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MINING OPERATIONS AND STATISTICS

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PROVINCE OF QUEBEC, CANADA

Department of Mines and Fisheries

BUREAU OF MINES

Honourable ONÉSIME GAGNON, *Minister* L. A. RICHARD, *Deputy-Minister*

A. O. DUFRESNE, *Director of Mines*

ANNUAL REPORT

of the

QUEBEC BUREAU OF MINES

for the calendar year

1935

PART A

Mining Operations and Statistics

QUEBEC

PRINTED BY R. PARADIS

PRINTER TO HIS MAJESTY THE KING

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PREFATORY NOTE

In the statistical tables, and in the review of the mining industry of the Province during the year, the term "production" is synonymous with "quantity sold, shipped, or used" and does not necessarily represent "output". The ore and other mineral products remaining as "stock on hand" at the end of the year are not included in the production figures.

The ton used is, throughout, that of 2,000 lb., unless otherwise stated, and the year referred to is the calendar year, ending December 31st. Values are given in Canadian funds.

The present report was preceded on March 6th by a statistical statement giving provisional figures of production, subject to revision. The figures in this volume supersede the provisional ones.

The Annual Report of the Bureau of Mines for 1935 is published in several parts, of which this volume is Part *A*. It is followed by Parts *B*, *C*, *D*, and *E*, which consist of geological reports with accompanying maps.

QUEBEC BUREAU OF MINES, July, 1936

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MINING OPERATIONS

IN THE

PROVINCE OF QUEBEC

DURING THE YEAR 1935

GENERAL REVIEW

It is gratifying to record a substantial increase in the Quebec mineral production in 1935 as compared with the preceding year. From a value of $31,310,752 it advanced to $39,141,734, a gain of 25 per cent. This is the highest value in any year except 1929 and 1930, and the third and most substantial increase since the low level of the depression period, which was reached by the production of 1932. Actually, the downward trend of the production curve continued during the first quarter of 1933, and the metal market reached its lowest ebb in March of that year; but in April, a decided improvement set in, which has continued since, with an appreciable acceleration in 1935.

The highest twelve-month production in the Province was recorded in 1929, when the total value attained $46,454,820. Toward the end of that year, market prices of metals commenced to fall, and they continued to do so through 1930 and the two following years. Thus, the average price of copper in New York for the year 1929 was 18.12 cents per pound, and in 1930, 1931, and 1932 it declined to 12.90, 8.12, and 5.55 cents, respectively, to reach an all-time monthly low of 4.775 cents per pound in January and February, 1933. The improvement that then set in brought the average price for 1933 to 7.03 cents, and, continuing to rise, it averaged 8.43 and 8.65 cents for 1934 and 1935, respectively. For the first quarter of 1936, the price was steady at 9.025 cents per pound. These downward and upward swings in the price of copper parallel closely the production curve for the mineral industry as a whole.

More than three-fifths of the value of the products of our mines in 1935 is to be assigned to the metal group, with a total of $23,804,792, which is 23.6 per cent higher than in 1934. Metal mining in the Province has been expanding very rapidly since 1928, the first full year of production from the Western Quebec mines, when the value of our metallic products advanced to $8,127,132, as compared with $2,412,268 in 1927 and a previous all-time record of $2,855,120 in 1918. During the past four years, these mines have contributed between 50 and 60 per cent of the total value of our mineral production.

Significant also in the year under review was a substantial increase in production of non-metallics, or "industrial minerals" as they are now com-

monly termed, to distinguish them from building materials. The proportional increase in value, amounting to 34.1 per cent, was even greater than for the metals. It may be added that returns, as yet incomplete, of production of these industrial minerals for the first quarter of 1936 indicate that the improvement is being well maintained and that their value for the calendar year 1936 will exceed very appreciably that for 1935.

SUBDIVISION OF QUEBEC'S MINERAL PRODUCTION FOR THE YEARS 1931-1935

YEAR	METALS	%	NON-METALLICS	%	BUILDING MATERIALS	%
1931.....	$12,367,932	34	$ 5,516,899	15	$ 18,166,535	51
1932.....	13,914,089	54	3,671,634	14	8,097,343	32
1933.....	16,360,011	58	6,043,308	22	5,761,221	20
1934.....	19,258,094	61	6,579,453*	21	5,473,205*	18
1935.....	23,804,792	61	8,824,178	22	6,512,764	17

* See footnote to main Table of Mineral Production, page 7.

TABLE OF ANNUAL VALUE OF MINERAL PRODUCTION SINCE 1898

YEAR	VALUE	YEAR	VALUE
1898.....	$ 1,673,337	1917.....	$16,189,179
1899.....	2,083,272	1918.....	18,707,762
1900.....	2,546,076	1919.....	20,813,670
1901.....	2,987,731	1920.....	28,392,939
1902.....	2,985,463	1921.....	15,522,988
1903.....	2,772,762	1922.....	18,335,153
1904.....	3,023,568	1923.....	21,326,314
1905.....	3,750,300	1924.....	18,952,896
1906.....	5,019,932	1925.....	23,824,912
1907.....	5,391,368	1926.....	25,740,002
1908.....	5,458,598	1927.....	29,124,110
1909.....	5,552,062	1928.....	37,325,237
1910.....	7,323,281	1929.....	46,454,820
1911.....	8,679,786	1930.....	41,158,740
1912.....	11,187,110	1931.....	36,051,366
1913.....	13,119,811	1932.....	25,683,066
1914.....	11,732,738	1933.....	28,164,540
1915.....	11,765,873	1934.....	31,310,752
1916.....	13,287,024	1935.....	39,141,734

TABLE OF THE MINERAL PRODUCTION OF THE PROVINCE OF QUEBEC DURING 1935

SUBSTANCE	No. of workmen	Wages	Quantity	Value in 1935	Value in 1934
		$		$	$
METALLICS					
Chrome, tons	5	1,257	346	9,371	1,098
Copper, lb	1,850	2,638,540	79,050,906	6,162,350	5,487,948
Gold, oz	3,369	3,771,387	470,545	16,558,478 (1)	13,458,554 (1)
Lead, lb			2,047,624	64,156	
Molybdenite	19	1,983			
Selenium, lb			206,421	396,328	73,146
Silver, oz			668,836	433,333	223,187
Tellurium, lb			1,708	3,417	
Titaniferous iron ore, tons	36	1,950	2,288	16,402	14,161
Zinc, lb	163	76,635	5,322,844	164,955	
Assessment work on claims	503	452,850			
Sub-totals	5,945	$6,944,602		$23,804,792	$19,258,094
NON-METALLICS					
Asbestos, tons	1,962	598,520	210,467	54,614	4,936,326
Feldspar, tons	50	19,885	7,002	63,075	78,853
Graphite, tons			21	1,281	6,426
Industrial lime, tons	266	48,233	105,041	587,680	546,233
Industrial limestone, tons			124,783	144,236	137,651
Kaolin				1,520	504
Magnesitic dolomite	179	15,791		486,084	382,927
Marl, tons			18,962	12,325	2,014
Mica, lb	162	43,078	745,790	74,894	85,967
Mineral water, gals	17	5,050	126,616	15,113	16,116
Ochre and iron oxide, tons	46	25,276	5,257	75,388	64,566
Peat		1,360		2,958	
Phosphate, tons			116	1,043	683
Pyrite, tons			15,042	47,779	50,398
Quartz and industrial sand, tons	131	64,208	50,258	224,135	226,492
Talc and soapstone	55	14,305		32,053	44,297
Sub-totals	2,874	$2,033,706		$8,824,178	$6,579,453 (2)
BUILDING MATERIALS					
Building lime, tons			11,089	88,981	95,008
Building limestone, tons	1,239	409,480	1,004,551	943,145	825,941
Cement, barrels	292	330,362	1,751,012	2,472,008	2,294,846
Clay products :					
Brick, M	615	182,370	28,385	439,143	460,998
Other products				152,499	170,817
Granite, tons	920	356,988	131,096	800,685	488,477
Marble, tons	67	50,653	6,244	31,071	35,712
Sand and gravel, tons	3,255	759,480	5,268,987	1,442,468	979,827
Sand-lime brick, M	23	5,903	1,490	19,226	35,299
Sandstone, tons	241	62,576	104,660	121,864	85,577
Slate and shale, tons	2	336	1,079	1,674	703
Sub-totals	6,654	$2,158,148		$6,512,764	$6,473,205 (2)
TOTALS	15,473	$11,136,456		$39,141,734	$31,310,752

(1) Value in Canadian funds. The value at the standard rate of $20.671834 amounts to $9,727,028 for 1935 and $8,064,144 for 1934.

(2) In the Table of Mineral Production appearing in the Annual Report for 1934, the total value of Non-Metallics for that year is shown as $5,895,569, and that of Building Materials as $6,157,089, their sum being the same as that for these two items as they appear in the present table. The discrepancy is due to the fact that production of lime and limestone, hitherto all classed as Building Materials, is now sub-divided as 'industrial lime and limestone' included with the Non-Metallics, and 'building lime and limestone' included with the Building Materials. In the above table, the 1934 figures have been revised to conform with the new practice.

Recovery in the building materials section of the industry was below expectations. There was an increase of 19 per cent in the value of the production, but the total, $6,512,764, is still very far below the peak of $18,534,165 reached in 1929.

That interest in the mineral potentialities of the Province was well maintained is indicated by the fact that no fewer than 11,995 claims were staked during the calendar year 1935, an increase of 598 as compared with 1934. The average number staked per year for the five-year period 1931-35 was 10,300, and for the period 1926-30 it was 10,700. The standard claim in unsurveyed territory has an area of 40 acres.

Throughout the year there was intensive prospecting and exploration activity in mineral areas in various sections of the Province, and particularly in Eastern Quebec, Rouyn-Harricana, Pascalis-Louvicourt, Guillet township, and in the northern regions of Madeleine (Rose) Lake, Opemisca, and Chibougamau. In the three last named fields, development both of old and newly discovered deposits was particularly active.

In the Madeleine Lake district, *Prospectors Airways, Limited,* continued their work in Currie township, on the discovery made on the south side of the lake in 1934. The property, which consists of 46 claims, is described by G. S. MacKenzie in a preliminary report which appeared in Part *A* of the Annual Report of the Bureau for 1934, and a more detailed account by the same author is included in Part *B* of the Annual Report for 1935. Early in 1936, the claims were transferred to *Lake Rose Mines, Limited*, a subsidiary of Prospectors Airways, organized to develop the property.

In Desjardins township, which is immediately west of Currie, the *Florence River (Quebec) Gold Mines, Limited,* acquired, and commenced development work on, a group of claims on which a gold discovery had been made in the fall of 1935.

In the Opemisca Lake area, *Opemiska Copper Mines, Limited,* continued development of their property in Lévy township. A winter road, 137 miles in length, was opened during the summer and fall from Rouleau Siding, near Langlade, to the property, and over this a mining plant was taken in during the winter. Shaft sinking was started in March, 1936. Lévy township is 15 miles southwest of McKenzie township.

In the Chibougamau region, a great deal of development and exploration work was carried out, principally by three operators: Consolidated Chibougamau Goldfields, Limited; McIntyre-Porcupine Mines, Limited; and McKay (Quebec) Exploration, Limited.

Consolidated Chibougamau Goldfields, Limited, deepened the shaft on their Cedar Bay, McKenzie township, property to 522 feet, cut stations at the 125-, 250-, 275-, and 500-foot levels, and began lateral work from the 250- and 375-foot stations. This work was continuing at the end of the year.

McIntyre-Porcupine Mines, Limited, carried out a programme of diamond drilling at Gwillim lake, on the Rangeley-Welson claims, following which they relinquished their option on this group. Early in 1936, interests connected with Mining Corporation of Canada took an option on the property.

McKay (Quebec) Exploration, Limited, did a great deal of surface work on various groups of claims in Scott and Obalski townships. The results of this work decided the Company to undertake some diamond drilling on four of these groups.

In these three fields, some 200 men were employed most of the year. Permanent camps have been established on the several properties under development.

A review of mining operations and development during the year in Western Quebec, by R. H. Taschereau, Inspector of Mines, will be found in a separate chapter of this volume (pp. 42-78).

METALS

For each of the past five years, an increase has been recorded in the value of metals produced from Quebec mines. Comparing the first and the last year of this period, the value has almost doubled, from $11,814,979 in 1931 to $23,056,076 in 1935, which was more than 22 per cent higher than the 1934 output. Metals account for 61 per cent of the total value of the 1935 production, with gold alone representing 42 1-3 per cent.

The average price of gold in 1935, in Canadian funds, was $35.19 per ounce of fine metal, as against $34.50 in 1934.

The market for base-metals showed improvement. Copper prices strengthened in London, where the bulk of the Quebec copper is shipped, from an average of £31.26 per long ton in January to a maximum of £39.61 in October, and an average for the whole year of £35.43, as compared with £33.32 in 1934. In the case of both lead and zinc, the price at the close of the year was appreciably higher than at the beginning. Despite this, however, the average price for the year of both metals on the Montreal market was slightly lower in 1935 than in 1934.

AVERAGE YEARLY PRICES OF BASE-METALS, 1930-1935

(Figures from Report of Dominion Bureau of Statistics)

METAL	MARKET	UNIT	1930	1931	1932	1933	1934	1935
Copper	New York	Cents per lb	12.982	8.116	5.555	7.025	8.428	8.649
	Montreal	" " "	14.980	10.006	7.516	8.681	8.220	8.488
	London	£ per long ton	61.528	42.093	35.962	36.359	33.319	35.430
Lead	New York	Cents per lb	5.496	4.168	3.511	3.705	3.409	3.925
	Montreal	" " "	5.517	4.243	3.180	3.636	3.860	4.065
	London	£ per long ton	18.007	12.958	11.913	11.670	10.935	14.238
Zinc	Saint-Louis	Cents per lb	4.556	3.640	2.876	4.029	4.158	4.328
	Montreal	" " "	5.084	3.961	3.724	4.488	4.059	3.992
	London	£ per long ton	16.570	12.215	13.545	15.666	13.657	14.082

NOTE. For 1934 and 1935, London market prices transposed into Canadian funds (cents per pound) were respectively as follows: Copper, 7.4193 c. and 7.7954 c.; lead, 2.4364 c. and 3.1332 c.; zinc, 3.0436 c. and 3.0990 c.

Metals are likely to remain the chief contributor to our mineral production, in point of value, for many years to come. The prospects for a greatly increased gold output are especially encouraging as new deposits in Western Quebec continue to be discovered and developed into producing mines. That this anticipation is well founded will be evident from the fact

that returns from operators show that gold production for the first three months of 1936 is 50 per cent higher than for the corresponding period in 1935.

Attention is called to the great increase in the production of selenium, from 48,764 pounds in 1934 to 206,421 pounds in 1935. The selenium is recovered as a by-product in the refining of copper anodes, shipped from the Noranda smelter to the plant of Canadian Copper Refiners, Limited, at Montreal East. Recovery of selenium at this plant commenced in November, 1934, so that 1935 was the first complete year of operation. There was also an initial production of 1,708 pounds of the related metal, tellurium, at the Montreal East refinery during 1935.

It is interesting to note that in March 1936 the St. Lawrence Alloys, Limited, was incorporated under a Dominion charter. The Company will establish metallurgical works at Beauharnois, principally to manufacture ferro-alloys; they have secured land and closed a contract for a substantial block of hydro-electric power. They will manufacture all grades of ferro-silicon, high and low carbon ferro-manganese, and they also intend to produce the metal beryllium and its alloys, from beryl of Canadian sources.

METAL PRODUCTION OF WESTERN QUEBEC, 1927-1935

YEAR	ORE MILLED (Tons)	SHIPMENTS						
		COPPER (Pounds)	GOLD (Ounces)	SILVER (Ounces)	ZINC (Pounds)	SELENIUM (Pounds)	TELLURIUM (Pounds)	VALUE $
1927...	7,570	463,471	741	2,611	.....	.....	.....	76,674
1928...	271,614	33,019,311	53,397	185,579	.....	.....	.....	6,022,692
1929...	498,280	51,101,054	86,162	333,792	.....	.....	.....	11,210,882
1930...	980,419	75,435,415	141,747	555,578	9,754,160	.....	.....	13,286,327
1931...	1,100,121	62,018,221	299,869	509,571	.....	.....	.....	11,814,979
1932...	1,331,104	60,584,116	401,005	605,258	.....	.....	.....	13,472,311
1933...	1,886,617	63,417,206	382,834	451,732	.....	22,131	.....	15,864,182
1934...	2,436,233	69,057,942	390,061	455,022	.....	48,764	.....	18,869,825
1935...	2,809,654	74,471,124	469,560	504,985	.....	206,421	1,708	23,056,076
Total..	11,321,612	489,567,860	2,225,376	3,604,128	9,754,160	277,316	1,708	$113,673,948

DIVIDENDS PAID BY MINING COMPANIES OPERATING IN WESTERN QUEBEC (TO JANUARY 1ST, 1936)

COMPANY	AUTHORIZED CAPITAL (shares)	DATE OF FIRST DIVIDEND	DIVIDENDS, 1935		TOTAL DIVIDENDS (To end of 1935)
			TOTAL	RATE PER SHARE	
Noranda Mines Ltd....	2,250,000	Jan. 2nd, 1930	$4,479,544.00	$2.00	$21,980,633.13
Siscoe Gold Mines, Ltd.	5,000,000	March 31st, 1932	972,328.62	0.21	2,993,455.34
McWatters Gold Mines Ltd.....	2,000,000	Dec. 18th, 1935	93,025.30	0.05	93,025.30

NON-METALLICS

There was a notable increase in the production of non-metallics, or so-called industrial minerals. The total value of these products for the year under review was $8,824,178, an advance of $2,244,725, or 34.1 per cent, as compared with the previous year (1).

(1) See footnote to Table of Mineral Production, page 7.

Nearly 94½ per cent of the gain was due to a very marked improvement in the asbestos industry, and, as indicating the continuance of an active demand for asbestos, it is encouraging to note that shipments for the first three months of 1936 are 47 per cent higher than for the corresponding period in 1935.

Magnesitic-dolomite and industrial lime and limestone were also produced in much larger amount than in 1934. There was a decreased output of feldspar, mica, pyrite (sulphur ore), quartz, and soapstone, but for each the falling off was small.

BUILDING MATERIALS

Recovery in the building industry is slow, and, as a consequence, there was little improvement during the year in the demand for minerals or rocks used as, or manufactured into, building materials. The output of such materials had a value of $6,512,764, as against $5,473,205 in the previous year, an increase of 19 per cent (1). This is distinctly encouraging as being the first increase to be recorded since the very sharp decline set in during 1932. That the Province has resources in mineral building-materials ample to meet all demands of the building industry will be evident from the fact that production during the period 1928-31, inclusive, averaged $17,937,442 in value each year.

(1) See footnote to Table of Mineral Production, page 7.

MINING OPERATIONS IN 1935

METALS

COPPER

Production of copper, in smelter anodes, concentrates, and ore, amounted to 79,050,906 pounds, valued at $6,162,350. Compared with the 1934 production of 73,968,545 pounds, valued at $5,487,948, this is an increase of 6.9 per cent in quantity and of 12.3 per cent in value.

At the beginning of 1935, the world's copper market was very weak, owing to over production of the metal. For the year 1934, the average price of copper in London, where the Quebec output is marketed, was £33.319 per long ton, but for the month of February, 1935, it averaged only £30.244, and on the 22nd of that month the quotation was as low as £26.875 per long ton. In March, the interests controlling the world's copper supplies met to consider the situation, and an agreement was reached to curtail production of the metal, the arrangement to remain in force until July, 1938. This action had a beneficial effect. The price of copper rose gradually to a maximum monthly average of £39.609 in October, and an average for the whole year of £35.430. For the month of March, 1936, the price was still higher, at £40.227 per long ton.

As a substantial proportion of the gold, and the whole of the nickel, produced in Canada is derived from ores carrying copper, Canadian producers of copper are not subject to curtailment of output so long as prices of gold and nickel remain at their present levels.

QUEBEC PRODUCTION OF COPPER, 1925-1935

YEAR	QUANTITY (Pounds)	VALUE $	YEAR	QUANTITY (Pounds)	VALUE $
1925.....	2,628,417	$ 277,083	1931.....	68,376,985	$ 5,723,154
1926.....	2,674,058	368,886	1932.....	67,336,692	4,296,216
1927.....	3,119,848	407,146	1933.....	69,943,882	5,214,177
1928.....	33,697,949	4,909,792	1934.....	73,968,545	5,487,948
1929.....	55,337,169	10,019,901	1935.....	79,050,906	6,162,350
1930.....	80,310,363	10,425,891			

Returns of production of copper, as metal, concentrate, or ore, were received from five operators, as follows: *Noranda Mines, Limited,* Rouyn township; *Consolidated Copper and Sulphur Company, Limited,* Eustis, Ascot township; *Greene Stabell Mines, Limited,* Dubuisson township; *Robb-Montbray Mines, Limited,* Montbray township; and *Bussières Mining Company, Limited,* Bourlamaque township.

The two first named operators were responsible for more than 99 per cent of the 1935 production. The balance was made up of a number of small shipments of copper concentrate recovered as a by-product in milling the ores of the other mines mentioned, which are all gold mines.

Consolidated Copper and Sulphur Company, Limited, operates the Eustis mine, situated eight miles south of Sherbrooke, in lots 2 and 3 of range IX,

Ascot township. Throughout 1935, the mine was worked continuously day and night, with two shifts.

The Eustis deposit was discovered in 1865, and, with the exception of a two-year period between 1877 and 1879, the mine has been operated continuously since that time. Formerly known as the Hartford mine, it was operated successively by General Adams, U.S.A. (1866-72), the Canadian Copper and Sulphur Company (1872-77), and the Orford Nickel and Copper Company (1879-85). In 1886, the property was acquired by W. E. C. Eustis, of Boston, and, as the Eustis mine, was operated by the Eustis Mining Company until 1927, in which year the Consolidated Copper and Sulphur Company, Limited, was organized to operate this and other mines in the vicinity.

In the course of the year, stage hoisting was adopted at the Eustis. From the 6,350-foot level, a second incline shaft (No. 2) is being sunk at a distance of fifty feet to the west of the main incline shaft, for the purpose of hoisting to that level the ore mined below it. At the end of the year mining was being carried on at a depth of 6,515 feet below the entrance adit, which is on the 500-foot level.

The mining and milling methods at the Eustis are described in recent papers by Fred W. Snow, mine manager, H. F. Brownbill, mine captain and engineer, and H. A. Baxter, mill superintendent (1).

Some work was done during the year on another property in Ascot township by *Poulin Gold Mines, Limited*, who acquired the mining rights on lots 2*B*, 3, 4*D*, and parts of 2*D* and 3*A*, of range XI, where the old Suffield mine is situated. The mine was de-watered and some ore taken out and shipped to the ore-dressing laboratories of the Mines Branch, Department of Mines, at Ottawa, for a test to determine the best method of treatment.

Details of mining operations and development in Western Quebec copper mines are given in the report of R. H. Taschereau on pages 42-78 of this volume.

GOLD AND SILVER

GOLD

Quebec mines in 1935 produced 470,545 ounces of gold, having a value of $16,558,478. This compares with 390,103 ounces valued at $13,458,554 in the previous year, and is an increase of 20 per cent in quantity and 23.8 per cent in value. The percentage value increase is the higher owing to the fact that the average exchange rate on the Canadian dollar was lower in 1935 than in 1934. As a consequence, the average value of gold, in Canadian funds, was $35.19 per ounce in 1935, whereas it had been $34.50 per ounce in 1934. The United States dollar has a fixed value, being pegged to gold at $35.00 per fine ounce. Its weight is 15 5-21 grains, of nine-tenths-fine gold.

Gold is far and away the most important single item in our table of mineral production. In 1935, as already stated, it accounted for 42 1-3 per cent of the total value. By way of contrast, we find that for the ten

(1) Can. Inst. Min. and Met., *Trans.*, Vol. XXXIX, 1936, pp. 70-97.

years 1917-1926 which immediately preceded the coming into production of the mines in Rouyn township, the output had a value little more than one-tenth of one per cent of the total.

Fifteen mines contributed to the 1935 gold production: fourteen in Western Quebec, and one in Portneuf county. The latter is the Tétreault, a zinc-lead mine whose ore carries a little gold and silver. Of the Western Quebec mines, three were brought into production during the year under review: the Arntfield, the Canadian-Malartic, and the Lamaque. The two last named poured their first gold brick in May, and the Arntfield followed in August. Several other gold mines were nearing the producing stage at the close of the year, and of these the Shawkey, in Dubuisson township, started production early in 1936. Since the close of the year, also, Perron Gold Mines, Limited, have started construction of a 100-ton mill to take the place of their original 20-ton plant.

QUEBEC GOLD PRODUCTION, 1898-1935

YEAR	AMOUNT (Ounces)	VALUE $	YEAR	AMOUNT (Ounces)	VALUE $	YEAR	AMOUNT (Ounces)	VALUE $
1898...	370	6,500	1911..	590	11,800	1924..	881	18,372
1899...	272	4,916	1912..	980	19,924	1925..	1,834	37,909
1900...	*nil*	*nil*	1913..	738	14,794	1926..	3,679	76,070
1901...	80	1,440	1914..	998	21,064	1927..	8,331	172,214
1902...	300	5,400	1915..	1,158	23,082	1928..	60,006	1,240,435
1903...	55	1,000	1916..	632	13,041	1929..	90,798	1,876,900
1904...	20	160	1917..	1,116	22,570	1930..	141,747	2,930,480
1905...	*nil*	*nil*	1918..	1,578	32,615	1931..	300,075	6,476,103
1906...	*nil*	*nil*	1919..	1,446	29,420	1932..	401,105	9,417,576
1907...	*nil*	*nil*	1920..	935	19,346	1933..	382,886	10,950,540
1908...	*nil*	*nil*	1921..	648	12,317	1934..	390,103	13,458,554
1909...	*nil*	*nil*	1922..	*nil*	*nil*	1935..	470,545	16,558,478
1910...	*nil*	*nil*	1923..	667	13,340			

Details of operations and development at the gold mines of Western Quebec are given in the report of R. H. Taschereau, on pages 42-78 of this volume.

ALLUVIAL GOLD (1):

In 1934, there had been a renewal of interest in the placer-gold deposits of Beauce county, but in 1935 the only placer gold mining operations reported were those conducted at Rivière des Plantes by Geo. A. Dion, which resulted in a small production of gold.

SILVER

Quebec's silver production consists entirely of metal recovered as a by-product in the treatment of the complex copper-gold and gold-quartz ores of Western Quebec, of the copper-sulphur ores of the Sherbrooke region, and of the zinc-lead sulphide ores of Portneuf county, all of which contain silver in small amount.

(1) By Eugène Larochelle, Inspector of Mines.

In 1935, the silver thus recovered totalled 668,836 ounces, valued at $433,338, a substantial increase—of 42 per cent in quantity and 94 per cent in value—over the 1934 production of 470,254 ounces, valued at $210,151. The average price of silver on the New York market, where practically the whole of the 1935 production found its way, was 64.79 cents per ounce, Canadian funds, whereas in 1934 it had been only 47.973 cents.

The average New York price of silver for January, 1935, was 54.418 cents per ounce. On heavy buying by the United States government, the price rose to an average of 74.356 cents in May, after having reached a maximum of 81.00 cents on April 26th. The price then declined gradually to an average of 58.42 cents per ounce in December. In January, 1936, it had fallen still further, to 47.25 cents.

LEAD

During the year, ore containing 2,047,624 pounds of lead was shipped from the Tétreault mine, in Portneuf county, operated by the *Tétreault Estate*. This was the first production of lead in the Province since 1929, when nearly five and a half million pounds were produced from this mine, at that time operated by the British Metal Corporation (Canada), Limited.

SELENIUM

In 1935, Canada was one of the world's important producers of selenium metal, the Provinces of Quebec, Ontario, and Manitoba contributing to the output. Of the three, Quebec had the highest production: 206,421 pounds, valued at $396,328.

In Quebec, selenium is produced at the plant of *Canadian Copper Refiners, Limited*, at Montreal East, as a by-product in the refining of copper anodes shipped to that plant from the Noranda smelter.

Mineral Trade Notes for October, 1935, published by the United States Bureau of Mines, gives the following information regarding the uses of selenium:

> "The principal use is in the glass industry. Selenium salts produce a whole range of colors in glass, from yellow to deep garnet-red. They are also used to bleach cheap kinds of glass. The green hue imparted by the iron impurities in raw materials is neutralized by the red coloration produced by a small admixture of selenium. An important commercial use is in the manufacture of 'cadmium red' pigments which are increasingly popular in Germany and for which large outlet has been opened recently by adoption of these shades of red by the Reichspost. All mail boxes, trucks, collection vehicles, and autobusses operated by the German post have been repainted cadmium red over yellow, the old post-office color. As cadmium red is made from cadmium sulphide and selenium (more recently by precipitating cadmium salts with a mixture of barium sulphide and barium selenide), the outlet for selenium seems to be considerable in this connection. A large industry, still in its infancy in Germany, the television and the 'electric eye' with its unlimited possibilities in in-

dustry and transportation, promises to open up enormous outlets for this peculiar element.

"Until October, 1934, the United States accounted for practically the entire German imports of selenium. After the American producers withdrew from the European market under the pressure of growing domestic requirements, the center of gravity shifted over to the Swedish source represented by the Bolidens Gruvaktienbolag, Stockholm, which became the sole supplier of Germany and of most other European markets. The German requirements for selenium amount to about 5 tons a month, or 60 tons a year.

"Significant also is the sweeping development in selenium rectifiers in the electrical industry for converting alternating into direct current. Such rectifiers have in the past been used mostly for small electric effects in radio and telegraphic apparatus, but are beginning to invade the higher tensions and strengths of current, up to 440 volt and 40 amperes.

"Other uses of selenium are in various alloys, including alloy steels, as a catalyst for certain special reactions, and to some extent in medicine".

ZINC

There was a slight improvement in the zinc situation during the year. The price of the metal on the London market rose from an average of £13.657 per long ton in 1934 to £14.082 in 1935. In Canadian funds, this is equivalent to 3.044 cents, and 3.099 cents, per pound, respectively.

The production of zinc recorded for 1935, amounting to 5,322,844 pounds, came from the Tétreault mine, in Portneuf county. This is the first production of zinc in the Province since 1930, when Amulet Mines, Limited, made some shipments from their mine in Dufresnoy township, Abitibi county. Since that time, however, the mine has been closed down, awaiting a better market for zinc.

MISCELLANEOUS METALS

Chromite

The production of chromite in 1935 was 346 tons, valued at $5,371. In 1934 it had been 71 tons, valued at $1,098.

The ore was shipped without concentration or other treatment by the *Asbestos Corporation, Limited,* from their Beaver mine, in Coleraine township, for use in the manufacture of refractories.

Tellurium

This year, a new item—tellurium—makes its first appearance in our table of metal production, with an initial output of 1,708 pounds, valued at $3,416. Like selenium, this metal is recovered in the course of refining Noranda copper anodes, at the plant of *Canadian Copper Refiners, Limited,* at Montreal East.

The market for tellurium is restricted, but it bids fair to become more important, as research is finding a number of new uses for the metal. Two of its more recent applications are in rubber fabrication and as an alloy with lead. To rubber, it gives greater resistance to both stretching and abrasion. Lead containing a small amount (0.02 to 0.08 per cent) of tellurium has increased toughness under strains produced by frost, vibration, or water-hammer, and also greater resistance to corrosion (1).

Titaniferous Iron Ore

Returns of shipments of ilmenite from the Saint-Urbain deposits were received from two operators, the *Baie Saint-Paul Titanic Iron Ore* and *Canadian Pyrite, Limited.* They totalled 2,288 tons, valued at $16,400, a slight increase as compared with 1934, when 2,023 tons were shipped, valued at $14,161.

Almost the whole of the 1935 output went to the Titanium Alloys Manufacturing Company, at Niagara Falls, N. Y., where the ilmenite is used in making ferro-titanium. The balance was a trial shipment to a plant in the United States, for use in the manufacture of titanium-white pigments.

According to *Mineral Trade Notes*, April, 1936, and *Information Circular No. 6881*, both issued by the United States Bureau of Mines, the world's production of titanium-bearing pigments has expanded to about 200,000 tons annually, representing a titanium dioxide content of 50,000 tons, of which 35,000 tons is manufactured in the United States. It is further stated that the ilmenite used in the United States for the manufacture of these pigments is largely of foreign origin, coming from British India and Norway. In 1935, the United States imported 115,871 tons of titanium minerals, representing an increase of 517 per cent as compared with the tonnage imported in 1927.

NON-METALLICS (*)

ASBESTOS (†)

Statistics of Production, Exports, Etc.

The year 1935 witnessed a distinct improvement in the asbestos industry of the Province. Sales or shipments of unmanufactured asbestos were the largest in the past five years, totaling 210,467 tons valued at $7,054,614, as compared with 155,980 tons and $4,936,326 in 1934, an increase of 34.9 per cent in quantity and 42.9 per cent in value. The average price of the asbestos marketed in 1935 was $33.52 per ton, as against $31.65 in 1934.

According to returns received from the several operating companies, a total of 2,852,118 tons of asbestos-bearing rock was mined, of which

(1) *The Mineral Industry during 1934*, Vol. 43, p. 624; McGraw-Hill Book Company, New York.

(*) Unless otherwise stated, notes on Non-Metallics are by Paul E. Bourret, Inspector of Mines.

(†) By Eugène Larochelle, Inspector of Mines.

595,124 tons, or 20.9 per cent, was sent to the dumps as barren rock. The mill-rock thus amounted to 2,256,994 tons, which yielded 213,285 tons of fibre, valued at $6,903,953, an average of 149.56 lb. per ton of rock mined, or 7.48 per cent. At the prices for asbestos prevailing during the year, the rock mined had a value of $2.421 per ton.

Exports of unmanufactured asbestos amounted to 200,211 tons, valued at $6,885,657, an increase of 26.5 per cent in volume, and of 34.2 per cent in value, over the preceding year's exports. The total was made up almost equally of 'crude and fibre' (100,186 tons) and 'shorts' (100,025 tons), the former showing a gain of 20.3 per cent, and the latter of 33.4 per cent, over the 1934 exports.

The greater part of our asbestos exports was consigned direct to the United States. Table 6 and the following comments are reproduced from *Mineral Market Report* No. M. M. S. 461, published by the United States Bureau of Mines:

> "Imports of unmanufactured asbestos amounted to 166,585 tons, valued at $5,125,413, a gain of about 38 per cent in quantity and nearly 52 per cent in value compared with 1934.
>
> "Imports of short-fiberized chrysotile from Cyprus have increased greatly during recent years. Prior to 1933 they were negligible, in 1933 they amounted to 2,274 tons, in 1934, 2,463 tons, and in 1935, 4,628 tons. Imports from Russia show a decided increase over 1934. Canada is the principal source of the shorter grades, but a larger supply of crude fibers is obtained from Africa than from Canada".

Table 7 shows the source of unmanufactured asbestos imported by Japan for the years 1933, 1934, and 1935. Taking into consideration the imports shown as coming from the United States, which doubtless consist for the greater part of asbestos of Canadian origin, we estimate that Canada supplied about 65 per cent in volume of the asbestos requirements of Japan in 1935. Nevertheless, the fact that Canadian asbestos has to meet a very serious competition from Africa, Russia, and Cyprus must not be overlooked. This is further indicated by Table 8, which gives the source of origin of asbestos imported into the United Kingdom during 1935.

TABLE I

PRODUCTION OF ASBESTOS IN THE PROVINCE OF QUEBEC FOR 1935

GROUPING OF GRADES	SHIPMENTS AND SALES		AVERAGE VALUE PER TON
	TONS	VALUE	
Crudes	2,278	$ 539,558	$ 236.86
Fibres	102,270	4,873,255	47.65
Shorts	105,919	1,641,801	15.50
TOTALS	210,467	$ 7,054,614	$ 33.52
Sand, gravel, and stone (waste rock only)	3,025	$ 2,053	$ 0.68
TOTALS	213,492	$ 7,056,667	

Quantity of rock mined during the year 1935: 2,852,118 tons.
Quantity of rock milled during the year 1935: 2,256,994 tons.

TABLE 2

PRODUCTION OF ASBESTOS IN THE PROVINCE OF QUEBEC FOR 1934

GROUPING OF GRADES	SHIPMENTS AND SALES		AVERAGE VALUE PER TON
	TONS	VALUE	
Crudes	1,663	$ 409,853	$246.45
Fibres	77,465	3,456,399	44.62
Shorts	76,852	1,070,074	13.92
TOTALS	155,980	$ 4,936,326	$ 31.65
Sand, gravel, and stone (waste rock only)	4,672	$ 3,480	$ 0.74
TOTALS	160,652	$ 4,939,806	

Quantity of rock mined during the year 1934: 2,320,750 tons.
Quantity of rock milled during the year 1934: 1,935,129 tons.

