RP 328(A)

GENERAL REPORT OF THE MINISTER OF MINES OF THE PROVINCE OF QUEBEC FOR THE YEAR ENDING MARCH 31ST 1956

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OF THE

MINISTER OF MINES

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FOR THE YEAR ENDING MARCH 31st

1956

P.R. 328

Quebec, October, 1956.

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 a summary report of the work carried out by the Department of Mines during the fiscal year ending March 31st, 1956, in accordance with Section 229 of the Quebec Mining Act.

Your respectful servant,

W.M. COTTINGHAM,
Minister of Mines.

Québec, octobre 1956.

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

Sir,

In compliance with the Quebec Mining Act, which states in Section 229, chapter 196, Revised Statutes of Quebec 1941, that "the Minister of Mines shall submit, with his annual return to the Legislature, a statement respecting mines of the Province", 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, 1955, to March 31st, 1956.

Your obedient servant,

A.-O. Dufresne,
Deputy Minister.

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REPORT OF THE DEPARTMENT OF MINES

OF THE PROVINCE OF QUEBEC

For the Fiscal Year Ending March 31st, 1956

THE MINING INDUSTRY OF THE PROVINCE OF QUEBEC

DURING THE FISCAL YEAR 1955-56

During the calendar year of 1955, the mineral production of the Province of Quebec exceeded that of any previous year by a wide margin. In this twelve-month period the value of the output of the mines sold, shipped or used reached a total of $388,662,833, a 35 per cent increase over the figures for 1954, and a ten-fold increase in the value of the annual mineral production of the Province since 1935, twenty years ago.

The metals, led by copper and iron brought in $215,781,654, as compared with the revised figures of $137,780,968 for the previous year, an increase of 57 per cent, and more than double the value of the metal production in 1953. The value of the industrial minerals, led by asbestos, amounted to $105,890,962, a 13 per cent increase as compared with the figures for 1954. The demand for building materials

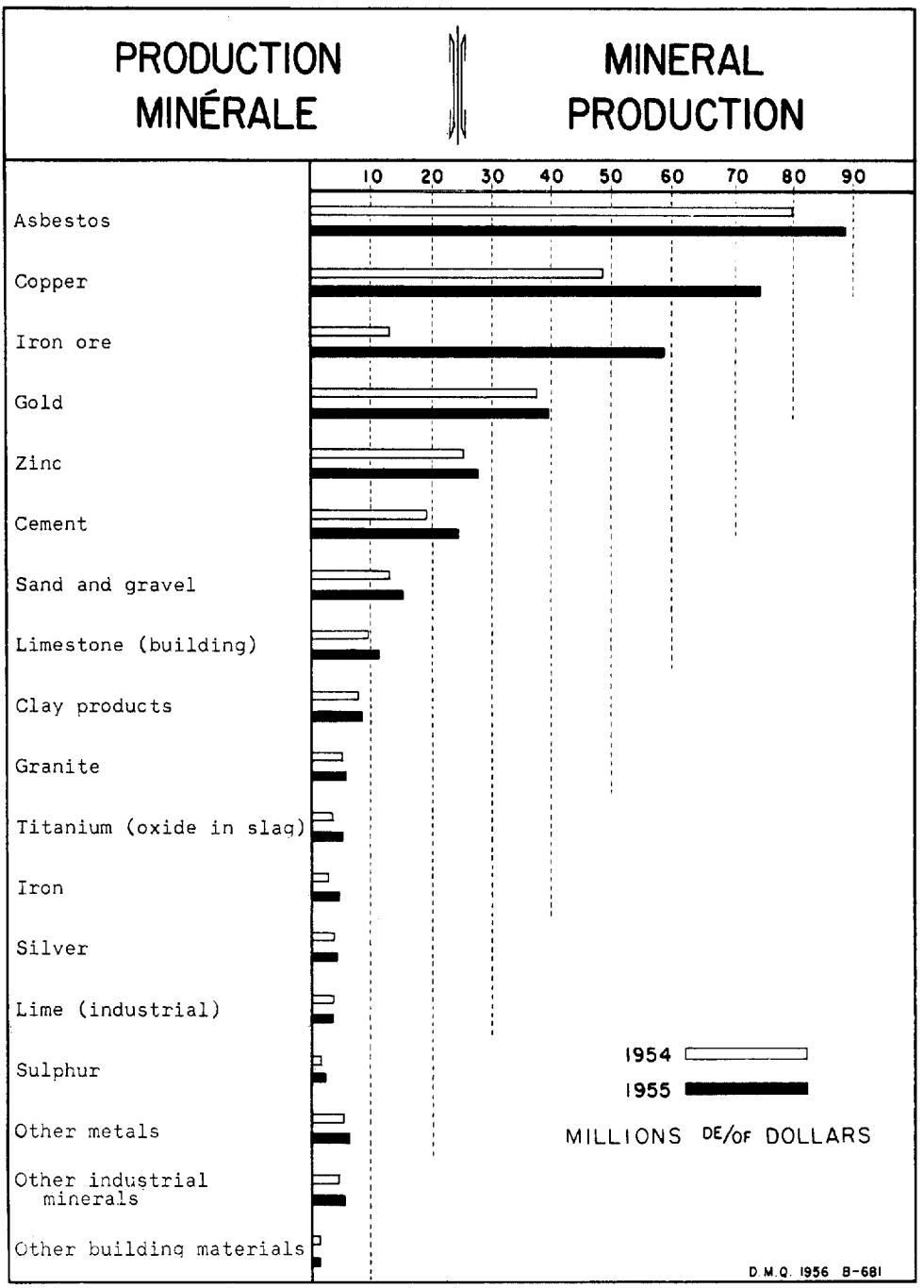

PRODUCTION MINÉRALE
MINERAL PRODUCTION
10
20
30
40
50
60
70
80
90
Asbestos
Copper
Iron ore
Gold
Zinc
Cement
Sand and gravel
Limestone (building)
Clay products
Granite
Titanium (oxide in slag)
Iron
Silver
Lime (industrial)
Sulphur
Other metals
Other industrial minerals
Other building materials
1954
1955
MILLIONS DE/OF DOLLARS
D.M.Q. 1956 B-681

Table 1.- Value of the Mineral Production of the Province of Quebec for Calendar Years 1954 and 1955

(Compiled by C.-O. Beaudet, Chief, Division of Mineral Statistics)

	Value 1955	Value 1954
METALLICS		
Bismuth	$ 210,636	$ 65,143
Copper	74,502,645	48,948,202
Gold	(a)39,919,549	(a)37,403,238
Iron	4,831,845	2,910,663
Iron ore (b)	58,265,200	13,016,822
Lead	1,612,862	2,084,271
Magnesium (c)	1,916,829	2,485,117
Molybdenite	823,954	457,912
Selenium	1,775,753	675,255
Silver	4,221,079	4,086,423
Tellurium	-----	928
Titaniferous iron ore	10,634	9,462
Zinc	27,690,668	25,637,532
Total metals	$ 215,781,654	$ 137,780,968
NON-METALLICS		
(I.- Industrial Minerals)		
Asbestos	$ 88,607,804	$ 79,906,506
Feldspar	355,879	278,997
Graphite	-----	1,093
Industrial lime	3,781,401	3,715,051
Industrial limestone	1,148,948	988,519
Lithium (oxide) (c)	58,480	-----
Magnesitic dolomite and brucite	2,151,820	1,909,163
Marl	74,325	58,050
Mica	73,734	78,351
Mineral water	158,495	147,307
Ochre and iron oxide	162,512	183,507
Peat (moss and humus)	638,696	730,250
Quartz and industrial sand	791,606	234,007
Soapstone and talc	143,895	165,472
Sulphur	2,550,557	1,854,489
Titanium dioxide (in slag)	5,192,810	3,841,270
Total industrial minerals..	$ 105,890,962	$ 94,092,032
(II.- Building Materials)		
Building lime	$ 624,277	$ 623,814
Building limestone	11,537,417	9,536,764
Cement	24,132,519	19,108,680
Clay products - (Brick	6,465,911	6,227,660
Clay products - (Other products	1,983,656	1,826,526
Granite	5,800,835	5,182,356
Marble	236,621	170,787
Sand and gravel	15,346,416	12,985,931
Sand-lime products - (Brick	447,126	320,925
Sand-lime products - (Blocks	82,084	68,116
Sandstone	280,674	278,888
Slate and shale	52,681	144,952
Total building materials ...	$ 66,990,217	$ 56,475,399
Grand Total	$ 388,662,833	$ 288,348,399

(a) Value in Canadian funds. The standard value at the rate of $20.671834 per ounce troy is $23,905,281 for 1955 and $22,694,263 for 1954.

(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.

(c) For statistical purposes, magnesium, which was previously included with magnesitic dolomite and brucite, is now included with the metallics, whereas lithium has been transferred to the list of industrial minerals.

Table II.- Subdivision of the Annual Value of the Mineral Production of the Province of Quebec, in 1950-1955

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

also improved, and production of these items was valued at $66,990,217, as compared with $56,475,339 in the previous year.

Preliminary statistics for the first three months of 1956 indicate a very prosperous year for the mining industry, with base metals continuing in great demand. Conditions have not favoured the gold-quartz mines, and the output of gold from this source declined, but this was compensated by an appreciable increase in the production of the precious metal by the base metal mines. However, the immediate outlook for the development of new auriferous quartz mines is not promising, in view of rising costs of operation.

IRON

In the first full year of production from the Iron Ranges of New Quebec, total shipments of ore exceeded eight million tons, as compared with approximately two million tons in 1954. Plans for 1956 call for an output of twelve million tons, an average rate of 33,000 tons per day.

All of the ore mined on the properties sub-leased by the Hollinger North Shore Exploration Company to Iron Ore Company of Canada, which amounted to approximately one-half of the total production, came from the French and Gagnon deposits.

Consolidated Fenimore Iron Mines Limited carried out metallurgical tests on ores from its properties at Leaf Bay, in the Ungava Bay district, and studies as to plant layout, townsite, loading facilities and airstrip. Similar investigations were carried out on the Payne Bay properties of International Iron Ores Ltd., including sampling and

test shipments. Oceanic Iron Ore of Canada Limited continued exploratory work in the Ungava Bay area, including about 5,000 feet of diamond drilling and bulk sampling of surface trenches. It is reported that this work has indicated from 275 to 300 million tons of ore of concentrating grade. Large low-grade iron ore deposits have also been indicated on the properties of Atlantic Iron Ores Limited where exploratory work was continued in the fiscal year under review.

The Hilton Mines, a joint venture of Stelco Mines Quebec Ltd. and Bristol Quebec Mining Co., Ltd., has been formed to prepare the old "Bristol" iron mine, in Pontiac county, for an annual production of 600,000 tons of high grade iron concentrate, in the form of pellets, suitable for open-hearth smelting. It is expected that the necessary mining and metallurgical plants will be completed in 1957. In 1951-52, diamond drilling carried out on this property indicated from 10 to 15 million tons of magnetite ore.

COPPER

The demand for copper continued at a high level with resulting higher prices, and this encouraged the further exploration and development of copper ores. Much of this activity was concentrated in the Chibougamau district, where three mines, Campbell-Chibougamau, Chibougamau Explorers and Opemiska Copper are already in steady production. Promising results have been obtained in diamond drilling on several other properties in the district where underground work is in progress in preparation for bringing them into production in the near future.

Gaspé Copper Mines Limited commenced the operation of its smelter and concentrator in the fiscal year under review. The plant is designed for a capacity of 6,500 tons per day. A number of new residences and other buildings were erected in the town of Murdochville, and the roads from Gaspé and Anse Pleureuse were improved.

Following a programme of diamond drilling carried out at the old Harvey Hill Copper Mine in Leeds township, Mogul Mining Corporation is planning to bring this property into production on a basis of 1,000 tons of ore per day. Underground development of a copper ore zone was undertaken by Lyndhurst Mining Company on its group in Destor and Poularies townships, the output to be trucked to the Beattie mill, at Duparquet, for treatment. Construction of a 400-ton mill has been completed at the Rainville Mines property, in Louvicourt township, and production commenced shortly after the close of the fiscal year under review.

