GENERAL REPORT

OF THE

MINISTER OF MINES

OF THE

PROVINCE OF QUEBEC

FOR THE YEAR ENDING MARCH 31st

1957

P. R. 354

Quebec, August, 1957.

To the Honourable
Gaspard Fauteux, P.C., LL.D., D.D.S., L.D.S.,
Lieutenant-Governor of the Province of Quebec.

Sir,

I have the honour to submit to you, in accordance with Section 229 of the Quebec Mining Act, a summary report of the work carried out by the Department of Mines during the fiscal year ending March 31st, 1957.

Your respectful servant,

W.M. Cottingham,
Minister of Mines.

Quebec, August, 1957.

To the Honourable W.M. Cottingham,
Minister of Mines,
Quebec, Que.

Sir,

In compliance with Section 229 of the Quebec Mining Act, chapter 196, Revised Statutes of Quebec 1941, I have the honour to present a summary report on the work carried out by the staff of the Department of Mines, during the fiscal year of April 1st, 1956, to March 31st, 1957.

Your obedient servant,

A.-O. Dufresne,
Deputy Minister.

ILLUSTRATIONS

REPORT OF THE DEPARTMENT OF MINES

OF THE PROVINCE OF QUEBEC

For the Fiscal Year Ending March 31st, 1957

THE MINING INDUSTRY OF THE PROVINCE OF QUEBEC

IN 1956-57

During the calendar year 1956 the value of the mineral production of the Province of Quebec reached $466,882,575. This figure represents an increase of 20% over the value attained in 1955, and is almost double the value of the mineral production of 1950 which amounted to $220,665,103.

The metals, with copper and iron leading, brought in $278,440,867 as compared with $215,781,654 in 1955. The value of industrial minerals increased from $105,890,962 in 1955 to $118,140,682 in 1956. The demand for building materials has also increased and the value of the production of these substances amounted to $70,301,026 as compared with $66,990,217 for the year 1955.

Preliminary statistics for the first six months of 1957 tend to show that the current year will not be as fructuous as the last one for the mining industry. The steady drop in prices of copper, lead and zinc, coupled with the discount on American funds are the main causes for this decline.

IRON ORE

In 1953, there was no production of iron ore in the Province of Quebec; in 1956, production amounted to $99,050,321. The development of the iron ore deposits in the province has advanced with great strides. Operators have laid out plans and initiated work which will result, once completed, in placing iron ore mining at the top of the list of mineral substances produced in the province.

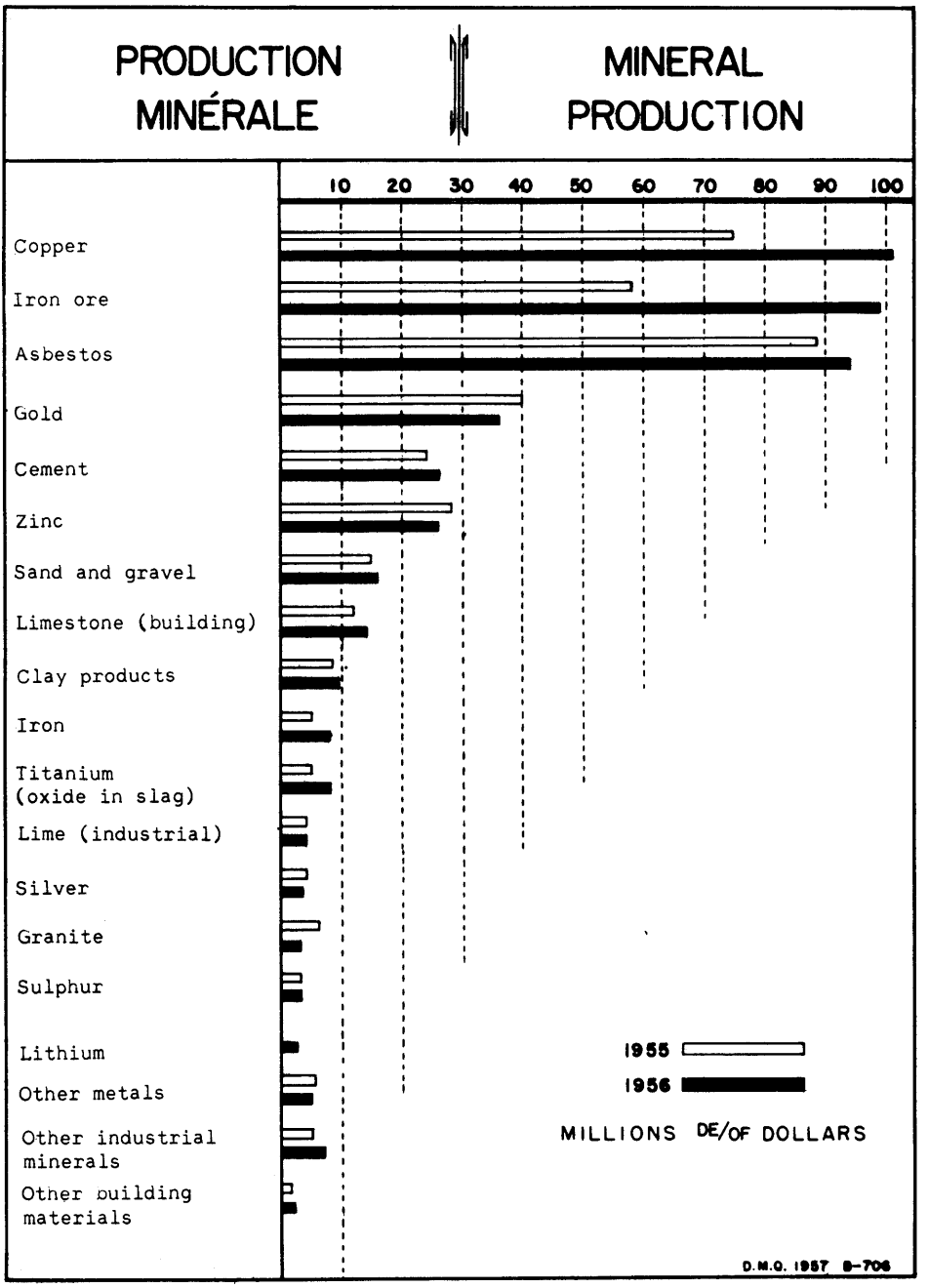
PRODUCTION MINÉRALE
MINERAL PRODUCTION
10 20 30 40 50 60 70 80 90 100
Copper
Iron ore
Asbestos
Gold
Cement
Zinc
Sand and gravel
Limestone (building)
Clay products
Iron
Titanium (oxide in slag)
Lime (industrial)
Silver
Granite
Sulphur
Lithium
Other metals
Other industrial minerals
Other building materials
1955
1956
MILLIONS DE/OF DOLLARS
D.M.O. 1957 B-706

Table I.- Value of the Mineral Production of the Province of Quebec for Calendar Years 1955 and 1956

METALLICS	Value 1956	Value 1955
Bismuth	$ 230,213	$ 210,636
Copper	101,288,640	74,502,645
Gold	(a) 35,726,717	(a) 39,919,549
Iron	7,996,897	4,831,845
Iron ore (b)	99,050,321	58,265,200
Lead	891,145	1,612,862
Magnesium	1,536,688	1,916,829
Molybdenite	955,828	823,954
Selenium	1,586,993	1,775,753
Silver	3,644,150	4,221,079
Titaniferous iron ore	16,561	10,634
Zinc	25,516,714	27,690,668
Total metals	$278,440,867	$ 215,781,654
NON-METALLICS		
I.- Industrial Minerals		
Asbestos	$ 93,733,063	$ 88,607,804
Feldspar	364,849	355,879
Industrial lime	3,791,679	3,781,401
Lithium	2,643,950	58,480
Industrial limestone	1,240,788	1,148,948
Magnesitic dolomite and brucite	2,783,181	2,151,820
Marl	105,872	74,325
Mica	93,761	73,734
Mineral water	148,167	158,495
Ochre and iron oxide	186,225	162,512
Peat (moss and humus)	951,644	638,696
Quartz and industrial sand	1,243,465	791,606
Soapstone and talc	185,298	143,895
Sulphur	2,985,829	2,550,557
Titanium dioxide (in slag)	7,682,911	5,192,810
Total industrial minerals	$ 118,140,682	$ 105,890,962
II.- Building Materials		
Building lime	$ 673,067	$ 624,277
Building limestone	13,588,256	11,537,417
Cement	25,696,957	24,132,519
Clay products - (Brick	7,270,450	6,465,911
Clay products - (Other products	2,143,464	1,983,656
Granite	3,184,330	5,800,835
Marble	219,007	236,621
Sand and gravel	16,354,886	15,346,416
Sand-lime products- (Brick	471,151	447,126
Sand-lime products- (Blocks	75,972	82,084
Sandstone	589,966	280,674
Slate and shale	33,520	52,681
Total building materials	$ 70,301,026	$ 66,990,217
Grand Total	$ 466,882,575	$ 388,662,833

(a) Value in Canadian funds. The standard value at the rate of $20.671834 per ounce troy is $21,437,932 for 1956 and $23,905,281 for 1955.

(b) In view of the uncertainty as to the boundary line, it is impossible, in present conditions, to give exactly shipments of iron ore having originated in Ungava. Figures given here represent shipments from Ungava and Labrador.

Table II.- Subdivision of the Annual Value of the Mineral Production of the Province of Quebec, in 1950-1956

Year	Metals	Per Cent	Industrial Minerals	Per Cent	Building Materials	Per Cent	Total
1950	$108,897,715	49	$ 73,128,980	33	$38,638,408	18	$220,665,103
1951	120,257,513	47	89,010,161	35	46,664,148	18	255,931,822
1952	120,283,133	44	97,233,834	36	53,222,585	20	270,739,552
1953	103,278.622	41	96,392,456	38	52,683,103	21	252,354,181
1954	137,780,968	48	94,092,032	32	56,475,399	20	288,348,399
1955	215,781,654	56	105,890,962	27	66,990,217	17	388,662,833
1956	278,440,867	60	118,140,682	25	70,301,026	15	466,882,575

From the old "Bristol" mine in Pontiac county, now known as "Hilton Mines", Stelco Mines Quebec Ltd. and Bristol Quebec Mining Co. Ltd. plan to extract enough ore to produce annually 600,000 tons of magnetite concentrates in the form of pellets. Production is scheduled to begin towards the end of 1957.

Approximately 200 miles north of the village of Shelter Bay, electoral district of Saguenay, Quebec Cartier Mining Company, a subsidiary of United States Steel Corporation, owns the mining rights to extensive iron ore deposits located in the Mounts Wright and Reed areas; it is estimated that nearly 700,000,000 tons of ore have been indicated. The company has published a list of engineering works to be carried out before production starts on the deposits, and these will include the construction of a railway and a road from Shelter Bay, dock-loading installations at Shelter Bay, a concentrator, mine villages, as well as a hydroelectric plant on the Hart Jaune river.

In the far north on the west shore of Ungava bay, the companies which hold exploration licenses in the territory of New Quebec have pursued their exploration mapping and metallurgical investigations. Atlantic Iron Ore Ltd. has continued the geological mapping of its area under license and has drilled and sampled the deposits. In addition, the western part of the north shore of Hope's Advance bay has been mapped topographically as a preliminary to the building of loading docks. A landing strip, 3,000 feet long, and two permanent buildings have been constructed.

Consolidated Fenimore Iron Mines Ltd. has also completed studies on concentrating processes for its iron ore; their reserves are estimated at 560,000,000 tons. Furthermore, the company is preparing plans for the building of a concentrator, a village, dock and loading installations.

International Iron Ore Co. has continued the topography and geological mapping of its deposits at Kayak Bay; the sampling of all the iron ore outcrops was completed during the 1956 season.

Oceanic Iron Ore (Quebec) Ltd. has completed the drilling of the "Morgan Range" ore body located 20 miles south of Payne river. This body is estimated to contain 400,000,000 tons of ore amenable to concentration.

COPPER

The price of copper remained substantially high during 1956, and this led to a more active search and development of copper deposits.

During the year, three new producers shipped concentrates: Chibougamau Explorers, Rainville Mines Ltd. and Lyndhurst Mining Co. Moreover, Beattie-Duquesne Mines Ltd. which, until April, 1956, had been a gold producer, converted its mill into a copper flotation mill.

On July 17, 1956, took place the ceremony that marked the formal opening of the mine and smelter operation by Gaspé Copper Mines Ltd, at Murdockville; the first anodes had, however, been poured at the end of 1955.

The Chibougamau district is still the leader in development work and new construction.

OTHER METALS

Gold and Silver. - During 1956, five gold and silver producers suspended operations; these are: Beattie-Duquesne Mines Ltd., Donalda Mines Ltd., O'Brien Gold Mines Ltd., Powell-Rouyn Mines Ltd. and Sullivan Consolidated Mines Ltd. This accounts for the lower gold production. In addition, the disparity between the Canadian and American dollars was also added to the decrease in the value of the gold production.

Bismuth and Molybdenite. - These substances are produced in Canada only by Molybdenite Corporation of Canada Ltd. This company enjoyed a good production year at its Lacorne Mine. Towards the end of 1956, a refinery was placed into operation, where molybdenite is transformed into molybdic oxide.

Titaniferous Iron Ore. - After many years of intense researches, Quebec Iron and Titanium Corporation has successfully worked out the economics

of its electric smelting process. The company has embarked on a vast expansion programme to be spread out over several years; these improvements and expansion will increase production of titaniferous iron ore mined from the company's Lake Allard deposits near Havre St.Pierre.

LEAD AND ZINC

The production of these two metals was much lower during the year. Ascot Metals Corporation suspended its operations during the summer 1956; Barvue Mines Ltd. changed from open-pit to underground operations. During the transition period, the tonnage produced was much lower. Lower production plus the gradual decrease in the prices for these metals accounts for the spread in value between the productions of 1956 and 1955.