TABLE 3

TABLE OF DATA OF THE QUEBEC ASBESTOS INDUSTRY FOR THE YEARS 1911-1935

YEAR	FIBRE SHIPPED (Tons)	TOTAL VALUE	AVERAGE VALUE (Per ton)	FIBRE PRODUCED (Tons)	ASBESTOS CONTENT PER TON OF ROCK (Pounds)	AVERAGE VALUE OF CONTENT OF ROCK (Per ton)	ROCK MINED (Tons)
1911	102,224	$ 3,026,306	$29.60	94,816	107.80	$1.53	1,583,076
1912	111,175	3,050,084	27.52	101,600	108.60	1.38	1,870,608
1913	136,609	3,830,504	28.04	133,174	105.40	1.45	2,527,410
1914	107,401	2,895,935	26.96	118,452	111.40	1.43	2,127,395
1915	113,115	3,544,362	31.33	103,361	96.90	1.46	2,134,073
1916	133,339	5,182,905	38.87	117,577	102.60	2.12	2,291,087
1917	137,242	7,198,558	52.45	138,174	108.70	3.08	2,634,410
1918	142,375	9,019,809	63.35	143,401	117.30	4.08	2,445,745
1919	135,862	10,932,289	80.47	154,380	100.80	3.88	3,601,690
1920	179,891	14,749,048	81.89	170,500	109.10	4.53	3,123,370
1921	87,475	5,199,789	59.44	117,458	107.20	4.28	2,224,138
1922	160,339	6,053,068	37.75	149,195	102.00	1.70	2,920,280
1923	216,804	7,364,260	33.97	218,959	117.00	1.42	3,747,576
1924	208,762	6,561,659	31.37	205,764	124.00	1.83	3,324,727
1925	273,522	8,976,645	32.82	267,328	129.70	1.95	4,121,258
1926	279,389	10,095,487	36.13	301,044	134.30	2.35	4,483,361
1927	274,778	10,621,013	38.65	274,763	113.70	2.13	4,834,761
1928	271,637	11,181,143	41.16	266,227	103.20	2.17	5,141,263
1929	306,055	13,172,581	43.04	309,746	99.76	2.21	6,208,970
1930	242,113	8,390,164	34.65	244,114	99.61	1.90	4,901,206
1931	164,297	4,812,886	29.29	154,872	136.20	1.99	2,274,048
1932 (1)	122,977	3,039,721	24.72	119,968	129.38	1.60	1,145,340
1933 (2)	158,367	5,211,177	32.90	151,842	145.38	2.39	1,566,919
1934	155,980	4,936,326	31.65	173,604	149.60	2.45	2,320,750
1935	210,467	7,054,614	33.52	213,285	149.56	2.42	2,852,118

(1) Calculated on 1,854,434 tons, *i.e.*, 1,145,340 tons of rock mined and 709,094 tons of tailing re-treated.

(2) Calculated on 2,088,849 tons, *i.e.*, 1,566,919 tons of rock mined and 521,930 tons of tailing re-treated.

TABLE 4

Annual Shipments of Asbestos, 1925-1935 (*)

(Tons of 2,000 lb.)

Year	Crude No. 1	Crude No. 2	Other Crudes	Spinn'g Fibre	Shingle Fibre	Mill-board & Paper Fibre	Fillers Floats & Other Short Fibre	Total Asbestos Shipped	Asbes-tic
1925.....	1,044	3,777	348	16,070	30,010	93,935	128,338	273,522	16,865
1926.....	1,094	3,494	446	15,182	30,497	86,746	135,930	279,389	15,672
1927.....	1,107	3,014	667	14,348	44,573	69,396	150,673	274,778	18,974
1928.....	893	2,713	516	13,504	34,556	78,123	141,332	221,637	22,788
1929.....	802	2,625	931	17,545	34,177	91,157	158,818	306,055	18,976
1930.....	720	1,440	161	10,411	19,909	79,738	129,734	242,113	40,309
Totals (1925–1930)	5,660	17,063	3,069	87,060	199,722	490,095	844,825	1,647,494	133,584

Year	Crude No. 1	Crude No. 2	Other Crudes	Spinn'g Fibre	Shingle Fibre	Paper Fibre	Waste, Stucco or Plast'r	Refuse or Shorts	Total Asbestos Shipped	Asbes-tic
1931.....	206	543	.....	8,560	15,988	39,867	6,309	92,823	164,296	7,209
1932.....	144	313	14	6,004	6,626	32,694	3,984	73,199	122,977	3,473
Totals (1931–1932)	350	856	14	14,564	22,613	72,561	10,293	166,022	287,273	10,682
Totals (1879–1932)	76,203	111,027	71,698	.....	.....	.....	.....	.....	4,754,030	645,100

Year	Crudes	Fibre	Shorts	Total Asbestos Shipped	Sand, Gravel and Stone (waste rock only)
1933.....	1,306	82,605	74,456	158,367	6,445
1934.....	1,663	77,465	76,852	155,980	4,672
1935.....	2,278	102,270	105,919	210,467	3,025

(*) For figures for 1879-1924, see report for the calendar year 1932.

TABLE 5

EXPORTS FROM CANADA OF UNMANUFACTURED ASBESTOS DURING THE CALENDER YEAR 1935

(From *Trade of Canada, Calendar Year 1935*, Dominion Bureau of Statistics)

IMPORTING COUNTRY	CRUDE AND FIBRE		SHORT FIBRE SHORTS AND WASTE		TOTAL	
	Tons 2,000 lb.	VALUE $	Tons 2,000 lb.	VALUE $	Tons 2,000 lb.	VALUE $
United Kingdom	4,584	$ 290,569	3,595	$ 75,516	8,179	$ 366,085
United States	61,059	3,079,366	92,810	1,440,995	153,869	4,520,361
Argentina	.....	13	30	296	30	309
Austria	.....	15	.....	.....	.....	15
Australia	2,004	99,632	3	66	2,007	99,698
Belgium	4,814	270,606	833	14,407	5,647	285,013
British India	40	2,000	60	720	100	2,720
Czechoslovakia	.....	55	.....	.....	.....	55
Dutch East Indies	3	150	.....	.....	3	150
France	3,781	254,142	320	6,200	4,101	260,342
Germany	4,913	438,062	1,438	27,669	6,351	465,731
Hungary	20	970	.....	.....	20	970
Italy	806	74,435	.....	.....	806	74,435
Japan	15,597	628,597	100	3,061	15,697	631,658
Netherlands	1,671	110,725	700	14,776	2,371	125,501
New Zealand	.....	.....	.....	.....	.....	.....
Poland	114	7,325	.....	.....	114	7,325
Portugal	20	1,538	.....	.....	20	1,538
Spain	710	37,328	.....	.....	710	37,328
Uruguay	50	4,648	.....	.....	50	4,648
Brazil	.....	.....	11	176	11	176
Cuba	.....	.....	30	324	30	324
Mexico	.....	.....	.....	203	.....	203
Puerta Rica	.....	.....	30	297	30	297
Sweden	.....	.....	60	721	60	721
Venezuela	.....	.....	5	54	5	54
TOTALS	100,186	$5,300,176	100,025	$1,585,481	200,211	$6,885,657

TABLE 6

ASBESTOS (UNMANUFACTURED) IMPORTED FOR CONSUMPTION IN THE UNITED STATES IN 1935, BY COUNTRIES AND CLASSES (*)

(From *Mineral Market Reports*, No. M.M.S.461, U.S. Bureau of Mines)

EXPORTING COUNTRY	CRUDE (INCLUDING BLUE FIBRE)		MILL FIBRE		STUCCO AND REFUSE		TOTAL	
	Short tons	Value $	Short tons	Value $	Short tons	Value $	Short tons	Value $
Africa, British:	.....	.....	.....	.....	.....	.....	.....	.....
Union of S. Af.	945	$ 121,577	.....	.....	.....	.....	945	$ 121,577
Other	1,183	172,654	.....	.....	.....	.....	1,183	172,654
Canada	1,548	301,352	58,484	2,713,895	94,204	1,470,865	154,236	4,486,112
Finland	.....	.....	.....	.....	11	446	11	446
Italy	22	11,464	.....	.....	523	5,202	545	16,666
Malta, Gozo, Cyprus	.....	.....	.....	.....	4,628	87 844	4,628	87,844
Morocco	22	2,131	.....	.....	.....	.....	22	2,131
U.S.S.R. (Russia)	18	7,351	4,614	206,347	181	834	4,813	214,532
United Kingdom	202	23,451	.....	.....	.....	.....	202	23,451
TOTALS, 1935	3,940	$ 639,980	63,098	$2,920,242	99.547	$1,565,191	166,585	$5,125,413
TOTALS, 1934	3,582	$ 458,353	41,960	$1,807,512	74,792	$1,112,129	120.334	$3,377.994

(*) Figures on imports and exports compiled by M. B. Price, of the United States Bureau of Mines, from records of the U. S. Bureau of Foreign and Domestic Commerce.

TABLE 7

IMPORTS OF RAW ASBESTOS INTO JAPAN FOR THE YEARS 1933, 1934 AND 1935

(From *Memorandum* by Dominion Bureau of Statistics, External Trade Branch)

(Tons of 2,000 lb.)

COUNTRY OF ORIGIN	1933	1934	1935
Canada	5,209	8,205	10,457
United States	5,138	6,539	5,584 (a)
Africa	501	785	2,793
Russia	2,719	2,920	2,164
Cyprus	.....	.....	1,315
Asiatic Russia	.....	935	597
Great Britain	.....	.....	409
Italy	.....	.....	185
Manchoukuo	.....	.....	119
China	.....	.....	39
British India	.....	.....	13
Germany	.....	.....	7
Poland and Dantzig	.....	.....	5
South America	.....	.....	5
Other Asiatic Countries	.....	.....	100
Other	1,573	803	.....
Mozambique	.....	2,379	.....
Total	15,140	22,566	23,792

(a) Of this amount, possibly five or six hundred tons originated in Vermont, while the balance is doubtless of Canadian origin.

TABLE 8

UNMANUFACTURED ASBESTOS IMPORTED INTO THE UNITED KINGDOM FOR THE YEARS 1934-35

(From *Trade of Canada, Calendar Year 1935;* Dom. Bur. of Statistics)

EXPORTING COUNTRY	1934		1935	
	TONS 2,240 lb.	VALUE £	TONS 2,240 lb.	VALUE £
Africa (Rhodesia)	11,266	£238,416	11,892	£274,345
Africa (Union of South)	6,415	118,024	10,938	155,826
Africa (Portuguese East)	13	259	.....	1
Australia	72	1,122	145	2,006
Austria	26	178	60	414
Belgium	2	26	2	37
British India	3	151	7	342
Canada	6,106	90,681	7,168	83,997
Cyprus	908	15,537	177	6,769
Czechoslovakia	.....	.....	2	19
Federated Malay States	100	800	.....	.....
Finland	135	879	95	625
France	5	38	.....	.....
Germany	2	57	23	630
Italy	85	930	56	2,606
Netherlands	2	67	.....	71
Soviet Union (Russia)	1,648	27,666	1,230	31,966
Switzerland	.....	6	.....	2
United States of America	395	5,965	64	1,446
Venezuela	5	202	47	653
Totals	27,188	£501,004	31,906	£561,755

NOTE:—Pound Sterling.—Average value in Canadian currency for the year 1934, $4.993; 1935, $4.929.

TABLE 9

IMPORTS OF UNMANUFACTURED ASBESTOS INTO PRINCIPAL COUNTRIES OF WORLD, 1932-34 (Less Re-Exports)

(From *The Mineral Industry of the British Empire and Foreign Countries: Statistical Summary, Production, Imports, and Exports*, 1932-34)

(Long tons)

IMPORTING COUNTRY	1932	1933	1934
BRITISH EMPIRE:			
United Kingdom	17,222	24,365	26,546
British India (*c*)	.....	1	951
Australia	.....	2,676	2,471
FOREIGN COUNTRIES:			
Austria	3,412	1,246	1,159
Belgium Luxemburg, E. U.	5,382	13,812	10,616
Bulgaria	5	4	3
Czechoslovakia	7,331	2,173	4,860
Denmark	724	707	1,023
Finland (including mica) (*c*)	42	67	84
France	(*b*) 6,583	14,127	10,059
Germany	7,462	12,414	19,836
Greece	47	54	75
Hungary	1,562	769	(*a*)
Italy	4,629	3,607	8,288
Latvia	69	46	22
Lithuania	10	80	20
Netherlands	155	548	283
Norway	769	958	745
Poland	319	541	797
Portugal	39	126	340
Roumania	64	100	120
Spain	4,067	5,964	4,628
Sweden	1,174	1,044	1,676
Switzerland (including mica)	584	824	771
U.S.S.R. (Russia)	269	27	111
Yugoslavia	457	339	866
Algeria	16	40	(*a*)
Egypt	72	88	95
Mexico	272	349	(*a*)
United States (*b*)	86,387	106,733	107,441
Brazil (*c*)	22	37	37
Chile	1	47	27
Colombia	13	28	37
Venezuela	8	(*a*)	(*a*)
China	579	576	575
Iraq (years ended March 31 of the year following)	979	272	(*a*)
Japan (*c*)	7,502	13,546	20,191
"Manchoukuo"	423	582	(*a*)
Netherlands East Indies	1	12	14

(*a*) Information not available.
(*b*) (France) April-December only.
(*b*) (United States) Re-exports of unmanufactured were 820, 13, and 172 long tons in 1932, 1933, and 1934, respectively.
(*c*) Total imports.

TABLE 10

World Production of Asbestos, 1932-34

(From *The Mineral Industry of the British Empire and Foreign Countries*, 1932-34

(Long tons)

Producing Country	1932	1933	1934
British Empire:			
Southern Rhodesia	14,077	26,948	28,762
Swaziland	4	.....	.....
Union of South Africa (*b*)	7,844	15,185	15,709
Canada:			
Chrysotile (*c*)	112,902	147,153	143,439
Actinolite	.....	.....	27
Cyprus	1,520	3,494	7,081
India	90	.....	25
Australia	130	279	170
Total, British Empire	137,000	193,000	195,000
Foreign Countries:			
Finland (fibre)	1,677	2,311	3,629
France	300	(*a*)	(*a*)
Greece	8	14	(*a*)
Italy	1,461	3,215	(*a*)
United States (sales)	3,178	4,237	4,542
Argentina	7	.....	(*a*)
Brazil	36	97	(*a*)
China (estimated)	500	500	500
Japan (estimated)	1,000	1,000	1,000
Korea	.....	12	.....
"Manchoukuo"	118	104	(*a*)
Turkey	.....	118	4
Total, Foreign Countries (*x*)	8,000	12,000	14,000
World Total (*x*)	145,000	205,000	209,000

(*x*) Excluding the production of U.S.S.R. (Russia), statistics for which are not available.

(*a*) Information not available.

(*b*) Production is not available by kinds, but sales were as follows:

	1932	1933	1934
Amosite	1,242 long tons	2,765 long tons	3,354 long tons
Blue	2,647 " "	2,879 " "	2,511 " "
Chrysotile	6,888 " "	8,546 " "	9,844 " "

(*c*) Sales and shipments.

TABLE 11

EXPORTS OF UNMANUFACTURED ASBESTOS FROM VARIOUS COUNTRIES, 1932-34

(Domestic Produce)

(From *The Mineral Industry of the British Empire and Foreign Countries: Statistical Summary, Production, Imports, and Exports*, 1932-34)

(Long tons)

EXPORTING COUNTRY	1932	1933	1934
BRITISH EMPIRE:			
United Kingdom	370	498	418
Southern Rhodesia	12,385	26,887	28,626
Union of South Africa	10,287	14,307	15,565
Canada	100,384	133,033	141,290
Cyprus	1,600	4,567	7,590
FOREIGN COUNTRIES:			
Austria	110	162	85
Belgium-Luxemburg, E. U.	274	2,745	803
Czechoslovakia	398	507	545
Germany	283	234	187
Italy	898	1,209	497
Netherlands	6	4	5
Poland	2	2	(*a*)
Spain	1	.....	.....
Sweden	3	26	5
Switzerland (including mica)	30	5	20
U.S.S.R. (Russia)	16,290	21,119	33,279
United States	1,524	1,230	1,490
"Manchoukuo"	(*a*)	70	94

(*a*) Information not available.

MINING OPERATIONS IN 1935

Returns of sales of asbestos were received from seven companies, as follows:

Asbestos Corporation, Limited, Thetford Mines.
Canadian Johns-Manville Company, Limited, Asbestos.
Keasbey & Mattison Company, Thetford Mines.
Johnson's Company, Thetford Mines.
Nicolet Asbestos Mines, Limited, Norbestos.
Quebec Asbestos Corporation, Limited, East Broughton.
Northern Asbestos Company, Thetford Mines.

Asbestos Corporation, Limited.—The King mine of the Asbestos Corporation, Limited, was in operation, day and night, steadily throughout the year. Ore was drawn from blocks 501 and 505, and block 515 was brought into production in June.

Development work was carried out on blocks 502, 503, and 504. Block 503 is scheduled for production in February, 1936. During the year, 7,385 feet of drifts and 3,096 feet of raises were driven. The incline shaft was continued from the 300-foot to the 500-foot level for the handling of men

and supplies. A main pumping station has been established on the 500-foot level, together with a sump of large storage capacity. A 2-stage electrical Cameron centrifugal pump with a capacity of 600 g.p.m. has been installed, and a second similar unit is to be added early in 1936.

A paper entitled *Notes on Block Caving at the King Mine*, by J. G. Ross and Staff, was presented at the Annual Western Meeting of the Canadian Institute of Mining and Metallurgy, held in Vancouver in November, 1935. This paper has since been published in the Institute *Transactions*, Vol. XXXIX, 1936, pp. 441-447. It supplements a more comprehensive paper that appeared in *Transactions*, Vol. XXXVII, 1934, pp. 184-218.

The Vimy Ridge mine, in Coleraine township, was operated, day and night, from the 13th of June to the 21st of December. Prior to this period, the mine was worked on a small scale for production of crude.

A small crew of men were employed at the Beaver-Consolidated mine, for the recovery of crude.

The other properties of the Asbestos Corporation, Limited, remained closed throughout the year.

Canadian Johns-Manville Company, Limited.—Mining and milling were carried on at full capacity throughout the year at the Canadian Johns-Manville mine, at Asbestos. Extensions to the mills were also built during the year. Stripping operations were pushed ahead actively.

Johnson's Company.—The Johnson's mine, at Thetford Mines, was operated throughout the year. Mining was also resumed at the Company's Black Lake mine on the 2nd of September. This is of special interest in view of the fact that this mine had remained closed since the fall of 1930.

Stripping operations were carried on by the Johnson's Company both at the Thetford and Black Lake properties.

Keasbey & Mattison Company.—The mine and the mill of this Company worked at full capacity throughout the year, and stripping of overburden was also carried on. An addition was made to the crushing plant, to provide for ore concentration.

Quebec Asbestos Corporation, Limited.—This mine, at East Broughton, was inactive from January 1st to April 26th. From then until the end of the year, mining and milling operations were carried on at full capacity, and some stripping was also done. During the winter months, an extension to the mill was built.

Nicolet Asbestos Mines, Limited.—This mine remained closed throughout the year.

Northern Asbestos Company.—The mill of this Company was active part of the year. The Company does not operate a mine, but works over some of the tailing or refuse of one of the large mills in Thetford Mines, to reclaim the short fibre left in the serpentine sand.

Quebec Asbestos Producers' Association

The Joint Safety Organization of the Quebec Asbestos Producers' Association has been very active during the year. The accident frequency and

severity showed a consistent reduction throughout the entire year. It is of interest to note that there was not a single fatal accident in the asbestos mining industry during 1935.

First-Aid courses have been instituted by four of the operating companies. The employees have taken a very been interest in these, about one hundred attending the classes, which were held weekly. Examinations are to be held shortly and First-Aid certificates will be awarded the successful candidates by the Bureau of Mines. As a matter of fact, at the end of the year, seven employees of the Canadian Johns-Manville Company, Limited, had passed their First-Aid examinations and received their certificates.

Asbestos in the Province of Ontario

(From *The Asbestos Mining Industry and the Asbestos Products Industry in Canada, 1935;* Dominion Bureau of Statistics)

"One of the more interesting events in the industry during the year was the development work conducted in Bannockburn township, Ontario, by Rahn Lake Mines Corporation; about 400 tons of mill rock asbestos ore was placed on the stock pile; this was reported to contain a high quality fibre and to average from $8 to $10 per ton".

Asbestos in Foreign Countries

Southern Rhodesia:

The Southern Rhodesia Chamber of Mines gives the production of asbestos for 1935 as 42,598 short tons, valued at £646,656, as against 32,214 short tons valued at £402,745 in 1934.

Union of South Africa:

The production of asbestos in the Union of South Africa in 1935 amounted to 22,798 short tons, valued at £226,771, as compared with 17,593 short tons, valued at £203,033, in 1934. Details of the production are given in Table 12.

TABLE 12

Asbestos Production in the Union of South Africa, 1934–35

(From *Ann. Rept. Gov't. Mining Eng.*, Pretoria, 1935)

	1934		1935	
	Tons (2,000 lb.)	Value	Tons (2,000 lb.)	Value
Transvaal:				
Amosite	3,756.42	£ 37,104	4,683.76	£ 46,170
Chrysotile	11,025.30	114,241	15,641.67	138,013
Blue	1.40	15	74.71	984
Cape:				
Blue	2,810.74	51,673	2,401.75	41,714
Total	17,593.86	£ 203,033	22,801.89	£ 226,881

UNITED STATES:

(From *Mineral Market Report* No. M. M. S. 461; U. S. Bureau of Mines)

"Domestic production of asbestos amounted to 9,415 short tons in 1935, compared with 6,544 tons in 1934, an increase of about 44 per cent. That sold or used by producers in 1935 amounted to 8,920 tons, valued at $292,927, an increase of about 75 per cent in quantity and 85 per cent in value over 1934. Most of that sold or used by producers was short fiber chrysotile from Vermont, although small sales of Arizona crude were recorded. Small quantities of amphibole were mined in Maryland and Montana".

CYPRUS:

TABLE 13

EXPORTS OF ASBESTOS FROM CYPRUS DURING 1935

(From *The Asbestos Mining Industry and the Asbestos Products Industry in Canada, 1935;* Dominion Bureau of Statistics)

FINAL DESTINATION	QUANTITY	VALUE
United Kingdom	115 long tons	L 418
Palestine	12 " "	38
Belgium	350 " "	5,101
Denmark	741 " "	9,440
Egypt	21 " "	72
Germany	34 " "	164
Holland	43 " "	594
Italy	389 " "	4,939
Japan	1,654 " "	8,064
Portugal	208 " "	2,744
Spain	429 " "	4,455
Syria	" "	2
United States of America	3,517 " "	14,143
TOTAL	7,513 long tons	L 50,174

CZECHOSLOVAKIA:

(From *Foreign Trade Notes—Minerals and Metals*, published by the United States Department of Commerce)

"The Dobsin Mines, Slovakia, is the sole producer of asbestos in Czechoslovakia. The output of the Company in 1934 amounted to 2,100 metric tons, of which amount 554 tons were exported.

"Although no data is available for former years, it is known that the 1934 figure represents the highest domestic production on record".

RUSSIA (U.S.S.R.):

Asbestos (Philadelphia), on the authority of the U.S.S.R. Industrial Export Corporation, gives the total exports of asbestos from Russia during 1935 as 27,677 short tons, consigned as follows:

To Europe	21,597 short tons
" United States	3,416 " "
" Japan	2,664 " "

Classified according to grade, these exports consisted of:

Crude (fibre not less than ¾ inch)	60 short tons
Mill fibre	27,485 " "
Shorts and waste	132 " "

FELDSPAR

Returns received from sixteen operators show that the production of feldspar in 1935 was 7,002 tons, valued at $63,075, against 9,207 tons valued at $78,853 in 1934.

The domestic market for Quebec ground feldspar showed a slight improvement, due to the continued, though still very slow, improvement in general business conditions throughout the country.

There are two feldspar grinding mills in the Province: one at Buckingham, operated by the *Canadian Flint & Spar Company, Limited*, who market their output; the other at Montreal East, owned by *Bon Ami, Ltd*, who use the whole of their output in the manufacture of scouring soaps.

The whole of the 1935 production of feldspar came from the Buckingham district and, with the exception of a small amount of white sodic feldspar shipped from the *Cameron mine*, in Buckingham township, it was all of the high-potash variety, mainly from the following properties:

The *Poltimore mine*, in Portland West township, operated by W. E. Evans.

The *Pike Lake mine*, in Derry township, operated by Wallingford & Cornu.

The *Derry mine*, in Derry township, operated by B. A. McDonnell.

The *Gonzague Pedneaud mine*, at Glen Almond in Buckingham township, which produced both quartz and feldspar.

Shipments of high-grade dental spar were reported by Bush Winning from the *Little Union mine*, in Portland West township.

Seventy per cent of the crude feldspar exported from Canada during 1935, mainly to the United States, was derived from properties in the Buckingham district, Quebec. As the United States market is at present confined to one grinding mill, at Rochester, New York, it is not anticipated that there will be any appreciable increase in feldspar exports in the near future.

GRAPHITE

No mining or development work was carried on at any of the Quebec graphite mines in 1935. A shipment of 21 tons of concentrates from stocked material was reported by the *Canadian Graphite Corporation*, whose graphite mine at Guenette, in Boyer township, has been closed down since 1930. The concentrating mill formerly operated by this Company is now dismantled.

KAOLIN (China-Clay)

A small tonnage of kaolin is obtained as a by-product in the extraction of silica from a kaolin-bearing quartzite deposit worked by *Canadian Kaolin Silica Products, Limited*, at Saint-Rémi, in Amherst township.

Shipments in 1935 were estimated at 170 tons. In 1934, a trial shipment of 48 tons had been reported by the same operator.

Other china-clay deposits are known to occur in the township of Amherst, notably on lots 2 to 8 of range VI South. Prior to 1923, shipments of considerable importance were made from this deposit by the *Canadian China Clay Company*.

LIME, LIMESTONE AND MARL (INDUSTRIAL)

By far the major portion of the lime produced in the Province, and a considerable tonnage of limestone also, is used for industrial purposes. Production of such limestone in 1935 amounted to 302,066 tons. Of this total, 124,783 tons, valued at $144,236, was used for a variety of purposes, mainly as enumerated below, and the balance for the production of lime, sales of which totalled 105,041 tons, valued at $587,680 (see accompanying tables). Data relating to building lime and limestone are given on page 38, in the section dealing with Building Materials.

High-calcium limestone, either in the natural state or calcined, is used in large amount in pulp and paper making, in the manufacture of calcium-carbide and products derived therefrom, in sugar refineries, and in tanneries; also for agricultural purposes to correct acid soils, as a flux in foundries, and as a filler.

Returns of sales and shipments of industrial high-calcium lime and limestone were received from the *Standard Lime Company*, Joliette and St-Marc-des-Carrières; *Shawinigan Chemicals, Limited*, Stanbridge and Shawinigan Falls; and the *Dominion Lime Company*, Limeridge.

Limestone carrying an exceptionally high percentage of calcium carbonate is produced by *J. J. Leclerc, Incorporée*, at Nouvelle in Bonaventure county, and by *Les Pères Trappistes de Mistassini*, near Mistassini in Roberval county. Industrial limestone is marketed also by several quarry operators whose main business is the production of building stone or crushed stone.

Dolomite and dolomitic limestone were produced by the *Canada Marble & Lime Company*, at L'Annonciation, and by the *White Grit Company*, at Portage-du-Fort. These materials have numerous uses, an important one being as an ingredient in the manufacture of glass.

In Gaspé peninsula, marl is an important source of lime carbonate. The deposits are quite numerous and many of them are of sufficient extent and purity to warrant their exploitation. The air-dried product is used without further treatment as a soil corrective. The amount of marl used for this purpose in the counties of Bonaventure, Matapédia, and Gaspé in 1935 is estimated at 18,962 tons, valued at $12,325.

QUANTITY AND VALUE OF INDUSTRIAL LIMESTONE PRODUCTS SOLD IN 1934 AND 1935

CLASSIFICATION	1935		1934	
	QUANTITY (Tons)	VALUE $	QUANTITY (Tons)	VALUE $
Flux	3,502	$ 8,385	4,053	$ 10,070
Pulp and paper mills	77,212	63,947	74,670**	61,057
Agricultural limestone	42,094	60,881	33,421	57,106
Dusting coal mines	175	381	.....	.....
Other industrial uses (*)	1,800	10,642	1,450	9,418
TOTAL	124,783	$ 144,236	113,594	$ 137,651

(*) Unspecified and glass factories.
(**) Includes 3,230 tons of limestone classified in 1934 report as marble.

DISTRIBUTION OF THE PRODUCTION OF INDUSTRIAL LIME IN 1934 AND 1935
(In tons)

CLASSIFICATION	1935		1934	
	QUICK-LIME	HYDRATED LIME	QUICK-LIME	HYDRATED LIME
Chemical works	26,738	3,230	28,916	2,265
Sugar refineries	.....	155	466	631
Tanneries	141	258	617	300
Pulp and paper mills	53,602	18,452	44,997	16,362
Agricultural uses	.....	977	.....	1,091
Foundries	1,488	.....	107	.....
TOTAL	81,969	23,072	75,103	20,649

MAGNESITIC-DOLOMITE

Markets for magnesitic-dolomite, both domestic and export, were further extended during the year. While better industrial conditions were in part responsible, the increased sales are attributable in large measure to improvements made recently in the products marketed. Shipments of magnesitic-dolomite in the crude, calcined, or dead-burned state were valued at $486,084, as compared with $382,927 in 1934 and $360,128 in 1933. Two operators, *Canadian Refractories, Limited,* at Kilmar in Grenville township, and the *International Magnesite Company,* in Harrington township, supplied the entire output.

During the year, Canadian Refractories, Limited, started mining by underground methods, as an extension of their open-cast operation. The method employed is shrinkage stoping. For the present, the underground workings are entered through an adit connecting with the bottom of an open pit nearly 190 feet deep. Derricks are used to hoist the ore and waste rock from the bottom of the pit to the surface. The new method has proved so satisfactory that the Company has decided gradually to replace all open-pit work by underground mining. Plans have been made for sinking a shaft to an initial depth of 375 feet.

Canadian Refractories, Limited, have developed several new plastic refractories, whose use in various industries has led to considerable economies. A chemically bonded basic brick is also now produced for the domestic trade and has met with a large measure of success in certain fields.

MICA

The production of mica in 1935 is estimated at 745,790 pounds, valued at $74,894. This is an increase in quantity, but a decrease in value, as compared with the previous year, when there was an output of 643,967 pounds, valued at $85,967. As usual, the mica was all of the phlogopite variety.

The bulk of last year's production came from mines in the Gatineau River valley. It is noteworthy, however, that for the first time in many years, shipments of some importance were made from mines in outlying districts, notably in Wentworth and Joliette townships.

Twenty-one operators in the Gatineau district reported sales of mica. *Blackburn Brothers, Limited,* and *A. G. Martin* were the principal producers in this area.

During the year, *J. I. Gourdeau,* of Quebec city, took over the Laurel mine, on lot 19, range X, of Wentworth township, formerly owned by the Laurel Mining Company, Limited. Mining and mica trimming operations were carried on with an average of eight men from April to the end of October. Mining work consisted mainly in deepening the pit opened by the former operators and in enlarging the excavation in a southeasterly direction. *François Bazinet* worked intermittently a deposit on lot 2, range II, of Joliette township. Shipments of knife-trimmed mica were made from both these properties.

The abandoned open-cast mica mine at Petit-Pré, in Montmorency county, was de-watered in the course of the year, to permit the examination and sampling of the deposit, but no actual mining was carried on.

Late in the year, a certain amount of development work was done at the *Pied-des-Monts muscovite mine,* in Lacoste township, Charlevoix county, about 18 miles northeast of La Malbaie. This mine was active in 1893 and 1894, and again for a few months in 1904, and during these periods several tons of muscovite were shipped from the property. The ore-body is a flat-lying pegmatite dyke of considerable width, made up chiefly of microcline, albite, quartz, biotite, and muscovite. In present faces, and in adjacent rock exposures, crystals of muscovite are less abundant than those of biotite, but they often occur in large "books' and the mica is generally of good quality.

The workings on the property consist of a large open-cut and two short adits driven on the side of a hill at a height of about 600 feet above lake Pied-des-Monts, and of three prospecting pits a mile and a half to the eastward, along the strike of the pegmatite dyke, on the north bank of Pied-des-Monts creek. A few hundred pounds of mica taken from one of these pits were distributed as samples in 1935. The operations were conducted by the *Charlevoix Muscovite Company.*

Few of the mine operators sell their mica direct to the consumer. The general practice is to dispose of the output through dealers and manufacturers of mica products. The latter, being familiar with the requirements of the trade, are able to carry in stock large quantities of all sizes of mica, some of which, otherwise, might not find a ready market.

Shipments of mica in 1935 and 1934 were as shown in the accompanying table. Practically the whole of the 1935 production of dressed mica was knife-trimmed.

SHIPMENTS OF MICA, 1934 AND 1935

DESCRIPTION	1935	1934
Splittings	32,150 lb.	75,050 lb.
Trimmed mica	110,657 "	121,111 "
Ground and scrap mica	602,983 "	447,806 "
TOTAL	745,790 lb.	643,967 lb.

OCHRES AND IRON OXIDES

The production of ochres and iron oxides amounted to 5,357 tons, valued at $75,388, as compared with 4,798 tons valued at $64,566 in 1934. This is the third successive year in which an increase in value of output has been recorded, and the largest tonnage since 1931.

Ochres and iron oxides are used in the manufacture of mineral pigments and for the purification of coal gas and some minor industrial purposes.

Mineral pigments are the main product of the *Sherwin-Williams Company of Canada, Limited,* at their modern calcining plant at Red Mill, in Champlain county. The raw material is obtained from two iron oxide deposits located nearby. One of these deposits is exceptionally high grade and yields a calcined oxide suitable for the manufacture of certain special grades of mineral pigments. A large portion of the calcined iron oxide produced at Red Mill is exported.

Ochres for use in gas purification plants were produced by two operators. The bulk of the output was extracted for *Thomas H. Argall* from deposits at La-Pointe-du-Lac, near Trois-Rivières, and the remainder from a deposit opened in 1934 by *Charles D. Girardin* at Almaville, near Shawinigan Falls. No shipments were made in 1935 from deposits outside the Trois-Rivières area.

PEAT (*)

No production of peat was reported during the year. The small amount recorded in the table of mineral production, appraised at $2,958, represents sales from stocks on hand. It consisted of peat for use as insulating material, for soil improvement, and as litter. There is a growing market for these materials.

The *Hydropeat Company, Limited,* which has carried on operations for several years at Saint-Hyacinthe, discontinued work in 1935. Their process of extraction was speedy and economical, and the product was a high quality fuel. However, it has been difficult to compete with hardwood, which sells at about $5.00 a cord in the immediate vicinity.

Insulation, Limited, opened-up a deposit of peat in the Seigniory of Isle Verte. The bog is situated alongside the Canadian National railway, half a mile east of Isle Verte station. A plant was erected for the production of loosened peat-moss, and operated during the year (see Plate I). Peat dust is shipped in bags of six cubic feet. It is used in making wallboard, insulating material, humus, and as litter for bedding animals.

F. X. Lambert, of Sainte-Anne-de-la-Pocatière, has built a peat-litter plant near the Rivière Ouelle peat bog. The equipment consists of a chaff-cutter and one press. Shipments are made in bales having dimensions of 30 by 22 by 18 inches. The price of peat litter, f.o.b. Rivière Ouelle, is $14.00 per ton. The material is used as stable litter and as humus.

Waterville Moss & Peat Mines, operated its peat bog on range II, Compton township, about two miles south of Waterville. The production

(*) By Henri Girard, Inspector of Mines.

of this operator was sold for use by florists for packing plants, and as humus. No record of the output has been received by the Bureau.

At certain places in the district of Saint-Hyacinthe and in the township of Godmanchester, peat is cut by hand on a small scale and air-dried for use locally as domestic fuel. It would be difficult to compute the amount or value of the peat used in this way and it has been neglected in the general table of mineral production.

QUARTZ AND INDUSTRIAL SAND

In 1935, shipments of quartz and industrial sand totalled 50,258 tons, valued at $224,135. This is a decrease of 9.7 per cent in quantity but of only 1 per cent in value as compared with the record output in 1934. These production figures include a certain amount of natural sand used in foundry work.

The largest producer was the *Canadian Kaolin Silica Products, Limited.* This Company works, by open-pit methods, a deposit of kaolin-bearing quartzite near Saint-Rémi, in Amherst township. The products marketed are glass-sand, sand-blasting materials and other abrasives, fillers, silica for use in the ceramic industry, and moulding sand. In the summer of 1935, a new Dominion ball-mill was installed in the grinding mill, more than doubling the capacity of the plant. The mill is so designed that it is possible to make products to meet the requirements and specifications of most silica-consuming industries.

The *Canadian Carborundum Company* operated their sandstone quarry and grinding mill at Saint-Canut throughout the year. The silica-sand produced was used for the most part in the manufacture of carborundum, and the balance as an ingredient in sand-lime brick and other products of the Company. As in former years, *Ottawa Silica and Sand Stone, Limited,* carried on intermittent operations at their East Templeton plant, the bulk of the output consisting of sand-blasting materials. Operations were resumed at the Mason mine, in Guigues township, by *Flint Sands, Limited,* of Toronto, who have the property under option. They did a certain amount of development work, as well as mining and milling, and shipped a few thousand tons of silica-sand.

In the Buckingham district, quartz was produced by several operators, who obtain the mineral and also feldspar from pegmatite dykes. The bulk of this quartz was shipped to the plant of the Electric Reduction Company, at Buckingham, for use as a flux in the manufacture of phosphorus and phosphorus salts. A small tonnage was sold to grinding mills and to foundries.

Silica Products of Canada, Limited, whose property is near Lac-Bouchette, in Dequen township, operated their mill for a short time for experimental purposes, but made no shipments. During the year, improvements were made in the method of conveying the quartz from the workings and for storing it at the grinding mill, and heavier machinery was installed in the primary crushing plant.

SOAPSTONE AND TALC (*)

There were no fresh developments during the year in connection with soapstone. Operators reported a decline in the price of sawn blocks and bricks to $3.00 per cubic foot. Total output had a value of $32,053 as compared with $44,297 in 1934.

The *Broughton Soapstone Quarry Company* operated its quarry on lot 12 of ranges X and XI, Broughton township, during eight months of the year, supplying sawn blocks and bricks for the pulp-mill trade. A small tonnage of lump ore was also shipped during the year to a Montreal grinding mill. This Company conducted some exploration work on a deposit of greyish talc on lot 692, range VII, Bolton township, near Eastman. A small mining plant was installed and a shaft sunk to a depth of 40 feet.

Other soapstone quarries operated during the year were those of *Charles Fortin*, of Robertsonville, on the east half of lot 2, range V, Thetford township, for two months, and of *L. C. Pharo*, on lot 11, range IX, Broughton township, for ten months. Cut furnace blocks for the pulp-mill trade were shipped from both these properties.