OTHER METALS

While the quantity of zinc in concentrates produced by Quebec mines was somewhat lower than in 1954, the value of shipments exceeded that of the previous year by two million dollars due to a higher average price for the metal. The Anacon lead-zinc mine in the electoral district of Portneuf, which has operated intermittently since 1913, and which was formerly known as the Tétreault mine, suspended operations, and the plant has been dismantled.

In October 1955, Barvue Mines Limited completed its sales agreement with U.S. interests for 175,000 tons of zinc concentrate at 17.5 cents per pound of zinc. The company is now engaged in converting the operation from open-pit to conventional underground mining practice. The New Calumet lead-zinc mine, on Calumet Island, and the Suffield mine, in Ascot township, were in steady production throughout the year.

Molybdenite Corporation of Canada continued to extract increased quantities of molybdenite and bismuth from its property in Lacorne township, and most of the output was sold. With the completion of a concentrator and subsidiary buildings, the first production of lithium was recorded by Quebec Lithium Corporation from its Lacorne township mine.

Selenium is a metal which is now in great demand, and the price has risen abruptly in the past few years. As a result, the 1955 output, recovered as a by-product at the electrolytic refinery of Canadian Copper Refiners Limited, at Montreal, was valued at $1,775,753, or nearly three times the value of the 1954 production. A substantial increase was also recorded by titanium, produced as an oxide in the slag from the Sorel plant of Quebec Iron and Titanium Corporation.

ASBESTOS

The asbestos industry enjoyed a prosperous year in 1955, with a record output of over one million tons of fibre, valued at $88,607,804. Asbestos Corporation Limited operated the King, Beaver, British Canadian mines. As operations at the Vimy Ridge mine reached the final stage, the Normandie mine was brought into production. The mines of Bell Asbestos Mines, Ltd., Canadian Johns-Manville Co., Ltd., Flintkote Mines, Ltd., Johnson's Company, Nicolet Asbestos Mines, Ltd., and Quebec Asbestos Corporation were in steady production throughout the year.

In the summer of 1955, Lake Asbestos of Quebec, Ltd. commenced the dredging of Black lake. Plans call for these operations to be completed in 1958, so that initial processing of ore may commence at that time. Mill construction is progressing at the Carey-Canadian property in Broughton township, and preparations are being made for the erection of a milling plant on the Thetford township property of National Asbestos Mines Ltd.

LEGISLATION

No amendments to the Quebec Mining Act were made during the year 1955. However, on February 22nd, 1956, Bill No. 67 entitled "An Act Respecting the Mining Development of the Province", was adopted by the Legislative Assembly. Under the provisions of this Act, the Lieutenant-Governor in Council may appoint four commissioners, as well as other officers and employees, to study the Quebec Mining Act and various other acts respecting the operation of mines with a view to coordinating, revising and adapting such acts to meet present conditions, and to prepare and present a report on their findings within fifteen months of the date of their appointment. An order-in-council was subsequently enacted, appointing four commissioners and a secretary as of March 16th, 1956. The Commission is now composed of:

President and Commissioner	Mr. Normand Grimard, Lawyer.
Commissioner	Mr. A.-O. Dufresne, Deputy Minister, Quebec Department of Mines.
Commissioner	Mr. Eugène Larochelle, Secretary General, Quebec Metal Mining Association.
Commissioner	Mr. W.J. Wiltsey, President, Northwestern Quebec Prospectors Association, Inc.
Secretary	Mr. Jacques-R. Alleyn, Lawyer.

MINERAL RIGHTS BRANCH

The current fiscal year has shown the greatest increase in its history in the number of miner's certificates issued annually, as well as in the number of claims registered. An increase nearly double that of the year 1954-55, which had been also a record year, was recorded. A total of 60,315 claims was registered during the course of the fiscal year, as compared with 31,702 during the previous year.

It is to be noted that the increase is general in all agencies of the Department of Mines. The agencies where claims are registered are situated at Amos, Noranda, Chibougamau, Montreal, and Quebec City. In addition to the localities mentioned above, prospectors can obtain miner's certificates at Val d'Or, Ville-Marie, Hull, and Campbells Bay, where the Department has agents at the service of the public.

The number of development licenses issued and renewed also increased considerably, showing an increase from 6,739 to 9,564.

The report on employment shows that the number of work-days during the course of the year totalled almost as much as that for the years 1953-54 and 1954-55 together.

Apart from the increased interest shown by mining property owners to execute all types of work, it is assumed that the supplementary rental, which was raised to $3.00 per acre for cases where work was not being done, contributed to a certain extent to this increase.

Four special mineral exploration licenses were issued during the year.

Fourteen mining concessions, covering an area of ~~368,731~~ 2,674 acres, were granted as compared with three during the preceding year.

By Orders in Council, the following properties were withdrawn from staking of mining claims during the same period:

1.- All lands situated in the territory of New Quebec;

2.- All lands bounded on the south by the 51st degree of latitude, on the north by Eastmain river, on the west by the Ontario border and James Bay coastline, and on the east by longitude 75°30'.

3.- Approximately 53,000 acres of land situated in the Rigaud-Vaudreuil seigniory is withdrawn from staking for a period of two years, starting May 28th, 1955.

The Mineral Rights Branch is under the direction of F.-U. Roux, Chief Registrar, who replaced T.H. Ledden, appointed General Supervisor of Mining Rights.

During the period under review, the General Supervisor studied the documents and reports dealing with several staking con-

flicts and he prepared recommendations with a view to settling these problems. In his capacity of advisor, he also visited the offices of the various registrars of mining claims in the different districts of the Province.

Table III.- Various Titles Issued by the Department of Mines
(Fiscal Years 1954-55 and 1955-56)

Designation of Title	1954-55	1955-56
Claims registered at Amos	8,814	20,156
Claims registered at Noranda	3,514	11,483
Claims registered at Quebec	14,533	7,644
Claims registered at Chibougamau	4,170	11,491
Claims registered at Montreal	671	9,541
Total	31,702	60,315
Miner's certificates issued	10,987	20,193
Development licenses issued	1,854	3,129
Development licenses renewed	4,885	6,435
Mining concessions	3	14
Transfers of titles registered	3,102	5,402
Reports of work: man-days reported	618,785	1,265,682
Reports of work: diamond drilling, in feet ..	233,178	682,178
Number of assay coupons delivered	----	52,559

Table IV.- Mining Titles Issued since 1946-47

Fiscal Year	Number of Miner's Certificates	Number of 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	~~368,731.27~~ 2,674	5,402

Table V.- Comparative Statement of Exploration Work on Mining Claims under License During Calendar Years 1946 to 1955

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

MINING OPERATIONS BRANCH

This Branch is concerned with all matters directly affecting the operation of mines and quarries in the Province, and its main duties comprise:

a) the inspection of mines and quarries to ensure the observance of the "Regulations for the Safety and Protection of Workmen in Mines and Quarries";
b) keeping the Department informed on the development and progress of the mining industry of the Province;
c) keeping the Department informed as to the observance of various sections of the Quebec Mining Act, notably those dealing with operational matters;
d) carrying out special studies and investigations on problems affecting the mining industry.

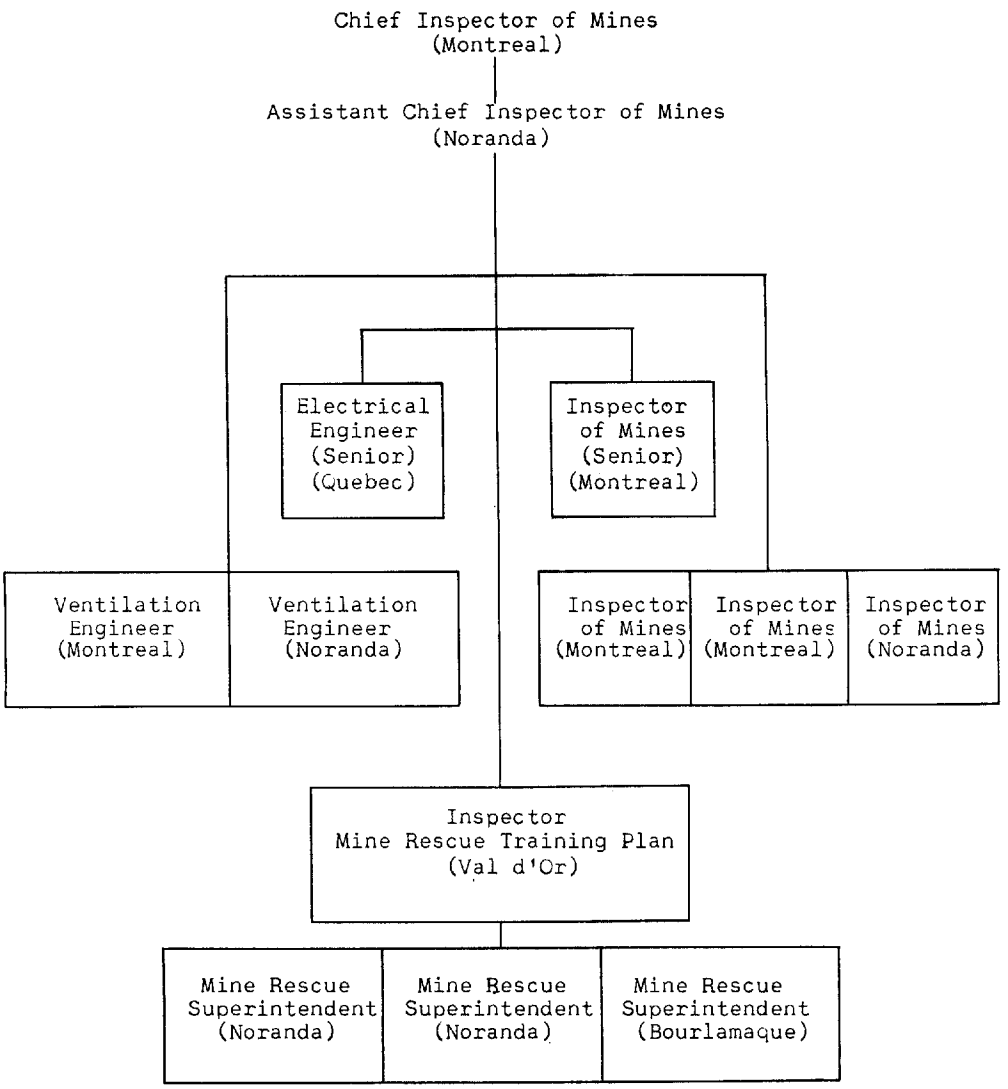
For inspection purposes, the Province is divided into three districts:

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 extends from the electoral district of Pontiac, eastward to the Richelieu river, as well as that part of the Province lying to the north of the St. Lawrence river, including New Quebec, Anticosti Island and Magdalen Islands.

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

During the 12-month period under review, the Inspection of Mines Branch was reorganized and was superceded by the Mining Operations Branch. The office of the Chief Inspector was established in Montreal, and a Chief Mining Engineer was named to the Quebec office. As at March 31st, 1956, the technical staff, under the direction of the Chief Inspector, was as shown in the following diagram:



A partial summary of the work of the Mining Operations Branch, in the period under review, is presented in the following table:

Inspections of mines and quarries	213
Inspections of electrical installations	51
Underground ventilation surveys	31
Dust counts	325
Mine rescue certificates issued	90
Mine rescue station reports received	129
Hoistmen's medical certificates issued	246
Hoisting rope records received	145
Hoisting rope breakage tests reported	300
Steam boiler inspection reports received	80
X-ray examinations - Western Quebec	10,175
Underground plans received	47
Approval of mill-sites Orders in Council	6
Approval of tailings sites	3
Tramways - Orders in Council	1
Sand and gravel - Orders in Council	1
Unwrought Metals Licenses issued	13
Unwrought Metals Reports received	195

The Mine Rescue Training Plan was continued and additional sub-stations were established at mines. The instruction staff was increased by the appointment of a third superintendent.