INDUSTRIAL MINERALS

Of 16 industrial minerals produced in the Province of Quebec during 1956, asbestos and lithium oxide have taken a special importance: asbestos because of the large expansion and construction programmes which have been initiated, lithium oxide because 1956 was the first complete year during which this substance was produced.

During the year, Canadian Johns Manville began enlarging its mill. Lake Asbestos of Quebec and Carey Canadian have carried on with their respective construction programmes, and National Asbestos started the construction of the buildings necessary for the production of asbestos fibre.

LEGISLATION

Bill No. 54, adopted by the Legislative Assembly, on February 13th, 1957, amends the Quebec Mining Act as follows:

1. Section 33 of the Quebec Mining Act (Revised Statutes, 1941, chapter 196), amended by section 1 of the act 13 George VI, chapter 57, is replaced by the following:

"33. No one may, without the previous authorization of the Lieutenant-Governor in Council, stake or mark lands of which the mining rights belong to the Crown, in the case of

a. lands set aside by the Crown as town or village lots;

b. lands subdivided into building lots and entered as such by the owner on the official plan and book of reference;

c. lands situated in the territory of a city or town;

d. lands alienated by the Crown for the development of hydraulic power;

e. the bed of a river or stream in which hydraulic power might be developed and lands included within an area four hundred feet wide on each side of such river or stream.

No one may, without the same authorization, acquire from the Crown mining rights in such lands".

2. Section 127 of the said act is amended by adding thereto the following paragraph:

"Every road built under this section must have a roadway of at least thirty-five feet."

3. Section 135 of the said act is amended by adding thereto, at the end, the following paragraph:

"With the authorization of the Lieutenant-Governor in Council, the Minister may cause to be widened, to at least thirty-five feet of roadway, any mining road which he determines."

Furthermore, the Legislative Assembly also adopted, on February 20th, 1957, Bills No. 62 and No. 63. Both are laws to facilitate mining and industrial development in New Quebec. The first concerns Oceanic Iron Ore (Quebec) Ltd.; the second, Atlantic Iron Ores Ltd. These Acts authorize the Lieutenant-Governor in Council to issue to and in the name of each company an operating license in the form of a lease, for a period of thirty years. These leases are issued under very well-defined conditions respecting the area of the territory, the dues to be paid, the date of beginning of operations and many other related stipulations.

MINERAL RIGHTS BRANCH

F.-U. Roux, Chief Mining Recorder, reports that the 1956-57 fiscal year can be compared favourably with that of 1955-56, which was the record year. If, on the one hand, there has been a slight decrease in the number of miner's certificates issued, the number of mining claims and transfers registered, of assay coupons delivered, and of mining concessions granted, on the other hand, there was a noticeable increase in both the number of development licenses issued and renewed, in the number of mineral exploration licenses, and in the total of work days reported to this branch. The importance of this last item should be stressed because it is a main factor in the mining development of the province.

The reports of work filed show that man-days reached a total of 2,833,696 units, as compared with 1,265,682 units in 1955-56, and 1,524,078 feet of diamond drilling was carried out this year, in comparison with 682,178 feet done in 1955-56; in both cases, this year's figures more than double those of the previous year.

There is a marked decrease in the number of mining claims registered at the Amos, Noranda and Montreal agencies; the Chibougamau and Quebec offices show a slight increase.

In the 1956-57 fiscal year, 15,686 miner's certificates were issued; the 1955-56 total was 20,193.

New development licenses issued numbered 4,299, up from 3,129 last year; the renewed licenses total 6,881, up from 6,435.

During the year, four mining concessions, aggregating 1,318 acres, were granted; in 1955-56, 14 concessions, covering 2,674 acres, had been granted.

Transfers of mining rights numbered 5,244, down from 5,402 registered in 1955-56.

A total of twenty mineral exploration licenses was issued during the year under review: four licenses for all minerals in the territory of New-Quebec, fourteen for gas and oil in the St. Lawrence lowlands and two in the Gaspé peninsula. This represents a substantial increase over the past years, considering that only four licenses were granted in 1955-56 and three in 1954-55.

By an Order-in-Council, dated May 3rd, 1956, an area of 4,400 square miles, lying to the north of Musquaro township, in the electoral district of Saguenay, was withdrawn from staking.

During the month of September, 1956, a new agency for the sale of miner's certificates was opened in Lachute. There are now, in the Province, four other similar offices where prospectors can obtain miner's certificates; they are located in Val d'Or, Ville-Marie, Hull and Campbell's Bay.

Table III.- VARIOUS TITLES ISSUED BY THE DEPARTMENT OF MINES
(Fiscal years 1955-56 and 1956-57)

Designation of Title	1955-56	1956-57
Mining claims registered at Amos	20,156	18,037
Mining claims registered at Noranda	11,483	7,134
Mining claims registered at Quebec	7,644	8,348
Mining claims registered at Chibougamau	11,491	12,607
Mining claims registered at Montreal	9,541	5,133
Total	60,315	51,259
Miner's certificates issued	20,193	15,686
Development licenses issued	3,129	4,299
Development licenses renewed	6,435	6,881
Mining concession	14	4
Transfers of titles registered	5,402	5,244
Reports of work: man-day reported	1,265,682	2,833,696
Reports of work: diamond drilling, in feet ...	682,178	1,524,078
Number of assay coupons delivered	52,559	39,127

Table IV.- MINING TITLES ISSUED SINCE 1946-47

Fiscal Year	Number of Miner's Certificates	Number of Mining Claims Recorded	Number of Development Licenses	Concessions		Transfers of Mining Rights
				Number	Acres	
1946-47	5,408	16,332	9,885	12	4,475	2,166
1947-48	5,119	16,735	6,858	14	6,065	1,448
1948-49	4,425	14,000	5,647	5	995	1,431
1949-50	4,608	14,398	5,168	6	994	1,115
1950-51	6,594	19,787	5,407	9	3,717	1,513
1951-52	7,531	22,807	5,407	8	1,019	2,396
1952-53	7,577	21,912	6,562	9	2,042	2,410
1953-54	10,558	23,667	6,905	8	908	2,154
1954-55	10,987	31,702	6,739	3	211	3,102
1955-56	20,193	60,315	9,564	14	2,674	5,402
1956-57	15,686	51,259	11,180	4	1,318	5,244

Table V.- COMPARATIVE STATEMENT OF EXPLORATION WORK ON MINING CLAIMS UNDER LICENSES DURING CALENDAR YEARS 1946 TO 1956

Year	Number of Work-days (man-days)	Diamond Drilling (in feet)
1946	1,463,934	1,296,074
1947	3,186,453	2,753,671
1948	772,568	517,526
1949	595,581	345,818
1950	498,460	317,558
1951	956,451	705,570
1952	871,307	590,788
1953	672,900	394,194
1954	664,447	295,221
1955	1,107,712	417,144
1956	2,338,452	1,321,429

MINING OPERATIONS BRANCH

This Branch is concerned with all matters directly affecting operations of mines and quarries in the Province, and its main duties may be summarized as follows:

1.- The application of the Quebec Mining Act in general, and especially as it concerns the following sections:

a) Section 13.- Sites of projected treatment plants.
b) Section 35.- Use of mining concessions for purposes other than mining.
c) Section 37.- Use of Crown lands for works to facilitate mining operations.
d) Section 70.- Buildings on Crown lands.
e) Section 123.- Tailings sites.
f) Section 198.- The inspection of mines and quarries to ensure the observance of the "Regulations for the Safety and Protection of Workmen in Mines and Quarries".
g) Section 199.- Plans of mining properties.
h) Section 201.- Reports to the Minister.

2.- The organization and direction of the Mine Rescue Training Plan throughout the Province;

3.- The examination of mines and quarries with a view to keeping the Department informed on the progress of the mineral industry.

4.- The application of the Unwrought Metals Sales Act;

5.- The collection of dues on mines.

6.- The collection and compilation of statistics on mining operations.

The senior officers attached to the Mining Operations Branch are as follows:

Beaudet, C.O.	Chief - Division of Mineral Statistics.
Bérubé, E.E.	Asst. Chief Mining Engineer.
Drouin, S.	Chief - Division of Collection of Dues on Mines.
Farnsworth, D.A.	Asst. Chief Inspector of Mines.
Grant, G.S.	Inspector of Mine Rescue Stations.
Lafontaine, M.O.	Chief Inspector of Mines.
Taschereau, R.H.	Chief Mining Engineer.
Trudel, L.	Electrical Engineer, Class III.

For inspection purposes, the Province is divided into three districts:

No. 1 district comprises that part of the Province lying to the south of the St. Lawrence river and east of the Richelieu river.

No. 2 district extends from Pontiac county, eastward to the north of the St. Lawrence river, including New Quebec, Anticosti island and Magdalen islands.

No. 3 district comprises the counties of Abitibi-East, Abitibi-West, Rouyn-Noranda and Témiscamingue.

During the 12-month period under review, the Mine Rescue Training Plan was extended throughout the Province and an additional Mine Rescue Superintendent was appointed with headquarters in Thetford Mines, where plans are being completed to erect a building to house the official mine rescue station.

The cost of equipping and operating this extension to the Mine Rescue Training Plan will be borne by the Quebec Asbestos Mining Association and the Quebec Metal Mines Accident Prevention Association.

The establishment of a medical clinic at Thetford Mines was authorized to provide X-ray examinations for miners engaged in dust exposure occupations. With the establishment of this clinic, X-ray examinations are now compulsory for the protection of all miners engaged in dust exposure occupations throughout the Province.

A partial summary of the work of the Mining Operations Branch, in the period under review, is presented in the following table with comparative figures for the previous year.

	1955-56	1956-57
Inspections of Mines and Quarries	213	214
Inspections of Electrical Installations	51	17
Underground Ventilation Surveys	31	32
Dust Counts	325	293
Mine Rescue Certificates issued	90	127
Mine Rescue Station Reports received	129	127
Hoistmen's Medical Certificates issued	246	321
Hoisting Rope Records received	145	241
Hoisting Rope Breakage Tests reported	300	298
Steam Boiler Inspection Reports received	80	96
X-ray Examinations of miners	10,175	11,969
Underground Plans received	47	43
Approval of Mill-sites - Orders in Council	6	2
Approval of Tailings sites	3	3
Tramways - Orders in Council	1	-
Sand and Gravel - Orders in Council	1	-
Unwrought Metals Licenses issued	13	8
Unwrought Metals Reports received	195	212
Collection of dues - Statements received	36	39

Collection of Dues on Mines

During the fiscal year 1956-57, the Department of Mines received sworn statements from 39 mining companies. These reports included statements of profits with vouchers. The sum of $5,954,056.70 * was collected by the Department, on the net profits as defined in Division III by the Quebec Mining Act.

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* There is a difference between the figures given by the assessor and those tabled by the Accounting Division. This is due to the fact that the assessor bases his accounting on "receipts" whereas the Accounting Division bases its figures on "revenues".

In addition, 117 holders of mining concessions remitted a sum of $3,048.33. This amount represents the total tax, at the annual rate of 10 cents per acre, levied against holders of mining concessions where no mining or exploration work has been performed during the fiscal year (Mining Act, Div. VIII, Sec. 50). 166 other holders of mining concessions sent sworn declarations to the effect that expenditures, amounting to at least $200.00, had been incurred in the performance of development work on each concession during the year. This is the statutory condition for exemption of the acreage tax mentioned above.

Division of Mineral Statistics

This Division's main function is to collect, to compile and to publish statistics relating to the mineral industry of Quebec.

The information needed for the compilation related to the 1956 mining operations was obtained from 289 mine and quarry operators, 400 companies doing development work on their properties, and a very large number of sand and gravel pit operators.

The figures obtained from these sources pertain to: the mineral production; the costs of operation and development; the quantity and cost of supplies, fuel and electricity used; the labour force and its wages; taxes and dividends.

Once revised, a copy of each report received is forwarded to the Mines Division of the Dominion Bureau of Statistics. Figures compiled by the Federal and the Provincial divisions are always compared before publication.

The Division of Mineral Statistics prepares every year: a table showing the quantity and value of each and every mineral substance produced during the preceding year; tables detailing the production of asbestos, mica, lime, limestone, building stone, clay products, sand and gravel. It also produces a list of gold producers, by region, upon which are shown the tonnage of ore milled and the quantity of gold recovered; tables dealing with the monies spent by the mining companies for the welfare of their employees; tables on labour and its wages; and a score of other tables.

Monthly production reports on asbestos, precious metals, cement, lime, and clay products are issued by the Division. Every three months, these monthly reports include figures on the quarterly production of copper, lead and zinc.

A record is kept of all the mining concerns which hold mining rights, in their name, in the province.

An eight-page pamphlet entitled "List of the principal operators and owners of mines and quarries in the Province of Quebec" is also published by the Division. There was, in 1956, a considerable increase in the number of new mining companies over the preceding year. During this period, 149 companies were incorporated by Quebec charter. Moreover, 35 companies with Ontario charter and 3 with a Federal charter, incorporated in 1956, acquired mining rights in the Province. It may therefore be stated that 187 companies were organized to operate in the Province of Quebec. In 1955 there had been 142, of which 105 had a Quebec charter, 34 an Ontario charter, and 3 a Federal charter.

Following is a list of the new mining companies, with their head office, date of incorporation and capitalization.