BUILDING MATERIALS (†)

In 1935, sales of building materials—comprising cement, clay products, lime and stone used in construction work, sand, and gravel—amounted to $6,512,764, as compared with $5,473,205 in 1934 and $5,112,553 in 1933. As these figures indicate, there has been an improvement during the past three years in the demand for building materials, but even so the value of these materials produced last year was only about one-half the average for the past decade, and compares with a maximum of $18,534,165 in 1929.

Increases were recorded in the production of concrete aggregate, dimension stone, and gravel. Shipments of building granite and limestone also considerably exceeded in quantity and value those of the past few years. Sixty-four quarries produced crushed stone, against sixty-seven in 1934; their combined output was 1,001,210 tons, which is an increase of 97,734 tons over 1934.

Building and engineering contracts let in the Province of Quebec during 1935 had a value estimated at $44,471,900, which is 30 per cent higher than in 1934. For the whole Dominion, the increase was 27 per cent. This remarkable gain is ascribable mainly to an increase in engineering work, but it is gratifying to note that the volume of residential and industrial building also increased very appreciably during the year.

The following table, prepared from statistics compiled by MacLean Building Reports, Limited, and published in the *Contract and Engineering Record*, shows in detail the value of building contracts issued in Quebec since 1932:

(*) By Eugène Larochelle, Inspector of Mines.
(†) By Paul E. Bourret, Inspector of Mines.

COMPARATIVE DETAILS OF CONSTRUCTION CONTRACTS IN THE PROVINCE OF QUEBEC, 1932-35

CLASSIFICATION	VALUE OF CONTRACTS AWARDED			
	1935	1934	1933	1932
Residential bldgs	$10,193,000	$ 8,311,200	$ 6,523,200	$ 9,180,000
Public and non-commercial bldgs	7,542,800	8,956,400	7,068,500	9,203,800
Business bldgs	3,137,200	4,161,800	2,741,000	3,768,000
Industrial bldgs	3,083,000	1,890,300	2,837,500	4,221,100
Engineering work	20,515,900	10,815,800	13,369,000	26,152,400
TOTAL	$44,471,900	$34,135,500	$32,539,200	$52,525,300

Men employed in the production of building materials worked for a total of 870,454 days and received, in wages and salaries, $2,158,148. The average daily wage was $2.48, as compared with $2.46 the previous year. Several collective labour agreements entered into during the year between groups of stone-cutters and quarry workmen on the one part, and their employers on the other, resulted in a slightly higher average daily wage in these industries.

CEMENT

Shipments of cement were made in 1935 from two plants, one at Montreal East and the other at Wrightville, near the city of Hull. Sales amounted to 1,751,012 barrels valued at $2,472,008, as compared with 1,613,641 barrels valued at $2,294,846 in 1934. The average market price of cement per barrel, f.o.b. plant, was $1.41, which is one cent less per barrel than in 1934.

The Hull plant was in operation from May 29th to September 30th. The Montreal East plant operated throughout the year, but not at full capacity.

No modifications of importance were made in any of the plants. At the Montreal East plant of the Canada Cement Company, the dry-process mill, which stands alongside the more efficient wet-process plant, was in part dismantled and demolished in 1935.

The plant of the *National Cement Company* at Montreal East was idle throughout the year, and no shipments were made from this plant.

CLAY AND SHALE PRODUCTS

Domestic clay and shale are used in the manufacture of common and face brick, structural and drain tile, and sewer pipe, the last being made in part with imported raw materials. As compared with pre-depression years, production of these materials during the past few years has been very low. Their total value in 1935 was $591,642, against $631,815 in the preceding year. The average market price of all classes of clay and shale products, drain tile excepted, was lower than in 1934.

Of the brick sold in 1935, 75 per cent were made with ground shale and the balance with clay. It is of interest to note that, relatively to shale brick,

sales of clay brick have been increasing steadily for several years. Thus, for the years 1931 to 1935, inclusive, clay brick constituted the following percentages of the total output: 6.7, 8.0, 16.0, 18.0, and 25.0 per cent. This is to be attributed in part to the lower cost of production, but mainly, perhaps, it is a result of labour conditions, practically all the clay-brick plants being located in small communities, where a low scale of wages prevails.

Sales of brick were made by eighteen operators, fifteen of whom had their plants in operation during the year.

CLAY PRODUCTS IN 1934 AND 1935

CLASSIFICATION	1935		1934	
	QUANTITY	VALUE	QUANTITY	VALUE
BRICK:				
Face brick, soft mud process.....M	225	$ 2,025	.....	.....
Common brick, soft mud process.....M	1,782	12,569	2,180	$ 17,908
Face brick, stiff mud process.....M	6,910	136,975	7,601	156,623
Common brick, stiff mud process.....M	18,044	252,015	18,839	270,516
Face brick, dry press...M	1,424	35,559	610	15,951
SUB-TOTAL.....	28,385	$ 439,143	29,230	$ 460,998
OTHER CLAY PRODUCTS:				
Structural tile .....tons	11,894	87,155	13,666	$ 107,674
Drain tile .....No.	539,529	15,895	540,119	14,191
Sewer pipe.....	.....	49,449	.....	48,952
SUB-TOTAL.....	.....	$ 152,499	.....	$ 170,817
TOTAL.....	.....	$ 591,642	.....	$ 631,815

GRANITE

The marked improvement in the building trade has greatly benefited the granite quarrying industry. Production in 1935 had a value of $800,685, as compared with $488,477 in 1934, an increase of 64 per cent. The peak production was reached in 1930, with a total value of $2,042,783.

All the larger quarries were in operation during at least a part of the year. Among the outstanding buildings in the construction of which Quebec granite was used in 1935 are: an addition to the Parliament Buildings, Quebec, built in part of Little-Mont-Mégantic granite; the Royal Mint, Ottawa, faced with Stanhope granite; the Custom House, Montreal, in which Stanstead granite was used; and the Post Office, Ottawa, built in part of Scotstown granite. *Le Granit Noir Canadien, Enregistré*, opened a quarry of pink granite on the third range of Ile d'Alma, in the lake Saint-Jean district. Stone from this quarry and local anorthosite were used in the construction of the post-office at Saint-Joseph-d'Alma.

Electrically-driven gang-saws were installed in 1935 at the property of *National Granite, Limited,* at Saint-Gédéon, on the east shore of lake Saint-Jean. They were employed in the latter part of the year for the production of stone for use in the construction of the Alliance Nationale building, on Sherbrooke Street West, Montreal.

Over seven thousand tons of granite paving blocks were shipped from quarries at Guenette, Brownsburg, Scotstown, and Stanstead. Those produced at Brownsburg were cut from waste rock lying in or near abandoned quarries.

Last year's output of curbstone came mainly from Rivière-à-Pierre, with some also from Brownsburg and Guenette. The bulk of the production was consigned to the municipality of Montreal East.

The production of crushed granite was 49,263 tons, valued at $34,965. Fifty-one per cent of the output was from commercial quarries and sold at an average price of $0.86 per ton. The balance came from municipal and government-owned quarries.

QUANTITY AND VALUE OF GRANITE SOLD IN 1934 AND 1935

CLASSIFICATION	1935		1934	
	QUANTITY (Tons)	VALUE	QUANTITY (Tons)	VALUE
Building stone, rough	5,281	$ 53,529	4,329	$ 12,969
Building stone, dressed	10,015	391,381	9,733	215,657
Monument stone, rough	4,095	31,113	3,414	24,917
Monument stone, dressed	7,984	174,474	2,844	143,852
Curbstone	1,266	8,976	276	1,066
Paving blocks	7,248	66,677	4,929	42,382
Rubble and rip-rap	45,944	39,570	1,110	959
Crushed stone	49,263	34,965	42,793	46,675
TOTAL	131,096	$ 800,635	69,428	$ 488,477

LIME AND LIMESTONE (BUILDING)

The total quantity of limestone quarried in Quebec in 1935 is estimated at 1,658,118 tons, as compared with 1,620,000 tons in 1934. The production was used as follows: 351,501 tons in the manufacture of cement and building lime; 1,004,551 tons in the building trade, as dimension stone, crushed stone, and rubble; and 302,066 tons for industrial purposes. Data relating to limestone used in the building trade, and to building lime, are given in the accompanying tables. Industrial lime and limestone are now classed with the 'non-metallics' and are dealt with on page 30.

BUILDING STONE:

The gain recorded in the production of building limestone in 1934 was more than maintained during the year under review. Three quarries at Saint-Marc-des-Carrières were particularly active. Of these, the *Deschambault Quarry Corporation* quarried and dressed the stone used to face the Moncton Post-Office; the *J. O. Gauthier* quarry produced a large tonnage of

rough building-stone, which was shipped to dressing plants in the Montreal and Quebec districts; and the same quarry together with that of *Gingras & Frères* supplied the stone used to face a new provincial government building erected on Saint-Augustin Street, Quebec.

In the Montreal area, the main source of building stone was the *Martineau quarry*, at Pont Viau. A small tonnage of dimension stone was extracted also from quarries at Cap Saint-Martin and on the island of Montreal, but the Saint-François-de-Salles quarries were idle throughout the year. Building limestone, dressed by hand, was shipped from quarries at Joliette and in the vicinity of the cities of Hull and Quebec.

Returns show that 51 per cent of the output of building limestone was dressed in plants owned by the quarry operators.

QUANTITY AND VALUE OF BUILDING LIMESTONE PRODUCTS SOLD IN 1934 AND 1935

CLASSIFICATION	1935		1934	
	QUANTITY (Tons)	VALUE	QUANTITY (Tons)	VALUE
Building stone, rough	7,655	$ 21,545	7,785	$ 19,770
Building stone, dressed	15,012	218,582	11,872	160,333
Monument stone, rough	16	135	47	349
Monument stone, dressed	49	1,680	123	3,488
Flagstone	407	357	47	47
Asphalt filler	3,451	8,572	3,738	7,843
Rubble and rip-rap	122,379	70,017	92,606	48,587
Crushed stone	855,582	622,257	803,960	585,524
TOTAL	1,004,551	$943,145	920,178	$825,941

DISTRIBUTION OF THE PRODUCTION OF BUILDING LIME IN 1934 AND 1935
(In tons)

CLASSIFICATION	1935		1934	
	QUICK-LIME	HYDRATED LIME	QUICK-LIME	HYDRATED LIME
Building trade	3,463	108	3,447	183
Dealers	3,588	1,814	5,722	1,891
Unclassified	1,723	393	476	861
TOTAL	8,774	2,315	9,645	2,935

CRUSHED STONE:

The total output of crushed limestone, from 46 producers, was 855,582 tons, valued at $622,257, an increase of 6.4 per cent in tonnage and of 6.3 per cent in value as compared with sales during the preceding year. Approximately 91 per cent of the production came from quarries marketing their products.

The average price of crushed limestone for the whole of the Province was $0.727 per ton, which is practically the same as in 1934. Commercial quarries on the Island of Montreal and on Isle Jésus reported sales of 425,269 tons at an average price, f.o.b. quarry, of $0.579 per ton, against 360,740

tons at $0.593 in 1934. In the City of Quebec district, sales of 97,562 tons of crushed limestone were recorded, and the average price was $0.846 per ton; this compares with 84,567 tons at $0.782 per ton in 1934. It may be of interest to recall that the average price of crushed limestone in the Province of Quebec for the year 1929 was $1.05 per ton.

RUBBLE:

The production of rubble increased both in quantity and value, as compared with the previous year. The output was used mainly in harbour work for filling purposes and also in the construction of rubble submerged dams between several islands facing Berthier and Sorel in the St. Lawrence, to break the force of the current in the upper reaches of the river.

MARBLE

The domestic marble industry has been at a low ebb since 1932 and has not yet regained any of its former activity. Production in 1935 was valued at $31,071, as compared with an average of $475,000 for the five-year period ending with 1932.

The shipments of building and ornamental marble were mainly from the quarry and dressing works of the *Wallace Sandstone Quarries, Limited,* at Philipsburg, in Missisquoi county. During 1935, *Emmanuel Andorno* opened two quarries, one at Cap Saint-Martin and the other at Saint-Michel-de-Laval on Isle Jésus. The former contains a bed of light grey, medium-grained limestone, through which numerous crystals of brownish-red calcite are evenly distributed. In the Saint-Michael quarry, a thick bed of coarse-grained fossiliferous limestone has been exposed. In its upper portion, it consists of large pink-coloured fossils embedded in a greenish-grey matrix, and, when cut parallel to the bedding, the stone has a pleasing mottled appearance. Both of these limestones take a good polish and are suitable for the interior decoration of buildings.

Sales of granulated and pulverized white marble were made by the following operators:

Canada Marble & Lime Company, L'Annonciation, Labelle county.

Wallace Sandstone Quarries, Limited, Philipsburg, Missisquoi county.

White Grit Company, Portage du Fort, Pontiac county.

The crushed material has numerous uses, as in the manufacture of artificial stone, for terrazo flooring and stucco work, as a filler, and as poultry grit.

Statistics pertaining to marble used for industrial purposes are included in this report with industrial limestone (page 30).

MARBLE PRODUCTS SOLD IN 1934 AND 1935

CLASSIFICATION	1935	1934
Building and ornamental stone, rough	130 tons	17 tons
Building and ornamental stone, dressed	165 "	358 "
Crushed marble	1,367 "	4,217 "
Rubble and rip-rap	4,582 "	30 "
TOTAL	6,244 tons	4,622 tons

SAND AND GRAVEL

The sand and gravel production for 1935 is estimated at 5,268,987 tons, an increase of nearly 44 per cent as compared with the previous year. As is usual, the great bulk of the output was used in road construction and maintenance, and as concrete aggregate.

QUANTITY OF SAND AND GRAVEL SOLD IN 1935 AND 1934

CLASSIFICATION	1935	1934
Washed and screened sand and gravel	355,950 tons	237,643 tons
Ballast	351,758 "	209,265 "
Sand and gravel for building concrete, and road construction and maintenance	4,208,991 "	3,037,736 "
Crushed gravel	343,485 "	172,159 "
Other sands	8,803 "	13,395 "
TOTAL	5,268,987 tons	3,670,198 tons

SANDSTONE AND SHALE

In 1935, the sandstone quarries of Quebec produced 104,660 tons of stone valued at $121,864, against 86,200 tons valued at $85,577 in 1934.

The bulk of the production was crushed stone, quarried in various parts of the Province but mainly in the vicinity of the cities of Quebec, Sherbrooke, and Beauharnois, and of the Baie des Chaleurs. The principal use of this material is as road-metal, but it is also used as aggregate in concrete for the construction of buildings. Crushed sandstone commands a much higher price than crushed limestone, the average during 1935 being $1.07 per ton, as compared with only $0.73 per ton for the latter.

Eight thousand tons of rough building-stone were extracted from sandstone quarries in 1935. Much of this material was used by the city of Sherbrooke in the construction of a protection wall along the Saint-François river.

Red and grey shale and slate to the value of $1,674 was produced in 1935. In addition to ground shale obtained as a by-product in brick manufacturing, the production comprised also an appreciable tonnage of run-of-quarry material shipped from slate quarries to pulverizing mills. Finely pulverized shale or slate is used as a filler in various industries.

QUANTITY AND VALUE OF SANDSTONE SOLD IN 1934 AND 1935

CLASSIFICATION	1935		1934	
	QUANTITY (TONS)	VALUE	QUANTITY (TONS)	VALUE
Building stone, rough	8,000	$ 8,359	.....	.....
Building stone, dressed	15	488	.....	.....
Rubble and rip-rap	280	194	29,477	$ 17,240
Crushed stone	96,365	112,823	56,723	68,337
TOTAL	104,660	$ 121,864	86,200	$ 85,577

MINING OPERATIONS AND DEVELOPMENT IN WESTERN QUEBEC IN 1935

By R. H. Taschereau, Inspector of Mines

DASSERAT TOWNSHIP

Monarch Mines, Limited

This Company was incorporated in 1934 with an authorized capitalization of 5,000,000 shares of $1 par value stock. The property is situated on the west shore of Dasserat lake, and consists of fourteen claims, as follows: R-18837, 18838, 19378, 19379, 20447 to 20451, and 25277 to 25281.

In May, 1935, exploratory work was commenced and resulted in the discovery of gold-bearing quartz veins. The veins occur in acid volcanic rocks in association with porphyritic intrusives. In addition to a considerable amount of stripping and rock trenching, three deep test-pits were sunk to depths of 56 feet, 30 feet, and 27 feet, respectively.

The principal discovery is on the north boundary of claim R-20449. It is reported that about 430 pounds of high-grade ore was selected and shipped to the Temiskaming Testing Laboratories at Cobalt, Ontario. The returns from this shipment assisted in the financing of the initial development work. A 1,000-foot diamond-drilling programme was carried out, but difficulty in reaching bed-rock made the results inconclusive.

It has been planned to initiate an underground development campaign, and since the close of the year light mining equipment has been transported to the property for this purpose. This equipment includes a 50 h.p. *H.R.T.* boiler, a 6 in. by 8 in. steam hoist, and a 387 cu. ft. air compressor, belt-driven by a Diesel engine.

BEAUCHASTEL TOWNSHIP

Arntfield Gold Mines, Limited

Developments in the No. 3 shaft area during 1934 having been so encouraging as to warrant placing the property on a production basis, the construction of a mill and subsidiary buildings was commenced in the early months of 1935. This work was completed in July. The plant was designed to treat 125 tons of ore per day, but tests have indicated that a larger tonnage may be successfully handled without the installation of additional equipment.

The mill is a straight-cyanide unit, All the equipment is driven by individual motors, thus eliminating belting and shafting. The following table, reproduced from the Company's annual report, presents the operating results attained in the last five months of 1935:

Dry tons milled, total	26,081.8	tons
Dry tons milled, average per day	165.1	tons
Average mill-heads, gold	0.2166	oz./ton
Gold produced	5,037.483	fine oz.
Silver produced	505.24	fine oz.
Average gold in tailings	0.0097	oz./ton
Percentage recovery	95.4	per cent

The subsidiary buildings erected during the year under review included a new power-house, sub-station, headframe, machine-shop, blacksmith shop, change house, and refinery. Four additional staff residences and a school were also built.

In early 1935, underground lateral work was continued in the No. 2 shaft area, but, as results were indefinite, this work was suspended and the workings have been allowed to fill with water. Operations in the No. 3 shaft area are described in the Company's annual report, as follows:

"Development work done during the year is shown in the following table. Most of this work was done in the No. 3 shaft area.

Drifting	2,479 ft.
Cross-cutting	995 "
Raising	767 "
Winzing	14 "
Shaft sinking	285 "
Stations	13 "
TOTAL	4,553 ft.
Diamond drilling	13,742 ft.

"The principal items in the above work were the development of the 375-ft. level from the winze east of No. 3 shaft, with raises connecting this and the 250-ft. level through to surface, the deepening of No. 3 shaft to an inclined depth of 542 feet, and the opening of the 525-ft. level. 674 feet of drifting was done on the 525-ft. level, the lowest at this shaft. Sixty-eight per cent of this drifting was in ore.

"Of the diamond drilling, 6,002 feet were drilled from surface and 7,740 feet from underground.

"The stoping areas have opened up well during the period under review, and it is expected that the ultimate tonnage derived from them will be somewhat greater than the original estimate. The stope above the 375-ft. level has an average width of 18 feet for a length of over 200 feet, with bulges up to 35 feet in width, while the stope above the 250 has an average width of about nine feet for a length of over 300 feet. On the other hand, the average grade of the ore as mined is somewhat reduced due to paralleling ore lenses and the necessary inclusion of considerable marginal material for complete extraction of the ore.

"With milling costs at a little over $1 per ton, all development rock grading $3 or better is sent to the mill and a considerable amount of this material has been treated.

"The ore reserve position has been fully maintained after five months of production, during which 26,081.8 tons of ore were mined and milled. At commencement of production, ore reserves were estimated at 90,000 tons grading 0.286 oz. As of December 31st, estimated reserves are 112,400

tons grading 0.24 oz. Of this tonnage, 97,400 tons is assured and reasonably assured ore, principally above the 375-ft. level, and 15,000 tons is indicated ore in one block above the 525-ft. level. There will necessarily be some dilution in mining this ore. The figures include 17,500 tons broken in stopes.

"The mine programme for 1936 includes the further development of the existing three levels in the main workings, particularly the extension of the 525-ft. level east and west, the deepening of No. 3 shaft to 1,000 feet inclined depth, and the establishment of three new levels at 675 ft., 825 ft., and 975 ft. inclined depth. This programme will be vigorously pursued and upon the results secured will depend the scope of future operations and the possibilities of increased tonnage.

"Present depth indications are favourable, in that the deeper ore is occurring in a well fractured quartz porphyry and greenstone association along a strong longitudinal fault which is now exposed for nearly one thousand feet on the present bottom level. Diamond drilling has also proved ore to exist 150 feet below this level".

Francoeur Gold Mines, Limited

The annual report of this Company for the year ending December 31st, 1935, contains the following description of operations and results attained during the year under review:

"Shaft Sinking:

"The shaft was extended during the year from the second to third level, and later from the third to the fifth level; in all, from 305 feet to 745 feet. The third level station was cut at 430 feet, and the fifth level station at 720 feet; being 300 feet and 500 feet, respectively, below the surface outcrop.

"Winzes:

"On the second level, two short ore sections were tested by winzes, one 17 feet deep and the other 13 feet deep.

"Lateral Development:

"The first and second level development was completed in February, 1935. All the third level development was completed during the year, and the fifth level started. Only the No. 1 ore system has been explored, and drifting started from the most favourable section discovered. Each 50 feet, a short cross-cut was driven into the walls to test for favourable wall-rocks. The work has been confined to an area having an extreme length of 1,000 feet, and a width of approximately 60 feet.

"Diamond Drilling:

"No underground diamond drilling has been done. Six hundred and nineteen feet of drilling from the surface, to test structure, has been completed. Three hundred and eighty-five feet of this amount was drilled to test the formation at a point 200 feet beyond the third level west.

"Ore Exposed in Drifts:

"The drifts were sampled each five feet. Each heading was sampled daily, and each car of rock was also sampled. Including results previously reported, the following is a summary of the sections that average more than 0.2 ounces of gold per ton:

	Length	Horizontal Width	Gold Per Ton	Value Per Ton (Gold at $35.00)
East Side:				
Surface	125 ft.	15.4 ft.	0.34 oz.	$11.90
1st level	222 "	6.15 "	0.22 "	7.70
2nd level	105 "	6.5 "	0.23 "	8.05
3rd level (1)	55 "	6.9 "	0.23 "	8.05
	46 "	5.8 "	0.22 "	7.70
West Side:				
3rd level	25 "	4.1 "	0.22 "	7.70
	65 "	4.6 "	0.20 "	7.00
5th level	90 "	9.2 "	0.42 "	14.00

(1) The two sections are separated by 15 feet of rock that assays below 0.1 oz. per ton.

"The above results show the values found at the levels, but raises will have to be driven to connect the levels before they can be considered as more than indications. However, in view of the uniformity of the location of the ore on successive levels, the east ore is probably one and the same shoot.

"On the west side, in view of the great level interval, 290 feet on the dip of the break, raising or drilling will have to be done to correlate the ore sections. The ore found to the west is particularly encouraging in view of the fact that no ore was known to exist west of the shaft. The property extends for a distance of 7,200 feet west along the strike. The ore on the fifth level is in a new condition, being in the footwall of the break, and of higher grade than any ore previously found underground".

Lake Fortune Gold Mines, Limited

Early in 1935, the two-compartment shaft was completed to a depth of 490 feet, and levels were established at the 355- and 465-foot horizons.

On the first level, a cross-cut was driven to the south for a distance of 110 feet. At 55 feet from the shaft, drifts were driven to east and west for distances of approximately 150 feet and 350 feet, respectively. The drifts follow the contact of a porphyritic intrusive. Irregular stringers and lenses of quartz occur along this contact, and in a few places spectacular free gold and tellurides are present. No continuous length of ore has been exposed.

On the second level, a cross-cut was driven north for 110 feet. At 45 feet from the shaft, drifts were cut to east and west for a total distance of about 235 feet. At 80 feet north of the shaft, another short drift was opened. The lateral work at this level did not indicate any well-defined zones, although quartz stringers occur in a number of places, and some free gold has been observed.

A 36 in. by 24 in. single-drum electric hoist was installed. In the late spring, operations were discontinued.

Riverside Gold Mines, Limited

This Company was incorporated in 1935 with a capitalization of 20,000 shares of $25 par value stock. It holds the mining rights to a group of claims in the east part of Beauchastel township. The claims are numbered as follows: R-12138 to 12141 and 12145 to 12148.

During the summer, camps were erected and some trenching and stripping were performed to explore a gold-bearing quartz vein. Later in the season, a 1,940-foot diamond drilling programme was carried out.

ROUYN TOWNSHIP

Adanac Gold Mines, Limited

The underground workings were de-watered in the spring of 1935, and lateral work was resumed on the 125- and 250-foot levels.

At the upper horizon, the *H* vein was encountered at a distance of 67 feet north of the shaft. Over 400 feet of east-west drifting was completed on this vein. In the east drift, sampling is reported to have indicated gold values of ore grade over drift width and a length of 152 feet; visible gold was observed. In the west drift, the vein is narrower and gold values are lower.

On the 250-foot level, the dip of the schistosity of the greywackes is almost flat, and lateral work gave indefinite results. In early 1936, deepening of the shaft was commenced.

Austin-Rouyn Gold Mines, Limited

This Company was incorporated in 1934 with a capitalization of 4,000,000 shares of $1 par value stock. The property consists of a group of seventeen claims situated in the south part of Rouyn township. The claims are numbered as follows: T-7114 to 7117, and R-10423 to 10432 and 13511 to 13513.

In 1934, some surface work was carried out on this group. In early 1935, camp buildings were erected, a road was completed from the Granada mine, and light mining equipment was transported to the property. The equipment includes an 8¼ in. by 10 in. reversible steam hoist, a 60 h.p. locomotive-type boiler, and a steam-driven compressor.

A shaft was sunk on claim R-10431. It is inclined to the north at about 55 degrees, and was completed to a depth of 135 feet. A station was cut at the 125-foot horizon, and a drift was opened to the west for a distance of fifty feet. About 260 feet of cross-cutting to north and south had been completed at the end of the year.

The shaft was started on a gold-bearing quartz vein, and, at a depth of 40 feet, the vein entered the hanging-wall of the excavation. It is reported that this vein has been traced on the surface for a considerable distance, and that it varies in width from six inches to a maximum of eight feet. It consists for the most part of a series of parallel quartz stringers in mineralized, schisted greywacke.

Ceres Exploration, Limited

This Company holds an option on the Hatfield claims. The ground covered by these claims was formerly held by Vickers-Porcupine Mines, Limited, who performed work in 1926 and 1927. The claims are located astride the Rouyn-Beauchastel boundary, and are numbered as follows: R-22429 to 22434.

In the fall, following the acquisition of the option, Ceres Exploration, Limited, performed exploratory work. Some heavily mineralized zones which had been explored in previous years were re-sampled, but interest was centred mainly on a new gold-bearing deposit lying on the township boundary. This deposit strikes approximately N.80°E. Channel sampling has indicated an average gold content of over one ounce per ton for a length of 120 feet and a width of one foot. Work was suspended in the winter months.

Granada Gold Mines, Limited

Throughout the first nine months of 1935, the mill treated an average of about 140 tons of ore per day. The gold content of the ore was appreciably lower than in previous years. In October, operations were discontinued when the mill, crushing plant, and No. 1 shaft-house were completely destroyed by fire.

During the period the mine operated, stoping was continued at a number of points down to the 11th level. Much of the ore for the mill was obtained in the east part of the 2nd, 3rd, 4th, and 5th level workings.

In the spring of 1935, a new discovery was made on claim R-10229, close to the north boundary of the property. It consists of a well-mineralized zone in tuffaceous sedimentary rocks. A white to bluish quartz is present in the form of stringers, and the sheared and altered rock is heavily mineralized with pyrite. No free gold has been observed. The zone has a length, on the surface, of about 400 feet, and is up to 15 feet in width. It has an east-west strike and dips vertically. It outcrops at a distance of about 130 feet to the south of a 250-foot wide diabase dyke.

A two-compartment shaft was sunk to a depth of 135 feet, and some lateral work was carried out at the 125-foot level. Several diamond-drill holes were also put down to explore the zone.

The shaft was sunk with the aid of light mining equipment, which included a 6 in. by 8 in. steam hoist, a 40 h.p. vertical boiler, and a 325 cu. ft. gasoline-driven compressor.

McWatters Gold Mines, Limited

This Company had a very successful year in 1935. During the twelve-month period, 24,431 tons of ore were milled and over 17,000 ounces of gold produced. Ore reserves were increased to 78,000 tons, and this includes a substantial supply broken in stopes.

In the early spring, the erection of a cyanide addition to the mill was commenced, and this was completed in October. The blanket tables were dismantled, and all coarse gold is now caught in traps at the foot of the ball-

mill; the remainder goes to cyanidation. No attempt has yet been made to re-treat the tailings from previous milling operations.

Up to the end of the year under review, all the ore extracted for milling was obtained above the 180-foot level. Lateral work and diamond drilling on the 275- and 400-foot levels had failed to indicate the downward continuation of the rich gold deposits. Early in 1935, a diamond-drill hole, put down below the 400-foot level, encountered a section of ore, and more promising results may be anticipated in the near future.

Noranda Mines, Limited

The annual report of the Company for the year 1935 contains the following description of operations at the Horne mine and smelter during that period:

"Mine:

"A new five-compartment shaft was completed from surface to a depth of 2,164 feet, and from this point to the 2,975-foot level a smaller opening, eight feet wide by twelve feet long, was made, and this section is now being enlarged to the full shaft size.

"10,168 feet of drifting, 4,471 feet of raising in rock, and 47,257 feet of diamond drilling was done, and 267,733 cubic feet of rock was excavated in cutting stations and widening drifts and ore-passes.

"Because of the considerable number of men and rock drills employed in raising and sinking No.5 shaft, general exploration was somewhat curtailed and was largely confined to the search for and development of siliceous gold ore which is used for flux in the smelter. Further exploration of the *Lower H* ore-body was carried out by driving a number of parallel cross-cuts through it on the 2,725-foot and 2,975-foot levels, and this more detailed work confirmed the general situation indicated by diamond drilling done in 1934, which was outlined in the previous annual report. On the 2,725-foot level, the massive sulphide ore averaged 6.11 per cent Cu and 0.32 oz. gold per ton over a length of 500 feet and average width of 105 feet. Extending beyond the boundaries of the massive sulphide ore was a much larger area of siliceous fluxing ore averaging 1.72 per cent Cu and 0.20 oz. per ton gold, so that the total mineable area is approximately 700 feet long by 200 feet wide. On the 2,975-foot level, the area of siliceous fluxing ore was extended to include an area 520 feet long, the average grade of which was 0.70 per cent Cu and 0.19 oz. per ton gold over an average width of 75 feet, but no massive sulphide ore has been found in the area so far explored.

"A zone approximately 500 feet long and 400 feet wide underlying the *Lower H* ore-body was partially explored to a depth of about 500 feet below the 2,975-foot level by eleven diamond-drill holes, in most of which scattered gold assays indicating fluxing ore were obtained. A little north of this zone there is a considerable area of rhyolite and rhyolite breccia in which the original rock has been very largely replaced by pyrite, accompanied by low values in gold and copper. This very heavily mineralized body has been traced down from the 1,500-foot level, where it was quite small, but on the 2,975-foot level it extends from No. 5 shaft in a southeasterly direction a

distance of at least 1,200 feet and varies in width from 50 to 200 feet. Five diamond-drill holes were drilled down in it from the 2,975-foot level and the work done so far indicates some shoots in it which are probably of commercial grade, and it is possible that at some lower horizon a good sized ore-body may be found in this very heavily mineralized zone. When the new No. 5 shaft is completed to the 2,975-foot level, sinking will be resumed and further exploration of the ground below the 2,975-foot level will be undertaken.

"ORE RESERVES:

"From the information obtained in drifting, diamond drilling, and other openings in various ore-bodies, there is now indicated above the 2,975-foot level the following tonnage of ore:

	AMOUNT (tons)	COPPER (per cent)	GOLD (oz. per ton)
Sulphide ore over 4% copper	7,333,000	7.54	0.174
Sulphide ore under 4% copper	20,457,000	0.99	0.190
Siliceous fluxing ore	3,239,000	0.73	0.137

"ORE SHIPMENTS:

"The tonnage and average grade of ore delivered from the Horne mine to the smelter and concentrator in 1935 were as follows:

	AMOUNT (tons)	COPPER (per cent)	GOLD (oz. per ton)	SILVER (oz. per ton)
Direct smelting sulphide ore	429,178	3.08	0.250	0.38
Concentrating sulphide ore	1,050,131	2.52	0.133	0.35
Siliceous fluxing ore	427,352	0.31	0.129	0.12
TOTAL	1,906,661			

"The above total represents an increase of 7¼ per cent over that for the previous year.

"SMELTER:

"During 1935, the smelter treated 1,076,232 tons of ore, concentrate, and refinery slag, and produced 77,027,969 pounds of anodes, the average analysis of which was 99.37 per cent Cu, 6.97 oz. gold per ton, and 14.95 oz. silver per ton; but after deducting the amount of copper, gold, and silver in the refinery slag that was smelted, the estimated net production of new copper, gold, and silver was 74,478,436 pounds of fine copper, 265,538 ounces gold, and 544,559 ounces silver.

"The following table shows the amount of material treated in the smelter and the production each year since commencement of operations:

Year	Ore, Concentrate and Refinery Slag Smelted (tons)	Fine Copper Produced (pounds)	Gold Produced (ounces)	Silver Produced (ounces)
1927	10,740	552,345	767	2,644
1928	271,926	33,065,261	52,949	186,277
1929	428,221	51,223,115	68,732	334,279
1930	734,072	75,509,373	117,393	691,920
1931	765,544	62,859,355	253,363	558,801
1932	918,567	63,013,485	341,350	619,597
1933	1,010,629	65,008,731	284,675	510,739
1934	1,050,684	70,175,512	248,615	552,809
1935	1,076,232	74,478,436	268,333 (*)	544,559

(*) Note. — This includes some gold recovered in cyanide plant which did not pass through the smelter.

"Concentrator:

"During 1935, the concentrator treated 1,048,806 tons of ore from the Horne mine, the average assay of which was 2.53 per cent Cu, 0.133 oz. gold per ton, and 0.35 oz. silver per ton, from which 213,487 tons of concentrate were produced and sent to the smelter.

"The following table shows the amount of ore treated by the concentrator since it was placed in operation:

Year	Tons
1928	4,468
1929	51,689
1930	191,856
1931	317,792
1932	379,637
1933	676,168
1934	920,363
1935	1,048,806

"The new 500-ton cyanide mill, designed to re-treat the pyrite portion of the flotation-mill tailing, was completed during the year and started up last May. During the last seven months of the year under review, 89,610 tons of pyrite were treated, from which 4,597 ounces of gold were recovered. The percentage of recovery was somewhat higher than was estimated when the decision to build the plant was made.

"New Construction:

"In addition to the completion of the cyanide mill, an addition was made to the shops building, a 2,600 k.w. steam-turbine-driven generator was installed in the power-house, and a new 1,000 h.p. steam boiler was installed in the smelter to utilize more of the waste heat in the gases from the reverberatory furnace".

The Horne ores contain an appreciable percentage of selenium and tellurium, and these metals are recovered at the Canadian Copper Refiners plant at Montreal East. The annual report contains the following information in regard to these rare metals:

"Production of selenium in the new plant at Montreal East continued in substantial quantities throughout the year, and although your Company is now one of the largest producers of selenium in the world, no difficulty was realized in marketing. Tellurium is now being produced and marketing commenced, and the sale of these two metals should represent a substantial increase in the value of production of your Company".

Dividends paid during the year amounted to $2.00 per share.

Pontiac Rouyn Mines, Limited

In the spring of 1935, the 60-degree shaft was completed to a depth of about 250 feet. Some lateral work was carried out on the 100-foot level, but underground exploration was, for the most part, confined to the 200-foot horizon.

In March, 1935, the north drift on the bottom level had been advanced to a distance of 200 feet from the shaft. At this point, a fault was encountered, and the knowledge that beyond it the overburden is very deep prevented further advance in this direction.

The drift follows the ore zone. Sulphide mineralization is not generally well-pronounced. Where it occurs, it consists of fine-grained pyrite and chalcopyrite. At the end of the south drift on the 200-foot level, a narrow quartz stringer contains coarse chalcopyrite, and visible gold was observed near the sulphide mineral.

Operations were suspended in the summer of 1935, and have not, as yet, been resumed.

Stadacona-Rouyn Mines, Limited

Early in 1935, the shaft was continued from the 300-foot level to a depth of over 600 feet, and stations were cut at the 450- and 600-foot horizons. The new part of the shaft is of three-compartment size. A secondary outlet was driven from the 300-foot level to the surface, and a connection was made at the 150-foot level with this raise.

Lateral work on the new levels was well advanced at the end of the year, and proved the continuation of the gold-bearing deposits to these depths.

Plans were made to place the property on a producing basis. An electric-power line was constructed, and the necessary substation equipment installed. A new hoist-house was erected, and the equipment is now driven by electric motors. Excavations for the foundations of a 200-ton mill have been prepared, and it is planned to have this unit in operation in 1936.

JOANNÈS TOWNSHIP

O'Neill-Thompson Gold Mines, Limited

The property which this Company is developing is registered in the name of Thompson-Joannès Gold, Limited. Surface work and diamond

drilling were carried out in 1933 to explore some promising gold-quartz veins exposed on claim R-11005. Operations were resumed early in 1935. Camp buildings were erected on the west bank of the Kinojevis river, and light mining equipment was installed at the mine workings.

A vertical two-compartment shaft, measuring 6 feet by 9 feet, was sunk to a depth of 90 feet, and some lateral work was completed at the 80-foot horizon. This work indicated the presence of several lenses of gold-bearing quartz, and some spectacular free gold has been observed. A short raise was commenced from the east drift.

