nipissing product.....	1,966,299.62	\$1,260,692.96

PRODUCTION IN 1926

	Silver, fine ounces	Gross value	Net value
Shipments in 1926.....	1,966,299.62	\$1,270,749.51	\$1,260,692.96
On hand at mine, December 31, 1926.....	1,088,469.42	849,168.14	836,644.27
Total.....	3,054,769.04	\$2,119,917.65	\$2,097,337.23
On hand at mine, December 31, 1925.....	1,114,171.69	1,005,225.50	989,119.74
Nipissing production.....	1,940,597.35	\$1,114,692.15	\$1,108,217.49

TOTAL SHIPMENTS TO DECEMBER 31, 1926

Year	Dry weight, pounds	Silver, Gross ounces	Gross value, silver plus cobalt, nickel, and arsenic paid for	Net value received
1904.....	124,659	32.13	\$24,163.90	\$23,887.52
1905.....	939,373	753,153.90	505,638.28	471,666.61
1906.....	4,019,494	2,214,821.60	1,576,852.94	1,421,655.54
1907.....	4,804,426	2,239,551.89	1,373,088.57	1,234,492.35
1908.....	7,009,998	2,893,031.44	1,526,686.32	1,364,478.03
1909.....	12,825,169	4,646,869.21	2,417,767.21	2,180,407.02
1910.....	13,388,039	5,596,135.80	3,008,957.80	2,742,842.58
1911.....	5,829,254	4,678,074.14	2,507,196.98	2,381,712.54
1912.....	3,701,726	4,719,578.21	2,893,276.54	2,827,317.62
1913.....	2,657,250	4,844,169.41	2,945,335.30	2,920,714.26
1914.....	868,425	3,999,862.51	2,226,429.66	2,207,427.72
1915.....	383,868	4,623,957.78	2,425,065.85	2,383,877.91
1916.....	4,275,804	3,819,768.50	2,737,569.36	2,687,530.85
1917.....	5,922,508	3,798,801.54	3,338,682.41	3,239,151.62
1918.....	4,148,760	4,116,076.70	4,238,666.53	4,165,353.98
1919.....	1,473,354	3,080,069.93	3,561,440.07	3,539,573.85
1920.....	7,386,488	2,814,852.28	2,627,937.76	2,539,250.71
1921.....	211,980	3,016,760.42	1,754,345.83	1,745,411.07
1922.....	6,036,449	3,845,011.83	2,906,102.87	2,886,719.20
1923.....	226,372	3,227,887.52	2,104,394.04	2,093,829.16
1924.....	1,401,472	2,828,287.06	1,923,171.13	1,911,213.31
1925.....	1,357,912	2,413,697.18	1,698,025.28	1,686,601.52
1926.....	1,673,998	1,966,299.62	1,270,749.51	1,260,692.96
Total.....	90,666,778	76,136,750.60	\$51,591,544.14	\$49,915,807.93

SOURCES OF PRODUCTION

From underground:	Tons
Shaft No. 19.....	2,535
Shaft No. 49.....	12,674
Shaft Nos. 63 and 86.....	39,712
Shaft Nos. 73 and 80.....	27,884
Shaft Nos. 92 and 407.....	1,688
Total.....	84,493
In battery bin, December 31, 1925.....	712
	85,205
In battery bin, December 31, 1926.....	650
Total ore milled.....	84,555

The various products treated in the high-grade plant were:—

HIGH-GRADE ORE TREATMENT

	Tons	Assay	Ounces contained
Nipissing concentrate.....	564	1,998	1,126,484
Custom ore.....	325	2,993	973,445
By-products.....	37	2,247	83,785
Total.....	926	2,358	2,183,714

The refinery treated precipitate and custom bullion containing 2,857,728 fine ounces. Shipments of bullion amounted to 2,985,650 fine ounces. Shipments of cobalt-nickel residue amounted to 771 tons.

LOW-GRADE MILL

	Tons	Assay	Ounces contained
Ore treated.....	84,555	23.53	1,989,359
Recovered in products:			
Precipitate.....	28	24,465	685,026
Coarse concentrate.....	471	2,383	1,122,513
Fine concentrate.....	104	832	86,566
Metallics.....			1,777
Total recovery.....			1,895,882

Average tailing, 1.11 ounces; recovery, 95.30 per cent. Forty stamps ran 302 days, 14 hours, or 82.9 per cent. of possible running time. They crushed 279.43 tons per day, or 6.99 tons per stamp per day.

