

GENERAL REPORT

OF THE

MINISTER OF MINES

OF THE

PROVINCE OF QUEBEC

FOR THE YEAR ENDING MARCH 31st

1954



Quebec, October, 1954.

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, 1954, in accordance with Section 229 of the Quebec Mining Act.

Your respectful servant,

W.M. COTTINGHAM,
Minister of Mines.

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REPORT OF THE DEPARTMENT OF MINES

OF THE PROVINCE OF QUEBEC

For the Fiscal Year Ending March 31st, 1954

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 the 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, 1953, to March 31st, 1954.

Your obedient servant,

A.O. Dufresne,
Deputy Minister.

THE MINING INDUSTRY OF THE PROVINCE OF QUEBEC

DURING THE FISCAL YEAR 1953-54

The total value of the minerals extracted from the mines of the Province of Quebec at present accounts for approximately 20 per cent of the total value of the production in Canada, and Quebec holds second place among the ten provinces of the country. During the course of 1953, the value of the mineral production was \$252,354,181, a decrease of more than \$18,000,000, as compared with the results obtained during the preceding year. This is the first time in ten years that a reduction in the value of our mining production has been indicated. The main reason for the decrease recorded in 1953 was a reduction of \$17,000,000 in the value of the metallic substances extracted during the course of the year. Copper, gold and lead were the metals most

affected. The strike that broke out in the Rouyn district during 1952 was carried on until February 13th, 1953. During several months, this cessation of operations made it impossible for numerous mines of the Western Quebec region to ship their ore concentrates to the Noranda smelter, which was closed.

Preliminary statistics for the first three months of 1954 indicate that the production for the current year will be notably higher, particularly in the category of metals, where a more sustained production has been noted in Western Quebec and in New Quebec where the first shipments of iron ore have started. A slight increase in the production of industrial minerals is also foreseen, as well as for raw materials for construction purposes.

The value of the ten metallic substances produced during 1953 was \$103,278,622, in comparison with \$120,283,133 for 1952. Values obtained were slightly increased only for silver, bismuth, ingot iron, titaniferous iron, and selenium. As regards quantitative production an increase was shown for silver, bismuth, ingot iron, selenium, and zinc. The average price for zinc was low during the course of 1953, thus explaining the diminution in the value received.

Industrial minerals also showed a slight reduction. In general, the values obtained for the fourteen industrial minerals produced were maintained, except for asbestos, the main industrial mineral, where a diminution of \$4,000,000 was registered.

In the category of mineral substances used as building material, there was also a decrease in value of more than \$500,000, in comparison with the preceding year.

The pie-chart on page 8 shows the various values in percentages of the main substances produced during the course of 1953.

The most important mining developments presently underway are those which will reach production stage during 1954, namely, the iron ore deposits situated in what is known as "the New Quebec Iron Range". The major part of that geological formation, which stretches over a length of some 500 miles and has an average width of 45 miles, is located in New Quebec. In a section of this formation, the presence of several hundred millions of tons of high-grade iron ore has been confirmed. The development of these deposits has necessitated gigantic exploration work, as well as the construction of a 360-mile railroad from Sept-Iles to Schefferville, the new mining town situated near Knob Lake, in New Quebec.