Early in 1936, plans were made to deepen the shaft, and to instal a 25-ton mill for bulk-sampling purposes.

A road was cut through to the McWatters highway, a distance of about a mile and a half.

MONTBRAY TOWNSHIP

Robb Montbray Mines, Limited

In the late fall of 1934, preparations were made to extract the small chimney of gold-copper ore from this property. The deposit was not as large as previously indicated. Three hundred and ninety-two tons of ore were mined and shipped to the customs smelter at Noranda. The Company reported a net loss of $11,500 in stoping and mining, and operations were suspended. This Company also performed exploratory work on a group of claims in Hébécourt township.

DUPRAT TOWNSHIP

Birrell Gold Mines, Limited

A programme of underground work, initiated in 1934, was carried out in early 1935. A two-compartment shaft was sunk to a depth of 175 feet, and a station was cut at the 150-foot horizon. The property was later optioned to Ventures, Limited, and a diamond drilling programme was performed: the drilling totalled 2,000 feet. On completion of this work, operations were suspended.

In addition to the mining work performed during the year, camp buildings were constructed, and a light mining plant installed. Also, a road was cut through to connect with the Perrault highway.

CLÉRICY TOWNSHIP

Bouchard-Clericy Gold Mines, Limited

This Company was incorporated in 1934 with a capitalization of 3,000,000 shares of $1 par value stock. Operations were confined to the Bouchard-Coallier group, situated to the northeast of Cléricy lake. The geology of this property is described by L.V. Bell in the Annual Report of the Bureau, Part *B*, 1930.

Work was resumed in August, 1934, after a lapse of several years during which the property was idle. New camp buildings were constructed.

The new work consists of stripping, trenching, and the sinking of a 33-foot test-pit. A 3,100-foot diamond drilling programme was carried out in 1935.

The vein on which the test-pit has been sunk has an east-west strike and dips to the south at about seventy degrees. At the surface, it is about four feet wide, but it narrows appreciably from a depth of fifteen feet to the bottom of the pit. Very coarse free gold was encountered in the upper part of the vein. The sheared zone in which this deposit occurs has been traced on the surface for a length of over 1,000 feet, and quartz lenses occur at intervals along the strike.

Early in 1936, the sinking of a shaft was commenced.

O'Brien Gold Mines, Limited

In October, 1935, this Company acquired an option on the Caputo-Legault group of claims, R-25913 to 25921, situated in the southwest quarter of Clériсy township.

On the south slope of a rocky knoll, an irregular mass of white quartz, with included horses of altered granodiorite and Keewatin flow rocks, is exposed over a maximum width of 60 feet; the dip and strike are indeterminate. Sulphide mineralization is scanty, but very fine free gold was observed in several places.

Stripping, trenching, and diamond drilling were carried out to explore the mass, but it is reported that results failed to reveal the presence of a deposit of commercial importance, and operations have been suspended.

This Company also held an option, and performed exploratory work, on the nearby Davis-Mercier group, in Joannès township.

HÉBÉCOURT TOWNSHIP

Robb-Montbray Mines, Limited

In the summer of 1935, a prospector in the employ of this Company made a gold discovery close to the Montbray-Hébécourt boundary. When the news spread, a number of prospectors invaded the area, and many claims were staked. The area is reached by canoe from Duparquet lake *via* the Magusi river.

The claims staked by Robb-Montbray representatives include R-25468 to 25487. In the Company's interim report dated November 29th, 1935, the following information is supplied:

"These prospectors were then sent to northwestern Quebec, south of Abitibi along the Ontario boundary line. On August 15th, a spectacular gold showing was discovered in the southwest corner of Hébécourt township, Quebec, and 25 claims were staked.

"Twelve men were sent in and surface work consisting of trenching and rock blasting was carried on. Then it was thought advisable to put down three diamond-drill holes, as the vein dipped into a swamp. The result of all this work was disappointing, so that work was discontinued on November 9th, and we do not anticipate any further expenditures".

DUPARQUET TOWNSHIP

Beattie Gold Mines, Limited

This Company continued to expand operations in 1935. Additional crushing and grinding capacity was provided, and the daily tonnage of ore treated was gradually increased from an average of 1,200 tons per day to 1,500 tons. In the summer months, a large part of the ore was obtained from the glory-hole on the North ore-zone. In winter, the underground stopes provide the mill-feed.

Developments during the year under review are described in the Company's annual report, as follows:

"Production:

Tons ore milled	435,760 tons		
Value per ton	0.16541 oz. at $35.123	$5.810	
Gross value	72,080.54 oz. at $35.123	$2,531,684.81	
Values recovered in concentrate:			
Gold	16,975.899 oz. at $34.987		$ 593,927.86
Values recovered in bullion and slag:			
Gold	38,503.014 oz. at $35.123	$1,354,665.16	
Silver	11,029.970 oz. at $0.6178	6,814.43	
			$1,361,479.59
Total recovered			$1,955,407.45
Recovered per ton milled	0.12732 oz.	($4.49)	
Cyanide mill absorption reduced	126.76 oz.		
Tailings loss	16,728.387 oz.		
Marketing concentrate		$ 310,823.27	
Marketing bullion		18,637.05	
			$ 329,460.32
Net value recovered			$1,625,947.13
Net value recovered per ton ore milled and marketed			$ 3.73

"Mining:

Ore broken in glory hole	196,390 tons
Ore broken in stopes	236,318 "
Ore from development	16,401 "
	449,109 tons
Ore hoisted	435,110 tons
Waste hoisted	26,593 "

Summary of Mining Operations:

		Year Ending Dec. 31st, 1935	Total to Dec. 31st, 1935
Surface soil stripping	Cubic yd.	39,000	79,342
Diamond drilling	Lineal ft.	15,328	36,020
Drifting and cross-cutting	" "	7,607	14,265
Raising	" "	2,464	8,605.5
Slashing	Cubic ft.	113,938	209,213
Shaft sinking	Lineal "	.....	1,656.5
Shaft stations	" "	.....	315
Loading and spill pockets	" "	.....	57
Ore broken (development)	Tons	16,401	79,040
Ore broken (stopes and glory hole)	"	432,708	876,930
Ore milled	"	435,760	939,971
Broken-ore reserves	"	16,649	16,649

"EXPLORATION:

"Exploration work on the surface during the year consisted of a small amount of diamond drilling to try and determine the western extension of the *A* ore zone. Nothing of importance was disclosed by these holes, as the area was badly faulted. Also, various other holes were drilled in the known ore zones in order to determine more closely the ore boundaries.

"Underground exploration work consisted of extending 33 drift on the 3rd level over 2,000 ft. to the east. The drift was in a medium-grade ore for the entire length. Also, on this level, 34 drift was extended for 1,200 ft. to the west in the *A* zone. This drift was in ore of 0.13 oz. grade for 900 ft.

"On the 6th level, 63 drift was extended over 2,000 ft. to the east. This drift is under the 33 drift on the 3rd level and both are in the North ore zone. The ore was of a lower grade than was encountered in the 33 drift. On the 6th level, 64 drift in *A* zone was extended 260 ft. to the west, from which diamond drilling will be done during 1936.

"During the year, the diamond drilling program carried out consisted of cross-sectioning holes driven from 33 and 63 drifts as far east as the 7,300 east co-ordinate.

"On the 3rd level, these holes, together with those drilled during 1934, showed a mineral zone representing 3,800 tons per foot of vertical height that average 0.135 oz. gold. It is intended during 1936 to determine tonnages of this zone by exploration work from other levels. On the 6th level, this zone was as large as shown on the 3rd level, but values are unpayable and seem to limit the downward extension of this lens.

"Three cross-section holes were driven across the *A* zone from the 3rd level and these holes showed an average width of 62 ft. with a grade of 0.12 oz. gold.

"Other drilling done during the year consisted of several holes for geological information.

"DEVELOPMENT:

"During the year, work was done on the 4th, 5th, and 6th levels in connection with installing a crusher on the 6th level, driving ore-passes from the crushers, and opening up seven stoping blocks on the two upper levels in the North ore zone. This work was completed during the year, and the latter part of the year practically all underground haulage was discontinued, the broken ore from the stopes going through ore-passes to the 6th level crusher, thence by conveyor to skip pockets, and hoisted. A reduction in costs was effected by this method.

"At the end of the year, preparations were under way to open up stoping areas east of the main fault.

"During the year, work was started on a pump sump on the 7th level. This work is being continued in 1936 and plans are to have it finished to take care of flood conditions that occur during the spring thaw.

"ORE RESERVES:

"During the year, 435,760 tons of ore were mined and, although the grade averaged 0.165 oz. gold, the tonnage was taken largely from within

the centre of the North ore zone, and future mining will, of necessity, until such time as pillars are reclaimed, be closer to the hanging and footwall of the body. Consequently, to some extent, there will be dilution, and the grade of the ore reserves has been adjusted accordingly.

"It will be noted that 350,000 tons, averaging 0.130 grade, of partially developed ore east of the main fault in the North zone has been added to the reserve this year.

	Amount (tons)	Grade
North Zone:		
Reserve, January 1st, 1935	3,831,300	0.160 oz.
Dilution, at 10 per cent	383,130	0.026 "
Partially developed east of main fault	350,000	0.130 "
Total	4,564,430	0.146 "
Milled 1935	435,760	0.165 "
Reserve	4,128,670	0.144 "
A Zone:		
Indicated by diamond drilling	300,000	0.152 "
Total Reserve, January 1st, 1936	4,428,670	0.145 oz.

"Milling:

"During the year 1935, the mill treated 435,760 tons of ore, assaying 0.1654 oz. gold per ton.

"The operation consisted of flotation, making a high-grade concentrate, and subsequent treatment of the concentrate in the cyanide plant that was built in 1934. Also, a marketable concentrate from the cyanide residue was shipped to the American Smelting & Refining Company smelter at Tacoma for further treatment.

"Preparations were under way during the latter part of the year to enlarge the crushing plant by the installation of a 5½-foot Symons short-head cone crusher and conveying and screening facilities to handle the increase in tonnage.

"Experimental work was carried on throughout the year in an endeavour to work out a more economical method of treating the ore. A pilot plant was erected and operated during part of the year in an effort to duplicate some encouraging laboratory results. This plant was in operation at the close of the year.

"Further test-work is necessary before a decision is made as to the best metallurgical method to use.

"Transportation:

"Considerable work was carried on during the year ballasting and improving the road-bed of the railway, and at the end of the year a regular service handling outgoing concentrates and incoming freight is being maintained.

"Construction and Plant Improvement:

"During the year, additions were made to the crushing plant, and a 9 ft. by 14 ft. ball-mill and 22-ft.-diameter bowl classifier installed in the flotation section of the mill. A pilot plant was also erected for experimental work on Beattie ore.

"The 500 h.p. 8-ft.-diameter by 80-in. double-drum Nordberg hoist and facilities for dumping 6-ton skips were installed during the year, and a 36-in. by 42-in. Buchanan jaw crusher and a 200-ft. by 42-in. conveyor were installed on the 6th level underground.

"On the surface, a power sub-station was erected at Beattie, as well as improvements made to the Company's sub-station at Noranda.

"Several new houses were built during the year in the Company's section of the town of Duparquet. These houses are occupied by employees".

The year's operation resulted in a net profit of $394,402.63.

Duparquet Mining Company, Limited

The diamond-drilling programme instituted on this property in the previous year was continued during the year under review. The results attained have indicated the possibility of developing a low-grade gold deposit. In September, 1935, thirty-four holes had been put down; the year's drilling totalled 6,971 feet. Operations were suspended in the autumn of 1935.

LA REINE TOWNSHIP

Manley Quebec Gold Mines, Limited

During the first six months of 1935, lateral work was continued on the 150-foot level of this property. A cross-cut was driven to the north, but no well-defined vein systems were intersected. This work was subsequently discontinued, and a diamond-drilling programme was carried out, the length of hole aggregating 3,904 feet. On completion of this drilling, all operations were suspended.

DESMELOIZES TOWNSHIP

Normetal Mining Corporation, Limited

Underground exploration work was continued on this property until February, 1935, when operations were suspended. In a review of operations of the Mining Corporation of Canada, dated April 30th, 1936, the President of that Company advanced the following information:

"The outlook in the base-metal markets up to date has not been sufficiently attractive to encourage bringing Normetal into production. However, conditions look more hopeful, and your Directors believe that they will be justified in putting the mill in shape so that the property can go into production as soon as prices are such as to yield a reasonable profit, with, of course, some assurance of continued good prices. Based on previous work, we have approximately 700,000 tons above the 800-ft. level, running 0.045 oz. gold, 4.4 oz. silver, 2.32 per cent copper, and 13.88 per cent zinc. A drill hole at 1,200 ft. vertical depth cut ore of good width and values, so

that I think we are justified in assuming that there are good possibilities for a considerable further tonnage. It will, of course, be necessary to do some financing before going ahead".

GUILLET TOWNSHIP

Coniagas Reduction Company, Limited

This Company continued surface exploration on its claims in Guillet township. The gold-bearing deposit discovered in the previous year was found to be irregular in shape and in its gold content. A large amount of stripping and deep trenching was performed, but toward the end of the summer it was deemed advisable to discontinue operations.

McIntyre-Porcupine Mines, Limited

Early in 1935, mine and camp buildings were erected on claim R-20520, and a vertical two-compartment shaft was sunk to a depth of 362 feet. Levels were established at the 125-, 225-, and 325-foot horizons, and lateral work was carried out on the three levels to explore the No. 2 vein system. A programme involving the drilling of five diamond-drill holes, to a total length of 2,005 feet, was carried out in this area prior to the commencement of underground work.

In the spring of 1935, a very promising gold discovery was made on claim R-20423. Stripping and trenching indicated a deposit 450 feet in length, averaging 15 feet in width, and with an average gold content of 0.5 ounces per ton. Some diamond drilling was carried out, and, by the close of the year, enough information had been obtained to indicate an ore deposit large enough in size to warrant the erection of a 100-ton cyanide mill. Early in 1936, the sinking of a three-compartment shaft was under way, and the equipment for the mill and other buildings had been ordered.

The ore deposit on claim R-20423 presents the appearance of a westerly continuation of the No. 1 vein structure. It apparently lies in an *S*-shaped drag-fold. It is composed of a bluish, cherty quartz, and is but slightly mineralized. Fine, free gold may be observed with the aid of a magnifying glass.

It is planned to generate electric power at the property with two 200 h.p. Diesel-driven generators. A new winter-road was completed in February, 1936, from La Tulipe, and tractors commenced to transport the heavy equipment to the mill site.

A number of other organizations, including Noranda Mines, Limited, O'Brien Gold Mines, Limited, and Prospectors Airways, Limited, performed work on claims in the Guillet Lake region. A description of the geology of these claims, by B. T. Denis, will be found in the annual report of the Bureau of Mines for 1935, part *B*.

BOUSQUET TOWNSHIP

Mooshla Gold Mines, Limited

In 1935, the shaft on this property was continued to a depth of 104 feet and a small amount of lateral work was carried out at the 100-foot level.

Heavier mining equipment has been transported over the winter roads, and a more extensive underground development programme is planned for the coming year.

CADILLAC TOWNSHIP

O'Brien Gold Mines, Limited

During 1935, the mill continued to treat about 75 tons of ore per day. Most of this ore was obtained from stopes above the 300-, 400-, and 500-foot levels. Deepening of the shaft was commenced in the spring, and it was carried to a depth of 1,000 feet. New levels were established at the 625-, 750-, 875-, and 1,000-foot horizons.

A roasting plant was erected during the year. The concentrates from flotation are roasted to remove the sulphur and arsenic. The arsenical fumes enter a bag-house, where the arsenic oxide is deposited. The roasted concentrates go to cyanidation. The arsenic oxide is packed in barrels and stored pending disposal to insecticide distributors.

Other additions included the installation of a 48 in. by 36 in. double-drum electric hoist, and the construction of a new dormitory and cook-house, in addition to several new residences.

Approximately 4,100 ounces in gold were produced during the year, a part of which was contained in concentrates shipped to a customs smelter.

Pan-Canadian Gold Mines, Limited

This Company was incorporated in 1934 with a capitalization of 3,000,000 shares of $1 par value stock. It holds the mining rights to the following claims: A-47922 to 47926, 52842 to 52844, 53093 to 53095, and 53099 to 53103.

The greater part of the work to date has been on claim A-47923. A schisted zone strikes in a northwesterly direction across this claim. The north wall of the zone is partially silicified, and is fairly well mineralized with pyrite. Quartz occurs in the form of stringers and small lenses. It is reported that gold values are found in places over a length of 700 feet and a maximum width of fifteen feet. The rocks in the vicinity of the discovery are Keewatin lavas intruded by fine-grained porphyries.

In the summer of 1935, a diamond-drilling programme was carried out over a length of 1,300 feet along the strike of the zone. Twelve holes, totalling 4,570 feet, were put down. It is reported that the drilling confirmed the results of surface sampling.

The sinking of a three-compartment shaft was commenced. Toward the end of the year, a light mining plant was brought in, and a number of buildings were erected. The plant includes a 9 in. by 12 in. steam hoist, a 310 cu. ft. gasoline compressor, and a 60 h.p. locomotive-type boiler. New buildings include a bunk-house, cookery, office, and blacksmith shop.

Thompson Cadillac Mining Corporation, Limited

Operations were resumed on this property in the early spring months of the year under review. The mine was not de-watered below the 300-foot

level. Re-sampling of the old workings on the 150- and 300-foot levels was completed, and lateral work was resumed at these horizons.

On the 150-foot level, the No. 1 vein drift was extended to the west, and a connection was made with the old No. 1 shaft.

On the 300-foot level, the south cross-cut was carried to a distance of 1,000 feet from the shaft; no important veins were encountered in this direction. Drifting on the No. 2 vein was continued toward the east, and some high-grade ore was opened-up in this area.

It is planned to improve the mill flow-sheet, and to bring this property into production on a modest scale.

MALARTIC TOWNSHIP

Ascot Gold Mines, Limited

This Company was incorporated in 1935 with a capitalization of 3,000,000 shares of $1 par value stock. It holds the mining rights to the following ground: range II, lots 51 to 59, inclusive; range III, lots 55, 56, and the south half of lots 57, 58, and 59.

Operations were, for the most part, confined to diamond drilling, which totalled 4,657 feet. No important developments were reported.

FOURNIÈRE TOWNSHIP

Canadian Malartic Gold Mines, Limited

This property was brought into production in May, 1935, and, by the end of the year, milling capacity had been increased from 150 tons of ore per day to 300 tons. All ore was obtained from a stope on the south ore-zone. This deposit is mined between the 125- and 375-foot levels by underhand benching. The annual report of the Company for the year 1935 contains the following account of operations:

"During the period January to May, construction of a cyanide mill designed to treat 150 tons daily was completed and the mill was put into operation on April 26th. The new production shaft, head-frame, hoisting equipment, and power station were also completed and put in service. Underground, the mine was prepared for production.

"On August 1st, as a result of confirmation of estimates as to ore grade and costs, it was decided to increase the mill capacity to 300 tons daily, and the additional treatment units were placed in operation on December 23rd.

"At No. 1 shaft, the hoist and compressor were electrified and a new power-house was constructed. A new mine change-house, steel-sharpening shop, warehouse, and ten dwellings were also constructed.

"It was found possible to complete the expansion and construction programme without further financing.

"Production:

"The addition of the new milling units was accomplished without serious interruption, but resulted in a slight reduction in capacity and recovery during November and December.

"Milling results were as follows:

Dry ore milled	38,599 tons
Days operated	227.629 days
Average per day	157.5 tons
Fine gold produced	7,951.121 oz.
Fine silver produced	3,944.820 oz.
Average grade milled, gold	0.2235 oz./ton
Average grade tailing, gold	0.0175 oz./ton
Recovery, gold, per cent	92.1 per cent.

"Experiments are being carried on with a view to increasing the recovery.

"DEVELOPMENT:

"During the earlier part of the year, development was limited to preparation for stoping and mine service. The new production shaft was finished and equipped. In September, a new development programme was decided on, and the No. 1 shaft was sunk to a depth of 793 feet, with stations established at 500, 625, and 750 feet. It is the intention to develop these levels and simultaneously to raise the inclined production-shaft from the 750-foot level. The ore will be hoisted from a new ore-pocket to be placed below that level.

"A new diamond-drill programme was begun in September and 18 holes aggregating 4,013 feet were completed. The ore position has been established down to the 600-foot horizon by drilling on sections at 50-foot intervals. Below this horizon, the situation is not clear.

"The porphyry intrusion referred to in last year's report as having been indicated by four drill-holes below the north ore-body has now been further delineated by ten more drill-holes and by the No. 1 shaft. The porphyry has a north-south dimension of at least 500 feet and appears to dip flatly to the south. The ore-body appears to flatten towards the south in conformity with the contact. No definite information as to its continuation has yet been secured.

"Eight drill-holes were directed towards securing more positive information in the indicated ore-zones. In general, previous assumptions have been confirmed.

"ORE RESERVES:

"Development and diamond-drilling results permit a satisfactory increase in ore reserves, which are estimated as of December 31st as follows:

	AMOUNT (tons)	AVERAGE GRADE (per ton)	VALUE (Gold at $35)
Assured ore reserves	259,000	0.220 oz.	$7.70
Indicated ore	350.000	0.184 oz.	6.44
TOTAL	609,000	0.199 oz.	$6.96

"Additional to the above reserves there is a large amount of lower grade material which, it is hoped, can be worked profitably on a larger scale of operations; the grade and tonnage are not positively determined.

"It has been found that the ore-blocks stoped conform closely to the calculated values, and that diamond drilling in the Malartic type of ore-body gives sections closely approximating the true value.

"GENERAL:

"The area surrounding the plant has been cleared of inflammatory material for an average distance of about 2,000 feet, and fire-fighting equipment, including a storage tank having a capacity of 150,000 gallons and a fire-pump capable of delivering 500 gallons a minute, has been installed".

The Company reported a net profit for the eight months operation of $24,994.19.

EAST MALARTIC MINES, LIMITED

A large amount of surface work and diamond drilling were carried out on this property during the year under review. By January, 1936, forty-six drill holes aggregating 13,596 feet had been completed. This work was confined to three promising mineralized zones. The original, or No. 1, discovery was described in the annual report of the Bureau for 1934. The west, or No. 2, zone is apparently a continuation of the Sladen-Malartic deposit. No. 3 zone was found to the east of the camps, and is reported to consist of a well-mineralized silicified porphyritic rock. Gold values were encountered in the three zones.

As a result of the promising results obtained in this work, it has been decided to sink two shafts on the No. 1 and No. 2 zones. Electric equipment was installed early in 1936, and a 12,000-volt power line was constructed to the property.

SLADEN MALARTIC MINES, LIMITED

In 1935, a diamond-drilling programme was completed on this property. Twenty holes, totalling 6,850 feet, were put down. This drilling has indicated two low-grade shoots of gold ore lying on the strike of the Canadian Malartic zones. There are no surface outcrops, and in most places the overburden is about sixty feet in depth.

Plans were made to carry out an underground development campaign. Early in 1936, substantial camp and mine buildings were under construction, and the collar of a three-compartment shaft had been excavated. Electric power will be supplied by the Northern Quebec Power Company.

DALQUIER TOWNSHIP

COLONIAL GOLD SYNDICATE, LIMITED

This Syndicate holds the mining rights to ten mining claims, A-53470 to 53479, covering the following ground: lots 10, 11, 16, and 17, range VII; the north half of lots 12, 13, 14, and 15, range VII; and lots 10 and 11, range VI.

A considerable amount of stripping and trenching was performed on this group. Several veins and lenses of quartz were found, with, it is reported, gold values at several points.

Operations were suspended in the fall of 1935.

Nortrac Mining Company, Limited

In March, 1935, the sinking of a shaft was commenced on this property. It was carried to an inclined depth of ninety-five feet at an inclination of forty-five degrees. It follows a gold-bearing quartz vein, discovered in the previous year.

From the bottom of the shaft, drifts were carried to north and south on the strike of the vein. The deposit proved to be irregular at this horizon, and no continuous length of ore was opened up. The north drift intersected a zone containing several quartz veinlets at a distance of 110 feet from the shaft, and visible gold was observed in this material. Drifting on the zone failed to establish continuity.

DUVERNY TOWNSHIP

La Compagnie Minière Franco-Canadienne

This Company holds the mining rights to a large number of claims in Duverny township.

Camps were erected in range II, distant about eight miles by road from the town of Amos. Some surface work was carried out, and a 3,000-foot diamond-drilling programme was completed. Light mining equipment was installed, and the sinking of a small inclined shaft was then commenced. Operations were intermittent throughout the year.

The shaft is sunk on a quartz vein, which has a north-south strike and dips to the east at 70 degrees. Actually, the vein consists of a series of lenses, one of which, near the shaft, is exposed over a length of 100 feet and is approximately two feet in width. It is reported that encouraging gold assays were obtained in surface sampling.

LANDRIENNE TOWNSHIP

Mines Development Corporation, Limited

In the fall of 1935, operations were resumed at the 'Randall' property. The construction of a 50-ton milling plant was commenced, and preparations were made to continue the shaft from the 200-foot level to a depth of 300 feet, and to open up a second level at this horizon.

The power to operate the mill will be derived from a steam-engine, connected to the equipment by belts and line shafting.

DUBUISSON TOWNSHIP

Crossroads Gold Mines, Limited

This Company took over the old Unison property, previously held by Minrand Gold, Limited. The old workings were de-watered, and the sinking of a new shaft was commenced at a point approximately 500 feet south of the old shaft. Shortly after the commencement of this work, operations were suspended.

Gale Gold Mines, Limited

In 1935, light mining equipment was transported to this property. This equipment includes a 600 cu. ft. Diesel-driven compressor and an 8 in.

by 12 in. air-operated steam hoist. A 50 h.p. boiler was installed for heating purposes.

A vertical two-compartment shaft was sunk to a depth of 114 feet, and at the close of the year station-cutting was in progress at the 100-foot level.

Greene-Stabell Mines, Limited

Throughout 1935, a production of 70 tons of ore per day was maintained at this property. Over 6,780 ounces of gold were produced in the form of bullion and in a copper concentrate; the latter was shipped to a customs smelter.

No important additions were made to the ore reserves of the old mine-workings during the year. Exploration work was, for the most part, confined to diamond drilling from the surface, and from the north cross-cut on the 600-foot level, to explore the granodiorite contact zone on the Hammell claims northeast of the shaft. About 10,000 feet of diamond drilling was completed. This work was rewarded with encouraging results.

On the Hammell claims, several promising intersections of gold-quartz ore were cut by drill holes, and preparations were immediately made to carry out an underground exploration campaign in this section of the property. A three-compartment vertical shaft was sunk at a point about 2,800 feet northeast of the Greene-Stabell shaft. The new shaft is on the southeast shore of Stabell lake, on lot 57, range IX. At the end of the year, it was completed to a depth of 430 feet, and lateral work was under way at the 400-foot horizon. In the spring of 1936, it was reported that high-grade gold ore had been encountered, and the prospects for the property are considerably improved.

The equipment at the new shaft includes a 10 in. by 12 in. air-driven hoist. The compressed air is carried through pipes from the old shaft.

Shawkey Gold Mining Company, Limited

During 1935, the Shawkey mine responded very favourably to development. Drifting and raising on the 125-, 225-, and 325-foot levels indicated continuous lengths of ore. A raise was completed to the surface, to the north of the shaft, providing a secondary outlet to the mine, and shrinkage stopes were prepared above the first and second levels.

The shaft was deepened to 600 feet, and new levels were established at the 450- and 575-foot horizons. Lateral work was in progress on these levels at the end of the year.

Plans were made to place the property on a producing basis, and the construction of a mill and subsidiary buildings was completed in February, 1936. The mill is designed for a capacity of 125 tons of ore per day. The ore is hoisted in cages. It is then screened through a 1½-in. grizzly, and the oversize is reduced by a 15 in. by 24 in. jaw crusher. It is then transported by belt-conveyor to the mill bin. Fine grinding is accomplished in a 7 ft. by 4 ft. ball-mill in closed-circuit with traps and with a 54-in. high-weir classifier. The classifier overflow is pumped to a distributing box at the head of six blanket tables, and the table tailing enters No. 1 thickener. The concentrate, together with the materials from the traps, is amalgamated in a barrel, the residue being returned to the mill circuit.

The overflow from No. 1 thickener is clarified in a 6 ft. by 4½ ft. 13-leaf clarifier, and then goes to precipitation. The spigot product enters the first of three agitators in series. It then enters No. 2 thickener, and the clear overflow from this is returned to the head of the ball-mill; cyanide is added at this point. The pulp is filtered and washed on a 10 ft. by 12 ft. string filter, and is pumped to tailings; the filtrate is returned to the solution storage-tank.

The milling equipment is driven by individual motors, thus eliminating shafting and belting. Electric power is supplied by a 500 h.p. Diesel-driven generator.

During the first months in which the mill was operating, mill-heads averaged about 0.35 ounces gold per ton, and an estimated recovery of over 98 per cent was obtained.

Siscoe Extension Gold Mines, Limited

In the late fall of 1935, plans were made to resume mining operations at this property. An electric power line was constructed from the Blouin Lake sub-station of the Northern Quebec Power Company. New mine buildings were erected to replace those destroyed by fire in 1933. The new equipment installed includes a 600 cu. ft. electric compressor, and a 36 in. by 24 in. double-drum electric hoist.

Early in 1936, the mine was de-watered, and cross-cutting to the south was commenced to explore a promising indication obtained in previous diamond drilling.

Siscoe Gold Mines, Limited

During 1935, this Company again expanded operations. Production amounted to $2,274,582.58, with the mill treating an average of 408 tons per day. Dividends to the amount of 21 cents per share were paid, bringing the total amount disbursed to shareholders since production commenced to approximately $3,000,000.

The following data are included in the annual report of the Company for the year 1935:

"Production:

"149,070 tons of ore were milled, from which $2,274,582.58 were recovered. Advantage was taken of the new price of gold, and our increased tonnage capacity, to treat a lower grade ore to the advantage of the mine and the Company. The following comparative table shows results since 1930:

Year	Production	Tons Milled	Heads	Tailings	Percent Extraction
1930	$ 367,266.20	33,744	$11.11	$0.230	97.70
1931	787,724.24	55,675	14.45	0.302	97.91
1932	1,135,931.91	63,998	17.99	0.247	98.63
1933	1,616,487.08	96,348	17.27	0.492	97.14
1934	2,116,603.49	124,151	17.60	0.551	96.86
1935	2,274,582.58	149,070	15.81	0.556	96.49

"MINING:

"From development and stoping, ore was produced on every level in the mine. That from the three lower levels was mostly from development.

PLACE	TONS–1933	TONS–1934	TONS–1935
First level	17,342	12,408	18,241
Second level	19,165	30,445	27,170
Third level	17,699	21,122	17,434
Fourth level	15,353	18,236	11,032
Fifth level	20,349	24,439	26,925
Sixth level	3,324	12,005	24,238
Seventh level	3,116	4,811	11,231
Eighth level	.....	1,360	4,568
Ninth level	.....	.....	4,316
Tenth level	.....	.....	5,012
	96,348	124,826	150,167

"BROKEN-ORE RESERVES:

"With a reserve of broken ore in stopes at the end of the year of 59,967 tons, we are carrying approximately five months' supply. This represents an investment of $89,616.21; a cost of $1.49 per ton. This reserve is considered ample for the efficient regulation of ore extraction at our present rate.

"DEVELOPMENT:

"In exploration and development, we practically doubled the amount of underground work done in 1934. There were 7,742.9 feet of cross-cuts, 11,174.8 feet of drifts, and 3,696.7 feet of raises, a total of 22,614.4 feet, equivalent to 4.3 miles, driven in the search for new ore; 9,296.2 feet, or 41 per cent. of this was in vein material. This includes also the tunnel drive to the mainland on the fourth level, which penetrates into a large unprospected area.

"32,161 feet of diamond drilling was done. Of this, 24,656 feet were from underground, and 7,505 feet from the surface.

"These two methods passed through, and gave us information on, more than ten miles of rock formation.

"As a result, 249,276 tons of ore were found. This provided our year's mill requirements and, in addition, 100,206 tons were added to proven ore reserves. These now stand at 383,217 tons, an increase of 37 per cent over 1934. All of this new ore is in our main workings on the island. Principal additions to our reserves were made in the *K* zone, where a number of new lenses were opened up. The rapidly increasing importance of this section is indicated by the fact that, two years ago, *K* zone ore made up 5 per cent of our total reserves of 200,000 tons, while today it represents 25 per cent of the greatly increased tonnage. Two of the lenses in the *K* zone are now providing the highest grade of ore going to the mill.

"Except for changes which may seem advisable, we propose to continue the programme of development and diamond drilling which has been in effect since the early part of last year.

"This calls for detailed development in our main workings on the island for the purpose of extending the limits of the present ore-bodies and locating new ones.

"As a result of the success obtained in the *K* zone during the past year, our programme there will be enlarged. We know that this zone extends for a considerable distance on our property.

"In the greenstones to the south, our present programme will be continued. Outlying sections to east, west, and south, beyond the limits of our central mining operations, will continue to be prospected.

"On the mainland to the northeast, we now have before us an extensive programme of drifting, cross-cutting, and diamond-drilling. This must be completed before definite recommendations can be made with regard to this particular area.

"Downward, there is a probability that further shaft-sinking will be done and that lower levels will be established, developing the present veins at greater depth.

"MILLING OPERATIONS:

"Due to the changing conditions, because of the increasing amount of ore from the *K* zone, it was found necessary to change and improve the mill flow-sheet. Another agitator was installed, as were trays in the old thickeners. A new type of filter was added, which eliminated soluble losses from tails. A laboratory and office was also added in the mill.

"Greater emphasis is being placed on cyanidation, the final process in the mill flow-sheet. Of the total recovery of 96.49 per cent, 85.32 per cent is being recovered by amalgamation and 11.17 per cent by cyanidation. Average mill-tails remained about the same at 0.556, but for the last quarter were down to 0.43. Finer grinding is being done and stronger solutions are being used, with resulting improvement in extraction under the changed conditions. Tonnage treated daily increased from an average of 340.7 in 1934 to 408.4 in 1935.

"GENERAL:

"It is expected that, during the coming summer, the island will be connected by means of a grade to the mainland with the new highway system of the mining district. This will eliminate the hazards of the freeze-up and break-up periods and will make living on the island much safer and also aid the efficiency of our operations.

"In the early spring, further additions to the cyanide part of the mill will be made. These will enable us to treat larger tonnages of the talcy *K* zone ore and permit an increase in the overall tonnage of possibly 50 tons per day. Our grinding capacity is ample for this increase. Advantage of this will be taken to mill larger amounts of our lower-grade ore".

SULLIVAN CONSOLIDATED GOLD MINES, LIMITED

During 1935, the mill operated continuously at an average of 85 tons of ore per day. Gold production for the twelve-month period amounted to approximately 13,301 ounces.

Lateral work was continued on the three levels of the mine, and stoping was commenced on the *A* vein system above the 1st level. Toward the end of the year, the sinking of a three-compartment shaft was commenced. This shaft is inclined at 45 degrees. It was connected with the mine workings at the 1st level toward the end of the year.

Exploratory work performed in 1935 included over 17,000 feet of diamond drilling.

BOURLAMAQUE TOWNSHIP

Lamaque Gold Mines, Limited

In April, 1935, the Lamaque mine was brought into production. The initial milling installation, comprising a 250-ton unit, gave satisfactory results, and underground development warranted an increased capacity. Accordingly, a second 250-ton unit was ordered, and its installation was completed in November.

The annual report of the Company for the year 1935 contains the following information:

"During this period, 83,847 tons of ore were treated. The recovery of bullion was the equivalent of 29,122.56 troy ounces of fine gold, which realized $1,019,289.68, or $12.16 per ton of ore milled.

"The principal results of development were as follows: No. 6 shaft was deepened along the incline 1,070 feet and reached its present objective, the 1,200-foot level; drifting along veins at various levels opened up new ore throughout the mine down to the 825-foot level; cross-cutting to reach the favourable ore-zone on the 950-, the 1,075-, and the 1,200-foot levels began in December; while a large amount of raising was done to block out ore reserves between levels in the upper portion of the mine.

"Classified under the usual headings, the year's development was as follows:

	In Ore	In Waste	Totals
Drifting	5,928.0 feet	5,437.0 feet	11,365.0 feet
Cross-cutting	1,145.5 "	2,341.5 "	3,487.0 "
Raising	6,922.5 "	1,989.5 "	8,912.0 "
Winzing	0.0 "	4.5 "	4.5 "
Stations	40.0 "	341.5 "	381.5 "
Shaft sinking	96.5 "	973.5 "	1,070.0 "
Totals	14,132.5 feet	11,087.5 feet	25,220.0 feet

"Ore produced from development amounted to 53,131 tons.

"Diamond drill exploration amounted to:

Surface	9,259.9 feet
Underground	30,270.0 "
	39,529.9 feet

"The technical estimate of 'positive ore' reserves at January 1st was at follows:

	Amount (Tons)	Pennyweights Per Ton	Total Gold in Pennyweights
Broken ore	28,794	5.71	164,435
Blocked ore	287,397	6.97	2,003,632
Totals and Average	316,191	6.86	2,168,067

"The construction of the first half of the 500-ton mill unit was completed in April and of the second half in November. The results obtained in the completed mill unit confirm those of the preliminary tests. The mill is currently treating over 500 tons per day, with better than 97 per cent recovery. The average recovery on the total tonnage of ore treated to December 31st was 97.66 per cent.

"The initial construction work incidental to the establishment of a small town to serve the needs of the mine workmen and their families has been completed. This work was carefully planned to allow for normal growth of population and for possible extensions that may be needed as a result of any further increase in the scale of mining operations.

"A water system from Blouin lake, which provides adequately for present and possible future requirements of the town and mill, has also been completed".

Nu Sigma Gold Syndicate, Limited

This Syndicate holds the mining rights to the following claims in Bourlamaque township: A-44049 to 44053, 44058 to 44062, 44067 to 44069, 40546 to 40550, 48470 to 48480, 48641 to 48645, 52252 and 54979.