GEOLOGICAL SURVEYS BRANCH

The chief of this Branch, I.W. Jones, reports the past fiscal year to have been the most active in the history of the Branch. As in the past, the principal function of the Geological Surveys Branch is to explore the rock formations and minerals of the province and to provide maps and reports that outline the results of these explorations. Such work in some instances has directly located mineral deposits of commercial value, and in others has indicated where further search was advisable. Furthermore, in new regions the reports and maps serve as references and guides to those engaged in other activities, - particularly road and railroad builders, hydro-electric and forestry engineers, agronomists, and sportsmen.

During the summer of 1955, twenty field parties conducted investigations in widely separated areas extending from the southern limits of the province to Ungava bay, and from the Ontario border to Gaspé and the lower North Shore. Only four of these parties were led

by geologists of the permanent staff. In addition, two geologists of the permanent staff investigated problems of water supply of interest to municipalities and private concerns. Also, one geologist on part-time employment served in an advisory capacity to some investigations in the southern part of the province, and another assisted in administrative duties.

In addition to the twenty-four geologists whose duties have been outlined above, the twenty field parties collectively employed sixteen other graduate geologists as senior assistants, thirty-nine university students as junior assistants, and fifty-three other men generally engaged locally and for varying periods of time as canoemen, packers, and cooks.

The twenty field parties of 1955 represented an increase of three over those sent out in 1954.

The total of territory mapped was 4,000 square miles, an increase of about 400 square miles over that mapped in 1954.

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

Northern Ungava

Explorations were continued by two geological parties in the region southwest of Ungava bay where important discoveries of base metals were made in 1953:

Robert Bergeron mapped the west half of the Harveng Lake area, about 55 miles west-northwest of Fort Chimo. Several mineralized zones consisting essentially of pyrrhotite, pyrite, and chalcopyrite are present in this area.

Pierre Sauvé mapped the east half of the Leopard Lake area, about 55 miles west-southwest of Fort Chimo. A few zones mineralized by sulphides were found.

Electoral District of Saguenay

W.B. Emo mapped the Mule Lake area, about 100 miles north of Sept Iles along the railway leading from Sept Iles to Knob Lake and the Ungava iron deposits.

J.T. Jenkins mapped the Manitou River area, some 70 miles east-northeast of Sept Iles and 20 miles north of the St. Lawrence.

A small occurrence of galena and another of magnetite were noted.

Roger Blais mapped the Pashashibu area (West half of the Aguanish area), bordering on the St. Lawrence shore north of Anticosti island and some 175 miles east of Sept Iles. The area includes Costebelle township and parts of Drucourt and La Richardière townships. The variety of igneous and of sedimentary rocks combined with major structures and some mineralization (pyrite, fluorite, slightly radioactive pegmatites) indicate that prospecting is warranted.

Marcel Morin continued the mapping of the Cassé Lake-Labrieville area. This work was begun in 1954 with a particular study being made of the eight-mile tunnel driven in connection with hydroelectric developments on Bersimis river near Labrieville.

Chibougamau Region (Electoral Districts of Abitibi-East and Roberval; Abitibi Territory)

The area around Chibougamau lake and westward for several miles is one of the most active prospecting areas in Canada, and is rapidly developing into a mining area. Four Geological Surveys Branch parties carried out investigations in this general region in 1955.

R.-J.-E. Sabourin mapped the Blaiklock area, Abitibi Territory. This area included Blaiklock township and parts of Beaulieu, McKenzie, Chérisy, Vienne, and Barlow townships. The southern boundary of the area is six miles north of Chibougamau. Some pyrite and pyrrhotite as well as traces of gold and of copper were found.

J.H. Remick mapped the Anville-Drouet area, electoral district of Abitibi-East. The area includes parts of Drouet, Anville, Brochant, Lescure, Dolomieu and Daubrée townships. Showings of pyrite, chalcopyrite, specularite, magnetite, and fluorite are present.

André Deland mapped the Du Guesclin-Royal area, electoral district of Abitibi-East. This is about 60 miles southwest of Chibougamau. Nearly all of Du Guesclin and Royal townships and parts of Gradis, Machault, Belmont and l'Espinay townships are included. The greater part of the bedrock in this area is granite.

André Laurin mapped the Migneault-Aigremont area, electoral district of Roberval. Most of Mignault and Aigremont townships and parts of Denault, Cazeneuve, Leber and Mance townships are included in this area. Some small quartz veins were noted and some of these showed traces of gold, silver, and base metals.

Electoral District of Rouyn-Noranda

P.V. Freeman continued mapping the Béraud-Mazérac area, the east half of which was completed in 1954. The west half includes Béraud and Desroberts townships, about two-thirds of Mazérac and Landanet, and parts of Darlens, Chabert, Montanier, Surimau, Fournière, Laubanie, and Jourdan townships. Radioactive minerals, beryl, pyrrhotite and some copper minerals are present.

Electoral District of Pontiac

R. Kretz mapped the Clapham-Leslie area, which includes most of Thorne, Leslie and Clapham, and parts of Alleyn, Cawood, Aldfield, Litchfield and Huddersfield townships. Occurrences of mica, asbestos, garnet, molybdenite, graphite, barite, iron, and radioactive minerals were noted.

Electoral Districts of Labelle and Papineau

D.W.T. Pollock mapped the Labelle-Addington area. The area includes parts of Addington and Amherst townships in the electoral district of Papineau, and parts of Labelle, La Minerve, Clyde, and Joly townships in the electoral district of Labelle. Much of the rock in this area is assigned to the Grenville group of the Precambrian.

Electoral District of Laviolette

M.A. Klugman mapped the west half of the La Tuque area, including most of Turcotte and Vallières townships and some of Dumoulin, Harper, Baril, Malhiot, and Carignan townships. Most of the rock in this area is assigned to the Grenville group. Later intrusives of pegmatite and of syenite are slightly radioactive. Disseminated magnetite and pyrite occur in many of the rocks.

This mapping completed the investigation of the La Tuque area, the eastern half having been done in 1954 by M. Tiphane. The investigation was made at the request of the Chamber of Commerce and Council of the town of La Tuque.

St. Lawrence Lowlands

T.H. Clark continued his investigations of the St. Lawrence Lowlands. The main economic interest attached to this work is the oil and gas possibilities. In 1955 the western part of the Chateauguay map-area was almost completed. Deposits of silica sand (Potsdam) and of building stone (Beauharnois) are present.

Eastern Townships

H.C. Cooke mapped the east half of the Lyster area, which includes most of the townships of Somerset and Nelson, and part of Inverness, in the electoral district of Mégantic, as well as an eastern part of the electoral district of Lotbinière.

It is with great regret that we record the death of Dr. Cooke, March 6, 1956, bringing to an end a brilliant career devoted, in large part, to geological work in the province of Quebec.

Electoral Districts of Kamouraska and Témiscouata

W.A. Gorman mapped the Chabot-Painchaud area. The area includes all of Chabot and Painchaud townships, most of Woodbridge, and parts of Bungay, Ixworth, Chapais, Pohénégamook and Estcourt townships. All of the area is in the electoral district of Kamouraska except for Estcourt township which is in the electoral district of Témiscouata. This project was a continuation of the investigation of the region extending northeastward from the nickel-copper deposits of the St. Fabien-de-Panet area, electoral district of Montmagny.

Gaspé Peninsula

Jacques Béland mapped the southern part of the east half of the Mount Logan area. This included much of the townships of Faribault and Joffre and parts of Dalibaire, Dunière and Romieu, all in the electoral district of Matane, and a very small part of Courcelette township, electoral district of Gaspé-North. The northern part of the Mount Logan area and the Cap Chat area to the north were mapped by H.W. McGerrigle in 1954. The Shickshock range of mountains traverses the Mount Logan area from southwest to northeast. Traces of copper were seen at two places in the Shickshocks and indications of petroleum in Silurian rocks to the south.

H.W. McGerrigle mapped a small part of the Mount Logan area, mainly in Dalibaire township, electoral district of Matane, in continuation of the work done in 1954.

W.B. Skidmore mapped the Upper St.John River area. This included Gastonguay and parts of Sirois and Vondenvelden townships, electoral district of Gaspé-South, and part of Holland township, electoral district of Gaspé-North. A little copper and some indications of petroleum were noted.

Water-Supply

Roland DeBlois conducted hydrological surveys in various parts of the province, rendering aid to many municipalities and other operators of aqueducts. Raymond Roy joined in this work in June, 1955, after a period of special training with the Water Supply section of the United States Geological Survey. In all, 65 surveys were made in the electoral districts of Argenteuil, Arthabaska, L'Assomption, Beauce, Bellechasse, Bonaventure, Chambly, Champlain, Chicoutimi, Dorchester, Frontenac, Joliette, L'Islet, Kamouraska, Lotbinière, Matane, Montcalm, Montmagny, Montmorency, Nicolet, Portneuf, Quebec, Richelieu, Rivière-du-Loup, Roberval, Rouville, Vaudreuil, and Verchères.

Other Work

Messrs. DeBlois and Roy, in addition to their principal task of investigating water-supply, and T.H. Clark, logged the rock samples taken from wells drilled for oil and gas in Gaspé Peninsula and the St. Lawrence Lowlands. Visits were made also by these geologists to occurrences of oil or gas that were reported from various parts of the province.

Jacques Béland and F.F. Osborne investigated and reported on the Nicolet landslide, making a special study of the landslide area during the period November 15-21.

F.F. Osborne served in a supervisory and advisory capacity for geological investigations in the Appalachian region south of Quebec city and in the Laurentians, and also reviewed certain of the geological reports.

H.W. McGerrigle and M.M. Ritchie reviewed and edited geological reports and maps for publication, and assisted 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

Bertrand-T. Denis, chief of this Branch, reports as follows on the activities of the past fiscal year:-

The technical officers of this Branch carry out geological investigations of mineral occurrences, mining properties or mining districts with a view to furthering the development of the mineral industry

within the Province. They also give technical advice to the prospectors and to the engineers engaged in exploration and development.

The resident geologists of the Department are attached to this Branch. Apart from the offices of the Department at Rouyn, Val d'Or and in Quebec City, a new office was established in Montreal last December.

During the summer and early autumn eleven parties were in the field, and, in addition, the resident geologists made examinations of mining properties under development in each of their respective districts. The field personnel included fifteen geologists, three mining engineers, sixteen students who acted as assistants, and twelve labourers or helpers.

P.-E. Bourret, senior mining engineer in charge of industrial minerals technology, examined 60 properties in different stages of development, from prospects to productive mines. The properties visited are situated mainly in the southwestern part of the Laurentian Plateau, in the Saint Lawrence lowlands, and in the Eastern Townships. During the course of these visits, technical advice was given prospectors and mine operators concerning the development of various deposits, mining operations, and ore dressing, as well as marketing of the products.

Jean Dugas, resident geologist at Rouyn, took charge of the Rouyn office last December. During the summer, he completed the detailed geological surveying of the southeast quarter of Montbray township and of the southwest quarter of Duparquet township. He started the surveying, to the same scale, of the northwest quarter of Duprat township.

S.V. Ermengen started a study of the geochemical prospection techniques in the Chibougamau district. This project follows similar studies already commenced in the Gaspé district.

J.-E. Gilbert, resident geologist for the Montreal district, took charge of the organization of that office last December. The Montreal district comprises the western part of the Province, south of the electoral districts of Témiscamingue, Rouyn-Noranda, and Abitibi-East, as far as the electoral district of Berthier; to the south of the Saint Lawrence river, the district comprises the area west of the Richelieu river. Dr. Gilbert visited 53 mining properties, seven of which were in the Montreal district and 46 in that of Rouyn-Noranda, when he was in charge of the latter district. He also completed the compilation of the geology of the north-east quarter of Dasserat township, the west half and the northeast quarter of Dufresnoy township.