The tons treated and the head assay were slightly lower than in 1925. Stopping operations produced a harder and more difficult ore to treat than in former years, requiring increased supplies and repairs.

Cost per ton: labour, \$0.950; supplies, \$1.466; power, \$0.595; shops, \$0.193; credits, \$0.052; total, \$3.152.

SUMMARY OF UNDERGROUND WORK, 1926

Shaft No.	Drifting	Crosscutting	Raising	Sinking	Total	Stoping
	feet	feet	feet	feet	feet	cu. yds.
19.....						412
49.....	633	8	130		771	3,064
63.....	1,794	1,951	238		3,983	11,683
73.....	1,933	2,461	490	14	4,898	6,021
92.....	128		38		166	170
177.....	4,163	3,374	686		8,223	1,148
405.....		145			145	
407.....	192	2,169	43	6	2,410	250
Total.....	8,843	10,108	1,625	20	20,596	22,748

Summary of Results

The production of silver for the year was 1,940,000 ounces, a decrease of about 12 per cent. from 1925. The cost per ounce was considerably higher, due to less ounces treated and to the marked increase in amount of underground work.

The average New York price of silver was 62.11 cents per ounce, ranging from a high of 68.50 in January to a low of 51.50 in October, a variation of 17 cents. The average for 1926 was almost 7 cents lower than the average for 1925. The effect of this drop on the value of the year's production was \$135,000.

Underground exploration and development amounted to 20,000 feet, as compared with 13,000 feet in 1925. Work was carried on at eight shafts, the number of faces being 280, exclusive of stopes.

Development work was concentrated on branch veins, a number of which produced mill ore and small tonnages of high-grade. Several of the older workings were reopened, and some of them contributed to the year's production to an appreciable extent. Stopping operations, particularly on the older veins, exceeded expectations. Exploration work discovered several veins, two of them being of fair importance.

The estimated ore reserves are 34,000 tons, containing 794,000 ounces. The tons are the same as of a year ago; the ounces are 212,000 less, a decrease of 21 per cent. As time goes on, their calculation can be made with more certainty than in former years. The general situation at Cobalt is in line with expectations expressed in previous reports, namely that new discoveries are not likely to be of major importance; that stopping operations are becoming more restricted and laborious; and that the gradual depletion of high-grade ore makes it increasingly difficult to maintain a regular production.

At South Lorrain, fairly encouraging results were obtained from the year's work. Exploration of a conglomerate area, similar geologically to the most productive part of Cobalt, disclosed nothing of value or interest. Exploration of a Keewatin area underlying the diabase sill was attended with more success. In addition to the large cobalt vein found late in 1925, which has shown only low silver values to date, another strong vein was discovered, which has been partly developed by several levels and raises over much of its length of 500 feet.

In the progress of this work, a number of more or less disconnected ore lenses of varying size and richness were encountered. Some of them showed ore of remarkable richness over widths of two to ten inches. A small shipment of high-grade was made at the close of navigation, to be followed by more substantial amounts in the spring of 1927. It seems probable that additional lenses will be encountered from time to time as development work proceeds.

As advised in the report for 1925, an option was taken on a group of claims in Montbray township, Quebec, where an outcrop showing values in gold and copper had been found. Surface work was carried on throughout the winter, followed later by diamond-drilling. Results to date on the original discovery have been only fairly interesting. A somewhat similar deposit was later found about 1,500 feet away, but not connected with the first occurrence. This also was diamond-drilled and its general outline partly determined. While some favourable assays were obtained, principally in copper, results to date on both discoveries indicate small deposits probably too low in grade to be profitable in themselves. Further work was interrupted by the discovery in October of a third occurrence, about 1,000 feet from the first deposit.

A fractured zone, covered by deep overburden, has been traced for 400 feet, with the ends still undetermined. Scattered surface trenches and pits show lenses of ore at several points, in vein-like occurrences, which are irregular in size and value. The greatest width so far uncovered shows 9 feet of high-grade copper and gold, while the average of several exposures shows 3 feet of 10 per cent. copper and \$10 gold. Some sections assay considerably higher in both metals.

Diamond-drilling is now determining the general features of the deposit, to be followed by underground work. Drilling results to date have shown irregularity, both as to widths and values, with general results somewhat below surface sampling. On the other hand, a number of holes have been quite satisfactory.