A considerable amount of stripping and trenching was performed, and 7,159 feet of diamond drilling was completed during the year.

An interim report of Read-Authier Mine, Limited, dated August 31st, 1935, contains the following references to the Syndicate's holdings:

"This property comprises 1,335 acres, divided into three groups. The first is situated north of and immediately adjoining Sigma Mines, Limited; the second lies to the northeast of Sigma, adjoining the latter around its N.E. corner; while the third is north of and adjoins the easterly extension of Lamaque Gold Mines, Limited.

"Work has been concentrated on the second group, where preliminary surface exploration, due to the difficulties brought about by the heavy overburden, was confined to cutting and chaining lines, magnetometer survey, piping and sounding, drilling with special small drills, and, where possible, trenching and sampling.

"This preliminary work indicated the existence of a vein on surface, 115 feet in length, of average width approximately two feet. Systematic channel sampling over a length of 60 feet gave an average of 8.75 dwts. over a width of 3.5 feet, with visible gold eliminated prior to assaying.

"The heavy overburden referred to above made it impossible to trace the extension of the vein, and, after considering the general situation, your directors decided to proceed with diamond drilling. At the date of this report, the results of the first seven holes are available.

"*Hole No. 1.*—The first hole encountered difficulties while driving through the overburden and eventually it was abandoned at 78 feet.

"*Hole No. 2.*—This hole was spotted 45 feet north, 42 degrees east, of No. 1, and drilled at an angle of 45 degrees, with the object in view of cutting the extension of the easterly exposure in the surface trench.

"The vein was intersected at a vertical depth of 70 feet from surface, indicating that its dip at this point is approximately 61 degrees south. The hole was stopped at 500 feet.

"Examination of the core showed that visible gold was present in appreciable quantities and, after removal thereof, the core was sent to the Bureau of Mines for assaying. Results obtained gave an average value of 24.5 dwt. over a width of 6 feet 4 inches, made up as follows:

	Feet	Dwt.
93'10" to 93'10"	0'10"	7.61
93'10" to 96'2"	2'4"	.....
96'2" to 99'4"	3'2"	47.00
	6'4"	24.5 dwt. average

"*Hole No. 3.*—Drilled parallel to No. 1, at a distance of 100 feet southeast. This hole showed a zone of intensely schisted rock; no vein material was cut and it was stopped at 322 feet. No values were obtained.

"*Hole No. 4.*—Failed to reach bedrock and was abandoned at 135 feet.

"*Hole No. 5.*—Drilled parallel to, and 100 feet northwest of, No. 2. The hole, drilled at an angle of 35 degrees, reached a depth of 198 feet. No commercial values were obtained.

"*Hole No. 6.*—Drilled at an angle of 35 degrees to a depth of 148 feet, parallel to and 100 feet northwest of hole No. 5. No commercial values were obtained.

"*Hole No. 7.*—This hole was put down in order to explore the area north of the ore zone exposed by surface trenching. The hole was stopped at 502 feet; no commercial values were obtained.

"Each of the holes drilled intersected intrusive rocks, and the granodiorite dyke that accompanies the vein was intersected in every hole except No. 3. The said dyke runs at an angle of about 60 degrees with the general strike of the country rock.

"Feldspar porphyries, diorite, and granodiorite have been intersected, and although enough information has not yet been acquired to allow the expression of an opinion concerning the general geological conditions obtaining at the property, the fact that the known intrusives are similar to those at the Lamaque and Sigma causes the property to take on an interesting aspect.

"In view of the above, your directors are unable at this stage to draw any conclusions respecting the potentialities of the Nu Sigma property. Diamond-drilling continues, and it is the intention of your Company to pursue the exploration of Nu Sigma without interruption, in accordance with the programme set forth at the last meeting of shareholders".

Sigma Mines, Limited

During 1935, underground exploration work and diamond drilling were attended with very encouraging results. Large tonnages of ore are indicated and it is probable that this property will be provided with a mill at an early date.

During the first part of the year, operations were continued on the 100- and 225-foot levels, drifting on which disclosed the following ore-shoots:

	Length	Width	Average Grade (*)
100-Foot Level:			
102 drift east	272 feet	9.6 feet	3.87 dwt.
	115 "	5.0 "	5.32 "
102 drift west	250 "	6.7 "	7.97 "
225-Foot Level:			
204 drift east	128 "	4.3 "	4.8 "
	235 "	4.7 "	12.7 "
	50 "	4.47 "	4.78 "
203 drift west	134 "	5.1 "	7.62 "
	50 "	4.9 "	5.12 "
210 drift	100 "	5.0 "	4.92 "

A zone known as *219 zone* was found in diamond drilling from the 2nd level. It lies about 140 feet north of the 'North' vein referred to in the annual report for 1934 (1). Drifting on this zone has indicated an ore-shoot over 320 feet in length, 20 feet in width, and with an average gold content of 7.29 dwt. per ton.

In June, the sinking of a new three-compartment shaft was commenced. A steel headframe was erected over the temporary sinking headframe. The shaft is divided into two 5 ft. by 6 ft. compartments and a 4 ft. by 6 ft. manway. By the end of the year, a depth of 500 feet had been reached and lateral work was under way on the 350- and 475-foot levels. A hitherto unknown gold-quartz vein was intersected near the bottom of the shaft.

(*) These figures represent the average values, discounting high erratics.
(1) Que. Bur. Mines, Ann. Rept., 1934, Part A, p. 117.

In February, 1936, the lateral work on the new levels had been attended with the following results:

	Length	Width	Average Grade (*)
350-Foot Level:			
302 drift east	150 feet	5.6 feet	6.50 dwt.
304 " east	264 "	5.4 "	4.08 "
304 " west	170 "	5.7 "	2.55 "
475-Foot Level:			
402 drift east	155 "	5.3 "	4.19 "
402 " west	60 "	...	Low values
403 " east	215 "	5.6 "	3.82 dwt.
403 " west	...	...	Low values
404 " east	170 "	6.6 "	4.72 dwt.
404 " west	100 "	5.2 "	2.75 "

On the 350-foot level, 303 northwest drift intersected the *219 zone* at 611 feet. Drifting on this zone to east and west disclosed ore over a length of 60 feet, a width of 6.6 feet, and with an average gold content of 5.43 dwt. per ton.

Diamond drilling indications below the 475-foot level were encouraging, and it is planned to deepen the shaft and to open two more levels.

PASCALIS TOWNSHIP

Beaufor Gold Mines, Limited

In the fall of 1934, some diamond drilling was carried out on this property, but operations were suspended early in 1935. Later in the year, under an arrangement with Perron Gold Mines, Limited, a cross-cut was driven on the 325-foot level of the Perron workings toward the Beaufor shaft, and from the end of it a hole was drilled to intersect the shaft. Through this opening, the Beaufor workings were de-watered. Also, a new shaft was sunk by Perron Gold Mines on the Beaufor property, and from it connections were made with the latter's underground workings.

Perron Gold Mines, Limited

Lateral work was continued on the 175- and 325-foot levels. This work was attended with encouraging results, and in the fall of 1935 the erection of a 125-ton mill was in progress.

A new vertical shaft, measuring 18 ft. by 8 ft. and divided into three compartments, was sunk on the Beaufor property, to the south of the Perron workings. A cross-cut was driven on the 325-foot level to the shaft section, and a connection was made with the Beaufor workings. The south cross-cut on the Beaufor 2nd level, which is at a vertical depth of 200 feet, was continued to the new shaft section, and raising was commenced.

(*) These figures represent average values, discounting high erratics.

Drifting on the 175-foot level of the Perron mine has indicated a number of ore-shoots. The gold content is irregularly distributed, and it was found that reliable estimates could not be obtained by channel sampling. The 20-ton test-mill proved satisfactory for this purpose, at the same time providing a modest gold production: 7,529 tons of ore were treated, and 2,056.5 ounces of gold produced during the year.

The highway from Senneterre to the mine was completed, and it is now open for motor traffic. Early in 1936, a power line was constructed from the Blouin Lake sub-station of the Northern Quebec Power Company.

LOUVICOURT TOWNSHIP

Bussières Mining Company, Limited

During the first few months of 1935, the mine continued to produce about 180 tons of ore per day. Operations were unprofitable, and as exploration work failed to indicate any substantial ore deposits, it was deemed advisable to suspend operations. Since March, 1935, the property has been idle.

Vicour Gold Mines, Limited

In early 1935, preparations were made to carry out an underground exploration programme on this property. Light mining equipment was installed, including a 7 in. by 10 in. reversible steam-hoist, a 750 cu. ft. steam-driven compressor, and two 70 h.p. locomotive-type boilers.

A three-compartment vertical shaft was sunk to a depth of 150 feet, and some lateral work was carried out at this horizon. The shaft is located near the west boundary of claim A-34516. A mineralized zone is exposed on the surface about thirty-five feet north of the shaft; diamond drilling and surface work in previous years indicated an irregular gold content. The property did not respond favourably to underground development, and operations have been suspended.

TIBLEMONT TOWNSHIP

Murwood Gold Mines, Limited

The results obtained in drifting and cross-cutting on the 100-foot level of this property were unsatisfactory, and in the spring of 1935 operations were suspended.

South Tiblemont Mines, Limited

In February, 1935, following the completion of a 1,200-foot diamond-drilling programme, this Company suspended operations.

Tiblemont Island Mining Company, Limited

The sinking of the shaft, begun in the previous year, was completed to a depth of 510 feet. A level was established at 485 feet, and lateral work was carried out at this horizon.

A cross-cut was driven to the east for a distance of 775 feet. At 200 feet from the shaft, a drift was opened to the south for a distance of about

733 feet from the cross-cut. Several zones containing quartz stringers were encountered and explored. Visible gold was observed at a number of points.

At 300 feet east of the shaft, a drift to the north intersected a zone of silicified granodiorite, containing quartz stringers. Pyrite is plentifully distributed over a width of fifty feet, and free gold was observed in several places. The zone was followed to the east for about thirty feet.

At 675 feet east of the shaft, a quartz vein was encountered. It is about eighteen inches in width and has been exposed over a length of 100 feet. Encouraging gold values are reported.

An underground diamond-drilling programme was commenced early in 1936.

VAUQUELIN TOWNSHIP

Avocalon Mining Syndicate

The shaft was completed at this property to a depth of 125 feet, and approximately 1,000 feet of lateral work was carried out at the 100-foot level. Recent additions to equipment include an assay plant and a 50 h.p. steam boiler.

It is reported that some visible gold was encountered in the course of the underground work.

TAVERNIER TOWNSHIP

Lacoma Gold Mine, Limited

This Company was incorporated in 1935 with a capitalization of 3,000,000 shares of $1 par value stock. Mining operations were carried out on a group of claims in the southeast corner of Tavernier township. They were formerly known as the 'Peacock' claims, and are described under that name in the annual report of the Bureau for 1927.

During the year, light mining equipment was transported to the property, and a vertical shaft was completed to a depth of 270 feet. Lateral work was commenced at the 250-foot level. In November, the combined hoist and boiler house was destroyed by fire, and operations were suspended.

CURRIE TOWNSHIP

Lake Rose Mines, Limited

In February, 1936, the Prospectors Airways group of claims at Madeleine (Rose) lake was transferred to this Company. The group includes A-52813 to 52858, a total of 46 claims. A preliminary report on the property, by G. S. MacKenzie; appears in Part *A* of the annual report of the Bureau for 1934, and a more detailed report on the mine and area as a whole, by the same author, in Part *B* of the 1935 annual report.

During the year under review, a Diesel-driven compressor was transported to the claims, and an adit was driven to the south from the shore of the lake. The adit is 951 feet in length. Several quartz veins were intersected, and, in some of these, visible gold was observed. Drifting was in progress at the end of the year.

DESJARDINS TOWNSHIP

Florence River (Quebec) Gold Mines, Limited

This Company was incorporated in 1935 with a capitalization of 3,000,000 shares of $1 par value stock.

In the fall, a promising gold discovery was made in the vicinity of the Florence river and many claims were staked in that region. The mining rights to the following claims are held by this Company: A-57798 to 57822 and 57973 to 57985.

Camps were constructed, and a large amount of trenching was carried out. In the winter, a diamond-drilling programme was commenced.

The geology of this and neighbouring properties is described by G. S. MacKenzie in Part *B* of the annual report for 1935.

LÉVY TOWNSHIP

Opemiska Copper Mines, Limited

In the summer of 1935, some promising sulphide zones were discovered and trenched. An electrical survey of the property was also completed, and a small amount of diamond drilling was performed to confirm the results. The drilling totalled 3,308 feet in 19 holes.

The Company's report for the year 1935 contains the following information:

"The summer prospecting resulted in the discovery of a new copper zone about 2,000 feet east of the known showings. This zone runs north and south, with a steep dip, whereas the old showings run east and west with a 60° dip towards the north. The discovery trench showed about 17 feet of ore, running in excess of 13 per cent copper. Subsequent drilling did not come up to this mark, but did show commercial widths of good grade copper. Two holes tap the ore zones at a vertical depth of 175 feet, and indicated 30 feet to 40 feet of ore running between 2 per cent to 4 per cent copper. The length of the vein has not been determined, and drilling has been discontinued until next summer, due to lack of camp facilities.

"A winter road was built during the summer from Rouleau Siding, a station on the main line of the Canadian National railway, to the mine, a distance of 137 miles. This road is 25 feet wide, and 95 per cent of it is under one per cent grade. With the exception of a few temporary detours, the maximum grade is 5 per cent, and the maximum curve is 20 degrees..

"The cost of the road was in excess of $100,000, towards which the Quebec Government contributed $16,666.00. The cost is largely due to the great number of bridges necessary; four have spans in excess of 300 feet, and one is over 600 feet long.

"During late winter, about 400 tons were transported to the mine at a cost of 30 cents per ton-mile. With a few improvements, much larger tonnages could easily be handled at a reduced cost.

"At the mine, there has been built a new bunk house, an office, warehouse, blacksmith shop equipped with steel sharpener, power house, and a powder house. A change house for the men will be constructed. We have

installed a small three-drill Diesel-driven compressor, a double-drum steam hoist, and a 60-horsepower boiler.

"The shaft was started in March and will be sunk to the 150-foot level, from where we will develop the north zone and No. 1 zone. No. 2 zone will either be developed or diamond drilled from the 150-foot level. About mid-summer, we expect to be ready to sink to the 275-foot level".

CHIBOUGAMAU DISTRICT

Consolidated Chibougamau Goldfields, Limited

In 1935, the three-compartment shaft was completed to a depth of 522 feet, and stations were cut at the 125-, 250-, 375-, and 500-foot horizons. A programme of lateral work was then undertaken to explore the ore-zones on the 250- and 500-foot levels.

The shaft was sunk under difficult circumstances. A large amount of water was met, and pumping capacity was severely taxed. A number of diamond-drill holes were put down around the shaft, and grouting mixtures were forced down these holes to reduce the flow of water; partial success was attained.

In the Company's annual report for 1935, it is stated that the results of the year's work have given sufficient encouragement to warrant the continuance of the development programme originally formulated.

McIntyre-Porcupine Mines, Limited

In the spring of 1935, this Company continued the exploration of the Rangeley-Wolson discovery at Gwillim lake. A diamond-drilling programme was carried out for a length of 1,200 feet along the strike of the mineralized zone, and to an average depth of 125 feet. The results attained in the first eight holes indicated that the zone is continuous, but the gold content is irregular. It was thought that two ore sections are indicated; one 400 feet long, 10½ feet wide, averaging $8.25 per ton in gold; the other 300 feet long, 1½ feet wide, averaging $37.30 per ton in gold.

On completion of the diamond-drilling programme, the Company relinquished its option on the group. In early 1936, interests associated with Mining Corporation of Canada acquired an option, and made preparations for further exploration work.

McKay (Quebec) Exploration, Limited

This Company was active in the Chibougamau district during 1935. The first annual report contains the following information:

"*Property C* is located at the north end of lake David, with the major portion of the ground in Scott township, and an additional section in Obalski township.

"On the shore of lake David, a shear-zone was uncovered in which could be seen a series of quartz veins carrying iron and copper sulphides. This shear has been proven for a length of over 200 feet, and a width of twenty feet has been uncovered, with the westerly limit not as yet reached.

"A quartz porphyry zone nine feet in width and well mineralized with fine iron pyrite was located 800 feet northeast of this shear-zone. The length of this porphyry has already been determined for 130 feet. Masses of sulphides occur in the fracture planes across this zone. Assays of $2.15 in gold per ton have been returned.

"In the north-central section of this property, and lying in the contact between the granite and the greenstone, there has been found a zone of shearing which varies from 100 to 300 feet in width. Sections of this shearing are well mineralized with pyrite, chalcopyrite, and sphalerite, from which assays of over 20 per cent zinc have been returned.

"A further showing was uncovered near the western boundary of the property, where a porphyry area is cross-fractured and well mineralized with iron sulphides. Samples taken here assayed $4.20 in gold. (This showing is similar in appearance to that of the Ramsay MacDonald group, which it joins immediately on the west).

"Due to the heavy overburden and large areas of muskeg, it was decided that further exploration work here would be done by diamond-drilling, which drilling has already been contracted for.

"*Property D* is located at Williams lake, in the extreme north-central section of Scott township.

"A heavy shearing was noted here under the water, and within a few feet of the south shore of the lake. This shearing could be seen for several hundred feet in length, and in it were sections of heavily mineralized quartz and carbonate. Samples of these mineralized sections returned values of $2.45 in gold, and 7.5 per cent in copper.

"Due to the location of this discovery under water, it was decided to carry on all exploratory work by diamond drilling through the ice, and drilling is under way at the time of this writing.

"*Property E* covers a large portion of Simon lake in the central section of Scott township.

"On Duchesne island, a well fractured zone has been opened-up for a length of 400 feet and a width of 100 feet. Quartz veins fill the fracture planes and this quartz is mineralized with chalcopyrite, pyrite, sphalerite, and galena. These quartz veins are naturally irregular in shape and width, with many of them at flat-lying angles. The gold occurs in the free state, and seems to be in no way associated with the sulphide mineralization. In one trench of over 100 feet in length, a composite sample of all of the quartz which occurred in this trench gave assays of $14.35 per ton.

"At one point, the side of a bluff has been blasted away, so that a cross-section of the zone could be seen to a depth of twelve feet. A comparatively flat-lying vein is seen here to have vertical ascending stringers, and, near the base of the bluff, these stringers converge and roll into an almost vertical vein five feet in width. Free gold can be seen in various places across these faces. Due to the free state of the gold, assay results would naturally be erratic, and returns of from a trace to $17.00 have been received.

"The deposit appears to be a large mass broken up by two main fracture systems which intersect each other at an angle of 50 degrees. The

quartz which occurs in these fracture planes varies in width from inches to five feet. Additional work here will be in the form of a series of short diamond-drill holes.

"*Property G* adjoins Property *E* on the west, and covers an area between Simon lake and lake Asinitchibastat.

"A well-defined quartz vein was located here, having a maximum width of five feet and an average width of thirty inches. This vein has now been stripped for a little over seventy feet in length. Samples taken across the vein at various points gave assay returns of 0.75 oz., 2.03 oz., 0.56 oz., and 0.45 oz. in gold.

"This area shows the result of heavy erosion, and trenching exposes only that area which remains, namely, the footwall mineralization and the quartz vein lying on top of it, both being greatly oxidized and fractured. This footwall mineralization has returned assays of $3.50 per ton.

"The heavy overburden and the close proximity of the stream and lake make further surface work extremely difficult, and it was decided to carry on further development by diamond drilling. A contract for this drilling has already been let".

Several other groups of claims are held by this Company.

EMPLOYMENT, WAGES, AND ACCIDENTS IN MINES AND QUARRIES DURING THE YEAR 1935 (1)

EMPLOYMENT AND WAGES

During the year under review, a total of 15,473 men were employed in the mining industry of the Province. Compared with the previous year, this is an increase of 17.4 per cent.

The total working days for all employees were 3,397,870, which is equivalent to the work of 11,326 men each employed for 300 days.

Returns for the year covered 175 mines, 137 quarries, 3,420 sand and gravel pits (of which 2,965 were operated by the Provincial Roads Department), and also numerous claim holders who completed the required amount of assessment work.

TABLE I

WORKMEN EMPLOYED IN MINES AND QUARRIES IN THE PROVINCE OF QUEBEC, 1932 TO 1935

	1935	1934	1933	1932
Number of men employed	15,473	13,180	10,737	9,821
Number of men on a 300-day basis	11,326	9,561	7,431	6,855

The curves in the accompanying graph show how employment in the mining industry as a whole, and in the mines and quarries, separately, has fluctuated in the past ten years. In these curves, the 'number of men employed' in any year is the number as calculated on the basis of the standard year of 300 working days, adopted by the Bureau of Mines for statistical purposes.

As will be noted, 1935 established an all-time record for number of men employed in the mining industry of the Province. The curve has passed the previous peak, reached in 1929, and it is still rising steadily.

Employment in mines, proper, was higher than ever before, with an increase of 15 per cent over the previous year. In the quarries, also, there has been improvement—though not so pronounced—for two years in succession, but the number of employees still remains below the three thousand mark. As the graph shows, there was a fairly close correspondence prior to 1932 in the number of men employed in quarries and in mines, but during the past four years the curve for the mines has taken a decided upward turn, whereas that for the quarries, after a sharp drop in 1932, has risen but slightly. The trend of the curves reflects well both the great expansion in metal mining in Western Quebec and the relative stagnation in industries using the products of our quarries.

(1) Compiled by Henri Girard, from reports of Inspectors of Mines.

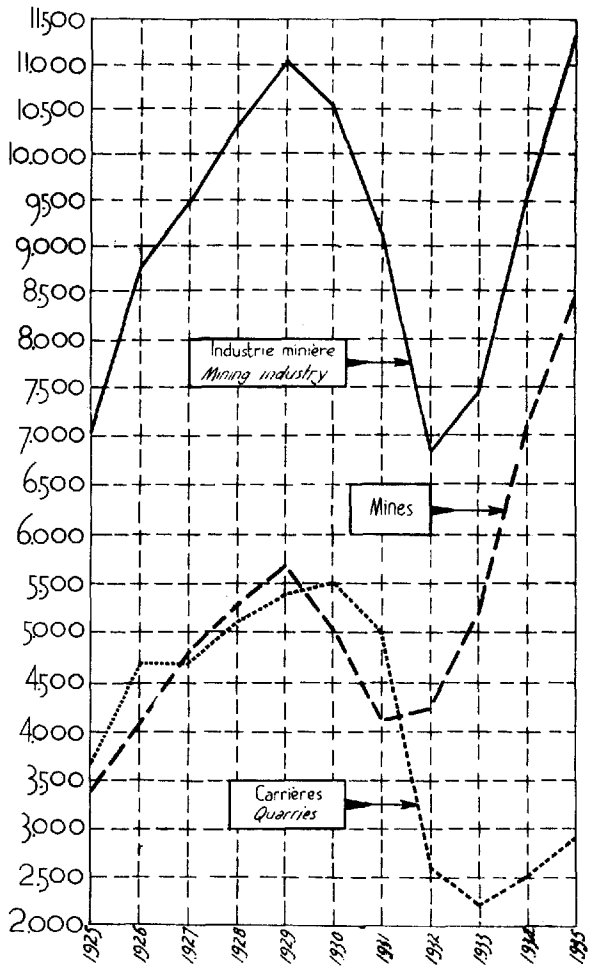


FIGURE 1.—Diagram showing the fluctuation in employment in mining industry as a whole and in mines and quarries separately for the past ten years.

Table II shows how the workmen were distributed over the various branches of the mining and quarrying industries. In the mines group, employment in gold mines continued to grow apace, showing an increase of nearly 85 per cent over the previous year, and there was also a large increase in the number of men employed in copper and pyrite (sulphur ore) mines. Less important gains were recorded in chrome, titaniferous iron ore, and zinc and lead mines, the last as the result of steady work at the Tétreault mine. Among the non-metallics, asbestos stands out conspicuously with an increase of nearly 15 per cent in the number of men employed. Increases were also recorded in the number of men engaged in the production of mica, ochre,

peat, and industrial lime, but fewer were employed in quartz and feldspar mining. Although there was a considerably increased amount of marl produced in the Province during the year, employment figures are not given in the table, as this material is extracted by local farmers for their own use. No activities were reported in the natural gas field.

Since the bulk of the lime production is consumed in various industries, such lime is now classed, for statistical purposes, as a non-metallic or 'industrial mineral' product, and not as a quarry product. Employment data relating to industrial lime are therefore given in the table under the heading of 'mines'. As will be noted, there was a considerable increase in the number of men employed in the lime industry as compared with 1934.

In the quarries group, there was improvement in every branch of the industry, with the exception of brick and pottery.

TABLE II

DISTRIBUTION OF WORKMEN IN THE VARIOUS MINES AND QUARRIES

	Number of men employed	Number of men calculated on 300-day basis	
	1935	1935	1934
MINES:			
Asbestos	1,962	1,940	1,691
Copper, pyrite	1,850	1,918	1,708
Chrome, titaniferous iron ore, zinc, lead	204	149	25
Feldspar	50	36	44
Gold, silver	3,369	3,222	1,744
Industrial lime	266	265	194
Magnesitic dolomite	179	145	149
Marl	-	-	2
Mica, phosphate	162	83	73
Mineral pigments, ochres	46	31	27
Mineral water	17	11	6
Molybdenite	19	4	2
Natural gas	-	-	13
Peat	6	2	-
Quartz, silica rock, garnet	131	87	102
Talc, soapstone	55	29	34
Assessment work on claims	503	503	1,450
SUB-TOTALS	8,819	8,425	7,264
QUARRIES:			
Brick, pottery	638	246	259
Cement	292	291	280
Granite	920	357	231
Limestone	1,239	618	559
Marble, slate, sandstone	310	152	111
Sand and gravel	3,255	1,237	857
SUB-TOTALS	6,654	2,901	2,297
TOTALS	15,473	11,326	9,561

A word of explanation is necessary regarding the great decrease shown in Table II in the number of men engaged in assessment work on claims, from 1,450 in 1934 to only 503 in 1935. Actually, work on claims was as active as ever. The reason for the apparent decrease is that, for statistical purposes, claims which have reached an advanced stage of development are now classed as non-producing mines. Men working on such claims are included in Table II for 1935 in the totals for gold or copper mines, as the case may be. As shown in Table III, the number of men working in non-producing mines was 1,508, or, on a 300-day basis, 1,110. For producing mines, the corresponding totals were 6,808 and 6,812..

Wages paid to workmen in the mines and quarries of the Province amounted to $11,136,456, as compared with $9,445,532 in 1934. Details of the wages in the several branches of the industry are given in the table of mineral production on page 7. Of the total, workmen in mines received $8,978,308 and those in quarries $2,158,148, which figures compare respectively with $7,608,829 and $1,836,703 in 1934. In both mines and quarries, the average wage was substantially the same as in the previous year.

TABLE III

WORKMEN EMPLOYED IN PRODUCING AND NON-PRODUCING MINES IN 1935

	NUMBER OF WORKMEN	WAGES	NUMBER OF DAYS' WORK	NUMBER OF 300-DAY WORKERS
Producing mines	6,808	$ 7,329,666	2,043,514	6,812
Non-producing mines	1,508	1,195,792	332,952	1,110
Assessment work on claims	503	452,850	150,950	503
TOTAL	8,819	$8,978,308	2,527,416	8.425

ACCIDENTS

The total number of accidents in mines, quarries, and annexed plants, as reported by operators, was 683, of which 17 were fatal (see Table IV). The rate per thousand workers, on the 300-day basis, was 60.3, which is higher than for the past three years. In mines proper, the rate was considerably above that of 1934, being 66.8 per thousand, as against 47.2. The distribution of accidents, fatal and non-fatal, in mines, quarries, and annexed plants is shown in Table V.

TABLE IV

SUMMARY OF ACCIDENTS IN MINES, QUARRIES, AND ANNEXED PLANTS IN 1935

	Number 300-day workers	Accidents		Total	Per 1,000 300-day workers
		Fatal	Non-fatal		
Mines	8,425	12	551	563	66.8
Quarries	2,901	5	115	120	41.4
TOTAL	11,326	17	666	683	60.3

TABLE V

ACCIDENTS IN MINES, QUARRIES, AND ANNEXED PLANTS IN THE PROVINCE OF QUEBEC DURING 1935

	Fatal		Non-fatal		Totals	
	No.	%	No.	%	No.	%
MINES:						
Underground	10	1.4	257	37.7	267	39.1
Open pits	0	.....	94	13.8	94	13.8
Surface	1	0.2	64	9.3	65	9.5
	11	1.6	415	60.8	426	62.4
QUARRIES:						
In pits	3	0.4	73	10.7	76	11.1
Surface	2	0.3	16	2.4	18	2.7
	5	0.7	89	13.1	94	13.8
ANNEXED PLANTS:						
Concentrators	0	.....	106	15.5	106	15.5
Smelters	0	.....	21	3.1	21	3.1
Shops	0	.....	28	4.1	28	4.1
Warehouses	0	.....	3	0.4	3	0.4
Power plants	1	0.2	4	0.5	5	0.7
	1	0.2	162	23.6	163	23.8
TOTALS	17	2.5	666	97.5	683	100.0

FATAL ACCIDENTS:

Fatalities were 1.28 per thousand full-year workers, as compared with 1.36 in 1934. An analysis of the fatal accidents, given in Table VI, shows that the chief causes were the handling of explosives and fall of rock, each of them accounting for three deaths.

TABLE VI

ANALYSIS OF FATAL ACCIDENTS IN MINES, QUARRIES, AND ANNEXED PLANTS IN THE PROVINCE OF QUEBEC DURING 1935

Cause of Accident	Underground	Open pits	Surface	Annexed plants	Total	
					No.	%
MINES:						
Explosives	2	0	1	0	3	25.0
Fall of rock	3	0	0	0	3	25.0
Hoisting and shaft	2	0	0	0	2	16.8
Electricity	0	0	0	1	1	8.3
Fall of person	1	0	0	0	1	8.3
Scaling	1	0	0	0	1	8.3
Slide of ground	1	0	0	0	1	8.3
TOTALS	10	0	1	1	12	100.0
QUARRIES:						
Slides of ground	0	2	0	0	2	40.0
Derrick	0	1	0	0	1	20.0
Electricity	0	0	1	0	1	20.0
Explosives	0	0	1	0	1	20.0
TOTALS	0	3	2	0	5	100.0

NON-FATAL ACCIDENTS:

Table VII classifies non-fatal accidents according to cause or occupation.

Mines:

'Loading cars and boxes' was the most frequent source of accidents, accounting for 14.3 per cent of the total, as compared with 8.4 per cent in 1934. Many of these accidents occurred while loading boxes, or at the foot of rock jams in open-cast pits or while loading cars underground. 'Haulage' accidents ranked second, with 11.3 per cent, which is an improvement over 1934, when they were responsible for 14.5 per cent of the total. 'Fall of rock' caused nearly 11 per cent of the accidents, with most of these mishaps occurring in working places underground. 'Handling rocks or objects', and 'drilling', are next in order, each with more than 9 per cent of the total.

Quarries:

The victims of 47 per cent of the accidents in quarries were men 'handling stone or objects' and 'loading boxes'. This is an improvement over the previous year, when 60 per cent of the accidents were in these occupations.

Annexed Plants:

About 75 per cent of the accidents in annexed plants came under the following classifications: machinery and tools, handling objects and stone, hammering stone and cobbing, fall of person, and falls of objects or rocks. This is about the same as the accident experience in such plants during 1934.

TABLE VII

ANALYSIS OF NON-FATAL ACCIDENTS IN MINES, QUARRIES, AND ANNEXED PLANTS IN THE PROVINCE OF QUEBEC DURING 1935

Cause of Accident	Underground	Open pits	Surface	Total	
				No.	%
MINES:					
Loading cars and boxes	22	36	1	59	14.3
Haulage	31	4	12	47	11.3
Fall of rock	34	8	2	44	10.6
Handling rocks or objects	24	7	10	41	9.9
Drilling	29	9	.....	38	9.2
Fall of person	20	8	8	36	8.1
Machinery and tools	13	2	13	28	7.0
Fall of objects	11	5	5	21	5.0
Rock rolling down incline	18	.....	.....	18	4.3
Explosives	16	.....	1	17	4.1
Lifting heavy object	8	1	5	14	3.4
Hammering stone and cobbing	3	7	.....	10	2.4
Scaling	7	3	.....	10	2.4
Hoisting and shaft	6	.....	2	8	2.0
Scaffolding and ladder	6	.....	.....	6	1.4
Slides of rock and ground	4	1	.....	5	1.2
Dust	3	1	1	5	1.2
Burns	1	1	2	4	1.0
Cable-derrick	.....	1	.....	1	0.3
Nails	.....	.....	1	1	0.3
Timbering	.....	.....	1	1	0.3
Miscellaneous	1	.....	.....	1	0.3
TOTALS	257	94	64	415	100.0
QUARRIES:					
Handling stone or objects	.....	17	6	23	25.9
Loading boxes	.....	19	.....	19	21.3
Haulage	.....	8	3	11	12.4
Hammering stone	.....	5	3	8	9.0
Fall of rock	.....	6	.....	6	6.7
Fall of person	.....	4	1	5	5.6
Drilling	.....	4	.....	4	4.5
Slides of rock and ground	.....	4	.....	4	4.5
Machinery and tools	.....	2	1	3	3.3
Derrick	.....	1	1	2	2.3
Electricity	.....	1	1	2	2.3
Burns	.....	1	.....	1	1.1
Explosives	.....	1	.....	1	1.1
TOTALS	.....	73	16	89	100.0

TABLE VII—(*continued*)

Cause of Accident	Concentrators	Smelters	Repair shop	Warehouses	Power plants	Total	
						No.	%
Annexed Plants:							
Machinery and tools	15	8	11	.....	1	35	21.6
Handling objects and stone	16	3	6	.....	1	26	16.1
Hammering stone and cobbing	23	.....	.....	.....	.....	23	14.2
Fall of person	14	2	2	1	.....	19	11.7
Falls of objects or rocks	9	3	3	2	.....	17	10.5
Burns	5	2	1	.....	.....	8	5.0
Gearing, shafting, belting	6	1	.....	.....	.....	7	4.3
Haulage	5	1	1	.....	.....	7	4.3
Lifting heavy objects	3	1	2	.....	.....	6	3.7
Dust	4	.....	1	.....	.....	5	3.1
Scaffolding and ladder	2	.....	.....	.....	1	3	1.9
Bagging and handling bags	2	.....	.....	.....	.....	2	1.2
Electricity	1	.....	.....	.....	1	2	1.2
Crane	.....	.....	1	.....	.....	1	0.6
Nails	1	.....	.....	.....	.....	1	0.6
Totals	106	21	28	3	4	162	100.0

PREVENTION OF ACCIDENTS

To maintain interest in accident prevention, we continue our practice of the past few years of publishing the experience that some mining companies in the Province are having with their safety organization. This year Mr. J. Tuttle, Mine Superintendent of Beattie Gold Mines, Limited, has very kindly furnished the following brief account of the safety measures adopted at the Beattie property, and Mr. Walter E. Montgomery has submitted a note on the same subject for the asbestos mines.

Accident Prevention and Safe Working Conditions at Beattie Gold Mines, Limited (1)

With the object of decreasing accidents and for the welfare of its employees generally, Beattie Gold Mines, Limited, inaugurated some time ago a Safety-First policy that has been of great benefit to all concerned. The methods adopted, and in operation in all departments, are as follows:

A safety committee is appointed by the head of each department—mine, mill, mechanical, electrical, railroad, construction and surface, and office, warehouse and engineering staff. Each committee consists of ten to fifteen employees, with the head of the department or his assistant as chairman. The timekeeper acts as secretary for all the committees. He sends a record of the proceedings of each meeting to the mine manager and to the heads of all departments, and posts a copy on a bulletin board provided for

(1) By J. Tuttle, Mine Supt., Beattie Gold Mines, Ltd.

that purpose. It is also his duty to see that all safety and other measures which have been adopted by the committees are duly carried out.

A noteworthy feature of the scheme is an arrangement whereby the personnel of the committees is continually changed, a certain number of the members of each committee retiring after each meeting and their places being filled by others at the following meeting. This rotation of membership continues until every employee in the department has served on his committee, after which the cycle is resumed. In this way, every employee, in due course, has an opportunity of serving on his particular committee, and thus becomes thoroughly imbued with the importance of striving at all times to improve safety measures and general working conditions, to the great benefit of all concerned. When a man has been appointed on a committee, his attendance at meetings is compulsory, except in the event of sickness, or for some special reason acceptable to the superintendent, in which case the absentee is required to attend a subsequent meeting.

The mine department committee meets twice a month, and each of the other committees once a month. At the meetings, accident prevention, safety measures, working conditions, operating methods, and kindred matters are freely discussed, and committee members are encouraged to offer suggestions, entirely without prejudice. Every proposal brought forward is given careful consideration. This opoprtunity of informal discussion with their chief and their fellow workers is of great psychological value, quite apart from its direct beneficial effect as an aid in accident prevention, since it encourages in the employees a sense of personal interest in all operations connected with the mine, and they are brought to realise their own and the Company's well-being are completely interdependent.

Most of the suggestions brought forward are of such a nature that the committees are competent to arrive at a final decision one way or the other concerning them, and such as are accepted are put into effect. But where the matter is one that calls for change of custom or policy, or that would entail considerable expenditure, or is beyond the authority of the chairman to act on, the recommendation of the committee is passed on to the management for consideration and final decision.

At the commencement of each meeting, the discussion and decisions of the previous meeting are outlined by the secretary, and are further debated if thought necessary. Also, the secretary gives details of accidents (if any) which have occurred in the intervening period, and these are analysed and discussed with a view to taking measures to prevent the recurrence of similar accidents.