MINING COMPANIES INCORPORATED
BY QUEBEC CHARTER IN 1956

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Abitibi Exploration Co.Ltd.	Val d'Or	July 30	3,000	$100.
Airborne Drilling and Exploration	Val d'Or	Aug. 30	1,500	$ 10.
Allard Sand and Gravel Limited	Foster	Dec. 4	500	$100.
Almar Mining Corporation Ltd	Montreal	Sept.24	3,000,000	$ 1.
Americ Mines Ltd.	Montreal	May 4	5,000,000	$ 1.
American Chibougamau Mines Limited	Montreal	June 7	5,000,000	$ 1.
Anctil Development Limited	Montreal	Sept.30	400	$100.
Anglo-Alaska Company Ltd	Rouyn	Mar. 12	5,000,000	$ 1.
Anglo-American Mining Corp.	Montreal	July 11	200,000	$ 1.
Antiquois Mining Corporation	Montreal	Apr. 24	3,000,000	$ 1.
Apollo Mineral Developers Inc	Montreal	July 31	3,000,000	$ 1.
Avmor Chibougamau Mines Ltd.	Montreal	Sept.29	5,000,000	$ 1.
Bachelor King Mines Ltd.	Montreal	May 8	4,000,000	$ 1.
Bagot Gas and Oil Limited	Montreal	Mar. 12	20,000	$ 1.
Baraca Mines Ltd.	Montreal	Nov. 7	5,000,000	$ 1.
Bearn Quarry Ltd.	Rouyn	Aug. 15	300	$100.
Beaver Mining and Drilling Corporation	Côteau-du-Lac	Aug. 23	4,000	$ 10.
Belle Oil Corporation	Montreal	Mar. 12	20,000	$ 1.
Berthier Gas and Oil Limited	Montreal	Apr. 26	20,000	$ 1.
Big Nell Mines Limited	Montreal	Nov. 21	5,000,000	$ 1.
Brique de Mont-Joli Inc. (La)	Mont-Joli	July 6	500	$100.
Brique Orléans Inc	Quebec	Feb. 14	400	$100.
Broughton Copper Limited	Quebec	Mar. 24	5,000,000	$ 1.
Camont Mining and Exploration Co. Ltd.	Montreal	May 19	4,000,000	$ 1.

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Campbell Baskatong Mining Corp'n.	Montreal	Aug. 7	5,000,000	$ 1.
Can-American Copper (P.Q.) Ltd...	Montreal	Mar. 15	40,000	$ 1.
Canex Minerals Ltd	Montreal	Feb. 23	4,000,000	$ 1.
Canso Natural Gas (Quebec) Ltd ..	Montreal	July 9	40,000	$ 1.
Canus Iron Company Limited	Montreal	Oct. 9	5,000,000	$ 1.
Carrière Dulude Limitée	Saint-Bruno	Mar. 9	400	$100.
Carrières "Gatineau" Limitée (Les)	Mont-Laurier	June 1	400	$100.
Carrières Goyer Ltée (Les)	Saint-Bruno	Mar. 2	400	$100.
Carrières Roberval Ltée	Roberval	Dec. 20	250,000	$ 1.
Carrière Shawinigan Ltée (La) ..	Shawinigan Falls	Oct. 19	4,000	$ 10.
Carrières de Thetford Limitée (Les)	Thetford Mines	Dec. 27	100	$100.
			(a) 400	$100.
Central Patricia Mines (Quebec) Limited	Montreal	Dec. 11	500,000	$ 1.
Charlevoix Mining Ltd.	Montreal	Oct. 2	2,000,000	$ 1.
Chartrand Cut Stone Company Limitée	Canton Bélanger	Oct. 11	300	$100.
Chesbar Chibougamau Mines Ltd. ..	Montreal	Apr. 5	5,000,000	$ 1.
Chibtown Copper Corporation	Montreal	Nov. 26	5,000,000	$ 1.
Columbium Mining Products Ltd. ..	Montreal	June 11	3,000,000	$ 1.
Conwest Exploration (Quebec) Ltd.	Montreal	Dec. 11	500,000	$ 1.
Copperama Mining Corporation ...	Montreal	Oct. 1	4,000,000	$ 1.
Copper Crop Mines Limited	Montreal	Apr. 11	4,000,000	$ 1.
Copper Rand Chibougamau Mines Ltd	Montreal	Mar. 15	6,300,000	$ 1.
Copper Valley Mines Ltd.	Montreal	Feb. 29	5,000,000	$ 1.
Corval Corporation Ltd.	Dorval	Jan. 5	1,000,000	$ 1.
Crown Chibougamau Corporation ..	Montreal	Apr. 13	4,000,000	$ 1.
Cubamina Ltd.	Montreal	May 8	3,000,000	$ 1.
Dadson Lake Chibougamau Mines Ltd	Montreal	Mar. 9	4,000,000	$ 1.
Dart Mines Limited	Montreal	July 30	5,000,000	$ 1.
Dasson Copper Corporation Ltd. ..	Rouyn	Sept.24	5,000,000	$ 1.
Delson Exploration Limited	Montreal	Aug. 10	40,000	$ 1.
Demers Chibougamau Mines Limited	Montreal	Mar. 24	5,000,000	$ 1.
Diggers Chibougamau Mines Ltd. ..	Quebec	Apr. 18	4,000,000	$ 1.
Dramiska Mines Limited	Sorel	Aug. 22	4,000,000	$ 1.
Ducoa Quarries Limited	Montreal	Aug 3	50,000	$ 10.
			(a) 30,000	$ 10.
Dula Metals Corporation	Montreal	Apr. 27	4,000,000	$ 1.
Dumont Geophysics Ltd.	Montreal	Mar. 7	40,000	$ 1.

(a) Preferred shares

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Dynamic Mining Corporation	Montreal	Aug. 17	500	$ 10.
			(a) 600	$100.
Eastern Opemiska Mines Ltd.	Montreal	May 4	4,000,000	$ 1.
Elwood Mining Exploration Co. Ltd.	Montreal	Mar. 1	4,000,000	$ 1.
Exploration Surveys Limited	Montreal	Aug. 10	(a) 7,000	$ 5.
			5,000	$ 1.
Fortunata Mines Ltd.	Montreal	Dec. 5	4,000,000	$ 1.
Frontenac Mining Corporation ...	Montreal	July 16	5,000,000	$ 1.
Gatineau Mining Corporation	Montreal	Dec. 20	4,000,000	$ 1.
Garthby Metals Mining Corporation	Montreal	Apr. 27	4,000,000	$ 1.
Giant Bachelor Mines Ltd.	Montreal	July 23	4,000,000	$ 1.
Gibson Chibougamau Mines Ltd. ...	Montreal	Mar. 15	4,000,000	$ 1.
Glencona Exploration Mining Ltd..	Montreal	May 19	5,000,000	$ 1.
Great Valley Exploration and Mining Ltd.	Montreal	Mar. 23	4,000,000	$ 1.
Hoover Mining and Exploration (Quebec) Company Ltd. (The) ...	Montreal	Oct. 11	5,000,000	$ 1.
Intercontinental Mines Ltd.	Montreal	Jan. 11	4,000,000	$ 1.
International Chibougamau Mining Company Limited	Roberval	July 3	5,000,000	$ 1.
International Exploration Corp...	Montreal	Feb. 22	5,000,000	$ 1.
Italia Copper Ltd.	Montreal	Feb. 10	4,000,000	$ 1.
James Bay and Quebec Development Corp.	Montreal	Sept. 7	5,000,000	$ 1.
Kent Chibougamau Mines Ltd.	Montreal	Dec. 3	5,000,000	$ 1.
Lake Baskatong Mining Corporation	Montreal	June 12	5,000,000	$ 1.
Lake Chibougamau Mines Limited ..	Montreal	Jan. 17	4,000,000	$ 1.
Larry Wilson (Chibougamau) Mining Company	Montreal	Nov. 21	4,000,000	$ 1.
Lavandin Mining Company	Montreal	Dec. 11	3,500,000	$ 1.
Leadville Silver Mining Corporation	Montreal	Nov. 2	5,000,000	$ 1.
Lemieux Mining Corporation	Quebec	Dec. 27	3,000,000	$ 1.
Lemoine Chibougamau Mining Corporation	Montreal	May 7	4,000,000	$ 1.
Le Moyne Ungava Mines Limited ..	Quebec	Jan. 13	5,000,000	$ 1.
Louiseville Gas and Oil Ltd.	Montreal	Apr. 26	20,000	$ 1.
Lyndvue Mines Limited	Montreal	Jan. 20	5,000,000	$ 1.
McCorkill Chibougamau Mining Co..	Ile Perrot	Mar. 2	5,000,000	$ 1.
McKenzie Chibougamau Mines Ltd...	Montreal	Jan. 14	4,000,000	$ 1.
Macport Mines Ltd.	Montreal	Feb. 3	3,500,000	$ 1.
Maggy Mining Corporation	Montreal	Apr. 16	5,000,000	$ 1.

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Major Chibougamau Mines Ltd.	Montreal	June 21	5,000,000	$ 1.
Malouf Exploration Company Ltd...	Montreal	June 5	40,000	$ 1.
Masson Diamond Drilling	Salaberry-de-		3,000	$ 10.
Corporation	Valleyfield	June 4	(a) 100	$100.
Mid-Chibougamau Mines Ltd.	Montreal	Apr. 3	5,000,000	$ 1.
Midway Ore Company Ltd.	Montreal	Mar. 7	400	$100.
Milado Mines Ltd.	Montreal	Oct. 25	50,000	$ 1.
Mine Faucon Ltée (La)	Quebec	July 26	40,000	$ 1.
Mines Roy Ross Inc. (Les)	Rimouski	Nov. 19	3,000,000	$ 1.
Minora Mining Corporation	Montreal	Dec. 11	4,000,000	$ 1.
Missisquoi Marble and Stone	Philipsburg	Oct. 30	(a) 10,000	$ 50.
Corporation			2,000,000	$ 1.
Mobrun Copper Ltd.	Rouyn	Mar. 7	3,000,000	$ 1.
Modern Quarries Inc	Notre-Dame du			
	Bon Conseil	Apr. 23	200,000	$ 1.
Nicolet Oil and Gas Company Ltd..	Montreal	Apr. 4	40,000	$ 1.
Oceanic Iron Ore (Quebec) Ltd....	Quebec	June 5	40,000	$ 1.
Oil Selections Exploration				
(Quebec) Limited	Montreal	Apr. 16	40,000	$ 1.
Onassis Mining Corporation	Montreal	Aug. 27	800,000	$ 5.
Piermond Mining Company Limited	Montreal	Dec. 3	5,000,000	$ 1.
Pincourt Sand and Gravel Inc ...	Montreal	Apr. 23	100	$100.
Piscotosin Copper Mines Ltd.	Montreal	July 18	4,000,000	$ 1.
Pontiac Explorers and Developers	Campbell's	Feb. 17	1,000	$ 10.
Incorporated	Bay		(a) 400	$100.
Quebec Bachelor Mining Corporation	Montreal	Nov. 19	5,000,000	$ 1.
Quebec Colombium Limited	Montreal	Apr. 25	30,000	None
			(a) 15,000	$100.
Quebec Lightweight Aggregates				
Mining Corporation (The)	Sorel	Apr. 20	5,000,000	$ 1.
Quebec Lowlands Gas and Oil Ltd..	Montreal	Aug. 6	4,000,000	$ 1.
Quebec Rare Minerals Inc	Amos	May 2	200,000	$ 1.
Queen Chibougamau Mines Ltd.	Montreal	Jan. 4	4,000,000	$ 1.
Ran-Lux Ltd.	Montreal	Sept.25	3,000,000	$ 1.
Raysonic Mineral Exploration				
Company Ltd.	Sweetsburg	Oct. 25	200,000	$ 1.
Red Mount Chibougamau Mines Ltd..	Montreal	Apr. 13	5,000,000	$ 1.
Regent Asbestos Mines Ltd.	Montreal	July 6	5,000,000	$ 1.
Rex Chibougamau Mines Ltd.	Montreal	Apr. 12	5,000,000	$ 1.
Richmond Explorations Limited ..	Quebec	Aug. 2	40,000	$ 1.
Rimosa Copper Limited	Quebec	Jan. 20	3,000,000	$ 1.

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Risborough Mining Corporation ..	Montreal	Aug. 13	5,000,000	$ 1.
Ross Mining Corporation	Montreal	May 4	10,000	$ 1.
Rouville Uranium Ltée	St-Jean-Baptiste de Rouville	Apr. 13	300,000	$ 1.
St. Joseph Iron Ore Company	Mingan	Feb. 23	200,000	$ 1.
			24,000	$100.
			600,000	$ 1.
St. Maurice Exploration Inc ...	Montreal	Aug. 15	3,000,000	$ 1.
St. Philomène Sand and Gravel (Thibert Pit) Ltd.	Montreal	Dec. 8	10,000	$ 1.
Saguenay Granit Inc	St. Gedeon	Sept.17	400	$100.
Scienex Mining Company Limited .	Montreal	July 19	4,000,000	$ 1.
Sharbot Lake Mines Ltd	Montreal	Apr. 4	4,000,000	$ 1.
Sheraton Mining Corporation ...	Montreal	Feb. 10	4,000,000	$ 1.
Silver Granite Industries Ltd...	St. Samuel	May 30	6,000	$ 10.
			(a) 400	$100.
Suzor Copper Mines Limited	Montreal	Jan. 12	5,000,000	$ 1.
Three Rivers Gas and Oil Limited	Montreal	Feb. 2	20,000	$ 1.
Trans-Canada Diamond Drilling and Development Corporation	Montreal	Dec. 1	(a) 900	$100.
			10,000	$ 1.
United Chibougamau Copper Corp..	Montreal	Mar. 16	5,000,000	$ 1.
Valmor Chibougamau Mining Co. Ltd.	Montreal	Aug. 16	5,000,000	$ 1.
Venus Chibougamau Mines Ltd. ...	Montreal	Dec. 7	3,000,000	$ 1.
Walter Tombs Ltd.	Noranda	May 29	4,000	$ 10.
Wedro Leeds Mining Corporation	Quebec	Dec. 7	5,000,000	$ 1.
Western Copperada Mining Corp...	Montreal	Nov. 13	5,000,000	$ 1.
White River Exploration Limited (The)	Montreal	May 1	5,000,000	$ 1.
Wonder Metals Mines Ltd.	Montreal	Sept. 4	5,000,000	$ 1.
Woodstock Mines Ltd.	Montreal	Mar. 6	2,000,000	$ 1.
Zenith Mines Limited	Montreal	Mar. 24	4,000,000	$ 1.

MINING COMPANIES INCORPORATED BY ONTARIO CHARTER IN 1956 HOLDING MINING RIGHTS IN QUEBEC

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Allard River Mines Limited	Toronto	Apr. 6	5,000,000	$ 1.
Barbi Lake Copper Mines Limited	Toronto	Feb. 9	6,000,000	$ 1.