The area is interesting, and while some encouraging results have been obtained over comparatively narrow widths, further work is necessary before the future of the property can be predicted. Other portions of the property are now being electrically surveyed.

The company considered a large number of properties during the year, but no options were taken. Several prospecting parties were in various fields, but nothing of interest was found.

Nipissing Lorrain Mine

The Nipissing Mining Company, Limited, operated this property in South Lorrain township, district of Timiskaming, during the year with an average force of 60 men. Hugh Park is general manager, and Carl Train, superintendent.

The production and results of development are included in the Nipissing Mines report.

Northern Extension Mining Company, Limited

The company continued to operate the Agaunico property until the end of October with a force of a dozen men. D. L. Jemmett, of Cobalt, is president, and R. McNaughton is superintendent.

In March, two diamond-drill holes were drilled at a point 200 feet west of the shaft from the 100-foot level, 400 feet north and 350 feet south. Sub-

sequently a level was opened up at a depth of 136 feet, and the vein was drifted on for 175 feet west and 55 feet east of the station.

Four cars of cobalt ore were shipped during the year, with a total dry weight of 242,745 pounds. The lots included in these shipments were 48,863 pounds, assaying 17.29 per cent. cobalt; 64,468 pounds, assaying 13.19 per cent.; 57,555 pounds, assaying 19.015 per cent.; 50,769 pounds, assaying 20.9 per cent.; 14,792 pounds, assaying 19.66 per cent.; and 6,298 pounds assaying 15.32 per cent.

M. J. O'Brien, Limited

Miller Lake O'Brien Mine

The Miller Lake O'Brien mine, township of Nicol, district of Timiskaming, is owned and operated by M. J. O'Brien, Limited. J. G. Dickenson is general manager, and H. G. Kennedy, assistant manager. An average of 70 men is employed.

Production was confined to the last quarter of the year and amounted to 103,000 ounces of silver from 2,133 tons milled.

The following is taken from the assistant manager's report for 1926:—

The year just closed, though not a banner one from the point of silver production, has been one of improvement in mine condition, mill, and surface equipment.

The wonderful success attained in the exploration and development of the new 650-foot level resulted not only in proving the known ore-bearing system, Nos. 72, 73, and 74, to continue to and below this level, but in uncovering a new system of ore-bearing veins north of No. 5 winze which gives great promise of developing large bodies of a good grade of mill ore, with some shoots of high-grade. A new crosscut was driven from No. 1 vein on the 350-foot level to a point chosen for a new central winze, No. 6, which when completed will eliminate both No. 4 and No. 5 winzes as a means of operating all levels below the 350-foot.

The mill was completely overhauled and changed from stamp- to ball-milling. The necessary machinery was installed to give the plant a daily capacity of 80 to 100 tons, as against 30 to 35 tons in the old mill.

The necessary high-tension line, switch-house, and transformer equipment for the delivery of Northern Canada power to the property was installed so as to assure adequate additional power for all needs over and above that obtained from the Gowganda Power Company. The old shaft-house was demolished and replaced by a modern shaft-house containing a new sorting and preliminary crushing plant which will allow of maximum production.

O'Brien Mine

The O'Brien mine in Coleman township, district of Timiskaming, is owned and operated by M. J. O'Brien, Limited. J. G. Dickenson is general manager, and 150 men are employed besides a field force varying from 3 to 15 men.

The production in 1926 was 1,200,329 ounces of silver from 54,571 tons milled and 23 tons of high-grade ore. The concentrates shipped to Deloro smelter amounted to 1,757 tons.

Development work during the year consisted of 97 feet of sinking, 403 feet of raising, and 2,522 feet of drifts and crosscuts. Stopping amounted to 41,875 tons.

Ontario Solid Silver Mines, Limited

The property in Cane township, district of Timiskaming, was operated for the three months, May to August, with a force of seven men, and 146 feet of drifting was done on the 100-foot level east. James A. McRae is manager.

Paragon Hitchcock Mines, Limited

This company began rebuilding camps and overhauling plant on their property near Wabun station, district of Timiskaming, on the Elk Lake branch of the T. & N.O. Railway on October 21, 1925.

The company has a capital of \$2,000,000, and the head office is in Collingwood, Ont. The board of directors comprises: Donald McKay, president; Reginald Gilpin, vice-president; David Melville, secretary; Dr. Conley, Charles Pitt, Joseph Knox, W. R. Hitchcock, Richard Fisher, L. L. Robinson, and Joseph P. Welsh. Joseph P. Welsh is manager, and 15 men are employed.