The head of the department, in his capacity as committee chairman, takes advantage of the meetings to address the men on general matters affecting the welfare of the Company and its employees, as well as on safety measures and accident prevention. These talks are much appreciated by the men and are a great aid in maintaining that *esprit de corps* which is so essential to successful operation.

Plans are now being made to arrange courses of instruction in first-aid and mine-rescue work. In the meantime, safety booklets have been prepared and are issued to all employees, giving suggestions as to how accidents

may be prevented and including rules and recommendations for workers in all departments.

Thanks to the hearty co-operation of all employees, the Beattie safety scheme is giving excellent results.

Safety Association of the Quebec Asbestos Producers (1)

Since the establishment, in 1932, of the *Safety Organization of the Quebec Asbestos Producers' Association*, notable progress has been made in the reduction of accidents in asbestos mines and mills. This has been achieved through the splendid co-operation of all members of the Association in a common cause.

Notwithstanding the increase—from five to nine—in the number of producing mines in this period, with corresponding increase in employees, hours worked, and tons produced, the accident frequency and accident cost have declined steadily.

In co-operation with the Quebec Bureau of Mines, First Aid classes have been held at all the properties and to date more than one hundred employees have successfully completed the course and been awarded certificates.

Fourteen emergency units are distributed at advantageous points about the various properties to assist employees in this First Aid work. These units are contained in sealed metal cans and include a stretcher, wool and rubber blankets, splints, tourniquets, bandages, slings, etc.

In underground workings, hard hats, safety shoes, and electric caplamps are standard equipment and have proved a decided factor in the reduction of accidents. Hard hats are now being introduced in open-pit work in order to reduce the danger from falling rocks.

Safety meetings are held periodically by the majority of the operating companies. At these meetings, which are attended by the superintendents and foremen, previous accidents and methods to prevent their recurrence are discussed.

All-Service gas masks are used for rescue work underground, and at each property an oxygen inhalator is available as an aid to resuscitation in case of an asphyxiation or a powder headache.

In the larger manufacturing plants, gas masks, as well as asbestos suits and gloves, are available for fire fighting.

It is gratifying to note that not one fatal accident occurred in the asbestos mines or plants during 1935, and this splendid record is being maintained during the first months of 1936. This record is the more commendable when it is realized that approximately 1,500,000 pounds of powder and a vast number of caps are used annually, and that, in 1935, the quantity of rock mined amounted to no less than 2,852,118 tons.

All concerned—workmen, foremen, superintendents, and other officials of the member companies of the Association—are to be congratulated on the results they have attained in this humanitarian work of accident prevention.

(1) By Walter E. Montgomery, Safety Engineer, Quebec Asbestos Producers' Association.

DESCRIPTION OF FATAL ACCIDENTS

January 2nd. — Thomas Skapec, mucker, was overcome by explosive fumes at the Bussières mine and succombed.

A vertical raise was being driven from a drift on the 500-foot level of the mine, and, on January 2nd, a height of about 35 feet above the level floor had been reached. A round was drilled-off and blasted at about 3 p.m. The muck from the previous blast had not all been removed, and, when this round was blasted, the muck pile closed-off the bottom of the raise. At 4.15 p.m. Skapec and his companion, P. Zowojski, went into the drift to load cars. The air-line in the drift was open and they did not notice explosive fumes. Seven cars had been loaded and trammed when Skapec started to loosen the muck which was hanging up. It started to run, leaving an opening at the edge of the raise. Noticing the presence of explosive fumes, Skapec took the air hose in his hand with the object of inserting it in the opening. He suddenly collapsed in doing so, and Zowojski, in trying to pick him up, was also overcome. The bodies of the two men were found by a machine-helper who went on shift at 6.45 p.m. Artificial respiration was employed, and Zowojski recovered in about fifteen minutes. Skapec could not be revived, although artificial respiration was continued for over five hours.

Verdict: Accidental death.

February 1st. — Fred Gallagher, timberman, age 42, was instantly killed in falling from a platform in the No. 6 shaft at the Lamaque mine.

The sinking of No. 6 shaft is continuing. It is inclined at 60 degrees from the horizontal and has reached an inclined depth of about 420 feet. In the shaft, there are two skip-compartments and one manway. While sinking is in progress, only one skip is in use, and this travels in the centre compartment.

At noon on February 1st, J. C. Perry, mine superintendent, descended the shaft in the skip to take measurements. In passing the 300-foot-level station, he observed Gallagher apparently engaged in nailing planks to provide additional supports to the shaft sets of the manway compartment. Perry descended to the bottom and, when his measurements were completed, he entered the skip and rang the signal to hoist to surface. While the skip ascended at slow speed, there was a crash and a violent movement of the skip. The hoist-man felt the jar and stopped the skip a few feet above. Two shaft-men who had been working on the bottom, climbed up the shaft and found Gallagher's body about 30 feet below the place where the first violent movement of the skip occurred. Probably, as the skip was passing this point, one end of a plank protruding into the skip-compartment was whipped around, throwing Gallagher into the shaft. It was found that his injuries consisted of a fracture of the neck and that death was instantaneous.

Verdict: Accidental death.

February 16th. — Robert Christie, aged 28 years, employed as a skip-tender at the Eustis mine, operated by the Consolidated Copper & Sulphur Company, Limited, was fatally injured at the bottom of the shaft.

Early in the morning of February 16th, a round was blasted in the bottom of the inclined shaft, which is in process of sinking. At 7.30 a.m., Christie came on duty with the shift in charge of loading the skips. Later on, Steve Harvey, shift boss, went around on his inspection tour. From the back of the shaft, he noticed a rock which apparently was loose. He asked the foreman, Bilinski, to scale it down.

At the inquest, Bilinski stated that he and the victim tried many times to bar it down, but without success. They had practically finished their shift and were cleaning-up the bottom of the shaft when the loose rock fell suddenly. Christie was crushed by a piece of the rock and died during the following night.

Verdict: Accidental death.

March 8th. — Frank Gregor, age 37, employed as cage tender at the O'Brien mine, was caught between the cage and the shaft-timbers, and died a few hours later.

At about 2.30 a.m., the cage was lowered with an empty car to the 400-foot level. The hoistman, Richard McCendie, expected the cage to intercept the cage chairs, and lowered it gently a few inches past the level floor. He stopped it there, as he knew that the chairs had not been put in. He then received a one-bell signal on the electric signal system, and returned it on the return system. He interpreted this signal as a signal to hoist above the level floor, to permit the cage-tender to put in the chairs. He started to hoist slowly for a height of about 10 feet from the level, then, receiving no other signal, he hoisted the cage to the 300-foot level.

When the cage reached that level, Gregor was observed sitting in an empty car and apparently hurt. The victim stated to the mine superintendent that, when he gave the first one-bell signal on the electric buzzer, he thought the cage was still in motion, and intended to stop it. Omitting the three-bell signal, he commenced to climb into the empty car on the cage, with the object of going to the 300-foot level. As the hoist-man interpreted the signal as a signal to hoist, the cage started away before he could get safely inside. He was caught across the back by the first wall-plate, twelve feet above the station floor, and fell into the car. Gregor died of his injuries the same day. Death was caused by shock and internal hemorrhage following extensive abdominal internal injuries.

Verdict: Accidental death.

March 27th. — Herménégilde Therrien was instantly killed at the Tétreault mine by the explosion of approximately one thousand detonators.

Therrien was on duty preparing capped fuse lengths for the following shift. He was alone in the cap-crimping room when the explosion occurred. The cause of the explosion is unknown.

Verdict: Accidental death.

April 3rd. — Onesime Thibeault, mucker, was killed by a fall of rock at the Tétreault mine.

The accident occurred on the 400-foot level, north of the main shaft, in a section where the level runs in ore through an abandoned stope. The

victim, with a companion, was mucking under a pillar standing about 40 feet above the floor of the level. A section of this pillar, weighing several tons, fell down, crushing Thibeault to death.

This accident would probably have been avoided if the victim had followed the instructions given to all employees at the mine, to retire to a point of safety at the first sign of danger and not to return to their work before a thorough investigation had been made. A few minutes before the accident, the noise of rock crushing was heard, overhead, by the two men. Alexandre Parent, Thibeault's companion, went under cover and tried to induce the latter to follow him, but he refused and continued working. The victim was found under heavy blocks of ore. Death was instantaneous.

Verdict: Accidental death.

April 12th. — Narcisse Gosselin, 53 years of age, foreman at the quarry of Gingras & Frères, in the township of Barnston, was fatally wounded by the fall of a stiff-leg derrick.

Just prior to the accident, the derrick was loaded with a five-ton granite block. Gosselin, who was standing on the upper carriage of the derrick, to signal, told his men to stand clear of the moving jib. At that moment, one leg of the derrick broke down. This so weakened the derrick that another of the supporting legs broke immediately afterwards. As a consequence, the derrick tipped over, and the victim's head was crushed against a piece of wood. He suffered a fracture of the skull and died the next day.

Verdict: Accidental death.

July 15th. — Michel Rompré, employed as skip loader at the Tétreault mine, was the victim of a fatal accident at the ore pocket located below the 500-foot level.

For unknown reasons, it seems that Rompré had gone over to a platform located on the side of the incline shaft opposite to his post. In jumping across the track, back to his post, he apparently fell and was caught between the skip on its downward trip and the lip of the loading pocket. He suffered a fracture of the spine and was disembowelled. No one witnessed the accident.

Verdict: Accidental death.

July 24th. — John W. Considine, age 34, employed as a mucker at the Noranda mine, was fatally injured in stope No. 36 below the 100-foot level.

At the time of the accident, Considine and a fellow worker, Joseph Perrault, were engaged in barring-down a large piece of loose rock which was hanging from the back, close to the east wall of the stope. Perrault noticed the rock starting to give way, and he shouted a warning to Considine, who was working with a bar about seven feet from him. Through an error in judgment, Considine ran in the wrong direction, under the loose rock, and he was caught by the end of it. A 300-pound piece fell on the victim. The injured man suffered multiple fractures of the right arm and shoulder. He died the same day.

Verdict: Accidental death.

July 28th. — Stanley Krol, aged 23 years, was instantly killed by an explosion of dynamite at the property of Sigma Mines, Limited.

On the morning of July 28th, two machine-men, Krol and Radoservich, were loading with dynamite a round of holes, in a raise that was being driven from the 200-foot level of the mine. When the loading was completed, they lit the fuses, following which Krol descended to the level. Radoservich first loosened the planks on which they had been standing, but as one plank failed to loosen easily, he left it, and then he, in turn, descended. Krol, believing there was plenty of time, re-ascended the ladder to the raise and tried to loosen the plank. At this moment, the round started to go off. The victim, who had remained too long at the face, was found at the foot of the muck pile. He had a fractured skull, and death was instantaneous.

Verdict: Accidental death.

August 21st. — Omer Fortier, 40 years old, employed as electrician at the quarry operated by the Standard Lime Company, Limited, near Joliette, was electrocuted by coming in contact with a high-tension wire.

At the time of the accident, Fortier had climbed a pole to attach thereto wires which were not under tension. They were to be connected later to a 2,200-volt power line. While doing his work, he happened to touch with his back some live wires carried higher up by the pole. He received a shock from which he died instantly.

Verdict: Accidental death.

August 28th. — Ray Larkin, electrician's helper, employed at the Stadacona-Rouyn mine, was killed when he put his hand on a 550-volt electric power line and fell to the ground.

On August the 28th, J. N. Collins, electrician, and his helper, Ray Larkin, were completing the wiring of the power-house. At about 8.30 a.m., they mounted the ladders and prepared the conduit in order that the service wires could be run through it. For some unexplainable reason, Larkin placed his hand on the open end of a nearby wire which was under a 550-volt current. Collins ran to shut the power off, but when he returned he found Larkin lying on the ground at the foot of the ladder. It was found on examination that the deceased also suffered a fractured skull in his fall.

Verdict: Accidental death.

October 3rd. — Paul Emile Pellerin, employed as a labourer by Laganière, Houde & Company, road contractors, was buried beneath a pile of sand and died of suffocation. The accident happened in Leopold Comeau's gravel pit, in range XV of Cleveland township.

The bank-face of the pit was worked in two levels. Pellerin, on the afternoon of October 3rd, was standing on the first landing, which was about 8 feet above the pit floor. The upper part of the face for a height of 15 feet was coarse gravel with a slope of 60 degrees, above which was 10 feet of fine sand with a vertical face. It was this vertical part that collapsed and buried the victim, who was found to be dead when extricated ten minutes later.

Verdict: Accidental death.

October 11th. — Noel Fortin, aged 21 years, employed by the Quebec Roads Department, was killed in a gravel pit owned by Alfred Savoie, on the Saint-Luc range, in the seigniory of Saint-Etienne-de-Lauzon.

Fortin was on the floor of the gravel pit, loading a waggon with sand, and was standing near a working face about thirty feet high and almost vertical. When a sudden slide of sand and gravel occurred, he was trapped between the face and the waggon. He was completely buried and was found to be dead when removed fifty minutes later.

Verdict: Accidental death.

October 17th.—Leopold Blais, aged 28 years, was fatally injured in a blasting accident that occurred on the property of the Deschambault Quarry Corporation, Limited, at Saint-Marc-des-Carrières.

On the morning of October 17th, a series of holes had been drilled at the edge of the working face of the quarry. Towards noon, Blais, employed as short firer, had finished loading the holes. Each hole was about eight feet in depth and was charged with black powder and one dynamite cartridge used as the primer. At the quitting time, he was ready to shoot. He went to a nearby shed to set off the blast, carrying with him a small iron keg containing about two pounds of black powder and three dynamite cartridges. While making the connection between his blasting wire and the electric current, there was a short circuit between the iron keg he was holding and the blasting line, causing a spark that ignited the explosives. Blais was found by his companions, lying 25 feet from the demolished shed. His clothes had caught fire and he was bleeding profusely. He died on October 21st, from grangrene poisoning.

Verdict: Accidental death.

October 22nd. — Godron Stoddard, age 23, employed at the Noranda mine, was asphyxiated when buried in a flow of unconsolidated material.

A mixture of slag and pyritic tailings is used at the mine for filling empty stopes. The mixing pocket is at a depth of 25 feet below the surface. At the bottom of the pocket there is a discharge gate consisting of a steel plate suspended from above and operated by a toggle mechanism from the adjoining manway compartment. This equipment is designed in such a way that no one is obliged to go below the gate in order to operate it. The material, which is generally very loose, flows readily from the pocket through an inclined raise to a drift on the 100-foot level.

On the morning of October 22nd, the raise was filled with this loose material to above the lip of the discharge opening, so that the gate could not be effectively closed. The victim and a companion, John Code, were at work to clean enough material away from the opening to permit closing of the gate. The two men stood on top of the gate when, without warning, the material started to flow. Code caught the foot of a nearby ladder and saved himself. Stoddard was swept down the raise, and half an hour elapsed before his body came through. Artificial respiration was resorted to, but all efforts to revive the victim were unsuccessful.

Verdict: Accidental death.

November 4th. — Louis Boisvenu, miner, age 22, employed at the Cadillac-O'Brien mine, was struck by a large slab of loose rock which fell from the wall of a stope. Death ensued almost instantly.

A skrinkage stope has been driven on No. 4 vein between the 300- and 400-foot levels. It is about 260 feet in length and varies from 2 to 4 feet in width. The walls are composed of rock that is liable to loosen readily, especially where there are cross-fractures.

At about 9.45 a.m. on November 4th, Boisvenu was engaged in shovelling broken ore through an opening in the floor of the stope, close to the manway. At this moment, a large piece of loose rock, estimated to weigh four tons, fell from the south wall from a height of about three feet above the floor. The victim was pinned beneath the rock and was dead when extricated.

Verdict : Accidental death.

LIST OF THE PRINCIPAL OPERATORS AND OWNERS OF MINES AND QUARRIES IN THE PROVINCE OF QUEBEC

I.—METALLIC ORES AND MINERAL PRODUCTS

NOTE.—Operators whose names are preceded by an asterisk have produced or done work in 1935.

ASBESTOS

NAME OF OPERATOR	ADDRESS	LOCATION OF MINE (Township)
* Asbestos Corporation, Limited	Canada Cement Building, Montreal	Thetford, Coleraine, Broughton
* Canadian Johns-Manville Co., Ltd.	Asbestos	Shipton
Compagnie d'Amiante de Thetford, Ltée, (La)	Thetford Mines	
Cyr, L. R.	Broughton Station	
* Johnson's Company	Thetford Mines	Coleraine, Thetford
* Keasbey & Mattison Company	Thetford Mines	Thetford
* Nicolet Asbestos Mines, Limited	c-o Greenshields & Greenshields, 820 Transportation Building, Montreal	Tingwick
* Northern Asbestos Co., Limited	Black Lake	
* Quebec Asbestos Corporation	East Broughton	Broughton
Queen Asbestos, Limited	c-o A. Manseau, Vice-Pres., Drummondville	Cleveland

CHROME

NAME OF OPERATOR	ADDRESS	LOCATION OF MINE (Township)
* Asbestos Corporation, Limited	Canada Cement Building, Montreal	Coleraine
Brousseau, Nap.	Courcelles	Garthby
Colonial Chrome Company, Limited	120 Broadway, New York, N. Y., U. S. A.	Coleraine
Dominion Mines & Quarries Ltd.	Canada Life Building, 40 University avenue, Toronto 2, Ont.	Coleraine
Gray, Ernest	Thetford Mines	Coleraine
Larochelle, J. A.	Black Lake	Coleraine
Plante, Pantaléon (fils Thomas)	Sainte-Angèle-de-Mérici, Rimouski Co.	Awantjish
Reed Realties, Limited	c-o H. A. Peverley, 1536 St. Mark St., Montreal	Coleraine
Ross, Frank W.	67 St. Peter Street, Quebec	Coleraine
Victory Chrome Mines, Limited	c-o General Trust of Canada, 112 St. James St., Montreal	Garthby

COPPER

NAME OF OPERATOR	ADDRESS	LOCATION OF MINE (Township)
Abitibi Copper Mining Syndicate, Ltd.	Villemontel, Abitibi	Trecesson
Adsit Mining Corporation (The)	c-o Noranda Mines, Ltd., 2-8 King St. East, Toronto 2, Ont.	Rouyn
Alamac Mines, Limited	1811 Royal Bank Building, Montreal	Desmeloizes
Aldermac Mines, Limited	500 Dominion Square Building, Montreal	Beauchastel
Alderson & MacKay, Inc.	500 Dominion Square Building, Montreal	Beauchastel
Alliance Mining and Securities, Ltd.	c-o L. A. McKinley, Sec.-Treas., Room 111, Blackburn Building, Ottawa, Ont.	Dufresnoy
Area Mines, Limited	c-o Chauvin, Walker, Stuart & Martineau, 414 St. James St. W., Montreal	Duprat, Dufresnoy, Rouyn
* Astoria Rouyn Mines, Limited	70 St. Paul Street, Quebec	Louvicourt, Rouyn
Aura Mines, Limited	Lorrainville	Laverlochère
* Bagamac Rouyn Mines, Limited	Bank of Nova Scotia Building, Haileybury, Ont.	Rouyn

COPPER—Continued

Name of Operator	Address	Location of Mine (Township)
Blake-Chibougamau Mining Corporation	c-o Bernard Devlin, 65 Ste Anne St., Quebec	McKenzie, Obalski
Bussières Mining Co., Limited	221 Notre-Dame St. West, Montreal	Louvicourt
Calbec Copper Nickel Syndicate, Ltd.	26-7 Fraser Building, Ottawa, Ont.	Calumet Island
Carlson Copper Syndicate	New Liskeard, Ont.	Dufay
Centre Boischatel Copper Co., Ltd.	c-o E. D. Ranck, The Coleman Lamp & Stove Co., Ltd., Queen St. East & Davies Ave., Toronto, Ont.	Beauchastel
Chibougamau McKenzie Mines, Ltd.	Room 336, Board of Trade Building, Montreal	McKenzie
Cie Minière Ville-Marie-Rouyn (La)	Ville-Marie	Rouyn
Clericy Consolidated Mines, Limited	11-12 Carleton Chambers, 74 Sparks St., Ottawa, Ont.	Clericy
* Consolidated Copper & Sulphur Co.	Eustis	Ascot
* Consolidated Mining & Smelting Co. of Canada, Limited	840 Dominion Square Building, Montreal	
Cosmos Copper Mining Corporation, Limited	c-o Alex. Livventaal de Livi, Sienna	Weir
Dufault Lake Mines, Limited	4141 St-Denis Street, Montreal	Dufresnoy
Frontenac Copper Mines, Limited	c-o J. J. Harold, 204 Notre Dame Street, Montreal	Clericy
Glenwood Mining Co., Limited	Room 920, Castle Building, Montreal	Rouyn
* Greene-Stabell Mines, Limited	Canadian Bank of Commerce Building, 25 King Street West, Toronto, Ont.	Dubuisson
* Joannès Mine Corporation, Limited	276 St. James Street West, Montreal	Joannès
Lakeside Mines, Limited	1610 Concourse Building, 100 Adelaide St. West, Toronto, Ont.	Rouyn
Memphremagog Mining Company	c-o Geo. E. Smith, R. M. D. No. 2, Mansonville	Potton
Montbray Rouyn Mines, Limited	112 Yonge Street, Toronto, Ont.	Montbray
Newbec Mines, Limited	603 Royal Bank Building, Toronto 2, Ont.	Dufresnoy
* Noranda Mines, Limited	804 Royal Bank Building, 2-8 King St. East, Toronto 2, Ont.	Rouyn
Normac Mining Syndicate	411-13 Pigott Building, Hamilton, Ont.	Beauchastel
* Normetal Mining Corporation, Ltd.	350 Bay Street, Toronto, Ont.	Desmeloizes
Northwaite Mining Company, Limited	c-o Crabtree & McKee, 302 Bay St., Toronto, Ont.	Duprat, Dufresnoy
Obalski Mining Corporation	Suite 205, 25 St. James St. East, Montreal	
* Opemiska Copper Mines, Limited	25 King Street West, Toronto, Ont.	Levy
* Prospectors Airways Company, Ltd.	12th Floor, 80 King Street West, Toronto, Ont.	Currie
Quebec Copper Corporation	c-o E. D. Ranck, The Coleman Lamp & Stove Co., Ltd., Queen St. East & Davies Avenue, Toronto, Ont.	Duprat
Quemont Mining Corporation, Ltd.	350 Bay Street, Toronto, Ont.	Rouyn
Rhyolite Rouyn Mines, Limited	1004 Bank of Hamilton Building, Toronto 2, Ont.	Duprat
Ribago Copper Corporation, Limited	c-o R.E. Lloyd Lott, Bank of Hamilton Building, Toronto, Ont.	Beauchastel, Rouyn
* Robb-Montbray Mines, Limited	Room 1007, Excelsior Life Building, Toronto, Ont.	Montbray
Syndicat d'Exploration Minière de la Rivière Mistassini, Enrg.	c-o Pierre Doucet, Girardville	
Syndicat Minier de Gaboury	Guigues	Gaboury
Turtle Lake Mining Company	c-o J. A. Parent, 193 Main Street, Hull	Dufay
United Copper Syndicate, Limited	130 Coristine Building, Montreal	Beauchastel
Ventures, Limited	Canadian Bank of Commerce Building, 25 King Street West, Toronto, Ont.	Duprat, Dufresnoy
Waite-Amulet Mines, Limited	804 Royal Bank Building, 2-8 King St. East, Toronto, Ont.	Duprat, Dufresnoy
Wasamac Mines, Limited	4141 St-Denis Street, Montreal	Beauchastel

FELDSPAR

Name of Operator	Address	Location of Mine (Township)
Bertrand, Wilfrid	Buckingham	Derry
Blais (Nap.) & Arbic (Phrase)	c-o Phrase Arbic, Mont-Laurier	Campbell

FELDSPAR—Continued

Name of Operator	Address	Location of Mine (Township)
Brazeau, Maurice A.	Buckingham	Portland West
Buckingham Feldspar Company (The)	c-o E. S. Higginson, P. O. Box 45, Buckingham	Derry
Cameron, Wm. & J. J.	Buckingham	Derry
Canadian Amber Mica Company	c-o A. D. MacPherson, 3542 Vendome Ave., Montreal	Portland West
* Canadian Flint & Spar Co., Ltd.	900 Victoria Building, Ottawa, Ont.	Buckingham
Coté, Hon. Louis	Victoria Building, Ottawa, Ont.	Templeton
Derry Mining Company	Buckingham	Derry
Donaldson, Robert, J.	Glen Almond	Buckingham
* Evans, W. E.	Buckingham	Buckingham, Portland West
* McDoncll, B. A.	Buckingham	Derry
McMillan, A. J.	P. O. Box 84, Buckingham	Buckingham
O'Brien & Fowler, Limited	900 Victoria Building, Ottawa, Ont.	Derry
Parcher, Alfred	Glen Almond	Derry
* Pedneaud, Gonzague	Buckingham	Buckingham
St. Amour, Orphila	Notre-Dame-de-la-Salette	Villeneuve
Sellers (Walter) & Parcher (Alton)	Glen Almond	Derry
Toutloff, Frank	Pointe Gatineau	Portland East
* Wallingford (Arthur) & Moreau (Rodolphe)	c-o Rodolphe Moreau, Pointe Gatineau	Derry
Whitfield, T.	Buckingham	Buckingham
Whittemore, Mrs. A. R.	475 Kent Street, Ottawa, Ont.	Derry
* Winning, Bush	Notre-Dame-de-la-Salette	Portland West

GARNET

Name of Operator	Address	Location of Mine (Township)
Garnet Products, Limited	973 Hartland Avenue, Montreal	Joly
La Belle Mining, Incorporated	c-o Victor Levesque, 4203 Brébeuf St., Montreal	Joly
Langlade Garnet, Limited	80 St-Peter Street, Quebec	Beaudin, Trévet
McLean-McNicoll, Limited	609 Confederation Building, Montreal	Joly
Montreal Garnet Products, Reg'd	c-o Victor Levesque, 4203 Brébeuf St., Montreal	Joly

GAS and OIL

Name of Operator	Address	Location of Holdings
Bordeaux Coal & Oil Co., Ltd.	c-o Dr. Arthur Beauchamp, 2101 Boulevard Gouin West, Montreal	
Brochu, Louis	Room 809, Lewis Building, 465 St. John St., Montreal	
Cartier Natural Gas Company, Ltd.	167 Main Street, Hull	
Gaspesian Oil Company, Ltd. (The)	c-o Joseph Têtu, Rivière-du-Loup	Gaspé South
Mohr, Carl M., Limited	706 Insurance Exchange Building, Montreal	
Scott, Hope	14 de la Fabrique Street, Quebec	
Syndicat Monicol, Enrg. (Le)	Room 508-14, 31 St. James St. West, Montreal	
Trinidad Mines, Gas & Oil, Limited	116 Côte de la Montagne, Quebec	
Twin Cities Gas & Oil Company, Ltd.	Room 614 276 St. James St., Montreal	

GOLD

Name of Operator	Address	Location of Mine (Township)
* Adanac Gold Mines, Limited	330 Bay Street, Toronto, Ont.	Rouyn
Adanac Gold Syndicate	c-o Wm. E. Smith, 601 Northern Ontario Building, Toronto 2, Ont.	Rouyn
Adeline Lake Gold Mines, Limited	2408 Stanley Street, Niagara Falls, Ont.	Beauchastel
Adnaron Mines, Limited	c-o Francis J. McNally, Rouyn	Dufresnoy
Aldermac Mines, Limited	500 Dominion Square Building, Montreal	Beauchastel

GOLD—Continued

Name of Operator	Address	Location of Mine (Township)
Algray Mines, Limited	Room 401, 68 King Street East, Toronto 2, Ont.	Beauchastel
Amity Gold Mines, Limited	306 C. P. R. Building, Toronto, Ont.	Dubuisson, Bourlamaque
* Amos Mining Company, Limited	Room 304, 1410 Stanley St., Montreal	Dalquier
* Anglo-Canada Mineral Explorers	276 St. James St., Montreal	Duparquet
Anglo-Huronian, Limited	Suite 1206, Star Building, 80 King St. West, Toronto 2, Ont.	Fournière
Arno Mines, Limited	63 Sparks Street, Ottawa, Ont.	Rouyn
* Arntfield Gold Mines, Limited	159 Bay Street, Toronto, Ont.	Beauchastel
Arrowhead Gold Mines, Limited	1117 St-Catherine St. West, Montreal	Joanrès
* Ascot Gold Mines, Limited	357 Bay Street, Toronto, Ont.	Malartic
* Austin Rouyn Gold Mines, Ltd.	21 King Street East, Toronto, Ont.	Rouyn
Avocalon Extension Syndicate, Ltd.	Room 629, 67 Yonge St., Toronto, Ont.	Vauquelin
* Avocalon Mining Syndicate, Ltd.	428 Bank of Hamilton Building, 67 Yonge Street, Toronto, Ont.	Vauquelin
Basin Gold Mines, Limited	Suite 619, 159 Craig St. West, Montreal	Dubuisson
* Beattie Gold Mines, Limited	Canadian Bank of Commerce Bld'g., 25 King Street West, Toronto, Ont.	Duparquet
* Beafor Mining Corporation	445 St-François-Xavier St., Montreal	Pascalis, Louvicourt
Bell River Gold Mines, Limited	204 Hospital Street, Montreal	Cadillac
* Bidlamaque Gold Mines, Limited	713 Canada Permanent Building, 320 Bay Street, Toronto, Ont.	Bourlamaque
* Birrell Gold Mines, Limited	1609 Sterling Tower Building, Toronto, Ont.	Duprat
Blairmont Mining Company, Limited	c-o Messrs. Jenner & Brunt, 171 Yonge St., Toronto, Ont.	Tiblemont
Blake River Gold Mines, Limited	4681 Fabre St., Montreal	Cadillac
Blouin Lake Gold Mines, Limited	3-4 Carleton Chambers, Ottawa, Ont.	Boulamaque
* Bouchard Cléricy Gold Mines, Ltd.	715 Metropolitan Building, Toronto, Ont.	Cléricy
Bourbeau Lake Chibougamau Mines, Limited	New Liskeard, Ont.	McKenzie
Brown Bousquet Mines, Limited	437 St. James St. West, Montreal	Cadillac
Brownlee Mines, Limited	Noranda	Rouyn
* Bruell Gold Syndicate, Limited	Room 302, 330 Bay Street, Toronto, Ont.	Vauquelin
Buffalo Canadian Gold Mines, Ltd.	Suite 603-4, Royal Bank Building, 2-8 King St. East, Toronto 2, Ont.	Beauchastel
* Bussières Mining Company, Limited	221 Notre-Dame St. West, Montreal	Louvicourt
Calder-Bousquet Gold Mines, Ltd.	Room 706, 100 Adelaide St. West, Toronto, Ont.	Bousquet
Canadian Enterprises, Limited	212 Keefer Building, Montreal	Cadillac
Canadian Gold Operators, Limited	c-o Emilien Gadbois, 84 Notre-Dame St. West, Montreal	Cadillac
* Canadian Malartic Gold Mines, Ltd.	25 King Street West, Toronto, Ont.	Fournière
* Canadian Pandora Gold Mines, Ltd.	P. O. Block, New Liskeard, Ont.	Cadillac
Capital Rouyn Gold Mines, Limited	503 Standard Bank Building, Ottawa, Ont.	McKenzie
Cartier-Malartic Gold Mines, Ltd.	276 St. James Street, Montreal	Malartic
* Central Gold Mines, Limited	Picton, Ont.	Dasserat
Central Malartic Mines, Limited	c-o E. T. Garner, 512 Jarvis St., Toronto, Ont.	Malartic
Chadbourne Development Co., Ltd.	c-o Gerald A. McTeigue, 720 Transportation Building, Montreal	Rouyn
Chanore Louvicourt Gold Mines Syndicate, Ltd.	2144 Centre St., Montreal	Louvicourt
Chaput Gold Syndicate	210 Crown Office Building, 26 Queen St. East, Toronto, Ont.	Pershing
* Chieftain Gold Mines, Limited	810 Federal Building, 85 Richmond St. West, Toronto, Ont.	Tiblemont
* Churchill Mining & Milling Co. Ltd.	Central Building, Toronto, Ont.	Cadillac
* Colonial Gold Syndicate, Limited	Room 1101, 1410 Stanley St., Montreal	Dalquier
Compagnie Minière Franco-Canadienne, Ltée	Amos	Dubuisson, Duverny
* Consolidated Chibougamau Goldfields, Ltd.	Suite 702, Insurance Exchange Bld'g., 276 St. James St., Montreal	Obalski, McKenzie, Roy
Contact Gold Mines, Limited	713 Canada Permanent Building, 320 Bay Street, Toronto, Ont.	Bourlamaque
* Crossroads Gold Mines, Ltd.	Room 215, 159 Bay St., Toronto, Ont.	Dubuisson
Cummings-Trudel Mining & Development Co., Limited	Room 300, Victoria Building, Ottawa, Ont.	Barraute
* Dalton, John	Timmins, Ont.	Dubuisson
Dasserat Rouyn Goldfields, Limited	129 Cooper Street, Ottawa, Ont.	Rouyn
* Dion, Georges A.	19 St. Etienne Street, Lévis	Wattford

GOLD—Continued

Name of Operator	Address	Location of Mine (Township)
Donchester Mines, Limited	25 King St. West, Toronto, Ont.	Duparquet
* Dorrington Mining Syndicate	2177 Dawlish Avenue, Niagara Falls, Ont.	Beauchastel
Dorval-Siscoe Gold Mines, Limited	Suite 504, General Assurance Building, Cor. Bay & Temperance Sts., Toronto 2, Ont.	Varsan
Dubuisson Gold Mining Co. Ltd., (The)	Pine Street, Timmins, Ont.	Dubuisson
* Dubuisson Mines, Limited	Canadian Bank of Commerce Building, 25 King Street West, Toronto, Ont.	Bousquet
Dugoss Mines, Limited	168 Pitt Street, Cornwall, Ont.	Duparquet
Dunlop Consolidated Mines, Limited	503 General Assurance Building, 357 Bay Street, Toronto, Ont.	Louvicourt
Dupark Syndicate, Limited	Room 412, 276 St. James St., Montreal	Duparquet
* Duparquet Mining Co., Limited	c-o James McWilliam, 204 Hospital Street, Montreal	Duparquet
Duquesne Mines, Limited	80 King Street West, Toronto, Ont.	Duparquet, Destor
East Lamaque Gold Mines, Limited	504 General Assurance Building, Bay & Temperance Streets, Toronto, Ont.	Bourlamaque
* East Malartic Mines, Limited	913 Royal Bank Building, Montreal	Fournière
East Rouyn Gold Mines, Limited	c-o Holden, Murdock, Walton & Beatty, 2-8 King Street East, Toronto, Ont.	Rouyn
Eastwest Exploration Company, Ltd.	Room 809, Lewis Building, 465 St. John Street, Montreal	Dubuisson, Cadillac, Bourlamaque
Eclipse Gold Mining Company, Ltd.	6th Floor, 201 Notre Dame St. West, Montreal	Destor
* Engineers Exploration Co., Limited	P. O. Box 310, Noranda	Destor
* Erié Canadian Mines, Limited	Kirkland Lake, Ont.	Bourlamaque, Rouyn
Explorer Syndicate	c-o W. M. Goodwin, Ste-Anne-de-Bellevue	Rouyn
Farrell-Rouyn Mines, Limited	Canadian Bank of Commerce Building, 25 King Street West, Toronto, Ont.	Rouyn
Ferguson Exploration, Limited	Room 503, 1411 Crescent St., Montreal	Ditton
* Fleming Mines, Limited	Room 515, 215 St. James Street West, Montreal	Louvicourt
* Fleming-Thompson Gold Mines, Ltd	1305 Star Building, Toronto, Ont.	Duparquet
* Florence River (Quebec) Gold Mines, Ltd.	Room 510, 320 Bay Street, Toronto, Ont.	Desjardins
* Francœur Gold Mines, Limited	941 Dominion Square Building, Montreal	Beauchastel
* Gains-Moor Gold Mines Syndicate, Limited	411 Transportation Building, Montreal	Guillet
* Gale Gold Mines, Limited	459 Ouellette Avenue, Windsor, Ont.	Dubuisson
* Garth Chiboug Gold Syndicate, Ltd.	320 Bay Street, Toronto 2, Ont.	McKenzie
Gilbec Mines, Limited	200 Bay Street, Toronto 2, Ont.	Pascalis
Gold Bar Mines, Limited	204 Royal Bank Building, Toronto 2, Ont.	Rouyn, Beauchastel
Gold River Mining Company, Ltd.	956 New Birks Building, Montreal	Ditton
Golden Road Mine, Limited	Rouyn	Rouyn
Goldstrike Syndicate	206 Reford Building, 217 Bay Street, Toronto, Ont.	Rouyn
Graham Bousquet Gold Mines, Ltd.	603 Royal Bank Building, 2-8 King St. East, Toronto, Ont.	Bousquet
* Granada Gold Mines, Limited	1108 Federal Building, Toronto, Ont.	Rouyn
* Greene-Stabell Mines, Limited	Canadian Bank of Commerce Building, 25 King St. West, Toronto, Ont.	Dubuisson
Halliwell Gold Mines, Limited	360 St. James Street West, Montreal	Beauchastel
* Harricana Amalgamated Mines Inc.	105 Mountain Hill, Quebec	Bourlamaque, Dubuisson
Harris Bousquet Gold Mines, Limited	Suite 716, 276 St. James St. West, Montreal	Bousquet
Hosking Mining Company, Limited	221 Notre Dame Street West, Montreal	Louvicourt
* Inspiration Mining and Development Co., Limited	Amos	McKenzie
* James Patrice Gold Mines, Limited (The)	Rouyn	Guérin
Kegamione Development and Mining Co., Limited	c-o Mrs. E. Prickett, President, Noranda	McKenzie, Obalski
Keyroc Gold Mining Co., Limited	Suite 605, 244 Bay Street, Toronto 2, Ont.	Rouyn
Kindale Mines, Limited	217 University Tower Bldg., Montreal	Rouyn
Kinghorn Sturgeon Mines, Limited	357 Bay Street, Toronto, Ont.	Bourlamaque
Kinojevis Mining Co., Limited	c-o R. J. Driscoll, Témiscamingue	Rouyn