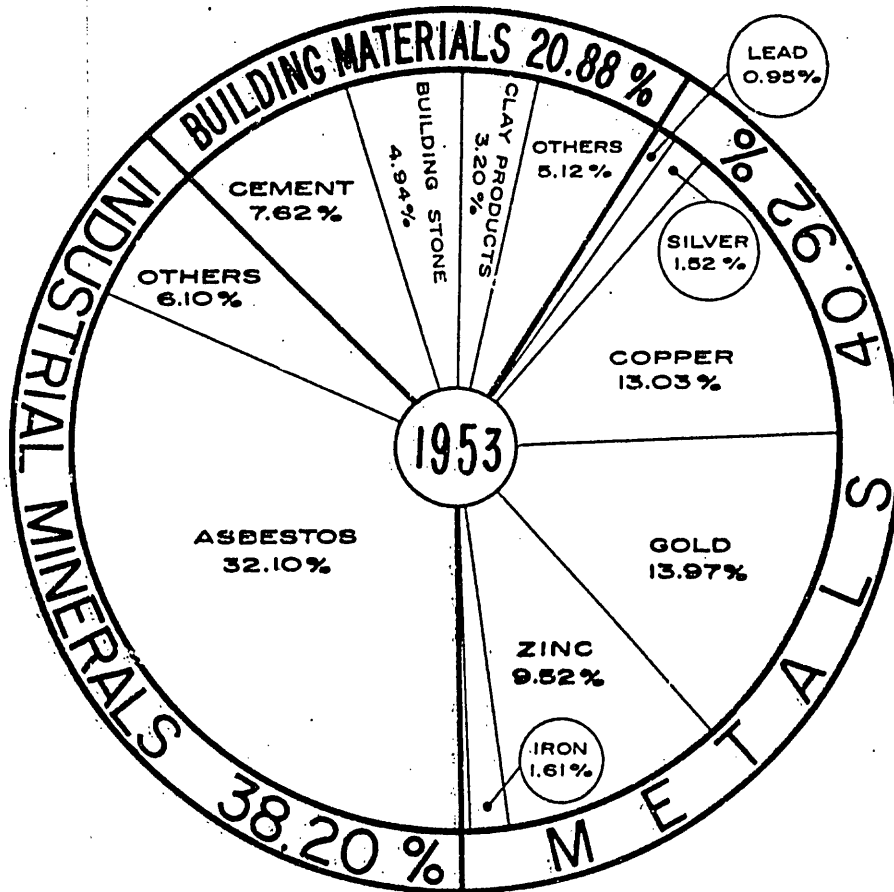
The construction of the Sept-Iles-Schefferville railroad was completed February 12, 1954. It is expected that, within a few years, this railroad will carry alone approximately twice as much iron ore as all the other railroads of the country put together. Despite the fact that, at the start, production will be limited to one and a half million tons for 1954, it is foreseen that this production will be increased to five million tons by 1955, and that the rate of shipments will continue gradually to increase to 10,000,000 tons by 1957. This quantity will remain at that level until the completion of the Saint Lawrence seaway.

In another remote region, that of Allard Lake, about 27 miles North of Havre-St-Pierre, was continued the exploitation of what is probably the greatest and richest deposit of ilmenite in the world. The titaniferous ore is shipped to Sorel, Quebec, a town on the south shore of the St. Lawrence river, not far from Montreal, where Que. Iron and Titanium Corporation treats the ore in specially built electric blast furnaces.

From the ore, two products are obtained at the Sorel smelter, namely, iron and steel ingots and slags containing as much as 70 per cent titanium oxide. With its five blast furnaces, during 1953, the Sorel plant treated 300,000 tons of the ore, which produced 100,000 tons of iron and steel and 100,000 tons of slags rich in titanium oxide.

At the head of the York river in the Gaspé peninsula, a mining enterprise of wide scope is beginning to operate. There, Gaspé Copper Mines Limited, a subsidiary of Noranda Mines Limited, has started the development of a copper deposit, the reserves of which are estimated at more than 70,000,000 tons with an average tenor of 1.3 per cent copper. Relying on these reserves, Gaspé Copper Mines is launching the development of a new mine and building a concentration plant capable of milling, at the start, 6,500 tons of ore per day, which is the highest initial processing rate so far reached in the Canadian mining industry. A smelting plant with a daily capacity of 125 tons of metallic copper production is also being built by the same firm. Besides the proper mining operations and the construction of a modern mining town at Murdochville, capable of meeting the needs of 4,000 people, 62 miles west of Gaspé, Québec. The operators of the mine had to face the problem of building new roads in the region, as well as contributing to the bringing into the district the electric energy necessary to the metallurgical treatment of their ore.