Sinking began in the shaft at the 200-foot level in February, 1926, and a station was cut at the 330-foot level in August. A total of 295 feet of drifting and crosscutting was done on this level. The plant consists of two 60 h.p. boilers, a 600 cubic foot air compressor, and a 6- by 8-inch hoist.

One new, modern bungalow was erected, and alterations were made to several other buildings to place them in first-class condition.

Mine operations for the year comprised 1,757 feet of drifting, 672 feet of crosscuts, 67 feet of winzes, and 52 feet of raising. Only 44,660 cubic feet of stoping was done, owing to the fact that no milling was done until late in September. On the 350-foot level, a 482-foot crosscut was driven to provide a new tram route from No. 1 crosscut to the point chosen for No. 6 winze. The station for the new winze was excavated and 17 feet of sinking done. No work was done on the old level between 350 and 525 feet.

Parora Silver Mines Company, Limited

This company began surface work on three 20-acre claims, T.21,028-30, one mile south of Cobalt, in June with a force of three men. The property is situated in the southeast quarter of the south half of lot 8, concession V, Coleman township, district of Timiskaming. Joseph M. Hickingbottom is manager.

A log camp, 21 by 26 feet, was built. Five men were employed in the fall months in an effort to deepen a 40-foot shaft on the property. Considerable difficulty was experienced in handling the water without a plant.

Peterson Cobalt Mines, Limited

The authorized capital of this company is \$3,000,000 in shares of \$1 par value and is a reorganization of the Peterson Lake Cobalt Mining Company, Limited. The head office of the company is at 301 Royal Bank Building, Toronto. D. J. Russell is manager, and 25 men are employed. The property is in the township of Coleman, district of Timiskaming.

The company began pumping out the No. 3 shaft in August. Mining began September 15 and was continued until late in June, 1927. Development work comprised 70 feet of drifting and 150 feet of crosscutting on the 155-foot level. A winze was sunk 175 feet to the 330-foot level, and a winze started from that level on a 22-degree incline in order to follow the lower contact.

Plata Mines, Limited

Plata Mines, Limited, a subsidiary of Noranda Mines, Limited, took over the option on the Hylands-Johnston-Gardiner claims in Nicol township, district of Timiskaming, on June 1. They installed a mining plant and began mining operations in August. L. K. Fletcher was manager, and 30 men were employed.

New installations included a 720 cubic foot air compressor, a 125 h.p. motor, a 10- by 12-inch hoist, and a 42-foot headframe.

The shaft was deepened from 100 feet to 285 feet, and stations were cut at 200 feet and 265 feet. Crosscuts were driven 150 feet north and 130 feet south on the 200-foot level, and 250 feet north and 130 feet south on the 265-foot level.

Altogether some 2,800 feet of drifts and crosscuts were driven up to April 15, 1927, when the mine was closed. Most of this work was done on the 265-foot level, where 830 feet was driven partly on veins crossing the property in an east-southeast direction from the outlet of Miller lake.

Carl Reinhardt

The Crown Reserve mine in Coleman township, district of Timiskaming, was operated during the year under lease by Carl Reinhardt with a working force of 12 men.

In January, a hoist was installed on the 200-foot level at No. 29 vein near the north boundary, and the 250-foot level was put in shape for work. Stopping was continued on No. 29 vein between the 250- and 200-foot levels until the middle of March. A drift on a sublevel on No. 25 vein, at about the centre of the property, also opened up some mill rock. In the latter part of March exploratory drifting and raising at a number of points in the mine between the 150- and 300-foot levels resulted in a high-grade ore shoot being discovered in a vein, No. 45, paralleling the south boundary of the property which carried ore between the 100- and 200-foot levels for about 90 feet in length. Stopping of this ore continued throughout the summer and during September, the high-grade being shipped to the Deloro smelter and the mill rock by truck to the Cobalt Reduction Company.

Mill rock was also produced in May from vein No. 29 above the 250-foot level and from vein No. 44 above the 150-foot level. In September a raise was put up 40 feet from vein No. 44 from the 200-foot level, and further drifting done at the 150-foot level, some mill rock being produced from the latter work. In October a crosscut to the northwest from the west end of the Gear vein system on the 200-foot level was continued about 75 feet with negative results, and drifting continued up to the middle of September on vein No. 44 from the 150-foot level produced some mill rock.