GOLD—Continued

Name of Operator	Address	Location of Mine (Township)
Kirkland-Crest Gold Mining Syndicate	c-o Kenneth J. Matheson, 56 Sparks St., Ottawa, Ont.	Louvicourt
Kirkland-Hudson Bay Gold Mines, Limited	New Liskeard, Ont.	Blondeau, Guillet
Kotter Gold, Limited	c-o D. B. Mulholland, 330 Bay Street, Toronto, Ont.	Lavergne
* L. B. United Mines, Limited	767 Yonge Street, Toronto, Ont.	Tiblemont
La Mine du Lac, Limitée	Notre-Dame-du-Lac	
La Rose-Rouyn Mines, Limited	112 Yonge Street, Toronto 2, Ont.	Rouyn
* La Sarre Gold Mines, Limited	Room 314, C. P. R. Building, Toronto, Ont.	La Sarre
* Lacoma Gold Mine, Limited	Room 629, 67 Yonge Street, Toronto, Ont.	Jurie, Tavernier
* Lake Doré Mines, Limited	85 Richmond Street West, Toronto, Ont.	McKenzie
Lake Expanse Gold Mines, Limited	Room 510, 320 Bay Street, Toronto, Ont.	Guillet
* Lake Expanse Mines, Limited	Room 701, 407 McGill Street, Montreal	Guillet
* Lake Fortune Gold Mines, Limited	c-o Godin & Smith, N. P., 231 St. James St. West, Montreal	Beauchastel
Lake Malartic Development Co., Ltd.	911 Excelsior Life Building, Toronto, Ont.	Malartic
Lamaque Contact Gold Mines, Limited	357 Bay Street, Toronto, Ont.	Bourlamaque
* Lamaque Gold Mines, Limited	Amos	Bourlamaque
* Lapa Cadillac Gold Mines, Limited	25 King Street West, Toronto, Ont.	Cadillac
Lartic Mines, Limited	c-o Holden & Murdock, Suite 603-4, 2-8 King Street, Toronto 2, Ont.	Malartic
* Legault Gold Mines, Limited	c-o Adélard Beauchemin, Amos	Dubuisson
LeRoy Mines, Limited	267 Notre Dame St. West, Montreal	Duparquet, Guillet
Locarno Gold Mines, Limited	34 Murray Street, Ottawa, Ont.	Cléricy
Louvicourt Mines, Limited	Room 1610, 100 Adelaide St. West, Toronto, Ont.	Louvicourt
Louvre Gold Mines, Limited	407 McGill Street, Montreal	Louvicourt
* MacDonald Gold Mines, Limited	P. O. Box 247, Elmira, Ont.	Duparquet
* McDonough Mining Syndicate, Ltd.	Room 712, 63 Sparks Street, Ottawa, Ont.	Louvicourt
McIntyre-Porcupine Mines, Limited	15 King Street West, Toronto, Ont.	Guillet
* McKay (Quebec) Exploration, Ltd.	Room 702, Insurance Exchange Building, 276 St. James Street West, Montreal	Roy, Scott, Obalski
* McWatters Gold Mines, Limited	P. O. Box 689, Rouyn	Rouyn
Magog Gold Mines Corporation	c-o Eugène Gagnon, 116 Short Street, Sherbrooke	Ascot
* Malartic Gold Fields Limited	824-25 Royal Bank Building, Montreal	Malartic, Fournière
* Malrobic Mines, Limited	36 Toronto Street, Toronto 2, Ont.	Malartic
* Manley Quebec Gold Mines, Ltd.	Room 703, 367 Bay Street, Toronto, Ont.	La Reine
Marillac Mining Syndicate, Limited	c-o Lloyd A. Bissell, 55 Ossington Ave., Ottawa, Ont.	Joannès
* Maritime Cadillac Syndicate	Moncton, N. B.	Cadillac
Mecca Gold Mines, Limited	Room 707, 217 Bay Street, Toronto, Ont.	Tiblemont, Vauquelin
Mega Mining Syndicate (The)	c-o Alex. Gagnon, 55 Scott Street, Quebec	Whitton
Mentor Exploration and Development Co., Limited	Canadian Bank of Commerce Building, 25 King Street West, Toronto 2, Ont.	Rouyn
Met-Mac Prospectors, Limited	Suite 701, 407 McGill Street, Montreal	Louvicourt
Midcour Prospectors, Limited	c-o J. J. Gray, 906 Central Building, Toronto 2, Ont.	Louvicourt
* Midland Mining Corporation, Ltd.	231 Notre Dame Street West, Montreal	Desmeloizes, Perron
* Mine d'Or Vénus Consolidée (La)	51 Colomb Street, Quebec	Barraute
* Mines Development Corporation	189 St. John Street, Quebec	Landirenne, Launay
* Mines d'Or de Laverlochère, Ltée (Les)	c-o Horace Bédard, Saint-Eugène-de-Guigues	
Mining Enterprises, Limited	Dominion Square Building, Montreal	Malartic
Minrand Gold, Limited	231 St. James Street West, Montreal	Dubuisson
Moffatt Hall Mines, Limited	Haileybury, Ont.	Bourlamaque
* Monarch Mines, Limited	14 King Street East, Toronto, Ont.	Dasserat
* Mooshla Gold Mines, Limited	2529 Canadian Bank of Commerce Bld'g., 25 King Street West, Toronto 2, Ont.	Bousquet
Mormac Gold Mines, Limited	c-o P. Cuddihy, Rouyn	Guillet
* Murwood Gold Mines, Limited	Concourse Building, 100 Adelaide St. West, Toronto, Ont.	Tiblemont

GOLD—Continued

Name of Operator	Address	Location of Mine (Township)
Natagan Gold Mines Syndicate, Ltd.	c-o A. P. Robitaille, Charlesbourg	Barraute
NewRoy Gold Mines, Limited	465 Bay Street, Toronto, Ont.	Louvicourt
* Noranda Mines, Limited	804 Royal Bank Building, Toronto 2, Ont.	Rouyn
Norgold Mines, Limited	2529 Canadian Bank of Commerce Bld'g., 25 King Street West, Toronto 2, Ont.	Bousquet
Norlake Mining Corporation	902 Castle Building, Montreal	McKenzie
Normont Gold Mines, Limited	905 Transportation Building, Montreal	Beauchastel, Rouyn
* North King Gold Syndicate	Room 213, 414 Bay Street, Toronto, Ont.	Haig
North Tiblemont Gold Mines, Limited	Insurance Exchange Building, Toronto, Ont.	Tiblemont
Northern Chibougamau Mines, Ltd.	460 St. François-Xavier St., Montreal	McKenzie
Northern Exploration Syndicate, Ltd.	P. O. Box 630, Montreal	Duparquet
* Northern Quebec Gold Fields & Exploration Company (The)	Trois-Rivières	Joannes, Duparquet
Northern Quebec Gold Mines, Ltd.	Room 341, Dominion Square Building, Montreal	Rouyn
* Nortrac Mining Company, Limited	210 St. James Street West, Montreal	Dalquier
* Nu Sigma Gold Syndicate, Limited	Room 809, Lewis Building, 465 St. John Street, Montreal	Bourlamaque
Nubell Gold Mines, Limited	Room 513, 215 St. James Street West, Montreal	Clériey, Vauquelin
* O'Brien Gold Mines, Limited	Kewagama	Cadillac
* O'Leary-Malartic Mines, Limited	Rouyn	Beauchastel, Duprat
* O'Neill Thompson Gold Mines, Ltd.	Roxborough Apartments, Ottawa, Ont.	Joannès
Osisko Lake Mines, Limited	c-o H. Whittingham, 100 Adelaide St., Toronto, Ont.	Rouyn
Osisko Rouyn Exploration Co., Ltd.	Room 710, Transportation Building, Montreal	Rouyn
* Pan-Canadian Gold Mines, Limited	24 Milk Street, Boston, Mass., U. S. A.	Cadillac
Pascalis Gold Mines, Limited	Canadian Bank of Commerce Building, 25 King St. West, Toronto, Ont.	Pascalis, Louvicourt
* Payore Gold Mines, Limited	504 General Assurance Building, Bay & Temperance Streets, Toronto, Ont.	Bourlamaque
* Perron Gold Mines, Limited	Pascalis	Pascalis
Pontiac & Abitibi Gold Mines, Ltd.	c-o J. C. Lamothe, K. C., Suite 204, 25 St. James St. West, Montreal	Beauchastel
* Pontiac Rouyn Mines, Limited	c-o Millar & Hunter, 59 Yonge Street, Toronto 2, Ont.	Rouyn
Poulin Gold Mines, Limited	48 Fort St., St. Lambert, Chambly Co.	Ascot
Powell-Rouyn Gold Mines, Limited	Room 440, Confederation Life Building, Toronto, Ont.	Rouyn
Pre-Cambrian Holdings, Limited	437 St. James Street West, Montreal	Malartic
* Pre-Cambrian Prospectors, Limited	Rouyn	Guillet, Rouyn
Quebec Consolidated Gold Mines, Ltd.	Room 100, 45 St. James Street West, Montreal	Launay
Quebec Eureka Gold Mines, Limited	11 King Street West, Toronto, Ont.	Tiblemont
Quebec Gold Belt Mines, Limited	P. O. Box 190, Fort Erie, Ont.	Bourlamaque, Louvicourt
* Quebec Gold Mining Corporation	225 Notre Dame Street West, Montreal	
Quebec Gold Research, Limited	Room 320, Castle Building, 1410 Stanley Street, Montreal	Dubuisson, Desmeloizes
* Quebec La Pauze Gold Mines, Ltd.	409 Notre Dame Street West, Montreal	La Pauze
Quebec Viking Gold Mines, Limited	Room 305, 330 Bay Street, Toronto, Ont.	Beauchastel
Randall Mines Corporation	189 St. John Street, Quebec	Landrienne
Ranic Gold Mines, Limited	Amos	Duverny
Ray-Lorr Gold Mines, Limited	132 Horne Avenue, Rouyn	Destor, Duparquet
Raymond Tiblemont Syndicate	Room 207, 200 Bay Street, Toronto, Ont.	Tiblemont
Red Gold Mining Co., Limited	159 Craig Street West, Montreal	Rouyn
* Renault, Auguste	Ville-Marie, Témiscamingue	Dasserat
* Riverside Gold Mines, Inc.	495 Gamble Street, Rouyn	Beauchastel
* Robb-Montbray Mines, Limited	Room 1007, Excelsior Life Building, Toronto, Ont.	Montbray
Roedor Gold Mines, Limited	Room 601, 244 Bay Street, Toronto, Ont.	Dubuisson, Bourlamaque
* Rosco Development Company, Ltd.	210 St. James Street West, Montreal	Rouyn
Rouyn Lake Gold Mines, Limited	c-o P. Bédard, Kapuskasing, Ont.	Rouyn
Rouyn Reward Gold Mines, Limited	330 Bay Street, Toronto, Ont.	Rouyn, Joannès
Rubec Mines, Limited	Room 402, Insurance Exchange Building, Montreal	Cadillac, Bousquet
* San Pedro Gold Mining and Prospecting Corporation	6720 Sherbrooke Street East, Montreal	Tiblemont

GOLD—Continued

Name of Operator	Address	Location of Mine (Township)
* Sanvar Mines, Limited	407 McGill Street, Montreal	Varsan
Scott, Hope	14 Fabrique Street, Quebec	Compton, Clifton
Seguin Rouyn Gold Mines, Limited	714 Drummond Building, Montreal	Rouyn
Senator Mines, Limited	187 Main Street, Hull	
Shawkey Gold Mining Co., Limited	Shawkey (Abitibi)	Dubuisson
* Sigma Mines, Limited	Room 1007, Excelsior Life Building, Toronto, Ont.	Bourlamaque
* Siscoe Extension Gold Mines, Ltd.	231 St. James Street West, Montreal	Dubuisson, Varsan
Siscoe Gold Mines, Limited	Room 905, Dominion Square Building, St. Catherine Street, Montreal	Dubuisson, Varsan
* Sladen Malartic Mines, Limited	Trust Building, Ottawa, Ont.	Cadillac
Smith-Tiblemont, Limited	1300 Aldred Building, 507 Place d'Armes, Montreal	Tiblemont
* South Tiblemont Gold Mines, Ltd.	Room 205, 200 Bay Street, Toronto, Ont.	Tiblemont
* Stadacona Rouyn Mines, Limited	719 Tramways Building, 159 Craig Street West, Montreal	Rouyn, Duprat
* Standard Gold Mines, Limited	c-o Pierre Beauchemin, Amos	Bourlamaque
Stonetrue Gold Mine Company, Ltd.	204 Hospital Street, Montreal	Cadillac
Sudbury Contact Mines, Limited	2529 Canadian Bank of Commerce Building, 25 King Street West, Toronto 2, Ont.	Bousquet, Cadillac
Sudbury Mines, Limited	11 Jordan Street, Toronto, Ont.	Joannès
Sulcoe Gold Mines, Limited	c-o Miller & Hunter, 59 Yonge St., Toronto 2, Ont.	Dubuisson
* Sullivan Consolidated Mines, Ltd.	1207 Aldred Building, Montreal	Dubuisson
* Syndicat Launayor, Limitée	445 St. François-Xavier Street, Montreal	Launay
Tavernier Gold Mining Syndicate	11 King Street West, Toronto, Ont.	Tavernier
Tétreault (Pierre) Estate	70 Holyrood Avenue, Montreal	Montauban
* Thompson Cadillac Mining Co.	Room 1885, Beaver Hall Building, Montreal	Cadillac
Thompson Joanne Gold, Limited	Rouyn	Joannès
* Tiblemont Island Mining Co., Ltd.	Amos	Tiblemont
Tonawanda Mines, Limited	706 Canada Permanent Building, Toronto, Ont.	Cadillac
Towagmac Exploration Company, Ltd.	941 Dominion Square Building, Montreal	Beauchastel
Trinidad Mines, Gas & Oil, Limited	116 Côte de la Montagne, Quebec	Dufresnoy
Twin Lakes Mining Corporation	59 St. James Street West, Montreal	Beauchastel
Unit Company, Limited	52 St. Peter Street, Quebec	Seigniory of Rigaud-Vaudreuil
* United Gold Exploration, Limited	Room 605, 276 St. James Street West, Montreal	Laverlochère
* United Gold Mines, Limited	c-o J. S. Prégent, 4948 Iberville Avenue, Montreal	Rouyn
Val d'Or Mineral Holdings, Limited	Canadian Bank of Commerce Building, 25 King Street West, Toronto, Ont.	Dubuisson, Bourlamaque, Cadillac, Malartic [Rouyn
Valco Mines Company	8 Sault-au-Matelot Street, Quebec	
Ventures Claims, Limited	Canadian Bank of Commerce Building, 25 King Street West, Toronto, Ont.	Dufresnoy, Rouyn
* Vicour Gold Mines, Limited	Room 713, Canada Permanent Building, 320 Bay Street, Toronto, Ont.	Louvicourt
Vimy Gold & Metals, Limited	14 Queen's Road, Valois	Montauban
Waite-Amulet Mines, Limited	804 Royal Bank Building, 2-8 King Street East, Toronto, Ont.	Duprat, Dufresnoy
West McWatters Syndicate, Limited	11 King Street West, Toronto, Ont.	Rouyn
West Shore Malartic Gold Mines, Ltd.	Room 816, 1440 St. Catherine Street, Montreal	Dubuisson, Malartic
Wiltsey-Coghlan Mines, Limited	25 King Street West, Toronto, Ont.	Rouyn
Wood Cadillac Mines, Limited	437 St. James Street West, Montreal	Cadillac

GRAPHITE

Name of Operator	Address	Location of Mine (Township)
Bertrand, E.	Gracefield	Northfield
* Canadian Graphite Corporation	1193 Phillips Place, Montreal	Boyer
Crucible Graphite Co., Ltd.	52 Spadina Avenue, Toronto, Ont.	Buckingham

KAOLIN

Name of Operator	Address	Location of Mine (Township)
Bryce, Robert A.	85 Richmond Street West, Toronto, Ont.	Amherst
* Canadian Kaolin Silica Products, Limited	1602 University Tower Building, Montreal	Amherst

MAGNESITE and DOLOMITE

Name of Operator	Address	Location of Mine (Township)
* Canadian Refractories, Limited	Canada Cement Building, Montreal	Grenville
* International Magnesite Company	Calumet	Harrington
Parker, N. S.	Orford Lake	Bolton East

MICA

Name of Operator	Address	Location of Mine (Township)
* Ahearn, Wm.	538 McLaren Street, Ottawa, Ont.	Hull
* Bazinet, François	5778 Cartier Street, Montreal	Joliette
* Blackburn Bros., Limited	Blackburn Building, Ottawa, Ont.	Templeton
Brown Bros.	Lucky Reserve, Cantley, Wright Co.	Hull
Canadian Amber Mica Co.	c-o A. D. MacPherson, Manager, 3542 Vendome Avenue, Montreal	Portland West
Carman, Osborn	Farm Point	Hull
Charlevoix Muscovite Mining Co., Ltd.	La Malbaie, Charlevoix Co	Lacoste, De Sales
Charlevoix Radium Exploration Syndicate Ltd	25 St. John Street, Quebec	Lacoste, De Sales
Chenier, Z. E.	148 Laurier Street, Rockland, Ont.	Grenville
Cheslock, Isidore	Poltimore	Portland West
* Cleary (G.), Morris (M.) & Poirier (A)	c-o George Cleary, Wilson's Corners	Wakefield
Cross, S. H.	90 Fifth Avenue, Ottawa, Ont.	Hull
* Cross, W. C.	209 Bridge Street, Hull	Hull
de Rainville, David	R. R. No. 1, Wilson's Corners	Wakefield
Ellard (J.) Estate	Wright	Alleyn
* Flynn, H. T.	33 Montcalm Street, Hull	Hull, Wright
Gauthier, J. B.	P. O. Box 226, Buckingham	Buckingham
Gourdeau, J. I.	51 d'Auteuil Street, Quebec	Wentworth
Gracefield Mica Mining Co. (The)	1475 St. Clément Street, Montreal	Northfield
Hamilton, Percy	Perkins Mill	North Templeton
* Kelly, Uldéric	153 First Street, Limoilou	Lacoste, De Sales
Kent Brothers	Kingston, Ont.	Hull
Kilbourn, Kenneth	101Murray Street, Montreal	Grenville
Lafortune (Silvio) Mining Co.	Pointe Gatineau	Templeton
Lépine, Hormidas	Sainte-Rose-de-Lima	Templeton
* Martin, A. G.	236 Besserer Street, Ottawa, Ont.	Hull
McGlashan (R. J.) & Co.	190 Montcalm Street, Hull	Wakefield
* McGlashan, Wm.	R. R. No. 1, Wilson's Corners	Wakefield
McLaurin, T. G.	42 Stanley Avenue, Ottawa, Ont.	Portland
McManiman, C.	Rawdon	Rawdon
* Morlot, Charles	Low, Gatineau Co.	Low
Morris, Jos.	Wilson's Corners	Wakefield
Nellis (T. F.) Estate	c-o Nellis, Thompson & Ellis, Royal Bank Chambers, Ottawa, Ont.	Hull
O'Brien & Fowler	900 Victoria Building, Ottawa, Ont.	Villeneuve
* Papineauville Lumber Co., Limited	Papineauville	Templeton
Perkins Mining Company	P. O. Box 63, Pointe Gatineau	Templeton
Poulin (Ernest) & Holmes (Thos.)	Cantley	Hull
Richard, Louis E.	L'Ange Gardien	Petit Pré
St. Lawrence Mica Mines, Limited	c-o J. C. Boulanger, Cimon Building, 2 Côte d'Abraham, Quebec	Petit Pré
Saguenay Mica Company, Limited	c-o Germain Beaulieu, Advocate, P. O. Box 21, Quebec	
Sparks, Wm. J.	Stevenson Place P. O., Ont.	Hincks
* Tremblay, André	Saint-Pierre-de-Wakefield	
* Trudeau, William	Old Chelsea	Old Chelsea
Wallingford Bros., Limited	Perkins, Hull Co.	Templeton
Wilson (S.) Estate	Cascades	Thorne
Winning, Bush	Notre-Dame-de-la-Salette	Portland

MINERAL WATER

Name of Operator	Address	Location of Spring
* Abenakis Springs Company	Blondin	Saint-François-du-Lac
* Cie d'Eau Minérale (La)	148 Concorde Street, Saint-Hyacinthe	Saint-Hyacinthe le Confesseur
Coulombe, J.	L'Epiphanie	L'Epiphanie Parish
* Eau Minérale Etoile	Sainte-Geneviève-de-Batiscan	Sainte-Geneviève de Batiscan
Eau Minérale Richelieu	Saint-Joseph, Chambly Co.	
* Eau Naturelle Purgative de Chambord, Ltée (L')	c-o David Doré, Desbiens, Lac-Saint-Jean Co.	Métabetchouan
* Gurd (Chas.) & Co., Ltd.	1016 Bleury Street, Montreal	Varennes
* Lacerte, Adélard (Mrs)	Saint-Sévère, Saint-Maurice Co.	Saint-Sévère
* Lafrance, Noël	Saint-Hyacinthe	Abénakis Springs
* Lamarre, Josaphat	Saint-Barnabé North, Saint-Maurice Co.	Saint-Barnabé
* Maska Mineral Water	c-o Philippe Nadeau, Saint-Hyacinthe	Village Casavan
* Maski Bottling Works	Maskinongé	Saint-Justin
* Pellerin, Albert	Saint-Barnabé North	Saint-Barnabé
* Radnor Mineral Water Springs	Saint-Maurice, Champlain Co.	Radnor Forges
* Richard, Gérard	Saint-Grégoire, Nicolet Co.	Saint-Grégoire
Thomson (R. G. O.) & Moore (W. H.)	Room 28, 88 King Street East, Toronto 2, Ont.	Saint-Léon, Maskinongé Co.

MOLYBDENITE

Name of Operator	Address	Location of Mine (Township)
* Bain (John) Estate	c-o Toronto General Trusts Corporation, Ottawa, Ont.	Masham
Height of Land Company (The)	4327 Old Orchard Avenue, Montreal	Preissac
Lalonde, T. A., Ltée	Amos	Preissac
Lamotte Mines, Limited	445 St. François-Xavier St., Montreal	La Corne
Madore (W. W.) & Germain (Gabriel)	4321A Brébeuf St., Montreal	Deschambault, Portneuf
Riley, James	Hodgins, Pontiac Co.	Thorne

OCHRE and IRON OXIDE

Name of Operator	Address	Location of Mine
* Argall, Thos. H.	Argall's Siding, Pointe-du-Lac	Pointe-du-Lac
Canadian Siennas	c-o Alex. L. de Livi, Sienna, Labelle Co	Lynch Township
Girardin, Chas. D.	Yamachiche	Almaville
McNicoll, Eugène	354 St. Catherine Street, Montreal	Marchand Township
Montmorency Paint Products Co., Limited	6684 St. Urbain Street, Montreal	Les Forges, Trois-Rivières
Paint River Oxide Company	P. O. Box 144, Station B, Quebec	Les Escoumains
Sherwin-Williams Co. of Canada, Ltd. (The)	2875 Centre St., Montreal	Red Mill, Champlain Co.

PEAT

Name of Operator	Address	Location of Bog
Compagnie de Tourbe, Ltée (La)	P. O. Box 2468, Montreal	
* Insulation, Limited	55 O'Brien Boulevard, St. Laurent, Montreal	Isle Verte
Lambert, F. X.	Sainte-Anne-de-la-Pocatière	Rivière Ouelle
Waterville Moss & Peat Mines	Waterville, Compton Co.	Compton Township

PHOSPHATE

Name of Operator	Address	Location of Mine (Township)
Blackburn Bros.	711 Blackburn Building, Ottawa, Ont.	Templeton
Kent Bros.	Mica Dealers, Kingston, Ont.	Buckingham
McGlashan, R. J.	190 Montcalm Street, Hull	Wakefield

PHOSPHATE—Continued

Name of Operator	Address	Location of Mine (Township)
Majeau, Donat	Notre-Dame-de-la-Salette	
St. Amour, A.	Notre-Dame-de-la-Salette	Portland East
Wallingford Bros., Ltd.	Perkins, Hull Co.	Templeton
Winning, Bush	Notre-Dame-de-la-Salette	Portland

PYRITE

Name of Operator	Address	Location of Mine (Township)
Aldermac Mines, Limited	Room 500, Dominion Square Building, Montreal	Beauchastel
* Consolidated Copper & Sulphur Co.	Eustis	Ascot

SILICA (Rock and Sand)

Name of Operator	Address	Location of Mine (Township)
Cameron, Wm. & J. J.	Buckingham	Buckingham
* Canadian Carborundum Company	Shawinigan Falls	Saint-Canut parish
* Canadian Flint and Spar Co., Ltd.	900 Victoria Building, Ottawa, Ont.	Buckingham
* Canadian Kaolin Silica Products, Limited	1602 University Tower Building, Montreal	Amherst
* Derry Mining Company	Buckingham	Derry
Deschambault Quarry Corporation	52 St. Paul Street, Quebec	Saint-Alban parish
Donaldson, Robert J.	Glen Almond	Buckingham
* Flint Sands, Limited	24 King Street West, Toronto, Ont.	Guigues
Hill, Nelson	Glen Almond	Buckingham
McClements, Albert	Buckingham	
McDonell, B. A.	Glen Almond	Derry
Montpetit, Euclide	Melocheville	Beauharnois parish
O'Brien & Fowler, Limited	900 Victoria Building, 140 Wellington Street, Ottawa, Ont.	Derry
* Ottawa Silica and Sandstone, Ltd.	Plaza Building, Ottawa, Ont.	Templeton
* Parcher, Alfred	Glen Almond	Derry
* Pedneaud, G.	Buckingham	Buckingham
Perkins Mining Co.	Point Gatineau	Derry
St. Amour, Orphila	Notre-Dame-de-la-Salette	Villeneuve
Sellers (Walter) & Parcher (Alton)	Glen Almond	Derry
* Silica Products of Canada, Limited	4074 Marlowe Avenue, Montreal	Dequen
Stewart, Wm.	Box 19, Buckingham	Buckingham
Warwick, Wm.	Buckingham	
Whitfield, T.	Buckingham	Buckingham
* Winning & Downing	Notre-Dame-de-la-Salette	Buckingham
Winning, Bush	Glen Almond	

SILVER

Name of Operator	Address	Location of Mine (Township)
Aldermac Mines, Limited	500 Dominion Square Building, Montreal	Beauchastel
* Arntfield Gold Mines, Limited	159 Bay Street, Toronto, Ont.	Beauchastel
* Beattie Gold Mines, Limited	Canadian Bank of Commerce Building, 25 King Street West, Toronto, Ont.	Duparquet
* Bussières Mining Company, Limited	221 Notre Dame St. West, Montreal	Louvicount
* Canadian Malartic Gold Mines, Ltd.	25 King St. West, Toronto, Ont.	Fournière
* Consolidated Copper & Sulphur Co.	Eustis	Ascot
* Granada Gold Mines, Limited	1108 Federal Building, Toronto, Ont.	Rouyn
* Greene-Stabell Mines, Limited	1402-6 Concourse Building, 100 Adelaide St. West, Toronto, Ont.	Dubuisson
* Lamaque Gold Mines, Limited	Amos	Bourlamaque
* McWatters Gold Mines, Limited	Box 689, Rouyn	Rouyn
Newbec Mines, Limited	603 Royal Bank Building, Toronto 2, Ont.	Dufresnoy
* Noranda Mines, Limited	804 Royal Bank Building, 2-8 King Street East, Toronto, Ont.	Rouyn

SILVER—Continued

Name of Operator	Address	Location of Mine (Township)
* O'Brien Gold Mines, Limited	Kewagama	Cadillac
* Perron Gold Mines, Limited	Pascalis (Abitibi)	Pascalis
* Robb-Montbray Mines, Limited	Room 1007, Excelsior Life Building, Toronto, Ont.	Montbray
* Siscoe Gold Mines, Limited	Room 905, Dominion Square Building, St. Catherine Street, Montreal	Dubuisson, Varsan
* Sullivan Consolidated Mines, Ltd.	1207 Aldred Building, Montreal	Dubuisson
* Tétreault (Pierre) Estate	70 Holyrood Avenue, Montreal	Montauban
* Waite-Amulet Mines, Limited	804 Royal Bank Bld'g., 2-8 King St. East, Toronto, Ont.	Duprat, Dufresnoy

SOAPSTONE and TALC

Name of Operator	Address	Location of Mine (Township)
* Broughton Soapstone & Quarry Co., Limited	Broughton Station, Beauce Co.	Broughton
Canadian Talc Rock Products, Ltd.	c-o E. P. Bélair, Cashier's Office, City Hall, Montreal	
* Fortin, Charles	Robertsonville	Thetford
Megantic Mining Company (The)	175 Spadina Road, Toronto, Ont.	Ireland
Parker, N. S.	Eastman	Bolton
* Pharo, L. C.	Thetford Mines	Broughton
Pibus, George R.	Knowlton	Bolton West
Reed Realties, Limited	c-o H. A. Peverley, 1536 St. Mark St., Montreal	Thetford

TITANIC IRON

Name of Operator	Address	Location of Mine (Township)
Acme Titanic Iron Ore Company	c-o J. O. Paré, N. P., Baie-Saint-Paul	Saint-Urbain
American Titanic Iron Co., Limited	c-o J. H. Boisvert, Parliament Buildings, Quebec	Saint-Urbain
* Baie St. Paul Titanic Iron Ore	c-o J. O. Paré, N. P., Baie-Saint-Paul	Saint-Urbain
Canadian Pyrites Company	c-o Dupont de Nemours, Wilmington, Delaware, U. S. A.	Saint-Urbain
Loughborough Mining Co., Ltd.	Sydenham, Ont.	Saint-Urbain
Titanium (Canada), Limited	11 Bates Road, Outremont	Beresford
Titanium Products Corporation	c-o G. C. Piché, Pres., 43 Chemin Ste Foy, Quebec	Bourget

ZINC and LEAD

Name of Operator	Address	Location of Mine (Township)
Alpha Mining Company	c-o Hollinger Consolidated Gold Mines, Limited, Timmins, Ont.	Duhamel
Clermont Mines, Limited	85 St. Peter Street, Quebec	Clermont
* Federal Zinc & Lead Co., Limited	Room 608, 1117 St. Catherine St. West, Montreal	Lemieux
Gaspé Mines	c-o Hon, John Hall Kelly, New Carlisle	Lemieux
* Lyall & Beidelman	Room 608, Drummond Building, 1117 St. Catherine St. West, Montreal	Lemieux
North American Mining Company	New Carlisle	Lemieux
Shawinigan Mining & Smelting Co., Limited	c-o W. T. Henderson, Sec'y, 116 Dalhousie Street, Brantford, Ont.	Montauban, Chavigny
* Tétreault (Pierre) Estate	70 Holyrood Avenue, Outremont	Montauban
Trinidad Mines, Gas & Oil, Ltd.	116 Côte-de-la-Montagne, Quebec	Mohtauban, Chavigny
Waite-Amulet Mines, Limited	804 Royal Bank Building, 2-8 King St. East, Toronto, Ont.	Duprat, Dufresnoy

II.—STONE QUARRIES, CLAY AND SAND PITS

BRICK

Name of Operator	Address	Location of Plant
Ascot Tile & Brick Co., Limited	Ascot Corner	Ascot
Bourbeau, Georges	R. R. No. 1, Danville, Richmond Co.	Kingsey Falls
Brique Champlain, Limitée (La)	56 Laliberté Street, Quebec	Beauport
Brique Citadelle, Ltée (La)	14 St. Joseph Street, Quebec	Boischatel
Brique de Chicoutimi, Ltée (La)	c-o Jules Tremblay, Chicoutimi	Chicoutimi
Brunelle, L. H.	Victoriaville	Victoriaville
Cie de Brique de Tuile de Scott, Ltée (La)	15 St. Joseph Street, Quebec	Scott Junction
Cie de Brique Panet, Ltée (La)	L'Islet	L'Islet
Desmarais, Stanislas	Richmond	Richmond
Duquette, Isidore	East Angus	Westbury Tonwship
Gaulin, Evangéliste	Princeville	Stanfold Township
Hodgins, David T.	Shawville	Clarendon Township
Industrielle de St. Tite, Ltée (L')	Saint-Tite, Champlain Co.	Saint-Tite
Laprairie Company, Inc. (The)	University Tower Building, Montreal	Laprairie, Delson
Longpré, Emile	Saint-Félix-de-Valois	Saint-Félix-de-Valois
Parrot, Michel H.	Deschaillons, Lotbinière Co.	Deschaillons
Potvin, Alphonse	Deschaillons	Deschaillons
St. Lawrence Brick Co., Limited	935 Dominion Square Building, 1010 St. Catherine Street West, Montreal	Laprairie
Suddard (E. P.) Brick Works	Gaspé, Gaspé Co.	Douglas West

CEMENT

Name of Operator	Address	Location of Plant
Canada Cement Company	Box 290, Station B, Montreal	Montreal East, Hull

GRANITE

Name of Operator	Address	Location of Quarry
Alcoa Power Company, Limited	Box 620, Kénogami	
Bernier, Auguste	Roberval	Roberval township
Berry and Redicker Granite Quarry	Beebe	Stanstead township
Bérubé, Lucien & Fils	Brownsburg	Chatham township
Bourbonnais, J. A.	Vaudreuil	Rigaud
Brodie's, Limited	1070 Bleury Street, Montreal	Graniteville, Guenette, Mount Johnson
Brunet, Joseph	4411 Côte-des-Neiges Road, Montreal	Chatham township
Bussière, Amédée	Sainte-Cécile	Barnston and Whitton town-
Chicoutimi, City of	Chicoutimi	Chicoutimi [ships
Clausen, Julius	Brownsburg	Chatham township
Cloutier (Ernest) & Lavers	Beebe	Stranstead township
Cloutier, R. L.	Beebe	Stantstead township
Compagnie Routière Lac St. Jean Chicoutimi (La)	P. O. Box 448, Roberval	Jonquière township
Delwnide & Goffin	12-16 du Hâvre Street, Chicoutimi	Chicoutimi and Simard town-
Deschambault Quarry Corporation	52 St. Paul Street, Quebec	Saint-Ubald [ships
Diamond Granite Company	Beebe	Stanstead township
Dontigny, Alphonse	112 de la Station Street, Shawinigan Falls	Glenada
Doyer, J. B.	c-o Mrs. J. B. Doyer, Rousseau Mill	Montauban township
Dumas (Arthur) Cie., Enrg.	Rivière-à-Pierre	Bois township
Dumas, Auguste	Rivière-à-Pierre	Bois township
Duncan, William	R. R. No. 1, Beebe	Stanstead township
Gingras & Frères, Ltée	Saint-Marc-des-Carrières	Stanhope
Gosselin, Oscar	Mégantic	Whitton township
Granit National Ltée (Le)	P. O. Box 276, Roberval	Signay township
Granit Noir Canadian, Enrg. (Le)	c-o O. G. Tremblay, Saint-Joseph-d'Alma	Signay township
Grenier, Elie	Glenada	Sainte-Flore
Guenette Granite Company, Ltd.	Guenette, Labelle Co.	Campbell township
Hartley, A. C.	Beebe	Stanstead township

GRANITE—Continued

Name of Operator	Address	Location of Quarry
Haselton, Wm.	Beebe	Stanstead township
Hébert, O.	Ville-Marie	Ville-Marie, Laverlochère
Jonquière, City of	Jonquière	Jonquière township
Lacasse & Boulais	P. O. Box 23, Beebe	Stanstead township
Low, James	Brownsburg	Chatham township
McIntosh, Robert	R. R. No. 1, Beebe	Stanstead township
McKenzie (A. M.) & Morrison (M. M.)	Scotstown	Lingwick township
Montreal Construction Supply & Equipment, Limited	1460 Sherbrooke St. West, Montreal	Montreal
Nett, Olson, Hokanson & Henrikson	R. R. No. 1, Beebe	Graniteville
Nolet, François	Rivière-à-Pierre	Bois township
Perron, Arthur	Rivière-à-Pierre	Bois township
Perron, Stanislas	Rivière-à-Pierre	Bois township
Port Alfred, City of	Port-Alfred, Chicoutimi Co.	
Reynolds, M. C.	Cedarville	Stanstead township
Rivière-à-Pierre Granite, Limited	Rivière-à-Pierre	Bois township
Saint-Bruno Quarry & Paving Co., Limited	7420 de Laroche Street, Montreal	Saint-Bruno
Scotstown Granite Company, Limited	Scotstown	Scotstown
Shawinigan Falls, City of	Shawinigan Falls	Shawinigan Falls
Silver Granite Company	180 Côte d'Abraham, Quebec	Saint-Samuel
Stranstead Granite Quarries Co., Ltd.	Beebe	Stanstead
Thibaudeau & St. Pierre	Rivière-à-Pierre	Rivière-à-Pierre
Tremblay, Joseph	Baie-Saint-Paul	Baie-Saint-Paul
Voirie, Département de la	Quebec	
Voyer (Fortunat) & Frère	Rivière-à-Pierre	Bois township
Ward, Joseph	359 Youville Place, Montreal	Chatham township
Wilkinson, Frank	Beebe	Stanstead township