VALUE OF THE MINERAL PRODUCTION OF THE PROVINCE OF QUEBEC



METALS	\$ 103,278,622
INDUSTRIAL MINERALS	96,392,456
BUILDING MATERIALS	52,683,103
TOTAL VALUE	\$ 252,354,181

Table I.-Value of the Mineral Production of the
Province of Quebec in Calendar Years 1952 and 1953
(Compiled by C.O. Beaudet, Chief, Division of Mineral Statistics)

	Value 1952	Value 1953
METALLICS		
Bismuth	\$ 27,171	\$ 49,136
Copper	39,297,212	32,886,057
Gold	(a)38,143,709	(a)35,255,511
Iron (ingots)	1,815,007	4,064,039
Lead	3,406,353	2,387,930
Molybdenite	409,831	215,527
Selenium	256,198	476,839
Silver	3,788,626	3,840,732
Titaniferous iron ore	459	80,085
Zinc	33,138,567	24,022,766
Sub-Totals	<u>\$120,283,133</u>	<u>\$103,278,622</u>
NON-METALLICS		
I.-Industrial Minerals		
Arsenic	\$ 5,399	\$ ---
Asbestos	85,248,098	81,000,775
Feldspar	293,007	319,146
Industrial lime	3,426,334	3,588,822
Industrial limestone	1,153,226	1,146,076
Magnesitic dolomite,brucite and magnesium Marl	2,715,266	3,056,392
	25,992	51,450
Mica	79,544	99,080
Mineral water	165,593	165,334
Ochre and iron oxide	194,922	195,801
Peat (moss and humus)	405,852	587,671
Quartz and industrial sand	583,644	603,524
Soapstone and talc	130,901	160,546
Sulphur	1,567,953	1,211,343
Titanium dioxide (in slag)	1,238,103	4,206,496
Sub-Totals	<u>\$ 97,233,834</u>	<u>\$ 96,392,456</u>
II.- Building Materials		
Building lime	\$ 608,197	\$ 614,105
Building limestone	8,817,186	9,195,468
Cement	18,838,458	19,232,112
Clay products (Brick	4,937,021	6,095,824
(Other products	1,706,455	1,973,581
Granite	4,873,257	3,265,420
Marble	165,056	140,328
Sand and gravel	12,744,630	11,630,482
Sand-lime products (Brick	282,998	397,924
(Blocks	---	19,200
Sandstone	246,916	116,359
Slate and shale	2,411	2,300
Sub-Total	<u>\$ 53,222,585</u>	<u>\$ 52,683,103</u>
Grand Totals	<u>\$270,739,552</u>	<u>\$252,354,181</u>

1) Value in Canadian funds. The standard value at the rate of \$20.671834 per ounce troy is \$21,173,622 for 1953 and \$23,008,475 for 1952.

During the course of 1952, the Department of Mines completed the construction of a 62-mile road linking Gaspé to the mine situated in Holland township. In cooperation with Gaspé Copper Mines Limited, the Department of Mines started the construction of a new 24-mile road which will link the mine with Anse Pleureuse and at the same time give easy access to Mont-Louis.

Besides shipments of anode copper to the Montreal refinery, the port of Mont-Louis will also receive all the necessary supplies for the enterprise, including the crude oil necessary as fuel for the blast furnaces of the Company. As regards the required electrical energy, the hydro-electric power development on the Bersimis river, on the Quebec north shore, will supply it for the enterprise. Underwater or submarine transmission cables from Manicouagan point will reach the Gaspé peninsula at the village of Les Boules, a distance of more than 32 miles. From Les Boules, an overland transmission line of 150 miles will bring the electrical energy to the site of the mine in Holland township. Construction work on that line should be completed by the first weeks of 1955, when the blast furnaces will be ready to operate.

The Chibougamau region has been perhaps the theatre of the greatest mining activity in the Province of Quebec during the course of the last few years. This region covers an area of some 25,000 square miles and is located in geological formations similar to those of Abitibi. According to estimates prepared by interested companies, the reserves of the Chibougamau region exceed 10,000,000 tons of ore valued at more than \$100,000,000. As an immediate result of extensive exploratory work and the construction of a 150-mile road from St-Félicien to the town of Chibougamau, this new mining district reached the production stage by December 1953, when Opemiska Copper Mines started ore shipments. Three other mines, also very promising, will contribute, in the near future, to the production of that region. These three mines are Campbell Chibougamau Mines Limited, Merrill Island Mining Corporation, and Chibougamau Explorers Limited.