(a) Preferred shares.

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Barymin Explorations Limited ...	Toronto	Jan. 11	4,000,000	$ 1.
Bradill Mines Limited	Windsor	Jan. 19	3,000,000	$ 1.
Brongniart Chibougamau Mines Limited	Toronto	Sept.14	3,000,000	$ 1.
Canalynda Copper Mines Limited .	Toronto	June 5	3,000,000	$ 1.
Canamiska Copper Mines Limited .	Toronto	Apr. 11	3,000,000	$ 1.
Conrego Nickel Mines Limited ...	Toronto	Aug. 15	10,000,000	$ 1.
Copore Mining and Exploration Ltd.	Toronto	Apr. 11	4,000,000	$ 1.
Currie Mines Limited	Toronto	June 22	3,500,000	$ 1.
Deban Mines Limited	Toronto	Feb. 2	3,500,000	$ 1.
Delahey Lake Nickel Limited	Toronto	Mar. 15	5,000,000	$None
Destor O'Hara Mines Limited	Haileybury	Apr. 18	4,000,000	$ 1.
Dufresnoy Mines Limited	Toronto	Feb. 14	5,000,000	$ 1.
Elvue Mines Limited	Toronto	Apr. 10	5,000,000	$ 1.
Galloway Chibougamau Mines Limited	Toronto	Feb. 14	5,000,000	$ 1.
Hopes Advance Mines Limited	Toronto	June 4	5,000,000	$ 1.
Hudson Chibougamau Mines Limited	Toronto	Mar. 5	4,000,000	$ 1.
Huborex Mines Limited	Toronto	May 4	3,500,000	$ 1.
Impero Copper Mines Limited	Toronto	Apr. 17	3,000,000	$ 1.
Jay Chibougamau Mines Limited ..	Toronto	Apr. 3	5,000,000	$ 1.
Kisco Copper Mines Limited	Toronto	Apr. 19	3,000,000	$ 1.
Millsite Mines Limited	Toronto	Dec. 14	3,000,000	$ 1.
Mining Endeavor Company Limited	Toronto	Mar. 28	5,000,000	$ 1.
Mining Geophysics Company Ltd. ..	Toronto	Mar. 22	(a)500,000	$ 10.
			7,500,000	$ 2.
Norque Copper Mines Limited	Toronto	Feb. 22	4,000,000	$ 1.
Pere Marquette Mines Limited ...	Toronto	Mar. 8	100,000	None
Presmac Copper Mines Limited ...	Toronto	Jan. 3	5,000,000	$ 1.
Riobec Mines Limited	Toronto	June 25	2,000.000	None
Roycam Copper Mines Limited	Toronto	Mar. 7	5,000,000	$ 1.
Saril Mines Limited	Toronto	Feb. 2	3,500,000	$ 1.
Scotibi Minerals Limited	Toronto	May 23	3,000,000	$ 1.
United Renzy Nickel Limited	Toronto	Apr. 3	5,000,000	$None
Winthorp Mines Limited	Toronto	Aug. 13	4,000,000	$ 1.
Yorcan Exploration Limited	Toronto	Apr. 30	5,000,000	$ 1.

(a) Preferred shares.

MINING COMPANIES INCORPORATED BY FEDERAL CHARTER IN 1956
HOLDING MINING RIGHTS IN QUEBEC

Company	Head Office	Date of Incor-poration	Number of Shares	Par Value
Coniska Copper Mines Limited ...	Toronto	Oct. 23	3,500,000	None
Invex Corporation Limited	Toronto	Mar. 1	(a) 50,000	$ 10.
			70,000	None
Warwick Asbestos Corporation ...	Montreal	Nov. 5	(a) 35,000	$ 100.
			6,500,000	None

(a) Preferred shares.

GEOLOGICAL SURVEYS BRANCH

I.W. Jones, chief of this Branch, reports as follows on the activities of the past fiscal year:

At March 31, 1957, the resident staff at Quebec City was comprised of eleven geologists and six technical assistants, clerks and stenographers. During the fiscal year four geologists joined the full-time staff, whereas one resigned to join a private company and another was transferred to the Mineral Deposits Branch. In addition, four special officers were appointed on a full-time basis to follow in the field various developments connected with the search for petroleum and natural gas.

The principal function of the Branch is to map the rock formations and explore the mineral possibilities of the province, and to provide maps and reports that give the results of these investigations. Such work in some instances has directly led to the location of mineral deposits of commercial value, and in others has indicated where further search was advisable. Furthermore, especially in new regions, the reports and maps serve as references and guides to those engaged in other activities - particularly road and railway builders, hydro-electric and forestry engineers, agronomists, and sportsmen.

The 1956 programme of the Branch was the largest yet carried out. A total of 21 field parties mapped the geology of specific areas in widely separated parts of the province, compared to 20 in 1955. Six of these parties were led by geologists of the permanent staff; the other 15, by part-time geologists, mainly ones pursuing post-graduate research at various universities. In addition, two geologists of the permanent staff carried out hydrological investigations in different sections of the inhabited parts of the province,

and two others were engaged in administrative and other duties. Also, one geologist on part-time employment supervised and aided in some investigations in the southern part of the province, and another continued correlation of the geology of the St. Lawrence lowlands.

In addition, the 21 field parties collectively employed 12 other graduate geologists as senior assistants, 50 students as junior assistants, and 52 other men generally engaged locally and for varying periods of time as canoemen, packers, and cooks.

During 1956 about 4,580 square miles of territory was mapped geologically at a scale that will permit the publication of maps at one mile to the inch. This is a new record for any one year and exceeds by some 785 square miles the figure reached in 1955.

The areas examined and the geologists in charge of investigations were as follows:

Northern Ungava

Four separate parties examined areas not far west and southwest of Ungava bay, continuing a programme of regional mapping begun in 1953. In addition to iron-bearing formations in this district there are important indications of other base-metal deposits.

Robert Bergeron* mapped the Brochant-DeBonnard area, about 125 miles north-northwest of Fort Chimo. The area extends southward from Payne river to the vicinity of latitude 59°35' and westward from Ungava bay to about longitude 70°07'. Large deposits of low-grade, concentrating-type iron ore occur within the area mapped.

Pierre Sauvé* covered the west half of De Freneuse Lake area, between latitudes 58°15' - 58°30' and longitudes 69°15' - 69°30', about 40 miles west-northwest of Fort Chimo. Slight indications of copper mineralization occur in some of the gabbros and lavas of the southern part of the area.

Jean Bérard mapped the east half of Bones Lake area, between latitudes 58°00' - 58°15' and longitudes 70°00' - 70°15', about 65 miles west of Fort Chimo. Iron formation containing cherty hematite, magnetite, and hematite occurs within the area mapped, as do some zones of massive sulphides, principally pyrite, chalcopyrite, and pyrrhotite.

Leopold Gélinas examined the east half of Thévenet Lake area, between latitudes 58°00' - 58°15' and longitudes 69°00' - 69°15', some 25 miles west of Fort Chimo.

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* Indicates full-time staff geologist, or other officer.

LIST OF GEOLOGICAL FIELD PARTIES - 1956

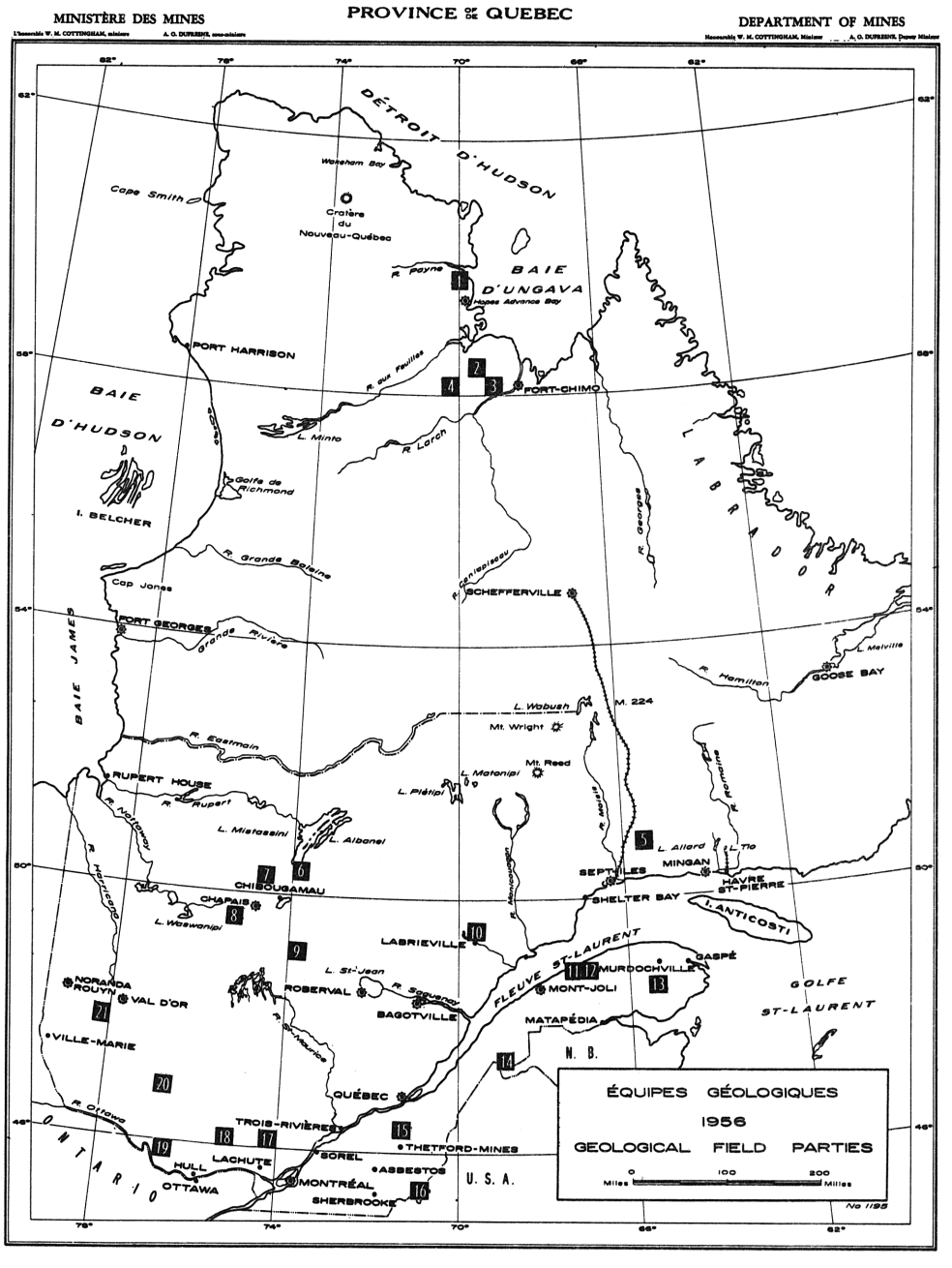
(Nos. refer to adjoining map)

1-	Payne Bay, Northern Ungava, N. Quebec	Bergeron
2-	Freneuse Lake (West Part), Northern Ungava, N. Quebec	Sauvé
3-	Bones Lake (East Part), Northern Ungava, N. Quebec	Bérard
4-	Thévenet Lake (East Part), Northern Ungava, N. Quebec	Gélinas
5-	Manitou Lake, Elect. Dist. of Saguenay	Jenkins
6-	Duquet-O'Sullivan, Territory of Mistassini	Deland
7-	Vienne, Territory of Abitibi, Northern Chibougamau	Gillett
8-	Lapparent-Guercheville, Elect. Dist. of Abitibi-East	Remick
9-	Chamouchouane Lake, Elect. Dist. of Roberval	Laurin
10-	Cassé-Labrieville Lake, Elect. Dist. of Saguenay	Morin
11-	Grosses-Roches - St. Félicité, Elect. Dist. of Matane	Béland
12-	Shickshocks, Elect. Dist. of Matane and Gaspé-North	Mattinson
13-	Gastonguay-Mourier, Elect. Dist. of Gaspé-South and Bonaventure	Skidmore
14-	Estcourt (East Part), Elect. Dist. of Témiscouata	Gorman
15-	St. Sylvestre, Elect. Dist. of Lotbinière, Mégantic, Beauce, Dorchester	Benoît
16-	Woburn, Elect. Dist. of Frontenac	Marleau
17-	Wexford-Doncaster, Elect. Dist. of Terrebonne	Klugman
18-	Duhamel (West Part), Elect. Dist. of Labelle and Papineau	Pollock
19-	Huddersfield, Elect. Dist. of Pontiac	Kretz
20-	Delahey-Renzy Lakes, Elect. Dist. of Pontiac	Lyall
21-	Darlens-Clérion, Elect. Dist. of Rouyn-Noranda	Freeman

Electoral District of Saguenay

J.T. Jenkins mapped the Manitou Lake area, between latitudes 50°45' - 51°00 and longitudes 65°15' - 65°30', about 65 miles northeast of Sept-Iles and 40 miles north of the St. Lawrence. A private company has done some development work on three zones of magnetite-rich rock, averaging more than 50 per cent iron, that occur as conformable lenses in injection gneiss. Sulphide minerals containing small amounts of copper, nickel, and lead are found at another locality.

Marcel Morin* completed the mapping, begun in 1954, of the Cassé-Lake Labrieville area, between latitudes 49°15' - 49°30' and longitudes 69°30' - 70°00', about 85 miles north of the confluence of Saguenay and St. Lawrence rivers. During this investigation a special study was made of the rocks cut by the eight-mile tunnel driven to conduct the water from a large dammed reservoir lake to an underground hydroelectric generating station on Betsiamites (Bersimis) river near Labrieville, which began producing power towards the end of 1956. Some ilmenite, in places associated with hematite and in places with magnetite, is found within the area.