In November a raise was put up 35 feet from the 200-foot level on vein No. 48 in the main east crosscut, and in December raising and drifting was done on the Gear vein above the 200-foot level with negative results.

The production was 72,695 ounces of silver, from 1,708 tons of ore.

John W. Shaw and Associates

The Chambers Ferland property in Coleman township, district of Timiskaming, was leased by John W. Shaw, Ernest Perry, A. A. Amos, and Joseph Gaynor in July, 1926.

During the second half of the year, it was worked with a force of three or four men, and $4\frac{3}{4}$ tons of high-grade ore were shipped, which ran about 1,200 ounces of silver to the ton.

Silver Bullion Mines, Limited

This company carried on operations at the property at Leroy lake, Nicol township, district of Timiskaming, from June 1 to September 15 with a force of 15 men. Murray D. Kennedy was manager. About 400 feet of drifting was done on the 275-foot level.

Tonapah Canadian Mines Company

During 1926, the Tonapah Canadian Mines Company exercised the option held on the Walsh, Gamble, and Hart claims and continued mining operations on these properties as well as on the Morrison property, which is held under option to purchase. The company is a subsidiary of the Tonapah Mining Company of Nevada. The officials are: Charles R. Miller, chairman of the board; W. L. Haehnlen, president; M. B. Huston, vice-president, in charge of operations; P. S. Bickmore, secretary-treasurer. The office of the company is at 572 Bullitt Building, Philadelphia. Ernest Craig is resident manager, and 90 men are employed. The properties are in Nicol township, district of Timiskaming.

The Northern Canada Power Company completed connections and began supplying electric energy about the middle of March, and a 1,500 cubic foot air compressor, driven by a 250 h.p. synchronous motor, was installed at the Walsh property, and a compressor about half this size at the Morrison property.

During the time that the mill was under construction, development work underground was reduced to a minimum in order to keep down the capital charge. However, during the year a total development footage, by drifting, crosscutting, and raising, of 1,575 feet was accomplished. With the mill now in operation it is proposed to enlarge the development campaign.

Considerable work was done on the Morrison and Stevens property during the year. On the Stevens property no ore was found, and the option was surrendered. On the Morrison property the development was continued throughout the year, and more development will be needed to determine its ultimate value.

The mill was completed and put in operation about the first of September and during the months of September and October treated ore in the dump on the Walsh property. During the month of November the mill treated ore from the Morrison property for a mill test of this ore, and in December treated ore from the mines on the Walsh property.

Trainmen Silver Mining Company, Limited

This company operated the McAndrew property in Gillies limit, district of Timiskaming, from May 15 to October 4 with a working force of six men. John J. McAndrew is manager.

The shaft was continued from a depth of 76 feet to 107 feet, and a 19-foot station was cut on the south side at the 100-foot level. A crosscut was continued 236 feet to the east.

Victory Silver Mines, Limited

This company operated their property in southeast Coleman, district of Timiskaming, with a working force of from six to ten men. W. D. Taylor is superintendent.

A crosscut was driven 40 feet east on the 177-foot level, and drifts were continued 240 feet southeast and 45 feet northwest. Ore was encountered in the vein 40 feet southeast of the crosscut for about 50 feet in length. An inclined raise was put up at this point, and a sublevel was established at 35 feet, where considerable work was done on patches of ore in the vein.

A shipment of 9 tons of high-grade ore, assaying about 1,400 ounces to the ton, was made in the spring of 1927, and test shipments of mill ore of 37 and 40 tons were made to the Cobalt Reduction Company.

Wigwam Silver Mines, Limited

This company did 435 feet of drifting and crosscutting on the 190-foot level below the adit in the early part of the year, with a force of 15 men. John W. Sanderson is manager, and Horace F. Strong, consulting engineer. This property is in Haultain township, district of Timiskaming.

W. J. Nine Silver Mines

W. J. Nine Silver Mines, a subsidiary of the Huronian Belt Company, carried on operations on the W. J. Nine claim in Nicol township, district of Timiskaming, during the year with a force of 20 to 25 men. Leonard Smith was superintendent.