In view of the distance between each of these three enterprises, it was necessary to build secondary roads to link them to the main highway between St-Félicien and Chibougamau. In all cases, they were gravelled regular rural roads 24 feet wide. In one case, however, a 3,500-foot causeway had to be built across Doré lake to link Merrill island to the mainland. Owing to the completion of these projects, the mining companies which operate in the Chibougamau region have realized that the cost of development and exploitation compares advantageously with that of any other mining district of the Province of Quebec, where other enterprises already operate.

Table II.- Subdivision of the Annual Value of the Mineral
Production of the Province of Quebec, 1948-1953

Year	Metals	Per Cent	Industrial Minerals	Per Cent	Building Materials	Per Cent	Total
1948	\$ 66,103,854	44	\$50,749,672	33	\$35,431,519	23	\$152,285,045
1949	82,728,089	51	47,173,969	28	35,266,545	21	165,168,603
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

The asbestos industry of the Province of Quebec is located exclusively in the regions of Broughton, Thetford Mines, Black Lake and Asbestos, in the Eastern Townships. These remarkable deposits have produced asbestos for more than 75 years, and this mineral is the most important item in our list on mineral production in the province.

Despite the fact that the total production of asbestos mines suffered a drop during the course of the year under review, this industry experienced a new expansion, thanks to the transformation programme presently underway. At Asbestos, Canadian Johns-Manville is building a new processing mill to replace the existing one and, at the same time, is converting operations at its Jeffrey Mine, which is the largest in the world, to expand underground.

At Vimy Ridge, Asbestos Corporation, Limited, is building a new processing plant with a capacity of 5,000 tons of the ore per day, whereas in the Black Lake region Johnson's Limited has completed the construction of a new plant capable of processing 4,000 tons of ore per day.

In the same region, Lake Asbestos of Quebec Limited, a subsidiary of American Smelting and Refining Company is getting ready to mine the properties of United Asbestos Corporation Limited, the main deposit of which is below the waters of Black lake. To permit this exploitation, by the open-pit method, it will be necessary to empty Black lake and undertake certain projects with a view to diverting several streams which are now flowing into the lake.

In the region of Thetford Mines, Bell, King and Johnson mines were handicapped in their open-pit exploitation operations by

many surface establishments in the town of Thetford. These companies are now completing a re-location project by which part of the town will be moved to make possible further expansion of the industry. Early estimates foresee that the re-location will be completed within the next ten years, although three-quarters of the project will have been realized by the end of 1954.

Among other projects worth mentioning, must be noted the construction and actual operation of the Marelan fire brick plant in the county of Argenteuil. This new plant which gets its ore from Kilmar mine has a capacity of 200 tons per day, which makes it the most important of its type in the Commonwealth.

In the building materials field, St-Lawrence Cement has started the construction of its mill at Villeneuve, east of Quebec city. This cement plant will be in full production during 1955 with an annual capacity of 500,000 barrels.

The present production of cement, which is about 7 1/2 million barrels annually, is derived mainly from the two plants of Canada Cement Company located at Montreal East and at Hull. The remainder of the cement production comes from Ciment Québec Inc., which has its plant at St-Basile, Portneuf county.

Among the other mineral substances used as construction material, the most important in terms of their production value are sand and gravel, construction stone, and clay products, the last mentioned consisting of bricks, the production value of which presently surpasses \$6,000,000.

LEGISLATION

During the session of 1953-1954, the Quebec Mining Act was amended as follows:

1. Section 35 of the Quebec Mining Act (Revised Statutes, 1941, chapter 196), as amended by section 2 of the act 13 George VI, chapter 57, is again amended by replacing, in the first line thereof, the word "No" by the words "Subject to section 35a, no".