MINISTÈRE DES MINES
PROVINCE OF QUEBEC
DEPARTMENT OF MINES
DÉTROIT D'HUDSON
Wakeham Bay
Cape Smith
Cratère du Nouveau-Québec
R. Payne
BAIE D'UNGAVA
Hopes Advance Bay
PORT HARRISON
R. aux Feuilles
FORT-CHIMO
BAIE D'HUDSON
L. Minto
R. Larch
Golfe de Richmond
I. BELCHER
R. Grande Baleine
Cap Jones
R. Coulonge
SCHEFFERVILLE
R. George
LABRADOR
PORT GEORGES
Grande Rivière
BAIE JAMES
L. Melville
R. Hamilton
GOOSE BAY
L. Wabush
M. 224
Mt. Wright
R. Eastmain
Mt. Reed
L. Matonipi
RUPERT HOUSE
L. Plétipi
R. Rupert
R. Nottaway
L. Mistassini
L. Albanel
R. Romaine
L. Allard
L. Tio
MINGAN
SEPT-ÎLES
HAVRE ST-PIERRE
CHIBOUGAMAU
R. Mistassini
R. Manicouagan
SHELTER BAY
I. ANTICOSTI
CHAPAIS
L. Waswanipi
R. Harricana
LABRIEVILLE
GASPÉ
L. St-Jean
MURDOCHVILLE
NORANDA
ROUYN
VAL D'OR
ROBERVAL
R. Saguenay
MONT-JOLI
FLEUVE ST-LAURENT
GOLFE ST-LAURENT
BAGOTVILLE
MATAPÉDIA
R. Mistassibi
VILLE-MARIE
N. B.
R. Ottawa
QUÉBEC
TROIS-RIVIÈRES
THETFORD-MINES
ONTARIO
LACHUTE
SOREL
HULL
ASBESTOS
U. S. A.
OTTAWA
MONTRÉAL
SHERBROOKE
ÉQUIPES GÉOLOGIQUES
1956
GEOLOGICAL FIELD PARTIES
0
100
200
Miles
Milles
No 1195

Chibougamau Region

(Electoral Districts of Abitibi-East and Roberval; Abitibi and Mistassini Territories)

Four parties carried out mapping assignments in this important region which during recent years has been undergoing rapid mineral development.

A.-N. Deland [1] mapped the Duquet area at the south end of lake Mistassini, between latitudes 50°15' - 50°30' and longitudes 73°45' - 74°00', and about 40 miles northeast of Chibougamau. The area includes most of Duquet township, about half of O'Sullivan, and parts of Guyon, McOuat and Gauvin townships, all within Mistassini territory. Minerals of lead and zinc were found at one place.

L.B. Gillett covered the Vienne area, between latitudes 50°00' - 50°15' and longitudes 74°30' - 74°49'. The area includes most of Vienne township and parts of Rageot, Chérisy and La Rochette townships in Abitibi territory, and parts of Barlow and Cuvier in Abitibi-East electoral district. The southeastern corner of the map-area is 7 miles northwest of Chibougamau. Copper and nickel minerals in small amount are present at places, and some beds of an iron formation contain more than 30 per cent iron.

J.H. Remick mapped the Guercheville-Lapparent area, between latitudes 49°30' - 49°45' and longitudes 75°15' - 75°30', about 50 miles southwest of Chibougamau. It includes most of Guercheville and Lapparent townships, and parts of Anville, Drouet, Dolomieu and Saussure, all in Abitibi-East electoral district. Gold, silver, copper, nickel, and zinc mineralization occurs at various places.

A.-F. Laurin* mapped the Lorne-Avaugour area, electoral district of Roberval, between latitudes 49°00' - 49°15' and longitudes 73°30' - 73°45'. Most of Lorne township and parts of Avaugour, Denault, D'Esglis, Bochart and Argenson townships are included in the area. A local magnetic anomaly was found in the northeastern corner of the map-area.

Electoral District of Rouyn-Noranda

P.V. Freeman continued a programme of mapping, begun in 1954, along the southern border of the district. In 1956 he covered the Darlens-Chabert area, between latitudes 47°45' - 48°00' and longitudes 78°30' - 78°45'. The area includes most of Darlens and Chabert townships, about half of Basserode

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(1) In March, 1957, was transferred to the Mineral Deposits Branch.

and Clérion, and small parts of Montanier and Vaudray townships. Radioactive minerals, beryl, and some copper minerals have been noted, all in small amount.

Electoral District of Pontiac

H.B. Lyall mapped the Hainaut-Champagne area, between latitudes 46°45' - 47°00' and longitudes 76°30' - 76°45', comprising parts of Hainaut, Kondiaronk, Orléanais and Champagne townships. The area lies about 45 miles northwest of Maniwaki, and includes de Renzy and Delahey lakes near which, in the summer of 1955, prospectors located copper and nickel bearing zones, leading to considerable staking activity. The ore minerals occur largely in ultrabasic rocks that lie within, and presumably intrude, paragneisses.

R.A. Kretz mapped the Litchfield-Huddersfield area, between latitudes 45°45' - 46°00' and longitudes 76°30' - 76°45', about 50 miles northwest of Hull. The area includes most of Litchfield and Huddersfield townships, and parts of Pontefract, Mansfield, Leslie, Grand-Calumet and Thorne townships. Prospecting for radioactive minerals has been extensive and considerable work has been carried out on claims held by various companies.

Electoral Districts of Labelle and Papineau

D.W.T. Pollock examined the Preston-Gagnon area, between latitudes 46°00' - 46°15' and longitudes 75°00' - 75°15', 55 miles northeast of Hull. The area includes most of Preston township and small parts of Papineau and Addington townships in the electoral district of Papineau, and all of Gagnon township as well as parts of Labelle, La Minerve, Lesage and Rocheblave townships in the electoral district of Labelle. There is a small showing of asbestos near the southwest corner of Gagnon township.

Electoral Districts of Terrebonne and Montcalm

M.A. Klugman mapped the Doncaster area, between latitudes 46°00' - 46°15' and longitudes 74°00' - 74°15', just east of Ste. Agathe. The area includes much of Doncaster and Wexford townships and parts of Morin and Beresford in the electoral district of Terrebonne, and parts of Chilton, Archambault, Chertsey and Wexford townships in the electoral district of Montcalm. Small showings of ilmenite and magnetite occur at many places in anorthositic rocks which underlie much of the map-area, and some sulphides are found.

Eastern Townships

R.A. Marleau covered the Woburn area, at the southeast border of Frontenac electoral district, about 100 miles south of Quebec City. The area is bounded on the north by latitude 45°30', on the west by longitude 71°00',

and on the south and east by the State of Maine. It includes all of Woburn, Clinton and Louise townships, and parts of Chesham, Marston and Ditchfield townships. Copper is found at a number of places, and lead, zinc and silver also occur; there is also a small asbestos showing in the southern part of the area.

Fernand Benoît mapped the St. Sylvestre area, between latitudes 46°15' - 46°30' and longitudes 71°00' - 71°30', about 30 miles south of Quebec City. The area includes parts of the electoral districts of Lotbinière, Dorchester, Beauce and Mégantic. New development work has recently been carried out on the old Harvey Hill mine, from which copper was extracted some hundred years ago, and there are other old workings that used to produce this mineral. Some talc is extracted from a quarry in Leeds township.

Electoral District of Témiscouata

M.A. Gorman mapped the Botsford-Robinson area in the south part of Témiscouata electoral district, about 120 miles northeast of Quebec City. The area is bounded on the north by latitude 47°30', on the west by longitude 69°15'; and on the south and east by the State of Maine and New Brunswick. The area includes Botsford and Robinson townships, parts of Cabano, Estcourt and Packington townships, and portions of the seigniories of Témiscouata and Murchie. Some limestone is quarried, mostly for agricultural purposes.

Gaspé Peninsula

Jacques Béland* mapped the Ste-Félicité-Grosses Roches area which borders St. Lawrence river just east of Matane. The area extends from the river southward to latitude 48°45' and is bounded on the east and west by longitudes 67°00' and 67°30'. It includes parts of Dalibaire, Cherbourg, Leclercq, Cuoq, St. Denis and Tessier townships, and of Matane seigniory. During the early part of the century several attempts at mining copper were made at two workings in St. Denis township, and copper mineralization is also present at several other places in the area. Manganese bog ore is found in varying amount at several localities.

G.R. Mattinson carried out mapping in parts of Boutet and Mount Logan areas, electoral district of Matane, between latitudes 48°40' - 48°50' and longitudes 66°45' - 67°00'. Most of the mapped portion is in Leclercq township and smaller parts are in Joffre and Cuoq townships. The area is about 35 miles east-southeast of Matane. A little copper mineralization was noted at two places, and a very little asbestos at another locality.

W.B. Skidmore* mapped the Mourier-Vondenvelden area, between latitudes 48°30' - 48°45' and longitudes 65°15' - 65°30', about 45 miles west-

southwest of the town of Gaspé. The area includes parts of Vondenvelden, Gastonguay, Sirois and Raudin townships in the electoral district of Gaspé-Sud, and parts of Mourier, Guéguen and Reboul townships in Bonaventure electoral district. A little bituminous limestone and slight indications of copper mineralization occur in some of the Middle Silurian rocks of the area.

Water-Supply

Roland DeBlois* and Raymond Roy*, conducting hydrological investigations, continued to render greatly appreciated services to many villages, municipalities, aqueduct operators, and others who were encountering difficulties with water-supply. In all, 56 surveys were carried out in the electoral districts of Argenteuil, Beauce, Bellechasse, Bonaventure, Chambly, Champlain, Charlevoix, Dorchester, Frontenac, Gaspé-Sud, Joliette, Kamouraska, L'Assomption, Laviolette, L'Islet, Lotbinière, Maskinongé, Matane, Mégantic, Montcalm, Portneuf, Québec, Rimouski, Roberval, St. Maurice, Témiscamingue, Verchères, and Yamaska.

Petroleum and Natural Gas

Officers of the Branch kept in close touch with the developments being carried out in the Province in the search for commercial quantities of petroleum and natural gas. During 1956 activities in this field reached an all-time high.

T.H. Clark continued investigating and correlating the geology of the St. Lawrence Lowlands.

J.-L. Ducharme*, J.-L. Duchesnay*, A. Larose*, and S. Moderie*, acted as special field officers, following drilling operations at well sites and collecting data on natural gas occurrences in many localities.

Also, certain of the staff geologists, in addition to their other duties, examined and recorded the samples obtained from drilling operations.

Other Work

F.F. Osborne served in a supervisory and advisory capacity for geological investigations in the Appalachian region south and northeast of Quebec City and in the Laurentian or Grenville section of the Province. He also reviewed certain of the geological reports and maps.

H.W. McGerrigle* and M.M. Ritchie* reviewed and edited geological reports and maps for publication, and assisted the chief of the Branch in administration of the Branch.

Geologists of the Branch represented the Department of Mines and contributed papers at meetings of geological, engineering, prospecting and other scientific organizations that were held during the year.

MINERAL DEPOSITS BRANCH

J.-E. Gilbert, chief pro tem. of this Branch, reports as follows on its activities.

The technical officers of this Branch carry out geological investigations of mineral occurrences, mining properties and mining districts with a view to furthering the development of the mineral industry within the Province. They also give technical advice to prospectors and to engineers engaged in exploration and development.

The resident geologists of the Department are attached to this Branch and are assigned to the Rouyn, Val d'Or, Quebec and Montreal districts respectively. During the summer and early fall, twelve parties were sent into the field. Furthermore, the resident geologists examined mining properties under development in each of their respective districts. The field personnel included seventeen geologists, two mining engineers, eleven students acting as assistants, and three labourers or helpers.

R.J. Assad did the geological investigations on 32 mining properties under development in the Chibougamau district. This is part of the regular examination programme of the mining properties which the Department carries throughout the various districts of the Province.

R.-E. Bourret, senior mining engineer in charge of industrial minerals technology, examined 31 properties in different stages of development, from prospects to producive mines. The properties visited are located mainly in the southwestern part of the Laurentian Plateau, in the Ottawa Valley, the St. Lawrence Lowlands, the Eastern Townships and in the Gaspé Peninsula. During the course of these visits, technical advice was given to prospectors and mine operators concerning the development of their deposits, their mining or ore dressing problems, as well as the marketing of the products.

H. de Römer started the detailed geological mapping of the northeastern quarter of Bolton township and of the south eastern quarter of Stukely township. This project is part of the detailed geological mapping programme of the vicinity of the Quebec Copper Corporation mining property.

Jean Dugas, resident geologist at Rouyn, visited 47 mining properties in his district. During the summer, he completed the detailed geological mapping of the southwestern quarter of Duparquet township. He also carried out various geological studies in his district.

W.B. Emo did the geological mapping on part of the northwestern quarter of Duprat township. This project is a follow-up of the study already begun by Dr. Dugas in this area.

S.V. Ermengen continued the study of geochemical prospecting techniques in the Chibougamau area. This project follows similar studies already made in the Gaspé district.

J.-E. Gilbert, resident geologist at Montreal, visited 44 mining properties in his district. He also made various compilations of the geology of his district.

P.-E. Grenier, resident geologist for the district south of the St. Lawrence river, visited 35 mining properties in his district and in the district north of the St. Lawrence. During the course of his examinations, he gave the owners of mining properties technical advice on the development of their deposits.

Wm. A. Hogg conducted geophysical surveys in various areas of the electoral district of Argenteuil. He also examined a few mining properties where discovery of magnetite had been reported.

F.D. Hurscroft continued the detailed geological mapping of the southwestern quarter of Roy township. This project is part of a detailed geological study programme begun in 1951 in the Chibougamau district.

Maurice Latulippe, resident geologist for the Val d'Or district, visited 35 mining properties in his district. Furthermore, he completed the mapping of the northwestern and northeastern quarters of Barraute and Landrienne townships. He also did different compilations of the geology of his district.

Léo Lachance, engineer in geology specialized in the technology of industrial minerals, visited and examined 15 mining properties located in the southwestern part of the Province, the Ottawa Valley, the Lake St. John region and on the North Shore.

G.W. Waddington, mining engineer, inspected 13 marl deposits located in the lower St. Lawrence region. He also helped in the preparation of various reports of this Branch.