Henri Girard, mining engineer, supervised the development of peat bogs under exploitation in the Province until the month of December.

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

F.D. Horscroft started detailed geological surveying of the southwest quarter of Roy township. This project is part of the detailed geological mapping programme which was started in 1951 in the Chibougamau district.

W.N. Ingham, who was resident geologist at Val d'Or until March 31st, 1956, visited 35 mining properties in his district and followed closely the developments of the exploitation of lithium deposits in the Lacorne region.

Maurice Latulippe, resident geologist for the region of Val d'Or, took charge of the Val d'Or office on April 1st, 1956. During the course of the summer he completed the detailed geological surveying at a scale of 1 inch to the 1,000 feet of the northwest quarter of the townships of Lacorne and Tiblemont.

R.E. Jones completed the detailed geological survey of the northeast quarter of LaMotte township. This project is part of the programme of detailed geological mapping of the district of Val d'Or and included a part of the region which is undergoing active exploration for lithium deposits.

Léo Lachance, engineer in geology specialized in the technology of industrial minerals, visited and examined 16 properties located in the southwest region of the Province, in the Ottawa valley, in the Montreal district, and in those of Saint-Maurice and Lake Saint John. Mr. Lachance also completed a summary geological survey of the townships of Plessis and Lartigue in the electoral district of Chicoutimi, where prospectors made discoveries of copper and nickel. These discoveries resulted in a staking race in that region.

O.-D. Maurice, engineer in geology, completed a detailed geological survey of the Oka district, where important exploitation work on deposits of columbium are being carried out.

D.M. Shaw examined 40 deposits of radioactive minerals, most

of which were located in the electoral districts of Pontiac and Gatineau.

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

The Mineral Deposits Branch is also responsible for the acceptance of reports, maps, and diamond-drill logs submitted in support of applications for credit towards assessment work requirements and consisting of geophysical or detailed geological surveys and diamond drilling. J.-L. Pouliot, mining engineer in charge of these activities, reports that during the course of the year, 248 reports and geophysical maps were examined, as well as 109 reports and geological maps and 264 reports of diamond-drilling. Besides that, 101 reports or prospectuses were studied at the request of the Quebec Securities Commission. Finally, thirteen reports by engineers, submitted in support of applications for mining concessions, were studied.

The following Table shows the increase in the number of reports received by the Department of Mines, which fact, in turn, indicates the increase of activity among the prospectors.

Comparative Table of the Number of Reports Received During the Years 1952 to 1956

Reports	1952	1953	1954	1955	1956
Geological	33	48	54	64	109
Geophysical	83	127	77	120	248
Diamond drilling	250	173	141	128	264
Transferable securities..	77	162	127	138	101
Mining concessions	13	15	2	3	13

To awaken interest in prospecting and to initiate those interested to the elementary notions of geology and mineralogy, lectures on initiation to prospecting were organized in nine different localities.

At each of the places mentioned below nine courses were given, four of which were in practice and held in the afternoon. These courses were given by O.-D. Maurice, Jean Dugas, P.-E. Grenier, and Leo Lachance, geologists with the Mineral Deposits Branch.

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

Bagotville (Chicoutimi)	22
St-Jérôme (Lake St. John)	23
Chibougamau (Abitibi-East)	8
Parent (Laviolette)	19
Clova (Abitibi-East)	12
Causapscal (Matapédia)	55
St-Georges-East (Beauce)	45
Sherbrooke (Sherbrooke)	32
Hull (Hull)	28
Maniwaki (Gatineau)	21

DIVISION OF TECHNICAL INFORMATION

The Division of Technical Information is charged with supplying prospectors and the public with technical information concerning the mineral wealth of the Province.

The following report which covers the work of this Division during the fiscal year ending March 31, 1956, is submitted by Jean-Paul Drolet, mining engineer.

A.- Number of requests for technical information concerning mining activities and various mineral substances 800

B.- Various enquiries and correspondence relating to mining companies and mineral technology, about 1,500

The Department of Mines also takes part each year in the various industrial and regional exhibitions in the Province, by displaying mineral exhibits. During the fiscal year 1955-56, exhibitions were held at:

Lachute	June 13 to 18, 1955
Port Alfred	July 4 to 9, 1955
Rouyn-Noranda	Aug. 20 to 24, 1955
Trois-Rivières	Aug. 20 to 26, 1955
Sherbrooke	Aug. 27 to Sept. 2, 1955
Val d'Or	Sept. 1 to 7, 1955

An exhibit of the publications of the Department was presented in Toronto on the occasion of the annual reunion of the Prospectors

and Developers Association, from March 4 to 7, 1956. Moreover, exhibits were held at: Palais du Commerce, Montreal, from March 4 to 13, 1955, and Chateau Frontenac, Quebec, from March 29 to April 1, 1955.

These two localities were not mentioned in the report for the preceding year. The theme of these exhibits for 1955 was the principal mineral substances taken from the mines of the Province of Quebec.

LABORATORIES BRANCH

The Laboratories Branch comprises the following sections:

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

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 chemical analyses 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 reviewed consisted of: a) technical assistance to prospecting; b) chemical utilization of our peat bogs; c) increase of the market value of our asbestos; d) chemical utilization of titanium ores; e) study of certain physical properties of metallic titanium; f) production of organic by-products of titanium; g) integral metallurgical and chemical utilization of our deposits of lithium; h) perfectioning of analyses methods appropriate to the needs of our industry; i) chemical extraction of columbium and of rare earths; j) processing ores of copper, lead, zinc, iron, gold, lithium, uranium, thorium, beryllium, phosphorus, fluorine, columbium and rare earths.

Following is the progress achieved for the various projects under study:

Project No. 8 - Claude Frémont continued his research work on the perfectioning of a micro-magnetometer that can be introduced into diamond drill holes. The various detection circuits, electronic

filterings, and magnetic field variations were definitely balanced. There remains to be controlled the amplification circuit giving the necessary characteristics of sensitiveness and stability.

Project No. 80 - Fernand Claisse completed a study of the diffusion of oxygen in titanium. The results obtained will serve in the thermal processing of metallic titanium.

Projects No. 91 and No. 103 - Jos. Risi and R. Cloutier continued the systematic study of a large number of samples of peat extracted from the peat bogs of St-Hyacinthe, in the electoral districts of St-Hyacinthe and Bagot, and from the peat bogs of St-Blaise in the electoral district of St-Jean. This work consists in the chemical fractioning of the more important components of the peat: soluble substances in hot water and organic solvants, hemicelluloses, cellulose, lignite, humic substances, and other components. A complete bibliographic study, covering the last twenty years on the utilization of peat as fertilizer was also started.

Project No. 94 - L.-P. Bonneau completed his tests on the removal of dust from asbestos prior to its packing in bags. The aerodynamic method used gives excellent results under certain experimental conditions and a special mechanical separator was perfectioned and will be patented in the near future.

Project No. 98 - J.U. MacEwan continued his research work on the production of lithium salts from spodumene concentrates. A new chemical processing method for lithium concentrates was perfected.

Project No. 99 - R. Brais continued his research work on the chemical utilization of ores and on other titaniferous products. The making of a hydrochloric solution of ilmenite in continuous cycle presents certain difficulties of a technical nature which are presently under study. On the other hand, the study of the synthesis of commercial organic components of titanium advances satisfactorily.

Project No. 102 - P.-E. Gagnon carried out research work on the chemical extraction of columbium and of rare earths from ore concentrates from the region of Oka. This difficult problem required first a critical, systematic and carefully selected bibliography which was built up simultaneously with judiciously organized laboratory operations.

Project No. 110 - Henri Boileau perfected a rapid, precise and inexpensive method of analysing the lithium, potassium, sodium

and caesium content in spodumene ores and concentrates, without having to use hydrofluoric acid and platinum containers.

Project No. 114 - Maurice Archambault, J.U. MacEwan and C.-A. Olivier, while working on preliminary tests on the industrialization of the MacEwan process, (Project No. 98) found a second new process for the metallurgical dressing of lithium ores and concentrates. The originality of the discovery and its economic repercussions are of importance owing to the abundance of lithium in the province of Quebec and they are planning to protect this invention by the appropriate patents.

Project No. 116 - Fernand Claisse has discovered an accurate and rapid method for the quantitative analysis of most of the elements contained in ores and metallurgical products by X-ray fluorescence. The originality of conception and the universality of application of the method have raised much enthusiasm among scientific circles, and, following consultation with the author, mining companies have adopted it spontaneously and fully.

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

Research on the Concentration of Ores

Project No.	Ore	Origin
72	Lithium	Quebec Lithium Corporation
87	Iron	Cyrus S. Eaton, jr., International Iron Ore Ltd.
93	Uranium	Quebec Nickel Corporation
95	Lithium	Valor Lithium Mines Ltd.
96	Uranium	Gatineau Uranium Mines Ltd.
97	Beryllium	Massberyl Company Ltd.
101	Lithium	Quebec Lithium Corporation
105	Uranium, thorium, apatite and fluorite	Yates Uranium Mines Inc.
107	Tungsten	St. Roberts Metals Corp. Ltd.
108	Columbium and rare earths	Molybdenum Corporation of America
109	Lithium	Quebec Lithium Corporation
111	Lithium	Violamac Mines Ltd.
112	Copper, lead and zinc	Vendôme Mines Ltd.

119	Nepheline	Chess Uranium Corporation
121	Gold	The Bersimis Company Ltd.

II.- Laboratories for Analyses and Assays

During the course of the fiscal year under review, the laboratories for analyses and assays (including the Thetford Mines plant) received 21,540 samples on which were performed 84,486 analyses and determinations. These figures comprise the quantitative chemical and flame photometric analyses and determinations by microscope, spectrograph, X-rays (diffraction and fluorescence), and radioactivity measurements.

Table VI.- Summary of Analytical Work Done in Laboratories

	Laboratories			Totals
	Quebec	Montreal	Thetford Mines	
Samples received	18,715	2,327	498	21,540
Quantitative analyses	30,163	4,019	3,299	37,481
Qualitative analyses	25,174	---	---	25,174
Spectrographic examinations	13,184	---	---	13,184
X-rays examinations	6,497	---	---	6,497
Radioactivity determinations ...	393	---	---	393
Research analyses	1,757	---	---	1,757
Totals	77,168	4,019	3,299	84,486

The Montreal laboratories carry out qualitative and quantitative chemical analyses for prospectors.

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 course of the financial year ending March 31st, 1956, the activities of the mineralogy and petrography laboratory increased considerably while 18,715 samples were received at our laboratories, as compared with 11,921 during the preceding year. The mineralogists examined under microscope 63 thin sections of rock and 39 polished surfaces of metallic ores. A total of 1,426 letters were written, 1,335 of which dealt with samples submitted for mineralogical determination, the larger part of these latter consisting in detailed reports on the mineralogical composition and the value of the samples submitted for identification. Besides the above, 664 technical consultations were given verbally.

The mineralogists, moreover, forwarded to different laboratories the samples to be analyzed, according to their nature and the work to be done.

The mineralogy laboratory also looks after the preparation of collections of rocks and typical minerals destined to prospectors and schools. These collections enjoy an ever increasing success and popularity since, during the course of the year 1955-56, 1,192 collections placed in boxes were shipped, besides more than 650 small fragments of rocks and minerals placed in envelopes.

Physics Laboratory

The fiscal year 1955-56 ended with an increase of 25 per cent in the number of analyses and determinations effected in the physics laboratory, as compared with the work carried out during the preceding year.

The total of these determinations is distributed as follows:

Physical analyses of elements	14,594
Radiocrystallographic determinations..	6,497
Radioactivity determinations	393

Included with the radiocrystallographic determinations are 138 quantitative analyses of free silica for the Department of Health. Three analyses and determinations for the Workmen's Compensation Commission are also included in this work.

The increase in the number of analyses is due to the great popularity of determinations by X-ray fluorescence. During the course of the year, the physics laboratory inaugurated in this field an accurate method developed for the rapid analysis of metallic elements. Even the elements the more difficult to determine by chemical analysis, such as uranium, thorium, columbium, tantalum and the rare earths, can be assessed in a few minutes by this new method.