2. The said act is amended by adding thereto, after section 35, the following:

"35a. The Lieutenant-Governor in Council may, however, when he deems it in the public interest, authorize, upon such conditions as he may stipulate, the owner of a mining concession to cede surface rights in the lands forming part thereof."

3. Section 36 of the said act is amended by replacing the word and figures "section 35", in the last line of the second paragraph, by the words and figures "sections 35 and 35a".

4. Section 44 of the said act is amended by adding thereto the following paragraphs:

"Whoever has acquired, with title, mining rights in privately owned lands shall prescribe the ownership of such rights by public and peaceful possession by himself and his predecessors in title during thirty years, subject to the rights of the Crown. The registration of a title of acquisition of such mining rights shall constitute public possession for the purposes of such prescription.

The provisions of the two preceding paragraphs shall not be interpreted as affecting any prescription heretofore or hereafter otherwise acquired or incurred under the Civil Code, in respect such mining lands or mines rights. Besides, the provisions of the Civil Code respecting prescription apply to cases provided for in the two first paragraphs of this section, save the special dispositions of the said paragraphs."

5. Section 71 of the said act is amended by replacing the first paragraph by the following:

"71. Whenever any person is illegally in possession of

land on which there exists a mining claim or development license, or of Crown land situated within the limits of a mining village, and refuses to yield up or abandon possession thereof, the Minister, or, with the permission of the latter, the holder of such claim or license, may apply to a judge of the Superior Court having jurisdiction in the district in which the land is situated, by a petition duly served with a notice of at least ten full days of the date of its presentation, for the order contemplated in the following paragraph."

6. Public and peaceful possession within the meaning of section 4, before the coming into force of this act, shall avail for the purposes of the prescription contemplated by the said section.

These changes constitute Chapter 16 of the Quebec Statutes 2-3 Elizabeth II, 1953-1954.

MINERAL RIGHTS BRANCH

The chief of this Branch is J.-X. Mercier, who is assisted by Harry Ledden, chief registrar.

During the fiscal year ending March 31st, 1954, there was an important increase in the number of miner's certificates issued. This increase of nearly 3,000 certificates is due mainly to the great activity which took place in the region of Oka as well as in the districts of Deux-Montagnes, Argenteuil and Vaudreuil, following the discovery of radio-active and other rare minerals. These certificates were issued by the Department of Mines at Quebec or by one of its agencies at Noranda, in the electoral district of Rouyn-Noranda; Ville-Marie, in the district of Temiscamingue; Amos, Val d'Or and Chibougamau, in the electoral district of Abitibi-East; Hull, in the electoral district of Gatineau; Campbell's Bay in the electoral district of Pontiac; and at Montreal.

The number of claims staked and recorded in the fiscal year under review was 23,667, as compared with 21,912 during the preceding year. The number of development licenses issued and renewed was slightly increased from 6,562 to 6,905 for 1953-54.

During the course of the fiscal year 1953-54, five special exploration licenses were issued. They were to International Iron Ores, Ltd., dated May 11th, 1953; Atlantic Iron Ores Ltd., dated May 19th, 1953; J.-Romuald Rioux, dated May 22nd, 1953, Fenimore Iron Mines Ltd., dated June 16th, 1953; and Shawinigan Chemicals Ltd., dated July 15th, 1953.

Table III.- Various Titles Issued by the Department of Mines
(Fiscal Years 1952-53 and 1953-54)

Designation of Title	1952-53	1953-54
Claims recorded at Amos	8,256	5,617
Claims recorded at Noranda	2,146	4,008
Claims recorded at Quebec	8,389	10,860
Claims recorded at Chibougamau	3,121	3,182
Total	21,912	23,667
Miner's certificates issued	7,577	10,558
Development licenses issued	1,454	1,456
Development licenses renewed	5,108	5,449
Mining concessions	9	8
Transfers of titles registered	2,410	2,154
Reports of work; man-days reported	815,039	387,694
Reports of work; diamond drilling, in feet ..	512,165	420,960

Table IV.- Mining Titles Issued since 1944-45
(Fiscal Years)