The Mineral Deposits Branch is also responsible for the acceptance of the reports, maps and the diamond-drill logs submitted in support of applications for credit towards statutory assessment work, consisting in detailed geophysical or geological surveys and diamond drilling.

J.-L. Pouliot, mining engineer, reported that, during the year under review, 567 geophysical maps and reports were examined together with 194 geological maps and reports and 491 diamond-drill logs. In addition, 207 reports or prospectus were studied upon request from the Quebec Securities Commission. Finally, three reports, submitted by engineers, in support of applications for mining concessions were examined. The following table shows the increase in the number of reports received by the Department, which fact indicates the increase of activities among prospectors.

COMPARATIVE TABLE OF THE NUMBER OF REPORTS RECEIVED DURING THE YEARS 1953 TO 1957

Reports	1953	1954	1955	1956	1957
Geological	48	54	64	107	194
Geophysical	127	77	120	248	567
Diamond drilling	173	141	128	264	491
Sale of securities	162	127	138	101	207
Mining concessions	15	2	3	13	3

To arouse greater interest in the search for economic minerals, a series of elementary lectures on prospecting was delivered in seven different localities in the Province.

At each place, nine lectures were given, of which four were on identification of rocks and minerals. The lecturers were Jean Dugas, Maurice Latulippe, P.-E. Grenier, and Léo Lachance, geologists with the Branch.

The following list gives the average attendance in each of the localities:

Amos	35	Trois-Rivières	48
Val d'Or	33	Belleterre	29
Shawville	6	Barraute	12
Rouyn	33		

Special lectures were also given at the Bersimis Indian Reserve, and at the summer camp of "Les Jeunes Naturalistes".

Division of Technical Archives

The division of Technical Archives is responsible for the safekeeping of all the technical data pertaining to mineral deposits, to development work done by operators, as well as other information concerning the

mining industry of the Province; it also supplies prospectors and others with technical information concerning these subjects.

François Baby, chief of this division, reports as follows on the activities of the Division:

a) Number of requests for technical information concerning mining activities and various mineral substances 1,830
b) Various inquiries and correspondence relating to mining companies and mineral technology 1,360

The Department of Mines also takes part, each year, in the various industrial and regional exhibitions held in the Province. During the fiscal year 1956-57, displays of mineral exhibits were presented at:

Lachute	June 13th to 16th, 1956
Trois-Rivières	August 19th to 24th, 1956
Rouyn-Noranda	August 22nd to 26th, 1956
Sherbrooke	August 25th to 30th, 1956
Quebec	August 31st to Sept. 9th, 1956
Val d'Or	August 31st to Sept. 3rd, 1956

It should also be mentioned that an exhibit was displayed at the International Trade Fair held at the Palais du Commerce, Montreal, from April 5th to 15th, 1956.

LABORATORIES BRANCH

The Laboratories Branch comprises the following sections:

I.- Laboratories for mineralogical and metallurgical research; II.- laboratories for analyses and assays established at Quebec and Montreal; III.- sampling and ore dressing plants at Val d'Or and Thetford Mines; IV.- elementary courses in prospecting.

The director of this Branch is Maurice Archambault and the assistant director is P.-E. Pelletier. The manager of the sampling and ore dressing plant at Val d'Or is G.S. Grant; Henri Boileau is chief of the chemistry laboratory, Jean Girault is chief of the mineralogy and petrography laboratory, and Fernand Claisse is chief of the physics laboratory.

I. - Research Laboratories

Mineralogical and metallurgical research work carried out during the course of the year consisted of: a) technical assistance to prospecting;

b) chemical utilization of peat bogs; c) increasing the market value of asbestos; d) chemical utilization of titanium ores; e) production of organic by-products of titanium; f) integral metallurgical and chemical utilization of deposits of lithium; g) improving methods of analyses for industrial needs; h) chemical extraction of columbium and rare earths; i) processing ores of copper, lead, zinc, iron, gold, lithium, uranium, thorium, beryllium, phosphorus, fluorine, columbium and rare earths, feldspar, nepheline, giobertite, and mica.

Investigations were carried out during the year on the following projects:

Project No. 8:- Claude Frémont, who since 1950 had been engaged in research and laboratory work on the design of a magnetometer small enough to be lowered into diamond drill holes, has devised a new detection process apparently much simpler than those used or under study up to now. He believes that he is on the verge of bringing out a magnetometer that will be as sensitive, but, on the other hand, less expensive, lighter, and less bulky than the ones in present use.

Project No. 99:- Roger Brais has continued his research work on a chemical process which would make both the iron and the titanium of the ilmenites of Quebec economically important. Using a counter-current extraction process with hydrochloric acid, he has obtained residues grading up to 90% titanium oxide.

Roger Brais and Lucien Gendron have also studied the preparation and properties of two organic compounds of titanium which could be comparable to the silicones.

Project No. 106:- Fernand Claisse has studied the desulphurization of molybdenite, to produce molybdenum dioxide.

Project No. 118:- Fernand Claisse and F. East have begun a spectrographic study of a certain type of rock, so as to obtain geochemical correlations which could be useful in prospecting work.

Project No. 122:- P.-E. Gagnon and J. Zauhar have continued research work on chemical extraction on two ore concentrates from the Oka region. These very complex concentrates contain columbium, tantalum, titanium, rare earths and radioactive elements. A large bibliography has been built up. So far, some results have been obtained.

Project No. 123:- Jos. Risi, with R. Cloutier as collaborator, continued his chemical studies on the peat of Quebec; the known reserves

of peat, in the Province, amount to two hundred million tons. Dr. Risi, who has been conducting this research since 1948, has studied twelve of the larger peat bogs of the Province. His later laboratory work has been channeled towards the conversion of peat into products which vegetable plants could assimilate with or without the addition of other nutritious essential elements such as nitrogen, phosphorus and potassium. Several rather simple methods have been studied. For example, the decomposition of peat, using inorganic acids, and its transformation through the action of specific micro-organisms.

Project No. 125:- Jean Girault has studied, from a mineralogical standpoint, the possibility of extracting the cobalt present in the ores of Merrill Island mine.

Project No. 126:- Maurice Archambault, J.U. MacEwan and Fernand Claisse carried out research work on the extraction of manganese from some complex ores of iron.

Project No. 128:- L.-P. Bonneau, who, since 1952, had been working on a process to remove dust from asbestos and had designed an apparatus to do such work, studied the conditions under which this separator could be used to sort minerals of varying densities or shapes. He has applied for letters patent on his invention.

Project No. 129:- Maurice Archambault, J.U. MacEwan and G.-A. Olivier continued, on a pilot plant scale, their research on the metallurgical dressing of ore from the Quebec Lithium Corporation mine. The results have shown the economic possibilities of this new process.

Project No. 133:- Maurice Archambault and Fernand Claisse have searched for a method to extract lithium from spodumene without preliminary decrepitation. They have found a flux which would make this extraction possible at temperatures far below those used to-day for decrepitation. Furthermore, it seems that the by-products would have a commercial value for the ceramic industry.

The following projects on ore dressing were the object of special investigations by B.J. Walsh, Jean Girault, J.-P. Bolduc and D. Karpoff:

Research on Ore Dressing

Project No.	Ore	Origin
95	Lithium, Feldspar, Mica	Valor Lithium Mines Ltd.
97	Beryllium, Feldspar, Mica	Massberyl Co. Ltd.
105	Uranium, Thorium, Apatite, Feldspar, Fluorine	Yates Uranium Mines Incorporated
107	Scheelite	St. Roberts Metals Corp. Ltd.

Project No.	Ore	Origin
108	Columbium, Rare Earths	Molybdenum Corp. of America
109	Lithium	Quebec Lithium Corp.
112	Copper, Lead, Zinc, Gold, Silver	Vendôme Mines Ltd.
113	Placer Gold	Standard Gold Mines Ltd.
115	Nickel	Eastern Smelting and Refining Co. Ltd.
117	Titanium, Columbium, Rare Earths	Oka Rare Metals Mining Co. Ltd.
119	Nepheline	Chess Uranium Corp.
121	Gold, Pyrite	Terra Nova Exploration Ltd.
124	Magnetite	Jean Olivier - Black Sands of Natashquan
127	Globertite	Canadian Refractories Ltd.

II.- Laboratories for Analyses and Assays

During the course of the fiscal year under review, the laboratories for analyses and assays (including Thetford Mines) received 13,901 samples on which were performed 66,418 analyses and determinations. These figures include the quantitative chemical and flame photometric analyses and determinations by microscope, spectrograph, X-rays (diffraction and fluorescence), and radioactivity measurements.

TABLE VI.- SUMMARY OF WORK DONE IN LABORATORIES

	Laboratories			Totals
	Quebec	Montreal	Thetford Mines	
Samples received	11, 822	1,781	298	13,901
Quantitative analyses	20,199	5,315	2,938	28,452
Semi-quantitative analyses ..	6,737	- -	- -	6,737
Research analyses	4,586	- -	- -	4,586
Mineralogical determination .	24,046	- -	- -	24,046
X-ray spectographs	2,439	- -	- -	2,439
Radioactivity determination .	164	- -	- -	164
Totals	58,165	5,315	2,938	66,418

Extensive repairs were made in the laboratories during the year, which account for the smaller number of analyses performed during this year as compared with last year.

Quebec Laboratories:-

The main laboratories of the Department are located at Quebec and, besides a mineralogical and metallurgical research division mentioned previously, comprise: 1.- a division of mineralogy and petrography; 2.- a division of physics; 3.- a division of chemistry; 4.- a division of metallurgy.

Mineralogy and Petrography Laboratory

During the fiscal year ending March 31st, 1957, 11,822 samples were submitted to our laboratory. Their study required 24,040 mineralogical determinations. The mineralogists also examined under microscope 96 thin sections and polished surfaces of rocks and metallic ores. As many as 1,320 letters were written, of which 1,191 dealt with samples submitted for mineralogical determinations. The latter consisted mainly of detailed reports on the mineralogical composition and the value of the ore represented by the samples. In addition, 1,012 technical consultations were given verbally. It is the function of the mineralogists to forward to the proper laboratory samples to be analysed, according to their nature and the work required.

The preparation of rock and mineral collections used by schools and prospectors is the responsibility of the mineralogy laboratory. These collections have a highly educative value; and it is rewarding to note that they are enjoying an ever-increasing popularity.

The following table of production bears witness to this statement:

TABLE VII.- ROCK AND MINERAL COLLECTIONS

Fiscal Year	1953-54	1954-55	1955-56	1956-57	Total
Mineral collections	212	665	792	851	2,520
Rock collections	-	602	400	451	1,453
Small fragments of minerals	79	310	350	500	1,239
Small fragments of rocks ..	-	345	300	465	1,105
Total	291	1,922	1,842	2,262	6,317

Physics Laboratory

During the fiscal year under review, this section of the laboratories handled 18,494 analyses distributed as follows:

Spectrography and X-ray fluorescence	15,891
Radiocrystallography	2,439
Radioactivity	164

Of these, 1,364 were for research purposes, and 132 were free silica determinations done for and at the request of the Department of Health.

The Physics laboratory has greatly improved its methods of analysis: in spectrography, the accuracy of analyses for lead, nickel, beryllium and lithium has been increased; the development of a method of analysing extremely small samples to determine both the major and secondary elements is progressing rapidly; in X-ray fluorescence, an entirely new method very accurate and rapid has been perfected for the quantitative determination of both secondary and major elements in rocks and other chemical compounds; work is progressing to extend this method to the analysis of minor elements and metals.

Chemistry Laboratory

A total of 16,931 analyses, done in duplicate, represents the sum of work put out by this division. Of these, 4,418 were for precious metals, 8,691 were ordinary analyses and 3,622 were for research purposes. The latter figure represents a sharp increase over last years: In this group, are analyses which require elaborate new techniques. Special work included seven complete precision geochemical analyses, eight water analyses, two natural gas analyses, and one petroleum analysis.

Metallurgy Laboratory

The lithium extraction process developed in the laboratories (Project No. 114) was studied on an industrial scale. This required the establishment of a pilot plant which was installed in the laundry of the old Jeffery Hale's Hospital. This plant includes a Dorr "Fluosolids" reactor, and an electric rotary kiln in stainless steel, twelve feet long and six inches in diameter, inside dimensions.

To ensure a better and more rapid control of the pilot plant operations, a special Jaco-Ebert photometer was purchased, and its spectrograph was equipped with a grating. This instrument possesses an extremely fine sensitivity which allows the determination of certain elements to be made with a much greater accuracy.

III.- Sampling and Ore Dressing Plants

Val d'or Plant:

This plant was idle throughout the year. Preparations are under

way to move it to Quebec where it will be more useful. It is a well known fact that the center of gravity of the mining industry has moved eastward, due to the large developments in Ungava and Eastern Quebec. This plant was erected in Val d'Or in 1940; during its life 531 shipments of ore were sampled, for a total weight of 10,816.62 tons.

A great variety of metallic and non-metallic ores was tested there; they contained gold, silver, platinum, copper, lead, zinc, nickel, cobalt, titanium, lithium, tungsten, molybdenum, tantalum beryllium, graphite, garnet, mica, rhyolite, pseudo-diamond, etc.

Ninety mining companies used the facilities of this plant. It was the pilot-plant work carried out in our Val d'Or Ore Dressing plant which enabled Quemont and East Sullivan to perfect the flowsheet of their respective mills.