Chemical Laboratory

The financial year 1955-56 showed a noticeable progress over the preceding year as regards the number of analyses performed. This increase amounts to more than 25 per cent. The distribution of analyses was as follows: 8,492 analyses of precious metals, 19,779 current analyses, and 1,526 research analyses. As in the past, all of these analyses, the total of which was 29,797, were made in duplicate.

As special work must be mentioned seven complete precision geochemical analyses, two complete analyses of commercial precision, two complete mineral water analyses, and five natural gas analyses. Under the heading of special work must also be added the perfectioning of new methods of analysis.

All the various sections of the laboratory are staffed by graduate chemists.

Metallurgical Laboratory

The study of the diffusion of oxygen in metallic titanium (Project No. 80) necessitated the perfectioning of special equipment for the verification of precise physical results. Simultaneously, for the continuity of research on iron ores, the Chevenard thermo-scale was transformed to effect measurements in vacuum or under various atmospheric pressures.

III.- Sampling and Ore Dressing Plants

Val d'Or Plant:

This plant, located near Val d'Or, in the electoral district of Abitibi-East, received for sampling and dressing purposes the following shipments of ores:

Table VII.-Shipments of Ore

Shipped by	Type of Ore	No. of Lots	Weight (pounds)
For sampling purposes:			
Roland Coté, Rouyn	Gold and copper	2	28
Sullivan Consolidated Mines Limited	Gold	1	980
Vendôme Mines Limited	Copper, zinc, and lead	1	1,082
Yates Uranium Mines Ltd.	Uranium and fluorite	1	17,110
Totals		5	19,200
For dressing purposes:			
Léon Doyon, Rouyn	Gold	1	14,245

During the dressing of this last lot, 10.787 ounces of fine gold were recovered.

The plant also received for crushing purposes a shipment of ore from Quebec Lithium Corporation weighing 3,340 pounds.

Thetford Mines Plant:-

This laboratory located in the heart of the asbestos region, in the electoral district of Mégantic, received the following shipments for sampling and dressing purposes:

Table VIII.- Shipments of Asbestos Minerals for Purposes of Dressing and Classification of Fibres

Shipped by	Lots	Weight in Pounds
Joseph Allaire, Disraeli	1	17
Asbestos Corporation Ltd.	98	146
Atomic Mining Corporation	4	638
Bell Asbestos Mines Ltd.	3	3,023

Buckingham Asbestos Co. Ltd.	1	48
Central Asbestos Mines Ltd.	6	195
Chibougamau Asbestos Co. Ltd.	1	30
Derogan Asbestos Mines Ltd.	4	232
Paul-E. Dumont, Laval des Rapides	1	6
Eastern Asbestos Co. Ltd.	1	302
Norman R. Fisher, Montreal	1	1,009
Flintkote Mines Ltd.	1	3
Golden Age Mines Ltd.	15	754
J.-A. Jacques, Ascot Corner	1	19
Arthur Lachance, Thetford Mines	1	60
Lachance Mines Ltd.	2	322
Lake Asbestos of Quebec Ltd.	11	202
P.M. Malouf, Montreal	15	722
Metro Asbestos Processors Ltd.	3	461
National Gypsum (Canada) Ltd.	256	18,816
New Lafayette Asbestos Co. Ltd.	20	5,704
Nicolet Asbestos Mines Ltd.	4	208
Pentagon Mining Corporation	5	1,013
Rosol Pepperess, Ladysmith	1	1
Quebec Asbestos Mining Association	40	125
The Ruberoid Company	5	11
Alphonse Savoie, Disraeli	1	20
Strategic Metals Ltd.	4	352
Thermoid Company	4	20
Totals	500	34,459

In the total weight of 34,459 pounds are included 326 pounds of fibres submitted for standard classification, fibres which required 3,299 tests.

IV.- University Courses on Mineral Prospecting

The university courses on mineral prospecting celebrate this year their tenth anniversary of existence. During the course of this decade, approximately thirty-eight students per year received specialized training and were oriented directly to professional prospecting, thanks to the gracious cooperation of the Faculty of Science of Laval University and of the Ecole Polytechnique de Montréal. The Department of Mines has reason to be proud of this initiative and the excellent results obtained when one considers the sustained interest of the mining companies in giving employment to graduate prospectors and the number of graduates who have made prospecting a career.

This year, the courses were given at the Ecole Polytechnique de Montréal from March 28th to April 28th, 1955, and at the Department of Geology of the Faculty of Science of Laval University, at Quebec, from March 5th to March 27th, 1956. At both places 64 students followed the complete courses.

Table IX.- University Courses on Mineral Prospecting Given between 1947 and 1956

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
Total	207	175	382

V.-Museum of the Department of Mines

A specimen of pollucite, a rare mineral containing large proportions of caesium, was offered to the museum of the Department of Mines by Valor Lithium Mines Ltd. It came from Lacorne township in the electoral district of Abitibi-East.

DRAUGHTING AND CARTOGRAPHY BRANCH

Léon Valois, P. Eng., is chief of this Branch, which has a staff of twelve persons including nine draughtsmen and one stenographer.

The Draughting and Cartography Branch supplies the documents required by the geological missions of the Department, namely, aerial photos and compilations, to the desired scale, base maps made from topographical surveys and aerial photographs. In some cases,

regions are photographed and mapped to serve as an adequate basis of information to these geological missions.

The Branch keeps up to date two series of maps of the various townships in the form of tracings on linen. On one of these are drawn the outlines of all mining claims in good standing and on the other set are shown the boundaries of mining properties and lands held by mining companies. The first set, which shows the claims staked out, comprises 769 tracings on which were traced the outlines of 60,315 new claims staked during the year. The second series comprises 441 tracings. From all these tracings, 24,540 blue or black prints were struck off during the year to satisfy requests from the interested public.

The following geological maps were prepared during the year by the Branch, which also supervised their printing.

Final maps (coloured)

a) Completed

No. 847 - Saint John Area
No. 848 - Beloeil Area
No. 921 - Trente-et-un-Milles Lake Area
No. 922 - McGill Area
No.1074 - Mineral Map (1 inch equals 125 miles) (2nd and 3rd edition)
No.1091 - Northwest Quarter Obalski Township
No.1092 - Northeast Quarter Obalski Township

b) In Press

No.1060 - Geology of the North of the Province of Quebec
No.1095 - Montauban-les-Mines Area

c) In preparation

No.1073 - Coaticook-Malvina Area
No.1096 - New Carlisle Area
No.1098 - St. Pamphile Area
No.1099 - Johan Beetz-Desherbiers Area
No.1100 - Beetz Lake Area
No.1113 - Southwestern Part of Lesueur Township

Preliminary Maps

Completed

No.1066 - Bristol Area
No.1067 - Ste-Perpétue Area
No.1068 - Lac Gérido Area (East)
No.1069 - Ducharme-Bouteroue Area
No.1070 - Thévenet Lake area

No.1071 - Gradis-Machault Area
No.1072 - Bailloquet Area
No.1075 - St-Georges-St-Zacharie Area
No.1085 - Napierville Peat Bog
No.1111 - Harveng Lake Area (West)
No.1114 - Pashashibou Area
No.1116 - Du Guesclin-Royal Area
No.1117 - La Tuque Area (W/2)
No.1118 - Addington-Labelle Area
No.1119 - Anville-Drouet Area
No.1122 - Blaiklock Area
No.1123 - Mule Lake Area
No.1124 - Léopard Lake Area
No.1125 - Manitou River Area

Our draughtsmen traced on linen eight other geological plans, five plans of furniture and machines, and graphs, as well as twenty-nine figures for illustration of final reports published by the Department.

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

The considerable increase of interest in mining, particularly in New Quebec and in the Saint Lawrence valley, has brought to the Cartography Branch supplementary work in the preparation of descriptions of territories and the tracing of plans for the issuance of Mineral Exploration Licenses.

Table X.- Comparative Table for the Years Ending March 31st, 1953, 1954, 1955, and 1956

	1953	1954	1955	1956
Personnel	12	11	12	12
Mining claims tracings	542	626	690	769
New claims	21,912	23,667	32,702	60,315
Mining companies tracings	210	219	375	441
Copies distributed	9,923	10,405	13,299	24,540
Final maps (coloured)	7	14	7	8
Preliminary maps	13	8	14	20
Geological plans	42	39	8	8
Miscellaneous plans	34	35	16	5
Figures	59	13	14	29

CIVIL ENGINEERING BRANCH

L.-A. St-Pierre, P. Eng., is chief of this Branch, which consists of two distinct divisions: a) Division of Mine roads, and b) Division of Mining Villages.

a) Division of Mine Roads

It is well established that the means of communication constitute one of the determining factors at the start of all important realizations successfully carried out in the discovery and the exploitation of the underground wealth. Besides linking the site of the particular deposits to transport channels already established, the mine roads built in the Province have made it possible to penetrate with facility within large mineralized areas or regions. Thus, the construction of mine roads is directly an important contribution to the economic development of the Province and, indirectly, to the expansion of the individual and collective welfare of its population.

During the course of the financial year 1955-56, a new stretch of 27.4 miles of mine roads was built, which brings to 1,486.18 miles the total length of roads built by the Department of Mines. The total expenditure, during the course of this year, for the construction, the improvement or the completion of mine roads, including bridges, was $2,258,810.30, bringing to $25,875,265 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	1953-54	1954-55	1955-56
New roads constructed, distance in miles	30.26	13.88	27.40
Improvements to roads, distance in miles	132.23	41.60	42.00
Permanent bridges, number of bridges	8	11	8
Maintenance by the Department, distance in miles ..	273	279	268.9
Cost of road maintenance ...	$124,988.22	$149,451.86	$154,525.34
Cost of new constructions, completion of projects started the previous year and improvements to roads built in the past	$4,706,656.37	$2,852,845.64	$2,258,810.30
Total expenditures	$4,831,644.59	$3,002,297.50	$2,413,335.64

Details for the year 1955-56:

Construction of new roads	$ 730,375.97
Bridge building	609,957.13
Completion of last year's projects	75,481.25
Improvements to roads built in the past	842,995.95
Total	$2,258,810.30

Construction of new roads:

Electoral District	Description of Road
Abitibi-East	Bachelor Lake road
Abitibi-East	Maisonneuve Mine road
Abitibi-East	Quebec Lithium Mine road (extension)
Abitibi-East	Valor Mine road (extension)
Abitibi-West	Duvan Mine road
Abitibi-West	Lyndhurst Mine road
Beauce	Carey-Asbestos Mine road
Matane	St-Ulric Marl Lake road (extension)
Mégantic	Broughton Soapstone Mine road
Papineau	Gauthier Quarry road
Rouyn-Noranda	Noranda, trucking road

Bridge building, steel or concrete frame:

Electoral District	Name of River	Length of Span
Abitibi-East	Audet	35 feet
Abitibi-East	Dufresne	40 feet
Abitibi-East	Nelligan	30 feet
Abitibi-East	O'Sullivan	165 feet
Mégantic	Bécancour	120 feet
Roberval	Chamouchouane	360 feet
Roberval	Coquille	40 feet
Roberval	Tonnerre	55 feet

Completion of last year's projects:

The projects completed were: the road from Murdochville to l'Anse Pleureuse and the bridges across the Bell, Chibougamau, Dufresne, and Madeleine rivers.

Improvements to roads built in the past:

Improvement work was executed over a distance of four miles on the Gaspé to Murdochville road and crushed gravel recoating

was spread along the roads leading to the Campbell Chibougamau, Chibougamau Explorers, and Opemiska mines.

The Department of Roads took definitively under its charge the maintenance of the Gaspé-l'Anse Pleureuse road from the beginning of 1955.