Fiscal Year	Number of Miner's Certificates	Number of Claims Recorded	Number of Development Licenses	Concessions		Transfers of Mining Rights
				Number	Acres	
1944-45	7,303	19,547	4,219	3	726	2,358
1945-46	9,225	26,501	8,676	7	2,566	3,721
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
Total for the last 10 Years	68,348	195,686	64,734	81	23,507	20,712

Table V.- Comparative Statement of Exploration Work
on Mining Claims under License During
Calendar Years 1944 to 1953

Year	Number of Work Days (man-days)	Diamond Drilling (in feet)
1944	59,066	37,209
1945	250,846	205,991
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
Total for the last 10 years	9,327,566	7,164,399

INSPECTION OF MINES BRANCH

The Chief Inspector of Mines, R.H. Taschereau, submits the following report for the period under review.

The main duties of this Branch 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.

In accordance with the provisions of Section 196 of the Quebec Mining Act, all compensable accidents are reported by the mine and quarry operators to the Inspectors, and the latter classify these reports and forward them to the Quebec office. In the case of accidents of a very serious nature, even where no loss of life may have occurred, the Inspector makes a thorough investigation and report.

These reports, both in French and English, are mimeographed, and copies are forwarded to all the mine and quarry operators, and to other interested parties.

In addition, the Inspectors of Mines keep the Department advised as to the observance of various sections of the Quebec Mining Act, notably those dealing with operational problems such as mill-sites, tailings-sites, water supply, and permits to export ores and concentrates.

For inspection purposes, the Province is divided into four districts as follows:

- No. 1 - the Eastern Quebec district;
- No. 2 - the Central district;
- No. 3 - the Western district;
- No. 4 - the more or less undeveloped area north of the above three districts, and including Anticosti and the Magdalen Islands.

There were no changes in the technical personnel of the Branch during the 12-month period under review, but the duties of the Assistant Chief Inspector, M.O. Lafontaine, were extended to include the supervision of all matters pertaining to the safety and health of workmen employed in the mining industry throughout the Province: previously, Mr. Lafontaine's duties were confined to the Western Quebec area.

Studies of atmospheric conditions in underground workings and surface plants were completed in 50 mines, and this involved the sampling and counting of 358 samples of air-borne dust, as well as a number of extensive ventilation surveys. Thirty-nine dust samples submitted by the Mines Branch of the Province of Newfoundland were also counted. This work was carried out by André Thibaudeau and Georges Courtemanche, Ventilation Engineers attached to the Quebec and Noranda offices respectively.

Mr. Lucien Trudel, Senior Electrical Engineer, carried out 46 inspections of electrical installations at mines and quarries, in addition to a number of special investigations.

Mr. E.O. Larivière, Special Agent attached to the Noranda office, assisted the Inspectors in various phases of their work, and carried out other duties assigned to him.

The Mine Rescue Training Plan, which is carried out in collaboration with the Quebec Workmen's Compensation Commission and the Quebec Metal Mines Accident Prevention Association, was expanded during the year by the establishment of a substation at the Campbell-Chibougamau mine, to service operations in the Chibougamau-Opemiska area. Ninety certificates in Mine Rescue Training were awarded, and active trained personnel now consists of 253 men distributed amongst 24 mines in Western Quebec. The part-time services of Mr. Granger Grant, Superintendent of the sampling and ore-dressing plant at Val d'Or, have been temporarily obtained to assist Mr. Lafontaine in the supervision of this programme.

A partial summary of the work of the Mines Inspection Branch is presented in the following table:

Inspections of Mines and Quarries	352
Mine Rescue Training Certificates issued	90
First Aid to the Injured Certificates issued..	54
Hoistmen's Medical Certificates issued	281
Unwrought Metal Licenses issued	8
Hoisting Rope Breakage Tests reported	306
Hoisting Rope Records reported	241
Steam-boiler Inspection Reports received	83
Plans of Underground Workings received	51

Orders-in-Council enacted during the fiscal year included:

Lease for Tailings Purposes	1
Approval of Mill and Smelter Sites	6
Export of Concentrates	15

The Inspection Branch records its appreciation of the cooperation received from many sources, and particularly from other branches of the Department, from the Quebec Workmen's Compensation Commission, and from mine and quarry operators throughout the Province.