Thetford Mines Plant:

During the year, this laboratory, located in the heart of the asbestos region, in the electoral district of Mégantic, received the following shipments for sampling and milling tests:

TABLE VIII.- SHIPMENTS OF ASBESTOS MINERALS FOR PURPOSES OF DRESSING AND CLASSIFICATION OF FIBRES

Shipped by	Lots	Weight in Pounds
Asbestos Corporation Ltd.	66	2,600
Atomic Mining Corporation	7	1,137
Bell Asbestos Mines Ltd.	3	281
Canadian Refractories Ltd.	5	512
Camero Copper Mines Ltd.	1	496
Central Asbestos Company Ltd.	4	718
Chibougamau Asbestos Ltd.	30	4,036
Derogan Asbestos Corporation	2	1,066
Léopold Duval, St. Victor de Beauce	1	52
East Sullivan Mines Ltd.	41	5,734
Eastern Asbestos Company Ltd.	3	1,372
Gilmont Mines Ltd.	3	672
Golden Age Mines Ltd.	15	1,362
J.A. Jacques, Ascot Corner, P.Q.	2	138
Johnson's Company Ltd.	3	61
Kennco Exploration Ltd.	1	40
Lachance Mines Ltd.	8	539

Paul Lachance, I.M., C.P. 236, Beauceville	2	360
Lake Asbestos of Quebec Ltd.	17	269
Lyndhurst Mining Company Ltd.	1	1,058
Mogul Mining Corporation Ltd.	2	1,391
New Jason-Bouzan Mines	4	782
New Lafayette Asbestos Co. Ltd.	8	928
Quebec Asbestos Mining Association	20	140
The Ruberoid Company	9	28
Sullivan Consolidated Mines Ltd.	7	822
Thermoid Co. Southern Division	8	34

Included in the total weight of 26,628 pounds were 865 pounds of fibres submitted for standard classification, and these fibres required 1,650 tests.

IV.- Elementary Courses on Mineral Prospecting

The courses were given at the Department of Geology, Faculty of Science, Laval University, from January 31st to March 27th, 1957, and at the Ecole Polytechnique of Montreal, from March 20th to April 25th, 1956. Sixty students completed the month-long course and received a certificate of attendance.

TABLE IX.- ELEMENTARY COURSES ON MINERAL PROSPECTION GIVEN BETWEEN 1947 AND 1957

Fiscal Year	Number of Students		Total
	Quebec	Montreal	
1947	28	---	28
1948	17	21	38
1949	9	15	24
1950	--	23	23
1951	29	28	57
1952	23	17	40
1953	--	27	27
1954	29	20	49
1955	32	--	32
1956	40	24	64
1957	25	35	60
Total	232	210	442

DRAUGHTING AND CARTOGRAPHY BRANCH

Léon Valois, P. Eng., is the chief of this Branch, with Armand Blanchette as assistant-chief. A Special Projects Division, under Jean-Paul Piché, was formed during the year to cope with the ever-increasing activities of the Department of Mines. The Branch employs thirteen draughtsmen, one stenographer and one messenger.

The Draughting and Cartography Branch supplies the documents needed by the geological surveys of the Department, namely, aerial photos and compilations to the desired scale, such as base maps made from topographical surveys and aerial photographs. In some cases, areas are photographed and mapped to serve as an adequate basis of information to these geological surveys.

The Branch keeps up to date two sets of tracings on linen of the various townships. On one are drawn the outlines of all mining claims in good standing, and on the other are shown the boundaries of mining properties and lands held by mining companies. The first set consists of 845 tracings on which were outlined the boundaries of 51,259 new claims staked out during the year; there are 441 tracings in the second set. From all these tracings, 34,192 blue prints were struck off during the year to fulfill requests from the public.

The following geological maps were prepared by the Branch, which also supervised their printing:

Final maps (coloured)

a) Completed:
- No. 1060 - Geology of the North of the Province of Quebec.
- No. 1065 - Eastern Metals Mine Area.
- No. 1095 - Montauban-les-Mines Area.
- No. 1096 - New Carlisle Area.
- No. 1102 - Geological Maps published by the Department of Mines (2nd Edition).
- No. 1126 - Vertical Sections, St-Magloire and St-Pamphile Area.
- No. 1127 - Noranda-Senneterre Mining Belt (revised edition of Map No. 1024).

b) In the press:
- No. 1097 - St-Magloire Area.
- No. 1098 - St-Pamphile Area.
- No. 1099 - Johan Beetz-Des Herbiers Area
- No. 1100 - Beetz Lake Area.

No. 1113 - Southwestern Part of Lesueur Township.

c) In preparation:
No. 1073 - Coaticook-Malvina Area.
No. 1129 - Geological Map of the Province of Quebec.
No. 1130 - Mineral Map of the Province of Quebec.

Preliminary Maps

a) Completed:
No. 642 - St. Lawrence Lowlands (4th Edition).
No. 943 - Lac-à-la-Tortue Peat Bog (2nd Edition).
No. 961 - Abitibi North and Chibougamau (East) (2nd Edition).
No. 1011 - Lanoraie Peat Bog (3rd Edition).
No. 1013 - Farnham Peat Bog (3rd Edition).
No. 1017 - Rivière-du-Loup Peat Bog (3rd Edition).
No. 1157 - Lorne-Avaugour Area.
No. 1158 - Duquet Area.
No. 1159 - De Freneuse Lake Area.
No. 1160 - Labrieville Area.
No. 1161 - Preston-Gagnon Area.
No. 1162 - Doncaster Area.
No. 1163 - Woburn Area.
No. 1164 - Vienne Area.
No. 1165 - Litchfield-Huddersfield Area.

b) In the press:
No. 1166 - Ste-Félicité-Grosses-Roches Area.
No. 1167 - Béraud-Mazerac Area.
No. 1168 - Darlens-Chabert Area.

c) In preparation:
No. 1169 - Guercheville-Lapparent Area.
No. 1172 - Hainaut-Champagne Area.

Our draughtsmen traced on linen fifteen other geological plans, twenty-four plans of office lay-outs, of furniture and machines, graphs, etc., besides twenty-four figures used to illustrate reports published by the Department.

Other work, more or less connected with draughting such as mounting of maps on linen, various types of compilation and classification is also part of the activities of the Draughting and Cartography Branch.

During the later part of the fiscal year, the Branch moved into more spacious and better planned offices, on Des Glacis Street. Thus, with a

larger staff and a reorganization of its sections, the Branch can keep pace with the rapid expansion of the Department.

TABLE X.- COMPARATIVE TABLE FOR THE FISCAL YEARS 1954, 1955, 1956, 1957

	1954	1955	1956	1957
Personnel	11	12	12	18
Mining claims tracings	626	690	769	845
New claims indicated	23,667	32,702	60,315	51,259
Mining companies tracings ...	219	375	441	441
Copies distributed	10,405	13,299	24,540	34,192
Final maps (coloured)	14	7	8	7
Preliminary maps	8	14	20	15
Geological plans	39	8	8	15
Miscellaneous plans	35	16	5	24
Figures	13	14	29	24

CIVIL ENGINEERING BRANCH

This Branch, under the direction of L.-A. St-Pierre, consists of two distinct divisions: a) Division of Mine Roads, and b) Division of Mine Villages.

a) Division of Mine Roads

During the fiscal year 1956-57, a stretch of 28.15 miles of new mine roads was built bringing to 1,514.33 miles, the total length of roads built by the Department of Mines. The over-all expenditure for the construction, the improvement and completion of mine roads, including bridges, incurred during the year, was $2,311,146.23, bringing to $28,186,411.24 the grand total of the sums spent by the Department since 1925.

TABLE XI.- SUMMARY OF PROJECTS AND EXPENDITURES OF THE DIVISION OF MINE ROADS DURING THE LAST THREE YEARS

Detail of projects	1954-55	1955-56	1956-57
New roads built, distance in miles	13.88	27.40	28.15
Improvements to roads, distance in miles	41.60	42.00	103.10
Permanent bridges, number ..	11	8	-
Maintenance by the Department, distance in miles	279	268.9	248

Detail of expenditures	1954-55	1955-56	1956-57
Cost of road maintenance ..	$ 149,451.86	$ 154,525.34	$ 136,589.90
Cost of new construction, completion of projects started the previous year, improvements to roads built in the past:	$2,852,845.64	$2,258,810.30	$2,311,146.23
Total expenditures	$3,002,297.50	$2,413,335.64	$2,447,736.13

Details for the year 1956-57

Construction of new roads	$1,330,014.11
Completion of last year's projects	$ 553,004.59
Improvements to roads built in previous years	$ 428,127.53
Total	$2,311,146.23

An addition of crushed gravel over a distance of 96 miles has greatly improved the condition of the Notre-Dame-de-la-Doré - Chibougamau road; during the next season, work will be continued to improve this main highway over its entire length of 127 miles.

List of roads maintained during 1956-57:

Electoral district	Description of roads
Abitibi-East and Roberval	Chibougamau road
Abitibi-East	Beattieville - Bachelor Lake road
Abitibi-East	Campbell Chibougamau mine road
Abitibi-East	Chibougamau Explorers mine road
Abitibi-East	Opemiska mine road

Projects under study:

Besides their routine work, which included location and elevations on roads under construction, the staff of the Division of Mine Roads did reconnaissance mapping, preliminary and final lay-outs, draughting and estimates for the following projects.

Desmaraisville to Chapais road
Hilton Mine road
Road to the mineral deposits of Lemieux township
Road to Le Tac Township
Overhead crossings of the Notre-Dame-de-la-Doré - Chibougamau road and the railway under construction

Construction of new roads:

Electoral district	Description of roads
Abitibi-East	Chibougamau to Copper Cliff mines
Abitibi-East	New-Royran, Doré Lake causeway
Abitibi-East	Waconichi Lake road
Abitibi-East	Chibougamau Jaculet Mine road
Abitibi-East	Quebec Chibougamau Goldfields Mine road
Abitibi-West	Beattie-Duquesne Mine road
Gaspé-North	to Lemieux Township deposits
Labelle	J.-A. St-Pierre Quarry road
Mégantic	National Asbestos Mine road
Papineau	New York Feldspar Mine Road
Pontiac	Hilton Mine road

Completion of last year's projects:

The projects completed were: the Bachelor Lake road, the Maisonneuve Mine road and the bridges across the Bell and Chamouchouane rivers.

Improvements to roads built in previous years:

Electoral district	Locality	Description of roads
Abitibi-East and Roberval		N.D. de-la-Doré-Chibougamau road
Beauce	Tring Jct.	Carey-Asbestos Mine road
Matane	St. Ulric	Bois-Sec Lake road
Mégantic	St. Antoine de Pontbriand	Flintkote Mine road
Rouyn-Noranda	Noranda	Trucking road

b) Division of Mine Villages

The present condition of the mine villages in the Province can be summarized as follows:

Belleterre

Located 35 miles east of Ville-Marie, electoral district of Témiscamingue, this town has a population of approximately 1,000. A 350-ton per day mill, treating gold ore, has been in operation for several years.

Bourlamaque and Val d'Or

The population of these two towns is showing a slight increase. The Catholic school was enlarged at a cost of $220,000.00

Cadillac and Malartic

Fifteen miles apart, these two towns are located in a gold-bearing zone extending from Rouyn to Val d'Or. The ever-increasing production costs of gold mining, coupled with the fixed price of gold, has brought a decrease and, in some instances, a suspension in the operations of mines that are essentially gold producers. Consequently, Cadillac is faced with a serious problem and its population has remained stagnant at 1,000 inhabitants.

The town of Malartic has completed the paving of all its streets, over a width of 22 feet and built 26,000 feet of sidewalks.

Sixteen class-rooms were added to a Catholic school, and a Protestant school has been modernized at a cost of $150,000,00. Trade and commerce are stable, and the population numbers 7,200 inhabitants.

Chapais

Very recently established this mine village is enjoying a prosperous period; during the year, a very modern hospital was erected.

Already linked with Chibougamau by a good road maintained by the Department, the town of Chapais is also serviced by the new Canadian National Senneterre - Chibougamau branch line.

Chibougamau

During the fiscal year under review, the Department ceded 172 residential lots under long-term lease; dwellings have been erected on more than half of these lots.

It has become imperative to extend the water and sewage systems to the new section of building lots. This work, begun in the fall of 1956, is progressing at a quick pace.

At the end of March, 1957, Canadian National Railways tracks from Senneterre had reached the town limits.

A project of subdividing by lots an area bordering the main thoroughfare and the service lines of the railway is on the draughting board: these lots will be mainly for industrial use.

Besides a large number of single men, there are 475 families established in the town. The population is estimated at 3,000 inhabitants: property evaluation carried on the municipal assessment roll exceeds $7,000,000.00

Chibougamau Explorers

Close by the surface plant of Chibougamau Explorers, the site of a future mine village has been selected. It is a choice piece of land in the

southwestern section of LaDauversière township, electoral district of Abitibi-East. A preliminary zoning plan has been drawn in readiness for the coming subdivision of an area which will contain 200 residential lots as well as other lots for schools, churches, parks, and commercial and industrial establishments.

Murdochville

During 1956, the main streets have been paved. An eight-room Protestant school has been built and plans have been drawn for the forthcoming erection of a fourteen-room Catholic school. The house building programme has been progressing very rapidly: Gaspé Copper Mines Limited had 80 one-family dwellings built; each dwelling contains three bedrooms. These houses, of different design and very attractive, are offered for sale on very easy terms, thanks to the co-operation of the Crédit Agricole.

The Company has assumed all the construction costs of a large building, begun in the fall of 1956, which will become a recreation centre for the whole population. Tennis courts have also been laid out. The town population numbers 2,320 inhabitants.

Noranda and Rouyn

These two towns are now adequately supplied with municipal services, hotels, schools, colleges, convent, a trade school, hospital, radio station, etc. The surrounding mines employ 3,200 people, and there are about one hundred prosperous commercial establishments serving the population.

Schefferville

New subdivisions by lots for residential and industrial zones are on the draughting board.

The town possesses both a Catholic and Protestant school, a twenty-five room hotel besides other accommodation for the traveling public. The erection of a recreation centre is quite advanced: 35 new dwellings are under construction.

Peat Bog Drainage

In accordance with the provisions of Section 142 of the Quebec Mining Act, the Lieutenant-Governor-in-Council has authorized the Minister of Mines to grant a total of $15,000,00 to be distributed amongst all peat bog operators in proportion to the estimated cost of the drainage work carried by each. The new drainage ditches extend over a total combined length of 143,466 feet. During the year peat bogs were operated in the following electoral districts: Charlevoix, Chicoutimi, Dorchester, Matane, Rimouski, Rivière-du-Loup.

SECRETARIATE

This Branch, under the direction of Raymond Cormier, is responsible for the personnel and the Division of equipment, purveyor, distribution of publications and publicity.