List of roads maintenanced during 1955-56:

Electoral District	Description of Road
Abitibi-East and Roberval ...	Chibougamau road
Abitibi-East	Bachelor Lake road
Abitibi-East	Campbell-Chibougamau Mine road
Abitibi-East	Chibougamau Explorers Mine road
Abitibi-East	Opemiska Mine road
Abitibi-East	Quebec Lithium Mine road
Bonaventure and Matapédia ...	Grand Cascapédia River road
Chicoutimi	Bagotville Peat Bog road
Gaspé-North	Levasseur Lake road
Rimouski	Pointe-au-Père Peat Bog road
Rivière-du-Loup	Isle Verte Peat Bog road
Rouyn-Noranda	Eldrich Mine road
Saguenay	Baie du Taureau road
Saguenay	Les Escoumains Peat Bog road

b) Division of Mining Villages

Research work and studies are continued to delimit an area favourable for the establishment of the future town of Desmaraisville, near the new railroad presently under construction between Beattyville and Chibougamau.

Herewith are mentioned summarily the progress achieved in the various mining centres. The Division of Mining Villages contributed to this progress and to the solution of the early problems and those which follow the increase in population.

The town of Belleterre, situated 35 miles to the east of Ville-Marie, in the electoral district of Témiscamingue, has a population of only 1,000 inhabitants. The heads of families are all employed in the exploitation of the gold mine which is the sole industry of that locality.

The towns of Cadillac and Malartic, in the electoral district of Abitibi-East, separated from each other by about fifteen

miles, are between Rouyn and Val d'Or. The population of Cadillac is 1,160 inhabitants, and that of Malartic 7,000.

Bourlamaque and Val d'Or, two distinct towns with adjoining territories, have a total population of 12,620 inhabitants.

These five towns would benefit from the establishment of diversified industries instead of having to count almost solely on the exploitation of mines. The various municipal administrations try to encourage all initiative toward this end.

Chapais

In the spring of 1955, the Department of Mines authorized the sale of building lots in a section of Block 1, Lévy township, electoral district of Abitibi-East, which is situated approximately 25 miles to the southwest of the town of Chibougamau. This area is situated near the copper mine being exploited by Opemiska Copper Mines (Quebec) Limited.

On November 16th, 1955, a territory of approximately 24 square miles, including the tract described above, was erected into a town municipality. The municipal corporation of the town of Chapais thus was organized under the administration of a municipal council, the first members of which were appointed by the Lieutenant-Governor in Council.

The first shipments of ores from the whole region of Chibougamau started in December, 1953, and these came from the Opemiska Copper mine.

Besides living quarters, a comfortable 25-room hotel is in operation and the construction of a school and of a hospital is being planned.

Chibougamau

The territory of Chibougamau was explored by mining prospectors as far back as 1897. These pioneers discovered indications of deposits of gold, copper, and iron. The first mining company for the exploration of that district was organized in 1905 and, since 1920, the discoveries of important base metal deposits have increased.

The Department of Mines, in 1936, opened a 25-foot-wide road and, subsequently, between 1936 and 1940, bridges and culverts were built. Following improved standards, the construction and gravelling of the Chibougamau road from St-Félicien to Gilman lake, in McKenzie township, was completed by 1950.

In 1950, the Government established the mining village of Chibougamau, on the western shore of Gilman lake. During the summer of that same year, 1950, 48 commercial lots and 70 residential lots were ceded under long-term lease. At the end of 1953, the aqueduct and sewage systems were in operation and several streets were supplied with these two services.

On September 25th, 1952, the Government created the municipal corporation of the village of Chibougamau, under the administration of a manager and, on August 12th, 1954, an expanded territory became a town municipality under the jurisdiction of a municipal council appointed by provincial authority.

The permanent population of Chibougamau is around 3,000 inhabitants.

An increase of activity must be noted in the domain of the building industry. Worthy of note are the construction of a school and of a church for the Protestant population of the town and of a second Catholic school, besides several stores and two office buildings. Two of the town's four hotels, at the service of the travelling public, have been enlarged.

The municipal authority has decided to municipalize the services of electricity, and projects for the distribution of that commodity were started in June, 1955.

The Campbell Chibougamau mine is in continuous operation, and ore is shipped by truck via St-Félicien.

The quantity of ore already delimited at Copper Cliff and New Royran mines is of such importance that the management of these mining companies is planning the purchase of 200 lots at Chibougamau to build homes for their employees. Authorities of Campbell Chibougamau mines also plan to build twenty additional homes for a similar purpose.

Canadian National Railways has produced a plan showing the proposed location of its main thoroughfare and of its service lines at the entry of the town. This project being known, it is now possible to establish the subdivision by lots of an industrial zone covering a large area of land.

Murdochville

In Holland township, electoral district of Gaspé-North, a mining village site having been selected, Gaspé Copper Mines Limited was authorized to subdivide in lots and to organize the area formed by Block 9, the surface rights of which were conceded on May 21st, 1952, and by the east section of Block 1.

On July 8th, 1953, the Government created by letters patent a town municipality known as Murdochville and it appointed the first members of the first municipal council. The territory of the new municipal corporation thus was enlarged and now is approximately 25 square miles.

A very comfortable hotel is at the convenience of travellers and there is also a movie theatre, and a church with resident pastor. The construction of a school, an arena and a recreational centre is also being studied. The total cost of these buildings may well reach a million dollars. The mining company also plans the construction of 80 additional homes. The municipal authorities are planning the subdivision of an additional tract of land.

Noranda, Rouyn

These two towns with adjoining territories have now a total population of 27,000 inhabitants.

There is great activity in the field of construction, particularly in the extension and improvement of municipal projects such as aqueduct and sewage systems,sidewalks, and paving of streets. In the field of education conditions are improving with the building of four large schools and the construction of an important wing to the classical college.

Schefferville

On January 14th, 1954, the Government established the mining town of Schefferville in the territory of New Quebec. The site chosen covered the area of Block 8, situated on the west shore of Knob lake, terminal of the Quebec North Shore and Labrador Railway Company railroad.

On May 5th, 1955, lot 3-1 was added to the area mentioned above.

On July 14th, 1955, the municipal corporation of the town of Schefferville was constituted with a municipal council having jurisdiction over a territory of 15.26 square miles.

The cadastral division and the sale of building lots come under the administration of the Department of Mines in collaboration with the Department of Municipal Affairs.

The permanent population is in the neighbourhood of 3,000 inhabitants. General stores, a movie theatre, a church and rectory, which will eventually serve as a bishopric, are already established. Among the immediate future projects are included the building of schools, Protestant churches, a modern hotel, and a recreational centre.

Peat Bog Drainage

In conformity 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 to be distributed among all operators of peat bogs in proportion to the estimated cost of drainage work carried out by each one of them. The new drainage ditches form a total of 111,402 linear feet. During the course of the year peat bogs were exploited in the following electoral districts: Charlevoix, Chicoutimi, Dorchester, Matane, Rimouski, Rivière-du-Loup.

SECRETARIATE

During the year reviewed, the administrative section of the Department was reorganized and more responsibility was given to the secretariate.

This Branch, under the direction of Raymond Cormier, Secretary of the Department, is now responsible for the personnel, the Divisions of Purveyor and Equipment, and the Distribution of Publications, and Publicity.

Equipment

The Division of Equipment, under C.R. Staniforth, supplied the necessary material for the thirty-eight crews engaged in field work for the Geological Surveys, Mineral Deposits, and Civil Engineering Works Branches. This material comprised automobiles (jeeps and trucks), precision instruments, tents, canoes, outboard motors, kitchen utensils, etc.

This Division is likewise charged with the upkeep of the fleet of the Department's motor vehicles, thirty-three in all.

Distribution of Publications

The personnel of this Division, which is under the direction of Noé Lamontagne, sent out 63,667 publications in reply to requests for information concerning the geology and mineral wealth of the Province, in addition to 11,113 publications distributed according to the regular mailing lists, for a total of 74,780 publications.

Publicity and Information

To keep the public informed of the new developments in the domain of the mineral riches of the province and that of its mining industry, the 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 specialized 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.

The main lectures and articles in this domain this year are given below.

Speeches Delivered by Honourable W.M. Cottingham

1955

May 24	St. George's Kiwanis Club, Montreal
May 30	Chemical Institute of Canada, Chateau Frontenac, Quebec
June 12	The Laurentian Chamber of Commerce, Montreal
June 15	Montreal Westward Rotary, Montreal
June 15	Official opening of the Regional Exhibition of Lachute
July 26	Rotary Club, Chateau Frontenac, Quebec
Aug. 21	Official opening of the Forestry Association Exhibition of Western Quebec, Noranda
Sept. 1	Richelieu Club, Queen's Hotel, Montreal
Sept. 24	Chamber of Commerce of the Province of Quebec, Albert Hotel, Rouyn
Oct. 1	Association of Protestant School Commissions of the Province of Quebec, Ste-Agathe
Oct. 5	Electrical Club of Montreal, Queen's Hotel, Montreal
Oct. 9	Federation of Charitable Works of the District of Lachute, Lachute
Oct. 13	Richelieu Club of Lachute, Lachute
Oct. 23	Official opening of a school at St-Philippe, electoral district of Argenteuil
Nov. 11	Remembrance Day, Memorial Park, Lachute

Nov. 30 Renaissance Club, Quebec
Dec. 8 Official opening of a school in Ayersville, electoral district of Argenteuil

1956

Feb. 6 Canadian Ceramic Society, Ste-Marguerite
Feb. 13 Talk over radio in English
Feb. 15 Talk over radio in French
Feb. 27 Canadian Credit Men's Trust Association, Queen's Hotel, Montreal
Mar. 16 Sportsman Show, Palais du Commerce, Montreal
Mar. 29 Lions Club of Montreal, Mount Royal Hotel

Articles under the Signature of Honourable W.M. Cottingham

1955

Sept. The Financial Times: Marked Expansion Ahead for the Mining Industry of Quebec
Dec. The Gazette: The Mineral Industry of Quebec
Dec. Financial Post: The Mineral Industry of Quebec

1956

Jan. The Clay Products News and Ceramic Record: The Mineral Resources of the Province of Quebec and the Ceramic Industry
Feb. La Tribune: L'industrie minière dans les Cantons de l'Est de la Province de Québec et les environs au cours de l'année 1955
Mar. The Western Miner: The Mining Industry of the Province of Quebec during 1955

Other Articles and Lectures

By Jean-Paul Drolet, Chief of the Division of Technical Information:

Procédure à suivre pour obtenir des droits de mine dans la province de Québec; appeared in the special number of the mining industry, Le Devoir, June 14, 1955.

L'industrie minérale de la province de Québec: appeared in Les Annales des Mines de France, October issue, 1955.

Quebec Mining Industry's Future Looks Vast: appeared in the annual number of The Northern Miner, December 8, 1955.

Revue des développements récents de l'industrie minière et métallurgique dans la province de Québec: illustrated lecture presented before members of the Kiwanis Club of Quebec, Chateau Frontenac, Dec. 15, 1955.

L'industrie minière de Québec et les nouvelles carrières minérales offertes aux étudiants: lecture presented before the student's section of the C.I.M.M., Laval University, February 3, 1956.

Quebec Mining Laws Simplify Claim Staking Procedure: appeared in The Northern Miner, March 1, 1956.

Les mines de Québec et les opportunités qu'elles offrent aux nouveaux gradués: illustrated lecture presented before members of the A.J.C., Quebec seminary March 20, 1956.

Mode d'acquisition des droits de mine dans la province de Québec: appeared in the review "L'Ingénieur", spring issue, 1956.

New Mines to Lift Quebec Output: New Quebec's iron ore production soon to double that of all Canada; Chibougamau and Gaspé areas moving to raise copper output: three articles appearing in The Journal of Commerce, New York, Mar. 22, 1956, and following.

By W.N. Ingham and Maurice Latulippe, resident geologists at Val d'Or:
Lithium Deposits, Lacorne Area, Quebec: prepared for a symposium on industrial minerals, to be published by the C.I.M.M.

By O.-D. Maurice, geologist:
A New Look at the Geology of the Oka Hills, Quebec: lecture presented at Royal York Hotel, Toronto, during the meeting of Prospectors and Developers Association, Mar. 6, 1956.