LIME

Name of Operator	Address	Location of Kiln
Arnaud & Beaudry	16 Ste Angelique Street, Joliette	Joliette
Boivin Arthur	Pont Rouge, Portneuf Co.	Pont Rouge
Bouchard, Praxède	Sainte-Anne-de-Chicoutimi	Tremblay township
Canada Lime Products Co.	7403 Drolet St., Montreal	Cap Saint-Martin
Canadian Lime & Stone, Limited	Saint-Marc-des-Carrières, Portneuf Co.	Saint-Marc-des-Carrières
Coté, Xavier	Saint-Jerome, Lac-Saint-Jean Co.	Métabetchouan township
Desfonds, Gaspard	Saint-Cuthbert, Berthier Co.	
Dominion Lime Company	East Angus	Dudswell township
Dontigny, Yvon	Sainte-Thècle, Champlain Co.	Saint-Thècle
Drouin, Eva Cimon	Sainte-Justine, Dorchester Co.	Sainte-Justine
Filion, Narcisse	Saint-Joachim, Montmorency Co.	Saint-Joachim
Gagné, Octave	Saint-Ulric, Matane Co.	Saint-Ulric
Giroux, Pierre Gédéon	Beauport East	Beauport East
Héon & Héon	Saint-Louis-de-Champlain	Saint-Louis
Lalumière, Joseph	Saint-Dominique-de-Bagot	Saint-Dominique-de-Bagot
Laurentian Stone Co., Ltd.	82 Crémazie Street, Hull	Hull
Limoges, Henri	552 Poupart St., Montreal	Montreal
Mercure, Camille	9 St. Denis Street, Saint-Hyacinthe	Saint-Dominique-de-Bagot
National Stone & Lime Co., Reg'd	386 Lemoyne Street, Montreal	Saint-Marc-des-Carrières
Pères Trappistes de Mistassini (Les Révérends)	Mistassini, Lac-Saint-Jean Co.	Mistassini
Shawinigan Chemicals, Limited	Room 611, 107 Craig Street, Montreal	Shawinigan Falls
Standard Lime Co., Limited	Joliette	Saint-Paul-de-Joliette Saint-Marc-des-Carrières
Stinson Reeb Builders Supply Co.	5585 Delorimier Avenue, Montreal	Montreal
Trottier, David	Saint-Marc-des-Carrières	Saint-Marc-des-Carrières
Villeneuve, Raoul	c-o Eagle Lumber Company, 169 St. Georges Street, Saint-Jérome, Terrebonne Co.	Saint-Jérôme Sainte-Anne-des-Plaines

LIMESTONE

Name of Operator	Address	Location of Quarry
Andorno, Emmanuel	Cap Saint-Martin	Cap Saint-Martin
Baillargeon & Faubert	62 Union Boulevard, St. Lambert	Caughnawaga
Bathurst Power and Paper Co., Ltd.	Bathurst, N. B.	Port Daniel East

LIMESTONE—Continued

Name of Operator	Address	Location of Quarry
Beaudry, Jos. Pitre	P. O. Box 209, Taché Street, Joliette	Joliette
Bégin, Joseph	176 de la Ronde Street, Quebec	Beauport
Boily, Albert	Baie-Saint-Paul, Charlevoix Co.	
Boivin, Ladislas	Baie-Saint-Paul, Charlevoix Co.	Baie-Saint-Paul
Bosca & Buraglia	East Bathurst, N. B.	Port Daniel East
Boursier, François	Sainte-Philomène, Chateauguay Co.	
Brisebois, O.	33 Windsor Street, Ville Saint-Pierre	Montreal
Bujold, Clément	Saint-Jules-de-Maria, Bonaventure Co.	Saint-Jules
Canada Cement Company, Limited	P. O. Box 290, Station B, Montreal	Hull
Canadian Quarries, Limited	1740 Iberville St., Montreal	Montreal
Carrière Cap St. Martin, Enrg. (La)	636 Querbes Avenue, Montreal	Cap Saint-Martin
Carrière Gravel, Ltée (La)	Château-Richer	Château-Richer
Carrière Marcil, Ltée (La)	Saint-Michel Station, Napierville Co.	Sainte-Clothilde
Carrière Montreal Est	c-o Cyrille Durocher, 11021 Notre Dame St. East, Montreal	Montreal
Carrière St. Barthélémi	Saint-Barthélémi	Saint-Barthélémi
Carrière St. Maurice, Ltée	307 Alexandre Street, Trois-Rivières	Saint-Louis-de-France
Cauchon & Breton	28½ St. Joseph Street, Quebec	Château-Richer
Cercle Agricole de St. Godefroi (Le)	c-o Edgar Nadeau, Saint-Godefroi	Saint-Godefroi
Chenel (Rev.) J. E.	Port Daniel Centre, Bonaventure Co.	Port Daniel West
Coté & Gendreau	Saint-Pierre, Ile d'Orléans	Saint-Laurent, Ile d'Orléans
Delisle, Emilien	Pont Rouge	Pont Rouge
Deschambault Quarry Corporation	52 St. Paul Street, Quebec	Saint-Marc-des-Carrières
Dominion Lime Company	East Angus	Lime Ridge
Drouin, Eva Cimon	Sainte-Justine, Dorchester Co.	Sainte-Justine
Dufresne Construction Co., Limited	1832 Boulevard Pie IX, Montreal	Rivière-des-Prairies
Faubert, Alphonse	Bellevue Station, Ville de Léry	Ville de Léry
Faubert, Donat	Ville de Léry, Chateauguay Co.	Ville de Léry
Filion, Adélard	Lachute	Lachute
Fonderies Nationales, Ltée (Les)	Pont Rouge	Pont Rouge
Fontaine, Omer	Saint-Maurice, Champlain Co.	Saint-Maurice
Francœur, J. B.	Kelly, Bonaventure Co.	Saint-Godefroi
Fuger & Smith, Limited	Pointe Claire	Pointe-Claire
Gagné, Octave	Saint-Ulric, Matane Co.	Saint-Ulric
Gaspesian Fertilizer Co., Reg'd	Port Daniel East	Port Daniel
Gauthier, J. Olivier	Saint-Marc-des-Carrières	Saint-Marc-des-Carrières
Gauthier, René	Bélanger Village, Laval Co.	Saint-Martin
Gingras & Frère, Ltée	Saint-Marc-des-Carrières	Saint-Marc-des-Carrières
Giroux, F. X. R.	Saint-Louis-de-Courville	Saint-Louis-de-Courville
Guilbault & Frère	Sainte-Elizabeth, Joliette Co.	Sainte-Elizabeth
Kennedy Construction Co., Ltd.	310 Shaughnessy Building, 407 McGill Street, Montreal	Saint-François-de-Sales, Acton Vale
Laberge & Marchand	Châteauguay	Châteauguay
Lacouline, Théodore	Château-Richer	Château-Richer
Lagacé Quarry, Limited	Saint-Martin, Laval Co.	Saint-Martin
Lapointe, A. & E.	12034 Lachapelle Street, Montreal	Cartierville
Lapointe, Emile	Saint-Dominique-de-Bagot	Saint-Dominique-de-Bagot
Laurendeau (A.) & Cie, Ltée	Room 310, Thémis Building, 10 St. James St. West, Montreal	Lachute
Laurentian Stone Co., Limited	82 Crémazie Street, Hull	Hull
Lauzon, Emery	7977 Shelly Street, Saint-Michel, Laval Co.	Saint-Michel-de-Laval
Laviolette, D. O.	166 Montcalm Street, Hull	Hull
Leclerc, Edouard	Saint-Joachim, Montmorency Co.	Saint-Joachim
Leclerc, J. J., Incorporée	Rimouski	Nouvelle township
Leclerc & Robitaille, Enrg.	Roberval	Roberval
Lecrenier, Victor	6853 St. Denis Street, Montreal	Cap Saint-Martin
Léger & Charlton	400 Notre Dame Street, Lachine	Lachine
Levesque, Armand	Roberval	Roberval
Loiselle, Henri	Saint-Dominique-de-Bagot	Saint-Dominique-de-Bagot
Marcotte (Ulric) & Normand (Edmond)	c-o Ulric Marcotte, 5717 Second Ave., Rosemount	Saint-Marc-des-Carrières
Martineau Fils, Ltée	517 Marie-Anne Street East, Montreal	Saint-Marc, Montreal
Matthew Devito Construction, Ltd.	6138 Hamilton Street, Montreal	Pointe Claire
Mercure, Camille	9 St. Denis Street, St. Hyacinthe	Saint-Dominique-de-Bagot
Miner (R. H.) Co., Limited	7411 de Lanaudière Street, Montreal	Montreal
Montreal Construction Supply & Equipment, Limited	1460 Sherbrooke Street West, Montreal	Montreal
Montreal Quarry, Limited	1340 Bellechasse Street, Montreal	Montreal
National Quarries, Limited	Park Avenue & Beaubien Street, Montreal	Saint-Michel-de-Laval
Naud, Oscar	Lachevrotière, Portneuf Co.	Saint-Marc-des-Carrières
Noel (Oscar) & Cie	44 Wright Street, Hull	Wrightville
Pagé, Jos.	Charlesbourg West	Charlesbourg West
Paquette (Lévis) & Cie	Cap Saint-Martin, Laval Co.	Cap Saint-Martin

LIMESTONE—Continued

Name of Operator	Address	Location of Quarry
Pénitencier de Saint-Vincent-de-Paul	Saint-Vincent-de-Paul	Saint-Vincent-de-Paul
Pères Trappistes de Mistassini (Les)	Mistassini, Lac-Saint-Jean Co.	Pelletier township
Petitjean, V. F.	4525 Chabot Street, Montreal	Cap Saint-Martin
Quinlan Cut Stone, Limited	1165 Greene Avenue, Westmount	Saint-François-de-Sales
Rousseau, T. E.	48 Second Avenue, Quebec	Val Brillant
St. Francis Rock Products & Equipment, Limited	8050 Bloomfield Avenue, Montreal	Ville Saint-Laurent
St. Laurent Quarry, Limited	Village Bélanger, Laval Co.	Saint-Dominique-de-Bagot
St. Onge, O. F.	Saint-Dominique-de-Bagot	Village Belanger
Salaberry-de-Valleyfield, City of	c-o Raphael Bélanger, City Engineer, Valleyfield	Valleyfield
Schetagne, W.	Pointe Claire, Jacques-Cartier Co.	Pointe Claire
Shawinigan Chemicals, Limited	Room 611, Power Building, 107 Craig Street West, Montreal	Saint-Damien-de-Stanbridge
Standard Clay Products, Limited	P. O. Box 819, Saint-Jean	Saint-Jean
Standard Lime Co., Limited	Joliette	Joliette, St-Marc-des-Carrières
Stinson-Reeb Builders Supply Co.	5585 Delorimier Avenue, Montreal	Côte Saint-Michel
Stone & Quarry, Limited	1340 Bellechasse Street, Montreal	Montreal
Théorêt, Magloire	Bellerive	Valleyfield
Tremblay, Nap.	Joffre Avenue, Hull	Hull
Trudel, Nap.	Saint-Irénée, Charlevoix Co.	Saint-François, Ile d'Orléans
Union Quarry, Limited	1340 Bellechasse St., Montreal	Côte Saint-Michel
Verreault (Elzéar), Ltée	194 du Pont Street, Quebec	Giffard
Villeneuve, François	Pointe-au-Pic, Charlevoix Co.	Pointe-au-Pic
Vincelette, Paul	Saint-Honoré, Chicoutimi Co.	Saint-Honoré
Voirie, Département de la	Parliament Buildings, Quebec	Bordeaux
Warren & Simard	Pointe-au-Pic	Pointe-au-Pic
Wright Crushed Stone Company, Ltd.	Wrightville, Hull Co.	Hull

MARBLE

Name of Operator	Address	Location of Quarry
Andorno, J. E.	Cap Saint-Martin	Cap Saint-Martin
Canada Marble and Lime Company	4095 St. Catherine St. West, Montreal	Marchand township
Wallace Sandstone Quarries, Limited	1135 Beaver Hall Hill, Montreal	Philipsburg
White Grit Company	Hurdman Road, Ottawa, Ont.	Portage-du-Fort

POTTERY

Name of Operator	Address	Location of Plant
Bégin (Olivier), Enrg.	R. R. No. 1, Petite Rivière, Quebec Co.	Petite Rivière
Brique Champlain, Ltée (La)	56 Laliberté Street, Quebec	Beauport
Canada Fire Brick Co., Limited	4741 St. Ambroise St., Montreal	Saint-Jean
Canadian Potteries, Limited	140 Longueuil St., Saint-Jean	Saint-Jean
Cie de Brique de Tuile de Scott, Ltée (La)	15 St. Joseph Street, Quebec	Scott Junction
Cie de Brique Panet, Ltée (La)	L'Islet	L'Islet
Citadel Brick, Limited	14 St. Joseph Street, Quebec	Boischatel
Dominion Sanitary Pottery Co., Ltd.	189 St. James Street, Saint-Jean	Saint-Jean
Duquette, Isidore	East Angus	East Angus
Hodgins, David T.	Shawville	Shawville
Laprairie Company, Inc. (The)	University Tower Building, Montreal	Delson, Laprairie
Montreal Terra Cotta Co., Limited	Room 923, 1010 St. Catherine St. West, Montreal	Lakeside
Parrot, Michel H.	Deschaillons	Deschaillons
Standard Clay Products, Limited	P. O. Box 819, Saint-Jean	Saint-Jean
Stone Bros.	Brôme	
Tremblay, J. R.	272 Racine Street, Chicoutimi	Chicoutimi

SAND and GRAVEL

Name of Operator	Address	Location of Pit
Alcoa Power Company, Limited	P. O. Box 620, Kénogami	
Aubert, Onésime	Ham Nord	

SAND and GRAVEL—Continued

Name of Operator	Address	Location of Pit
Bachand, Wilfrid	Roxton Falls	
Baker, H. S.	Rivière Beaudette	
Ball, Clayton	Abbotsford	
Ball, J. R.	Knowlton	
Barbe, Alfred	Sainte-Rose West, Laval Co.	
Barring, E.	Henrysburg	
Beauchemin, Albert	Sainte-Monique	
Beausoleil, Alphonse	Saint-Charles-de-Mandeville	
Bégin, Louis	Saint-Henri	
Bégin, Thomas	Saint-Isidore, Dorchester Co.	
Begnoche, Adélard	Saint-Blaise, Saint-Jean Co.	
Béland, Joseph	Saint-Agapit Station, Lotbinière Co.	
Bélanger, J. B.	Saint-Damase, L'Islet Co.	
Bélanger, Joseph	Ascot Corner	
Bélanger, Louis	Montmagny	
Bélanger, Omer	Mont-Laurier	Campbell
Bélisle, Euclide	145 St. Paul Street, Coaticook	Coaticook
Bélisle, Zénon	Saint-Fabien, Rimouski Co.	
Bell, Frank	East Angus, Compton Co.	
Bennett, Gertrude M.	P. O. Box 403, Lennoxville	
Benoit, J. A.	Mont Saint-Grégoire	Mount Johnson
Bergeron, Ursin	Jonquière	Kénogami
Bernier, Nap.	Saint-Dominique, Bagot Co.	
Berthiaume, Charles Ed.	Contrecœur, Verchères Co.	
Berthiaume, Joseph	Saint-Liboire, Bagot Co.	
Bertrand, Francis	Tancrédia, Pontiac Co.	
Bérubé, Joseph	R. R. No. 1, Arthabaska	
Bérubé, Zéphirin	Plessisville	
Bigras, Omer	Sainte-Dorothée, Laval Co.	Sainte-Rose West
Bisaillon, Gérard	L'Avenie, Drummond Co.	
Bitumen Products Corporation	3590 St. Patrick Street, Montreal	
Boisclair, Philippe	Saint-Paulin, Maskinongé Co.	
Boisvert, J. A.	R. R. No. 2, Saint-Jérome, Terrebonne Co.	
Boivin, Joseph	Labelle, Labelle Co.	
Bonner Sand & Ballast, Limited	Room 201, 1434 St. Catherine St. West, Montreal	South Durham
Boucher, Louis Nazaire	Sainte-Anne-de-Chicoutimi	
Boucher, Trefflé	Saint-Stanislas, Champlain Co.	
Boucher, Wilfrid	Fugèreville	
Boulanger, Ernest	Saint-Fabien, Rimouski Co.	
Bourassa, J. Boutin	Saint-Romuald, Lévis Co.	
Bourgeois, Edmond	Saint-Albert, Arthabaska Co.	Saint-Albert
Bourget, Arthur	Beaumont, Bellechasse Co.	
Bourret, Arthur	La Patrie	
Boutin, Philias	Sainte-Marguerite, Dorchester Co.	
Bradley (J. P.) & Son	Saint-Andrews, Argenteuil Co.	
Brault, F. Xavier	Saint-Dominique, Bagot Co.	
Breault, Blaise	Saint-Blaise, Saint-Jean Co.	
Breton, Aimé	Stornoway, Compton Co.	
Brouillet Sand & Gravel Co., Limited	Rawdon	Sainte-Julienne
Brouillette, Nelson	Saint-Narcisse, Champlain Co.	
Brunelle, John	Abbotsford	
Cabana, Alphonse	Contrecœur, Verchères Co.	
Campagna, F.	East Angus	
Canadian National Railways	c-o E. G. Newson, Engineer Maintenance of Way, Union Station, Toronto 2, Ont.	
Canadian Pacific Railway	Chief Engineer's Office, Windsor Station, Montreal	
Canadian Rock Products, Limited	c-o Thom. P. Spellane, 2020 Union Ave, Montreal	
Chabot, Osias	Saint-Jean-Baptiste, Rouville Co.	
Chabot, Mme Stanislas	Saint-Jean-Baptiste, Rouville Co.	
Chadwick, Thomas	Saint-Gilles, Lotbinière Co.	
Chamberland, Jos.	Saint-Pierre-de-Charlesbourg, Notre-Dame-des-Laurentides	
Champagne, O. T.	Sainte-Thècle, Champlain Co.	
Charland, Zoel	Saint-Jacques-de-Parisville	
Chevrier, Alphonse	Saint-Joseph-de-Sorel	
Chevrier, Raoul	Saint-Lazare, Vaudreuil Co.	
Cloutier, Philibert	Bras d'Apic, L'Islet Co.	
Coaticook, La Ville de	P. O. Box 150, Coaticook	
Compagnie de Sable, Ltée (La)	10 Third Avenue, Quebec	Saint-Charles River
Consolidated Oka Sand & Gravel Co., Limited	248 McCord Street, Montreal	Lake of Two Mountains

SAND and GRAVEL—Continued

Name of Operator	Address	Location of Pit
Cooke, R. T.	Stanbridge East, Missisquoi Co.	
Coulombe, Fabien	Saint-Fabien, Rimouski Co.	
Crawford, E. J.	R. R. No. 4, Lennoxville	
Crawford, J. J.	Eastman	
Daigle, Joseph	Saint-Apollinaire, Lotbinière Co.	
Dandurand, Raoul	Rigaud, Vaudreuil Co.	
Dauphinais, Camille	Hemmingford, Huntingdon Co.	
Demers, Joseph	Katevale, Stanstead Co.	
Denoncourt, Elphège	Grandes Piles, Laviolette Co.	
Deschênes, Mrs. Marie-Louise	Saint-Wenceslas, Nicolet Co.	
Descrres, Alphonse	Saint-Emile, Montcalm Co.	
Desforges, Alcide	Grenville	
Desgagné, Honorius	Saint-Fulgence, Chicoutimi Co.	
Deslandes, Léonard	Saint-Dominique, Bagot Co.	
Deslandes, Mastaï	Saint-Dominique, Bagot Co.	
Desmeules, Alfred	Albertville, Matapédia Co.	
Desroche, Hermas	Saint-Paul-d'Abbotsford	
Desrochers, Oscar	Warwick, Arthabaska Co.	
Dionne, Olivier	Martinville, Compton Co.	
Dodier, Alcide	East Broughton, Beauce Co.	
Dodier, Joseph	East Broughton	
Drouin, E.	Saint-Jérome, Terrebonne Co.	
Dubé, Pierre	Rimouski	
Dubois, Georges	Henrysburg	
Dubois, Joseph	Saint-Edwidge	
Dufour, Adélard	Causapscal	
Dupuis, Réal	Beaumont	
Durand, Albert	Saint-Jérome, Terrebonne Co.	
Dutrizac, Noel	Plage Laval, Laval Co.	Sainte-Dorothée
Emond, Adrien	Sainte-Marguerite Station, Terrebonne Co.	Wexford
Fay, Wm.	Saint-Sévérin, Champlain Co.	
Ferland, Zéphirin	Dosquet, Lotbinière Co.	
Filion, David	Saint-Maxime-de-Scott	
Fontaine, Armand	Weedon, Wolfe Co.	
Forcier, Deus	Saint-Guillaume-d'Upton	
Fournier, Absalon	Lacolle	
Fournier, Achille	La Patrie	
Fournier, J. B.	Stanbridge, Missisquoi Co.	
Fournier, Jos.	Taschereau (Abitibi)	
Gagné, Adrien	Saint-Côme, Joliette Co.	
Gagnon, Lucien	L'Acadie	
Gaillardetz, Hormidas	Saint-Wenceslas	
Gallant, Jean E.	Saint-Benoit	
Gaudette, Joseph C.	Béarn	
Gauthier & Tremblay	c-o William Gauthier, Racine St., Chicoutimi	Rivière-du-Moulin
Gauthier, Arsène	Saint-Alban	
Gauthier, Dorila	La Décharge, Chicoutimi Co.	Bourget township
Gauthier, J. O.	Taschereau (Abitibi)	
Gauthier, William	Warwick	
Gélinas, Nap.	Rang des Hêtres, Grand'Mère	
Gervais, Alden	Saint-Narcisse, Champlain Co.	
Gervais Eddy	Saint-Narcisse, Champlain Co.	
Gervais, Zoel	Lawrenceville	
Giguère, Emile	Sainte-Elizabeth, Arthabaska Co.	Warwick
Gilbert, F. L.	East Angus	
Girard, Omer	Sainte-Monique, Nicolet Co.	
Gorman, Herbert	Buckingham	
Gosselin, Hamilton	Saint-Nazaire	Grantham
Gosselin & Gosselin	Chicoutimi	Chicoutimi
Gouin, Wilfrid	Saint-Camille	
Gourde, Nap.	Neubois	
Goyette, Ovila	Mont Saint-Grégoire	
Granby, Ville de	c-o Chief Engineer, City Hall, Granby	
Grandmaître, Donat	19 Olmstead North, Eastview, Ont.	Hull township
Granger, Ildège	Sainte-Marie-Salomée, Montcalm Co.	
Grenon, François	Henryville	
Grenon, Herménégilde	Saint-Valentin	
Guay, Victor	Beaumont, Bellechasse Co.	
Haines, James	Oak Bay Mills, Bonaventure Co.	
Hart, Fred J.	Bishopton, Wolfe Co.	
Hébert, A.	R. R. No. 2, Richmond	
Henri, Arthur	Sainte-Sophie, Mégantic Co.	
Kenney, Wm.	Gaspé South Bay	Gaspé South
Laberge, J. B.	Sainte-Foy	

SAND and GRAVEL—Continued

Name of Operator	Address	Location of Pit
Lafortune, Emilien	25 Place Bourget, Joliette	
Laliberté, Joseph	Sainte-Claire, Dorchester Co.	
Lalumière, Georges	Saint-Bruno, Chambly Co.	
Lamarche, Georges	Saint-Bonaventure, Yamaska Co.	
Langlois, Louis	La Patrie, Compton Co.	
Larochelle, Héliodore	Neubois, Lotbinière Co.	
Larose, Damase	Saint-Ferdinand, Mégantic Co.	
Latulippe, E.	Saint-Louis-de-Pintendre	
Lauzon, Jos. A.	R. R. No. 1, Sainte-Anne-des-Plaines, Terrebonne Co.	
Lavallée, Michel	Contrecœur, Verchères Co.	
Lavallée, Philias	Saint-Gabriel-de-Brandon, Berthier Co.	
Laverdière, Albert	Beaurivage, Lotbinière Co.	
Lavigne, Nap.	Paquet, Compton Co.	
Lavoie, Gérard	Beaumont, Bellechasse Co.	
Lavoie, Isidore	Saint-Donat, Montcalm Co.	
Lebeau, Mrs Antoine	222 Lebeau Street, Saint-Jérome	
Lehouillier, Alphonse	Sainte-Marguerite, Dorchester Co.	
Lemay, René	Saint-Jérome, Terrebonne Co.	
Lepire, Olivier	Lake Saint-Charles, Quebec Co.	
Lessard, Alphonse	Mansonville, Brome Co.	
Lessard, Majorique	Sainte-Rose-de-Watford, Dorchester Co.	
Lettré, Wilfrid	Warwick	
Léveillé, Armand	Mont Saint-Michel, Labelle Co.	
Lévesque (Trefflé) & Gonzague	Kénogami	
Lord, Cléophas	Saint-Cyrille	
Lortie, P. E.	Sainte-Agathe-des-Monts, Terrebonne Co.	
Lussier, Hermas	Saint-Dominique, Bagot Co.	
McCollough, John	Linière, Beauce Co.	
McGowan, F. J.	Georgeville, Stanstead Co.	
McMillan, Mary M.	Gould, Compton Co.	
Maher, Thomas	Frampton, Dorchester Co.	
Marchand, Euclide	Almaville, Champlain Co.	
Marcoux, Adélard	Beaumont, Bellechasse Co.	
Marois, Lucien	Saint-Agapit, Lotbinière Co.	
Masse, Alfred	Saint-Louis-de-Kamouraska	
Massicotte, Hormidas	Saint-Narcisse, Champlain Co.	
Matheson, J. L.	Gould, Compton Co.	
Ménard, Timothée	Rigaud, Vaudreuil Co.	
Mercure, Alfred	Ange-Gardien, Rouville Co.	
Mercure, Camille	9 St. Denis Street, Saint-Hyacinthe	Saint-Dominique-de-Bagot
Métras, Esdras	Mont Saint-Grégoire	
Michaud, Wilfrid	Sainte-Ursule, Maskinongé Co.	
Montmarquette, Henri	Saint-Liboire, Bagot Co.	
Moody, J. Harry	St. Louis Avenue, Terrebonne	
Moras, A.	Bécancourt, Nicolet Co.	
Moreau, Oscar	Tingwick	
Moreau, Rodolphe	Pointe Gatineau, Hull Co.	
Morin, Antoine	Notre-Dame-de-Pontmain, Labelle Co.	
Morin, J. E.	Trenhorm, Drummond Co.	
Morin, Louis	Saint-Henri, Lévis Co.	
Morin, Nap. Thomas	R. R. No. 5, Lachute	
Moulton, C. W.	Hatley, Stanstead Co.	
Muldoon, James H.	Tingwick	
Neault, Octave	Saint-Jacques-des-Piles	
Neveu, Lucien	Saint-Guillaume-d'Upton	
Newton, Wellington	Buckingham	
Normand & Normand	Saint-Jean-Port-Joli, L'Islet Co.	
Ouellette, Damase	Sainte-Foy Parish	
Paradis, Pierre	Saint-Augustin, Portneuf Co.	
Parker, Albert M.	R. R. No. 3, North Hatley	
Parsons, A. E.	Comeau, Vaudreuil Co.	
Patenaude, Elie	Lacolle	
Péloquin, Walter	L'Avenir, Drummond Co.	
Pepin, Joseph	Warwick	
Pépin, Léon	Valcourt, Shefford Co.	
Pères Trappistes de Mistassini (Les)	Mistassini	
Perron, Achille	Saint-Thuribe, Portneuf Co.	
Pinard, Donat	Saint-Rémi-de-Tingwick	
Plante, Arthur	Stratford Centre, Wolfe Co.	
Plante, John	Danville	
Poirier, Alphonse	Saint-Anaclet, Rimouski Co.	
Poirier, Alphonse	Saint-Polycarpe, Soulanges Co.	

SAND and GRAVEL—Continued

Name of Operator	Address	Location of Pit
Poulin, Miss Elizabeth	Grenville	
Proulx, William	R. R. No. 1, Danville	
Quebec, City of	c-o Arthur Bourdeau, City Hall, Quebec	
Quessy, Adélard	Sainte-Anne-de-la-Pérade, Champlain Co.	
Ranger, Henri	Sainte-Justine-de-Newton	
Raymond, Ernest	Notre-Dame-de-Pontmain, Labelle Co.	
Raymond, J. B.	Saint-Denis, Kamouraska Co.	
Robert, Pierre	Royal Avenue, Beauport	Beauport
Robitaille, Charles	Buckingham	
Rodger, David, J.	R. R. No. 1, Lachute	
Row, Patrick	Masson	
St. François, Wilfrid	Mansonville	
St. Martin, Camille	Saint-Nazaire-d'Acton	
St. Pierre, Désiré	Laurierville	
St. Pierre, Félicien	Notre-Dame-du-Bon-Conseil	
Savard, Edmond	Sainte-Félicité, Matane Co.	
Savard, Ludger	Saint-Ambroise	
Shaw, W. T.	Saint-Félix-de-Kingsey	
Shea, Dennis J.	Fort Coulonge	
Sherbrooke, City of	c-o Thos. Tremblay, City Engineer, Sherbrooke	Sherbrooke
Simoneau, Albert	R. R. No. 3, Ayer's Cliff	
Smith, B. M.	L'Avenir	
Smith, John	Stornoway	
Sorel Harbour Tugs, Limited	Saint-Joseph-de-Sorel	
Soucy William	Sainte-Rose-du-Dégelé	
Standard Lime Company, Limited	Joliette	Sainte-Emélie, L'Épiphanie
Standard Sand & Gravel, Limited	Saint-Félix-de-Valois	Saint-Félix-de-Valois
Tardif, Azarias	Saint-Jean-Chrysostôme	
Tardif, Maurice	Carrier Junction, Levis Co.	
Tétreault, Emile	Rang Chartier, Mont-Saint-Grégoire	
Thériault, Gaspard	Saint-Côme, Joliette Co.	
Thériault, Lucien	Deleage, Gatineau Co.	
Therriault, Mrs. Georges	Cap-de-la-Madeleine Centre	
Thibault, Donat	Howick, Chateauguay Co.	
Thibault, Maurice	40 Fusey Street, Cap-de-la-Madeleine	
Thibert, Treffié	Sainte-Philomène	
Thompson, Albert	R. R. No. 1, Brownburg	
Thouin, J.	Mascouche	
Touchette, Arthur	Sainte-Thérèse, Terrebonne Co.	
Tremblay, John	Grande Baie, Chicoutimi Co.	
Tremblay, Joseph	Saint-Marc-de-Shawinigan-Falls	
Tremblay, Louis	Sainte-Fulgence, Chicoutimi Co.	
Trottier, L. O.	633 Bonaventure Street, Trois-Rivières	
Trudel, Donat O.	Saint-Stanislas, Champlain Co.	
Turenne, Delphis	Saint-Eugène-de-Grantham	
Turgeon, Léon	Notre-Dame-du-Bon-Conseil, Drummond Co.	
Turmel, Sauveur	Saint-Anselme	
Turreff, V. L.	Métis Beach, Matane Co.	
Vaillancourt, Donat	New Ireland, Mégantic Co.	
Valiquette, Dieudonné	Sainte-Adèle, Terrebonne Co.	
Valiquette, Hector	Labelle	
Valiquette, Hormidas	R. R. No. 1, Terrebonne	
Vallée, Joseph	Notre-Dame-du-Bon-Conseil	
Vanier, Mrs. Arthur	Sainte-Thérèse, Terrebonne Co.	
Venne, Oscar	Lachenaie	
Voirie, Département de, Québec	Parliament Buildings, Quebec	
Wheeler, L. E.	Greenlay	
Young, C. A.	Greenlay, Richmond Co.	

SAND-LIME BRICK

Name of Operator	Address	Location of Plant
Canadian Carborundum Company	Shawinigan Falls	Saint-Canut
Standard Lime Company, Limited	Joliette	Montreal

SANDSTONE

Name of Operator	Address	Location of Quarry
Beauharnois Light, Heat & Power Co.	Power Building, Montreal	
Bédard & Remy	47 des Remparts, Quebec	Sillery
Blais (Jos.), Enrg.	10 Mont-Marie Avenue, Levis	Saint-Louis de Pintendre, Saint-Nicholas
Cloutier, Emile	L'Islet	
Corrigan, Jos.	Chemin St. Louis, Sillery	Sainte-Foy
Gagnon, Ls. Philippe	Saint-David, Lévis Co.	
Montmagny, Carrière de la Ville de	Montmagny	
Rousseau, T. E.	48 Second Avenue, Quebec	New Carlisle, Leggatts' Point
Sherbrooke, City of	c-o Thos. Tremblay, City Engineer, Sherbrooke	Ascot
Vézina (Joseph), Enrg.	Bergerville	Parish of Sainte-Foy

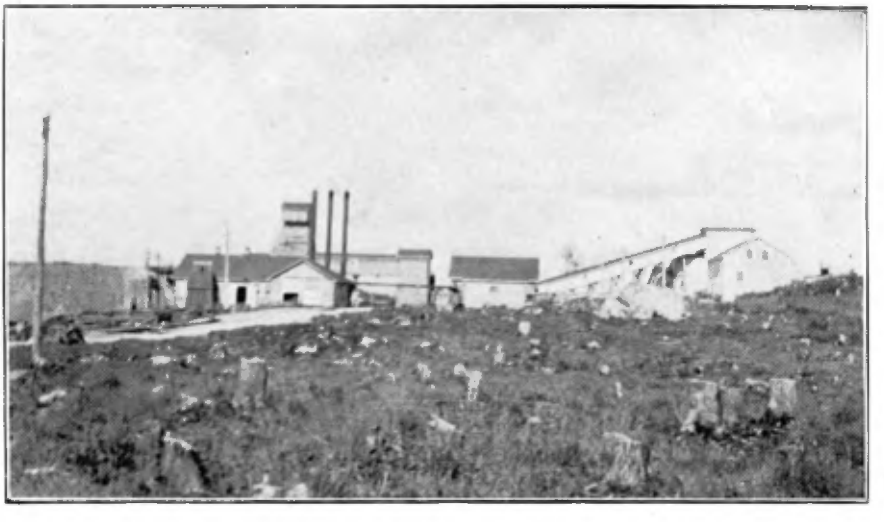
SLATE and SHALE

Name of Operator	Address	Location of Quarry
Brique Citadelle, Ltée (La)	14 St. Joseph Street, Quebec	Lauzon
Broughton Soapstone & Quarry Co., Limited	Broughton Station	Sainte-Hénédine
Davis Slate & Manufacturing Co. of Canada, Limited	131 Shaftesbury Avenue, Toronto, Ont.	
Taylor, John	R. R. No. 4, Granby	

A.—Peat bog at Isle Verte. Working trench and drying field.

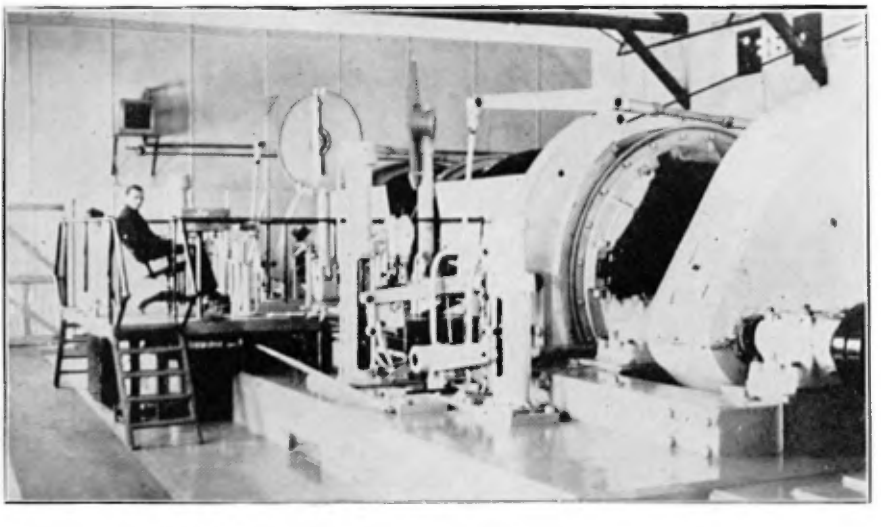
B.—The place of Insulation Limited at Isle Verte, P. Q.

A.—Flint Sands, Limited, Guigues township, August 1936.



B.—McWatters Gold Mines, Limited, Rouyn township, August 1936.

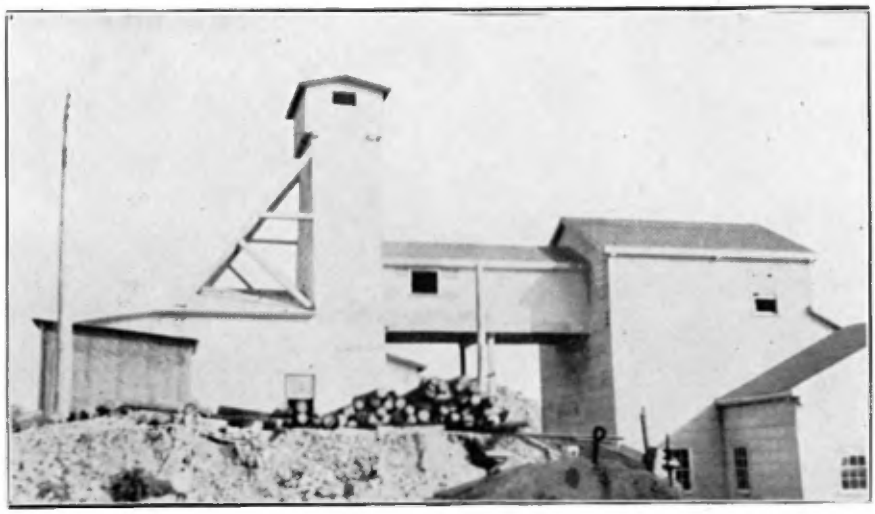
A.—Powell-Rouyn Gold Mines, new plan at old shaft, Rouyn township, July 1936.



B—Beattie Gold Mines, Limited, Nordberg skip hoist, Duparquet township, March 1936.

A.—McIntyre Porcupine Mines, Limited, Guillet township, August 1936.

B.—Randall Mine, Landrienne township, August 1936.



A.—Shawkey Gold Mining Company, Limited, Dubuisson township, July 1936.

B.—Siscoe Gold Mines, Limited, Dubuisson township, July 1936.

A.—Sullivan Consolidated Gold Mines, Limited, Dubuisson township, July 1936.

B.—Sigma Mines, Limited, Bourlamaque township, July 1936.

ALPHABETICAL INDEX