A 720 cubic foot air compressor, driven by a 125 h.p motor, and an 8- by 10-inch hoist were installed. The shaft was continued from a depth of 55 feet to a depth of 400 feet, Keewatin-diabase contact being encountered at a depth of 188 feet. Lateral work totalling 1,838 feet was done during the fiscal year, mainly on the 400-foot level.

SOAPSTONE

Grace Mining Company, Limited

The Grace Mining Company, Limited, capitalized at \$5,000,000, divided into 1,000,000 shares of \$5 each, has the following officers and directors: Jas. S. Porter, president; C. G. Oelheim, secretary-treasurer; Jas. S. Porter, Chas. P. Blake, Edward J. Blake, F. W. Burow, Chas. Rossow, Chas. F. Rossow, Max E. Rossow, Geo. W. Butler, C. G. Oelheim, all of Buffalo, N.Y.; and A. H. Pierce, Hamburg, N.Y., directors.

The quarry and plant on Eagle lake in Kenora district were operated during the summer of 1926 and again for a short period in the spring of 1927, but operations had ceased prior to July, 1927, when the area was visited.

W. J. Richards of Kenora, Ont., was manager of the operations.

TALC

Asbestos Pulp Company, Limited

This company operated the mine and mill, near Madoc in Hastings county, continuously during the year. A crosscut was run 47 feet north from the shaft to the vein on the 325-foot level. Drifts were run 100 feet west and 200 feet east on the vein, and ore chutes were installed. The raise was completed from the 325-foot level to the escapement shaft.

Ore was supplied to the mill from the 325-foot level. The production for the year was 3,969 tons of ground talc. An average of 19 men was employed. Henry Taylor, Belleville, is president; and Roy Taylor, Madoc, is manager.

Geo. H. Gillespie Company, Limited

The Henderson mine in Hastings county, one mile from Madoc, and the mill in Madoc village, owned by the Geo. H. Gillespie Company, Limited, were in continuous operation during 1926, with a slight increase of production over 1925, 10,802 tons of ground talc being shipped. No new development work was carried on underground during the year, the ore coming from the 300-foot west stope.

An average of 21 men was employed.

Geo. H. Gillespie is president, and M. H. Ludwig is secretary-treasurer.

METALLURGICAL WORKS**Algoma Steel Corporation**

In 1926, the blast furnaces of the Algoma Steel Corporation at Sault Ste. Marie operated as follows: No. 2 furnace operated all year, producing 87,497 tons of pig. No. 3 furnace operated 218 days from March 29 to November 2, producing 122,190 tons. Nos. 1 and 4 furnaces were idle all year.

During the period that two furnaces were on blast, 195 men were employed, and about 100 men during the time that No. 2 furnace was the only unit in operation.

Jas. H. Bell is blast-furnace superintendent, with Jas. Dale as assistant superintendent.

Deloro Smelting and Refining Company, Limited

During the year 1926, the silver, arsenic, and cobalt oxide plants were operated on a somewhat restricted production basis on account of market conditions. Some important improvements in processes were made during the year with improved metallurgical results.

The metals department produced a slightly larger quantity of stellite, and it is hoped that the application of this alloy in various new directions may result in increased demands in the future.

The insecticide plant was operated during the greater part of the year, the principal product being calcium arsenate, the use of which has materially increased during the past two years.

The average number of men employed by the company during the year, including staff, was 325.

At the end of April, 1927, the company had operated for a full year without a "compensation" accident.

The officials of the company are: M. J. O'Brien, president; J. A. O'Brien, vice-president; F. A. Bapty, secretary-treasurer; S. F. Kirkpatrick, managing director; S. B. Wright, general manager; R. A. Elliott, superintendent.

International Nickel Company of Canada, Limited

The refinery at Port Colborne was operated continuously throughout the year.

Steel Company of Canada, Limited

The company's two furnaces at Port Colborne operated continuously during 1926. A total of 483,698 tons of ore from the Lake Superior region was treated. "A" furnace produced 110,338 tons and "B" furnace produced 171,966 tons, making a total of 282,304 tons of basic, malleable, and foundry iron.

A sintering plant, with a capacity of 4,000 tons per months of single shift, was constructed during the year. The flue dust is collected from the furnaces sintered into clinkers and returned to the furnaces.

On an average, 143 men were employed.

The officers of the company are: C. S. Wilcox, chairman; R. H. McMaster, president; H. S. Alexander, secretary; H. H. Champ, treasurer; R. G. Wells, works superintendent; H. G. Hilton, blast furnace superintendent.

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