By Roger Blais, geologist:
Geology and Mineral Deposits on the North Shore of the St. Lawrence River: lecture presented at the Royal York Hotel, Toronto, during meeting of Prospectors and Developers Association, Mar. 7, 1956.

DIVISION OF MINERAL STATISTICS

This Division's main function is to collect, monthly and annually, figures of statistics relating to the mineral industry of the Province of Quebec and to answer requests for information.

These statistics are collected from reports supplied directly to this Division by the operators exploiting mineral deposits in the Province, to whom are sent appropriate questionnaires from time to time.

This Division of the Department of Mines works in collaboration with the Federal Bureau of Statistics which utilizes the same sources of information. The latter looks after the printing of the questionnaires. The Division forwards these printed forms to those concerned and sees to it that they are answered and returned. These reports are requested in two copies and as soon as they are found acceptable, one of the copies is sent to Ottawa. The tabulation of their contents is made at both places and the results compared.

Most of the figures thus obtained are shown in another section of this report as well as in the report which the Department publishes annually under the title of "The Mining Industry of the Province of Quebec" and in some of the monthly and tri-monthly bulletins this Department publishes. The other information is at the disposal of the Department and of the interested public upon request.

The following table indicates the different forms which this Division had to handle in the course of the calendar year 1955:

	Number of Returns Received
Annual reports on the mineral production and on mining operations	3,128
Annual reports from building contractors on the source of the materials they used	104
Monthly reports on the mineral production	731
Reports on capital received from certain sources by the mining companies	791
Total	4,754

Two other surveys were also launched: the first concerning the quantities of timber used by the mine operators for which were sent 108 questionnaires and the other concerning the expenditures of

mining companies for the welfare of their employees and the latter's families, which necessitated the mailing out of 55 questionnaires. This work is not complete, a certain number of reports not having been received yet.

The reports on the mineral production and those on mining operations show that 1,509 companies exploiting mineral deposits were in production during at least part of the year 1955 and that 360 others carried out exploration or development work on mining properties not in production.

The last reports mentioned in the above table give the net amounts of funds received by the companies that owned mining properties in the province during the course of 1955, the sale of capital shares, sale of bonds or other titles issued, and of long-term loans. The returns received from these three sources, in 1955, totalled $76,000,000, apparently destined to be spent mostly in the province of Quebec. A similar survey made last year for 1954 had given a total of $56,000,000.

The number of new mining companies was considerably higher than that for the preceding year. During 1955, 105 of these companies were incorporated by Quebec charter. Moreover, 34 companies with Ontario charter and 3 with a Federal charter, incorporated in 1955, acquired mining rights in the province of Quebec. It may, therefore, be stated that 142 companies were organized to operate in the province of Quebec. In 1954 there were 112, 91 of which had a Quebec charter, 15 with an Ontario charter, and 6 with a Federal charter.

Following is a list of the new mining companies for 1955, showing their Head Office, the date of their incorporation, and their capitalization.

Mining Companies Incorporated by Quebec Charter in 1955

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Accurso Quarry Limited	Montreal	Oct. 3	500	$ 10
			(a) 350	$100
Aero Mining Corporation	Montreal	Dec. 12	5,000,000	$ 1
Aldfield Mining Corporation Ltd..	Montreal	June 29	5,000,000	$ 1
American Uranium Corporation	Montreal	April 8	1,000	$ 1
Ametal Mining Corporation	Montreal	July 4	3,500,000	$ 1
Associated Mining Corporation ...	Montreal	Dec. 19	5,000,000	$ 1

(a) Preferred shares

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Atlas Nickel Corporation	Montreal	Feb. 24	5,000,000	$ 1
Atomic Mining Corporation	Montreal	April 18	5,000,000	$ 1
Auger Lake Mining Corporation..	Montreal	Dec. 21	4,000,000	$ 1
Barry Copper Mines Ltd.	Montreal	Dec. 7	3,500,000	$ 1
Bateman Bay Mining Company	Montreal	May 24	4,000,000	$ 1
Bli-Riv Uranium and Copper Corporation Ltd.	Montreal	May 11	5,500,000	$ 1
Bluestone Quarry Co.	Montreal	April 13	100	$ 10
			(a) 300	$100
Bolton Copper Mines Ltd.	Montreal	March 17	5,000,000	$ 1
Bornite Copper Corporation Ltd.	Rouyn	Oct. 5	5,000,000	$ 1
Bressani Mines Limited	Montreal	Feb. 8	5,000,000	$ 1
Brique St-Jean Ltée	Deschaillons	May 11	250	$100
			(a) 150	$100
Brome Copper Corporation	Montreal	April 4	5,000,000	$ 1
Bruno Mining Corporation	Montreal	Oct. 17	4,000,000	$ 1
Camyoung Mining Syndicate Co. Ltd.	Montreal	July 29	100,000	$ 1
Canadian British Aluminum Co. Ltd.	Montreal	Oct. 24	1,540,000	None
Canadian Oil and Gas Reserves (Quebec) Ltd.	Montreal	Aug. 26	40,000	$ 1
Canadian Shield Mining Corp. ..	Montreal	Aug. 19	2,000,000	$ 1
Cardicore Uranium Corporation .	Montreal	Feb. 11	5,000,000	$ 1
Carrière Bernier Ltée	St-Jean	Feb. 4	400	$100
Carrières Sept-Iles Incorporée (Les)	Sept-Iles	Nov. 17	750	$100
Central Lithium Corporation ...	Montreal	April 26	4,000,000	$ 1
Champlain Exploration Inc.	Quebec	Aug. 23	50,000	$ 1
Chess Uranium Corporation	Montreal	March 16	4,000,000	$ 1
Chibougamau Asbestos Limited ..	Montreal	Sept. 2	5,000,000	$ 1
Cleveland Copper Corporation ..	Montreal	Aug. 4	4,000,000	$ 1
Columbia Lithium Corporation ..	Montreal	March 14	5,000,000	$ 1
Consolidated Lithium Corporation of Canada Limited	Amos	March 17	4,000,000	$ 1
Continental Iron and Titanium Mining Limited	Montreal	May 2	5,000,000	$ 1
Danville Asbestos Mines Ltd. ..	Montreal	April 29	5,000,000	$ 1
Deer Lake Mining Corporation ..	Montreal	Oct. 24	4,000,000	$ 1
Dupont Mining Co. Ltd.	Montreal	Sept. 13	4,000,000	$ 1
Eastern Mining and Smelting Corp. Limited	Montreal	Dec. 16	5,000,000	$ 1

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Eastmain Mining and Exploration Company Limited	Quebec	Dec. 30	5,000,000	$ 1
Enterprise Mining Company Ltd..	Montreal	March 1	4,000,000	$ 1
Galithium Mines Ltd.	Montreal	May 21	5,000,000	$ 1
Gamache Exploration and Mining Company Limited	Montreal	May 30	10,000	$ 1
Gamma Ray Surveys (Quebec) Ltd.	Montreal	Aug. 26	40,000	$ 1
Golden West Minerals (Quebec) Ltd.	Montreal	Aug. 26	40,000	$ 1
Great Sweet Grass Oils (Quebec) Ltd.	Montreal	Aug. 11	40,000	$ 1
Hastings Mining and Development Co. Ltd.	Montreal	April 4	5,000,000	$ 1
Imadco Mining Corporation	Montreal	June 17	40,000	$ 1
International Potash Minerals, Limited	Montreal	Dec. 2	5,000,000	$ 1
Lake Renzy Mines Limited	Montreal	Nov. 2	3,500,000	$ 1
Lake Sand and Gravel Ltd.	Montreal	May 3	1,500	$ 10
			(a) 500	$ 10
Laurbec Mining Company	Quebec	Nov. 29	3,000,000	$ 1
Lura Corporation Ltd.	Montreal	Dec. 19	1,000,000	$ 1
McKenzie Northern Mines Ltd. ..	Montreal	April 29	5,000,000	$ 1
Madison Mining Corporation	Montreal	May 13	4,000,000	$ 1
Major Lithium Corporation	Montreal	April 26	5,000,000	$ 1
Marvel Granite Inc.	St-Basile	Aug. 16	10,000	None
			(a) 1,500	$100
Marvelor Mines Ltd.	Montreal	May 26	3,500,000	$ 1
Melrose Granite Company	Montreal	June 22	400	$100
Mico Mining and Development Corporation	Montreal	July 11	5,000,000	$ 1
Mineral Land Holdings Corp. ...	Montreal	Sept. 9	2,000	None
			(a) 1,200	
Miron Quarry Ltd.	Ville Saint-Michel	Nov. 8	1,000	$ 10
			(a) 400	$100
Mopa Gas and Oils Ltd.	Montreal	April 15	5,000,000	$ 1
Nahanni Mining Corporation	Montreal	May 23	3,000,000	$ 1
National Asbestos Limited	Montreal	July 26	50,000	$ 1
New Castle Mining Limited	Montreal	Nov. 15	4,000,000	$ 1
Norcopper and Metals Corporation	Montreal	Oct. 3	4,000,000	$ 1
Northland Lithium Mines Ltd. ..	Montreal	Feb. 4	5,000,000	$ 1

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Nuclear Mineral Fuels Ltd	Montreal	June 15	1,000	$ 1
Oka-Bathurst Mining Corp. Ltd. .	Montreal	May 27	5,000,000	$ 1
Oka Sand and Gravel Inc.	Saint-Michel	March 4	2,000	$ 10
			(a) 800	$100
Orefield Mining Corporation	Montreal	Oct. 3	5,000,000	$ 1
Ottawa Uranium and Copper Mining Corporation	Montreal	Oct. 26	5,000,000	$ 1
Pegmabelle Mining Corporation ..	Montreal	June 15	2,000,000	$ 1
Pennbec Mining Corporation	Montreal	Sept. 7	4,000,000	$ 1
Petawaga Mining Corporation	Montreal	Nov. 29	4,000,000	$ 1
Pool Mining Corporation	Montreal	May 20	5,000,000	$ 1
Preissac Molybdenite Mines Ltd..	Montreal	Nov. 14	3,000,000	$ 1
Prospecting Geophysics Ltd.	Montreal	Aug. 17	40,000	$ 1
Quebank Uranium Copper Corp. ...	Montreal	Feb. 22	3,000,000	$ 1
Quebec Ammonia and Gas Exploration Limited	Montreal	Sept. 7	100,000	$ 1
Quebec Cleveland Mining Corp. ..	Montreal	April 15	6,000,000	$ 1
Quebec Oka Uranium Mines Ltd. ..	Montreal	April 26	4,000,000	$ 1
Red Diamond Mines Ltd.	Montreal	Dec. 27	3,000,000	$ 1
Rigaud Sand and Gravel Transport Co. Ltd.	Rigaud	Feb. 22	400	$100
St. Lawrence Drilling Co. Ltd. .	Sherbrooke	Jan. 24	1,000	$100
			(a) 1,000	$100
St. Maurice Minerals Corporation	Montreal	March 24	4,000,000	$ 1
Sables St.Maurice Sand Inc.(Les)	Charette	Dec. 6	15,000	$ 5
			(a) 1,500	$100
Sables Shawinigan Sand Inc.(Les)	Charette	Dec. 6	10,000	$ 5
			1,000	$100
Shefford Copper Mines Ltd.	Montreal	Feb. 10	4,000,000	$ 1
Silica Company of Quebec Ltd. ..	Montreal	May 11	40,000	$ 1
			(a)18,000	$ 20
Simpson Chibougamau Mines Ltd. .	Quebec	Sept. 21	4,000,000	$ 1
Stelco Mines Quebec Limited	Montreal	March 3	400	$100
Superior Smelters Corporation ..	Montreal	Aug. 29	5,000,000	$ 1
Swanson Mines Limited	Montreal	April 13	4,000,000	$ 1
Terra-Nova Explorations Ltd. ...	Quebec	Feb. 7	20,000	$ 1
Terry Mining Corporation	Montreal	Sept. 22	5,000,000	$ 1
Texacan Uranium Corporation	Montreal	May 4	1,000	$ 1
Thero Metals Limited	Ste-Thérèse	July 27	100,000	$ 1
Thetford Mining Corporation	Montreal	Sept. 14	4,000,000	$ 1
Tower Mines Co. Limited	Montreal	Dec. 10	4,000,000	$ 1