Distribution of Publications

The personnel of this division, under Noé Lamontagne, sent out 56,175 publications in answer to requests for information concerning the geology and mineral resources of the Province. In addition, 14,133 publications were distributed according to the regular mailing lists, making a grand total of 70,308 publications.

Equipment

C.R. Staniforth, chief of this Division, reports that, during the year in review, a sum of $125,854.00 was expended to organize thirty-six geological and engineering parties. These parties were placed in the field by the following branches: Geological Surveys, Mineral Deposits, Resident Geologists, and Civil Engineering. These missions were supplied with instruments, tents, canoes, outboard motors, cooking equipment, etc.

The Department operates a fleet of 44 motor vehicles which includes automobiles, station wagons, jeeps, trucks and tractors. All these vehicles were maintained in good condition.

Publicity

To keep the public informed on new developments concerning the minerals of the Province and our mining industry, officials of the Department of Mines prepare lectures and papers which are presented to groups or societies. Several articles are also prepared for technical reviews and trade newspapers, as well as for the daily press. The numerous publications of the Department on geology and the mining industry keep the public up to date on the progress realized from year to year.

Speeches Delivered by Honourable W.M. Cottingham

1956

April 9 Meeting of the Canadian Institute of Mining and Metallurgy, Quebec.
April 23 Talk over radio in English, C.B.C. Station "Provincial Affairs".
Sept. 25 Montreal Foremen's Club - "Development of Our Natural Resources".
Sept. 27 Chemical Market Research Association - Banquet, Ballroom, Château Frontenac.

Oct. 25 Engineering Institute of Canada, Hawkesbury.
Nov. 14 Radio talk in French, C.K.A.C. Station, Montreal.
Nov. 28 Radio talk in French, C.K.A.C. Station, Montreal.
Dec. 3 Dinner - Chamber of Commerce of Drummondville - (Recent Development in the Mining Industry).

Articles under the Signature of Honourable W.M. Cottingham

1956

Mar. Western Miner and Oil Review: "Quebec Records Amazing Advancement in Mineral Output".

1957

Feb. The Gazette, Montreal: "Exploration Work in the Ungava Bay Region in 1956".

Other Articles and Lectures

By Jacques Béland, geologist:
"Nicolet Landslide, November, 1955": illustrated lecture presented at the joint Annual Meetings of the Can. Inst. Min. and Met. and the Geol. Assoc. Can. - Quebec City, April 11, 1956; also presented to La Société d'Histoire Naturelle - St. Anne-de-la-Pocatière, April 16, 1956, published in the Proc. Geol. Assoc. Can., Vol. 8, Pt. I, Nov. 1956.

By Robert Bergeron, geologist:
"General Geology and Copper Deposits of the Gerido District, New Quebec": lecture to the Outcrop Society of Quebec City, May 3 1956.

"Proterozoic Rocks of the Northern Part of the Labrador Geosyncline, the Cape Smith Belt, and the Richmond Gulf Area": paper read by I.W. Jones to the Annual Meeting of the Royal Society of Canada, Sect. IV - Montreal, June 12, 1956.

"Late Precambrian Rocks of the North Shore of the St. Lawrence River and of the Mistassini and Otish Mountains Areas, Quebec": paper read by I.W. Jones to the Annual Meeting of the Royal Society of Canada, Sect. IV - Montreal, June 12, 1956.

"La Région de la Baie d'Ungava": illustrated lecture presented to La Société Linnéenne - Quebec, Nov. 27, 1956.

"Important Low Grade Iron Deposits of the Province of Quebec":

lecture presented at the 25th Annual Convention of the Prospectors and Developers Association - Toronto, March 6, 1957.

By Roger Blais, geologist:
"General Geology and Economic Mineral Possibilities of the Lower North Shore Region, Quebec": lecture to the Outcrop Society of Quebec City, April 5, 1956.

By T.H. Clark, part-time geologist:
"Oil and Gas in the St. Lawrence Lowland of Quebec": lecture presented at the joint Annual Meetings of the Can. Inst. Min. and Met. and the Geol. Assoc. Can. - Quebec City, April 10, 1956; published in the Can. Inst. Min. Met. Bull., Vol. 49, No. 531, July, 1956.

By Roland DeBlois, engineer-geologist:
"L'Hydrologie": lecture to the Outcrop Society of Quebec City, March 14, 1957.

By A.-N. Deland, geologist:
"The Boundary Between the Timiskaming and Grenville Subprovinces in the Surprise Lake Area, Quebec": illustrated lecture presented at the joint Annual Meetings of the Can. Inst. Min. and Met. and the Geol. Assoc. Can. - Quebec City, April 11, 1956; published in the Proc. Geol. Assoc. Can., Vol. 8, Pt. I, Nov. 1956.

By F.F. Osborne, geologist:
"The Grenville Region of Quebec"; contributary paper published in "The Grenville Problem", Royal Soc. Can. Special Publications No. 1, Univ. of Toronto Press, 1956.

"Chemical Compositions of the Grenville and the Southern Part of the Timiskaming-Keewatin Subprovince in Quebec": lecture presented at the Annual Meeting of the Royal Society of Canada, Sect. IV - Montreal, June 11, 1956; published in the Trans. Roy. Soc. Can., Vol. I, Series III, June, 1956.

By J.H. Remick, part-time geologist:
"Stratigraphy and Petrography of the Iron Formation at Ross Mountain, Quebec": illustrated lecture presented at the 69th Annual Meeting of the Geol. Soc. Amer. - Minneapolis, Minn., Oct. 31, 1956, abstract published in Geol. Soc. Amer. Bull., Vol. 67, Pt. II, Dec. 1956.

"Some Anorthosites of the Chibougamau Region, Quebec": lecture

presented at the 61st Annual Meeting of the Michigan Academy of Arts and letters - Detroit, Mich., March 22, 1957.

By P.-E. Grenier, resident geologist, Quebec:
"The Application in Engineering Works of the Resistivity Method in Determining the Depth of the Overburden and its Possible Composition": lecture presented at the Outcrop Society of Quebec, March 7, 1957.

By S.V. Ermengen, part-time geologist:
"Geochemical Prospecting in Chibougamau": lecture presented at the 25th Annual Convention of the Prospectors and Developers Association - Toronto, March 5, 1957.

By R.J. Assad, part-time geologist:
"Recent Developments in the Chibougamau District, Quebec": lecture presented at the 25th Annual Convention of the Prospectors and Developers Association - Toronto, March 6, 1957.

By F. Claisse, metallurgist:
"Etat de l'Oxygène dans le Titane" and "Diffusion de l'Oxygène dans le Titane": two lectures presented at the XXIV Congress of ACFAS - Montreal, November 2 and 4, 1956.

"Sample Preparation for Accurate X-Ray Fluorescence Analysis": lecture presented at the 8th Pittsburg Conference of Analytical Chemistry and Applied Spectroscopy - Pittsburg, March 4 and 8, 1956.

"Thermal and Forced Diffusion of Oxygen in Betatitanium": study published in Acta Metallurgica, November, 1956.

Purveyor

The Department of Mines, through the Purveyor's office, issued purchasing orders, payable by its own Accounting Division, to the value of $300,978.81

In addition, purchasing orders payable by the Accounting Division of the Executive Council amounted to $147,161.09

Total purchases for the fiscal year ending March 31st, 1957, amounted to $448,139.90

DIVISION OF EDITING AND PRINTING

Maurice Brunet, chief of this division, submits the following report for the fiscal year under review.

Following is the list of the publications of the Department of Mines edited during the fiscal year 1956-1957. All of them have been issued in French and in English.

Geological Report No. 72: Southwestern Part of Lesueur Township, R.B. Graham.
Geological Report No. 73: Beetz Lake Area, Paul-E. Grenier.
Geological Report No. 74: Johan Beetz Area, C.E. Cooper.
Geological Report No. 75: Northern Quebec, J.-E. Gilbert and R. Bergeron (new edition).
Geological Report No. 76: Saint-Magloire and Rosaire - Saint-Pamphile Area, J. Béland.
Preliminary Report No. 328: General report of the Minister of Mines of the Province of Quebec for the year ending March 31st, 1956.
Preliminary Report No. 329: Lorne-Avaugour Area, A.-F. Laurin.
Preliminary Report No. 331: Duquet Area, A.-N. Deland.
Preliminary Report No. 332: De Freneuse Lake Area, Pierre Sauvé.
Preliminary Report No. 333: Labrieville Area, Marcel Morin.
Preliminary Report No. 334: Preston-Gagnon Area, D.W.T. Pollock.
Preliminary Report No. 335: Doncaster Area, M.A. Klugman.
Preliminary Report No. 336: Woburn Area, R.-A. Marleau.
Preliminary Report No. 337: Vienne Area, L.B. Gillett.
Preliminary Report No. 338: Litchfield-Huddersfield Area, Ralph Kretz.
Preliminary Report No. 339: Sainte-Félicité - Grosses-Roches Area, Jacques Béland.
Preliminary Report No. 340: Béraud-Mazerac Area, P.V. Freeman.
Preliminary Report No. 341: Darlens-Chabert Area, P.V. Freeman.
Preliminary Report No. 342: Bones Lake Area, Jean Béraud.
Preliminary Report No. 343: Guercheville-Lapparent Area, J.H. Remick.
Preliminary Report No. 344: Saint-Etienne de Bolton Area, H. de Romer.
Preliminary Report No. 345: Hainaut-Champagne Area, H.B. Lyall.
Preliminary Report No. 346: Thorne-Leslie-Clapham Area, R.A. Kretz.
Preliminary Report No. 347: Saint-Sylvestre Area, F.-W. Benoît.
Preliminary Report No. 348: Brochant-de-Bonnard Area, R. Bergeron.
Preliminary Report No. 349: Manitou Lake Area, J.T. Jenkins.
Preliminary Report No. 350: Chemical Study of the Peats of Quebec, XI, XII, Risi, Brunette, Cloutier, Girard.
S-37 Annotated List of the Publications of the Department of Mines of the Province of Quebec, 1883-1937.
The Mining Industry of the Province of Quebec for the year 1955.
Outline of Progress of the Mining Industry of the Province of Quebec during the year 1956.

LIBRARY

The library of the Department of Mines contains 10,365 items which include books, reviews and various publications, reports, bulletins, transactions, and sundry documents.

The library has now on its shelves approximately 6,000 books, one hundred periodicals and thirty newspapers. In addition, it has on file 1,600 geological, topographical and aeromagnetic maps; of this number, 1,262 are mounted on canvas, available for consultation.

During the fiscal year 1956-57, the library received 3,483 documents comprising: 1,701 reviews, 733 reports and bulletins, 473 pamphlets, 251 books, 7 manuscripts and 318 maps. In addition to numerous books acquired through exchange, the library purchased 171 books.

During the course of the year, 15 reviews, 4 volumes and 2 bulletins were bound. Also, 92 maps, geological as well as topographical, were mounted on canvas.

The public continues to show interest in questions pertaining to the mining industry: besides the technical officers of the Department, more than 250 visitors came to the library.

SCHOLARSHIPS

For the university term of 1956-57, the Legislative Assembly raised to $50,000.00 the amount to be distributed in scholarships to students in geology, metallurgy and mining.

According to established procedure, these scholarships were granted upon the recommendation of a committee appointed by the Minister. The Committee was composed of the following:

Chairman - Eugène Larochelle, General-Secretary, Quebec Metal Mining Association;
Ignace Brouillet, President of the Corporation de l'Ecole Polytechnique;
J.U. MacEwan, Director of the Department of Metallurgy, McGill University;
Reverend J.-W. Laverdière, Director, Department of Geology, Faculty of Sciences, Laval University;
Gérard Letendre, Director, Department of Mines and Metallurgy, Faculty of Sciences, Laval University;
H.G. Young, Inspector General, Protestant School Board;

Secretary - Miss Gisèle Landreville, Assistant Secretary, Quebec Department of Mines.

Following its past practice, the Committee, in making its recommendation, studied first the requests of graduates working towards doctor's or master's degrees; second came the requests for renewal of undergraduate scholarships and lastly, requests from new candidates, in order of merit.

The Department of Mines awarded in 1956-57, eighty-nine scholarships distributed as follows:

Candidates to post-graduate courses	25
Students entering final year in science faculties	22
Students in less advanced years	42
Total .....,	89

The members of the Committee wish to express to the Government of the Province, and more specifically to the Minister of Mines, their appreciation for the encouragement thus offered to the young men who have chosen careers in the mining industry.

TABLE XII - COMPARATIVE STATEMENT OF REVENUE COLLECTED BY THE DEPARTMENT OF MINES DURING THE FISCAL YEARS 1954-55 TO 1956-57

(Prepared by Gérard Gagnon, Chief Accountant)

	1954-55	1955-56	1956-57
Miner's certificates	$ 109,791.00	$ 196,859.00	$ 163,645.00
Development licenses	647,963.60	801,175.44	1,171,048.82
Exploitation leases	100,000.00	100,000.00	100,000.00
Sales of mining concessions ..	8,909.40	57,980.81	34,427.69
Acreage tax on mining concessions	3,343.08	3,496.66	3,032.02
Fees for transfer of titles ..	31,020.00	54,016.00	51,825.00
Rights on townsite lots	6,512.52	12,013.64	18,463.81
Rentals on townsite lots	2,849.00	826.00	1,873.02
Rental of land on townsite lots	600.00	5,140.00	6,338.67
Water and sewage tax	987.00	100.00	1,246.00
Fees on yearly profits	3,621,735.80	3,480,414.85	5,962,175.76
Sales permits for unwrought metals	24.00	28.00	14.00
Sales of maps, blue prints, etc.	6,367.26	11,607.52	11,566.64
Sales of mineral collections ..	2,506.55	2,804.70	2,508.75
Fees for assays and analyses ..	10,217.80	21,620.65	11,354.20
Miscellaneous	12,194.81	13,177.80	14,112.92
Casual revenue	1,727.90	3,122.06	3,396.62
Total	$4,566,749.72	$4,764,383.13	$7,557,028.92