Company	Head Office	Date of Incor-poration	Number of Shares	Par Value
United Lithium Corp.	Montreal	Feb. 20	4,000,000	$ 1
United Uranium Corporation Ltd.	Montreal	April 5	5,000,000	$ 1
Waterloo Marble Quarries Ltd...	Waterloo	March 21	500	$100
Wilberforce Uranium Mining Corporation	Montreal	Jan. 19	4,000,000	$ 1
Yamachiche Gas and Oil Co. Ltd.	Montreal	May 3	1,000	$ 1

Mining Companies Incorporated by Ontario Charter in 1955
Holding Mining Rights in Quebec

Company	Head Office	Date of Incor-poration	Number of Shares	Par Value
Arista Exploration Limited	Toronto	June 28	200,000	$ 1
Atlas Chibougamau Mines Ltd. ..	Toronto	Aug. 16	5,000,000	$ 1
Auqdome Exploration Limited ...	Toronto	May 24	4,000,000	$ 1
Boros Chibougamau Mines Ltd. ..	Toronto	Oct. 24	5,000,000	$ 1
Burma Shore Mines Limited	Toronto	Jan. 28	5,000,000	$ 1
Cavalier Mining Corporation Ltd	Toronto	Feb. 10	3,000,000	$ 1
Chedabucto Mining Corp. Ltd. ..	Toronto	April 25	5,000,000	$ 1
Court Lithium Mines Limited ...	Toronto	April 22	3,000,000	$ 1
Desmac Exploration Limited	Toronto	July 14	250,000	None
Ferrous Chibougamau Research Limited	Toronto	Dec. 30	5,000,000	None
Fiedmont Lithium Mines Ltd. ...	Toronto	July 8	6,000,000	$ 1
General Lithium Mines Ltd.	Toronto	March 31	(a)50,000	$ 10
			3,000,000	None
Glenmar Lithium Mines Ltd.	Toronto	May 10	3,500,000	$ 1
Glenrich Uranium Mines Ltd. ...	Toronto	June 29	5,000,000	$ 1
Greek-Canadian Mines Ltd.	Toronto	Oct. 7	3,000,000	$ 1
Kopp Mines Limited	Toronto	Oct. 27	3,000,000	$ 1
Lac de Renzy Nickel Ltd.	Toronto	Sept. 26	5,000,000	None
Lagava Minerals Mines Ltd.	Toronto	June 9	3,000,000	$ 1
Lambton Copper Mines Ltd.	Toronto	May 4	5,000,000	$ 1
Lavillery Lithium Mines Ltd. ..	Toronto	June 3	100,000	$ 1
Maisonneuve Mines Limited	Toronto	July 8	3,000,000	$ 1
Mespi Mines Limited	Toronto	Dec. 2	3,000,000	$ 1
Merico Explorations Limited ...	Toronto	Nov. 14	4,000,000	$ 1
Midrim Mining Company Ltd.	Toronto	April 1	5,000,000	$ 1
Millkirk Chibougamau Mines Ltd.	Toronto	Aug. 4	5,000,000	$ 1

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Old Colony Explorers Ltd.	Toronto	Nov. 14	(a)50,000	$ 10
			60,000	None
Payrock Mines Limited	Toronto	Dec. 14	6,000,000	$ 1
Quebec Iron Mines Limited	Toronto	Feb. 22	100,000	None
Sico Mining Corporation Ltd. ..	Toronto	Feb. 25	3,000,000	$ 1
Struan Uranium Mines Ltd.	Toronto	May 24	5,000,000	$ 1
Tomrock Copper Mines Ltd.	Toronto	Aug. 4	3,000,000	$ 1
Vallée Lithium Mines Corp. Ltd.	Toronto	May 18	3,500,000	$ 1
Vankirk Mines Limited	Toronto	Nov. 4	5,000,000	$ 1
Wacanichi Mines Limited	Toronto	Dec. 20	4,000,000	$ 1

(a) Preferred shares.

Mining Companies Incorporated by Federal Charter in 1955
Holding Mining Rights in Quebec

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Canadian Flint and Spar Company (1955) Limited	Ottawa	Dec. 12	5,000	$ 10
Canamine Explorers Ltd.	Charlottetown, P.E.I.	April 5	(a)100,000	$ 10
			1,000,000	$0.10
Carey-Canadian Mines Ltd.	East Broughton	Feb. 14	5,000	$100

(a) Preferred shares.

DIVISION OF EDITING AND PRINTING

Maurice Brunet, chief of the division of editing and printing, submits the following report for the fiscal year ending March 31, 1956.

Following is a list of the publications of the Department of Mines edited during the fiscal year 1955-1956. All publications are issued in French and in English.

Geological Report No. 65 - Montauban-les-Mines Area, J.R. Smith
Geological Report No. 67 - Trente-et-un-Milles Lake Area, E. Aubert de la Rüe
Geological Report No. 68 - McGill Area, E. Aubert de la Rüe
Geological Report No. 70 - New Carlisle Map-Area, P.C. Badgley
Geological Report No. 71 - North Half of Obalski Township, R.B. Graham

Preliminary Report No.315 - General Report of the Minister of Mines of the Province of Quebec for the year ending March 31, 1955
Preliminary Report No.316 - Pashashibou Area, R.A. Blais
Preliminary Report No.317 - Mignault-Aigremont, A.-F. Laurin
Preliminary Report No.318 - Du Guesclin-Royal Area, A.-N. Deland
Preliminary Report No.319 - La Tuque Area (West Half), M.A. Klugman
Preliminary Report No.320 - Harveng Lake Area (West Part), R. Bergeron
Preliminary Report No.321 - Addington-Labelle Area, D.W.T. Pollock
Preliminary Report No.322 - Anville-Drouet Area, J.R. Remick
Preliminary Report No.323 - Blaiklock Area, R.-J.-E. Sabourin
Preliminary Report No.324 - Mule Lake Area, W.B. Emo
Preliminary Report No.325 - Leopard Lake Area (East Half) New Quebec, Pierre Sauvé
Preliminary Report No.326 - Manitou River Area, J.T. Jenkins
Preliminary Report No.327 - Accurate X-ray Fluorescence Analysis, Fernand Claisse
Preliminary Report No.330 - Description of Mining Properties visited in 1952 and 1953

Special Report 27 (S-27) - List of the Principal Operators and Proprietors of Mines and Quarries in the Province of Quebec
Special Report 28 (S-28) - List of the Geological Maps published by the Department of Mines of the Province of Quebec
Special Report 29 (S-29) - Notes on the Quebec Mining Act
Special Report 30 (S-30) - Descriptive Notes to accompany the Compilation of the Geology of the Southeast Quarter of Montbray Township, Jean Dugas
Special Report 31 (S-31) - Geology of the Northeast Quarter of Tiblemont Township, Maurice Latulippe
Special Report 32 (S-32) - Geology of the Northwest Quarter of Lacorne Township, Maurice Latulippe

Special Report 33 (S-33) - Geology of the Northeast Quarter of Destor Township, Jean Dugas

Special Report 34 (S-34) - Geology of the Southwest Quarter of Duparquet Township, Jean Dugas

Special Report 35 (S-35) - Geology of the Southeast Quarter of Destor Township, J.-E. Gilbert

Special Report 36 (S-36) - Northwest Quarter of Destor Township, Jean Dugas

COLLECTION OF DUES ON MINES

Sylvio Drouin, in charge of this division, submits the following report:

During the fiscal year 1955-56, the Department of Mines received sworn statements on mineral production from 36 mining companies. These returns give the statement of profits, accompanied by vouchers, as required by Division III of the Quebec Mining Act. From this source, the Department of Mines collected a sum of $3,485,851.02[A] on net profits as defined in the Mining Act.

There is a small annual acreage tax of 10 cents per acre due by holders of mining concessions who have not carried out mining or development work on their idle mining lands during the year (Quebec Mining Act, Div. VIII, Sec. 50). The Department of Mines received returns from 290 owners of unproductive properties. A sum of $3,582.76 was collected from 158 holders of such dormant properties. The other 143 holders of unproductive properties sent in sworn statements showing that expenditure in excess of two hundred ($200) dollars had been spent in development work on their concessions during the year. This is a statutory condition for exemption of the acreage tax mentioned above.

[A] There is a difference between the figures given in the table below by the assessor and those given 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".

Table XII - Comparative Statement of Revenue Collected by the Department of Mines during the Fiscal Years 1953-54 to 1955-56

(Prepared by Gérard Gagnon, Chief Accountant)

	1953-54	1954-55	1955-56
Miner's certificates	$ 104,240.00	$ 109,791.00	$ 196,859.00
Development licenses	545,988.97	647,963.60	801,175.44
Exploitation leases	100,000.00	100,000.00	100,000.00
Sales of mining concessions.	6,972.07	8,909.40	57,980.81
Fees for transfers of titles	21,540.00	31,020.00	54,016.00
Acreage tax on mining concessions	3,033.69	3,343.08	3,496.66
Rights on townsite lots	13,441.76	6,512.52	12,013.64
Rentals on townsite lots ...	216.00	2,849.00	826.00
Fees on yearly profits	4,478,200.36	3,621,735.80	3,480,414.85
Sales permits for unwrought metals	20.00	24.00	28.00
Water and sewage taxes		987.00	100.00
Rental of land on townsite lots		600.00	5,140.00
Sales of maps, blue prints, etc.	4,712.10	6,367.26	11,607.52
Sales of mineral collections	1,613.05	2,506.55	2,804.70
Fees for assays and analyses	3,975.92	10,217.80	21,620.65
Miscellaneous	11,483.51	12,194.81	13,177.80
Casual revenue	1,218.69	1,727.90	3,122.06
Total	$5,296,656.12	$4,566,749.72	$4,764,383.13

THE LIBRARY

During the year under review, the Library of the Department of Mines received 2,256 documents, which may be described as follows: 1,680 reviews, 632 reports, 502 pamphlets, 231 volumes, 21 manuscripts, and 190 maps.

Besides the numerous volumes it obtained through exchanges, the Library purchased in 1955-56 more than 133 volumes.

During the course of the year 65 reviews and 6 volumes were bound. Moreover, 70 maps, both geological and topographical, were mounted on canvas.

The public continued to show interest in questions pertaining to the mining industry as more than 500 visitors came to consult the volumes of our library.

SCHOLARSHIPS

As in the previous years, the Department of Mines has granted scholarships to students in geology, in metallurgy or in mining exploitation. This amount distributed for the year 1955-56 was the same as for the preceding year, that is $45,000.00.

The Committee, appointed by the Minister for the recommendation of awards for the year to the most deserving students was composed of the following: Eugène Larochelle, General-Secretary, Quebec Metal Mining Association, as Chairman; Ignace Brouillet, President of the Ecole Polytechnique; J.U. MacEwan, Director of the Department of Metallurgy, McGill University; Reverend J.-W. Laverdière, Director of the Department of Geology, Faculty of Science, Laval University; Gérard Letendre, Director of the Department of Mines and Metallurgy, Faculty of Science, Laval University; and H.G. Young, Principal of Quebec High School. Miss Gisèle Landreville acted as secretary to the Committee.

While giving preference to requests of graduates anxious to continue more advanced studies, the Committee was more severe in the selection of these candidates so as to be able to come to the assistance of a larger number of under-graduate students.

The Department of Mines awarded in 1955-56 seventy-seven scholarships, distributed as follows:

Candidates to post-graduate courses	23
Students entering final year in science faculties	22
Students in less advanced years	32
Total	77

The members of the Committee wish, on behalf of those who received scholarships, to thank the Government for the financial assistance which was given them to carry on their studies.