GEOLOGICAL SURVEYS BRANCH

This Branch, under the direction of I.W. Jones, continued its principal task which is to investigate and map the geology of regions in different parts of the Province. In this work, the nature, distribution, and structural relations of the rock formations in various sections of the country are examined by qualified geologists who subsequently prepare geological reports and maps showing the results of their investigations.

These geological reports, with their accompanying maps, serve as guides to prospectors, geologists and mining companies in their search for mineral deposits. Furthermore, as many of the government geologists work in regions that were hitherto unexplored, their reports, describing these new regions, are sought for information that is valuable to many other fields of activity: building of roads and railways; hydro-electric power developments; agriculture and colonization; forestry; hunting etc.

It is gratifying to note that more geological work is being done by the Department of Mines of Quebec than is being done by any other province of Canada. On the other hand, it must be noted that, unless there will be a considerable increase in the number of geologists to do this work, it will take more than a hundred years to make only a first exploration of all the Province. The demand for geologists by private industry makes it difficult for government services to maintain and build up the staff that is urgently required to examine the vast, still unexplored territories in this country.

Fourteen geologists were in charge of investigations for this Branch in widespread parts of the Province during 1953. This number represents an increase over the twelve that were engaged in similar work during 1952 but is short of the record of 1951 when nineteen geological investigations were underway.

In addition to the fourteen geologists in charge of the various investigations, the parties sent out by the Geological Surveys Branch in 1953 required the services of ten other graduate geologists, twenty-two university students, and twenty-six other men engaged locally as canoemen, portageurs and cooks.

In all, about 2,600 square miles of territory was geologically mapped during the work of 1953.

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

Northern Ungava

Robert Bergeron mapped the west half of the Gériido Lake area, between latitudes 58°00'-58°15' and longitudes 69°45'-70°00', southwest of Ungava bay, 60 miles west of Fort Chimo. Important discoveries of copper, nickel and other metal deposits were made during the summer of 1953.

Chibougamau (Abitibi-East and Roberval counties)

André Deland covered the Surprise Lake area southwest of Chibougamau, between latitudes 49°15'-49°30' and longitudes 74°45'-75°00', in a belt of rocks favourable to finding gold and copper deposits such as those of Chibougamau and other parts of Abitibi. The area is in Hazeur, Rambrun and other townships of Abitibi-East county.

E.R.W. Neale covered ground in Dollier and Charron townships, southeast of Chibougamau, in Abitibi-East and Roberval counties. The area, between latitudes 49°30'-49°45' and longitudes 74°00'-74°15', is in a region of metamorphic rocks that prospectors have generally neglected, but our work is indicating that such areas do have possibilities.

Saquenay County

Two geological parties worked in or near the region that is being opened by the railway that is being built northward from Seven Islands to tap the big iron fields of Ungava and Labrador.

Roger Blais covered the Wacouno River area, bordering the railway about 60 miles north of Seven Islands, and between latitudes 51°00'-51°15' and longitudes 65°40'-66°00'.

M.A. Klugman mapped an area about 40 miles east of Seven Islands, bordering the St. Lawrence in Charpeney and Coopman townships, and lying between latitudes 50°15'-50°30' and longitudes 65°15'-65°30'. Indications are that iron and titanium as well as other minerals may be found in this region.

Gaspé Peninsula

H.W. McGerrigle continued his investigation of the country northward from the important copper deposits of Holland township (Gaspé Copper Mines Ltd., Murdochville) to the St. Lawrence shore. In 1953 he covered the Grande Vallée area between latitudes 49°00'-49°15' and longitudes 65°00'-65°15'.

Montmagny and L'Islet Counties

Jacques Béland continued investigating the region around the important discoveries of nickel and copper that have been

made in Montmagny county (St. Fabien-de-Panet, Eastern Metals Corporation). In 1953 he found favourable conditions to extend northeastward into L'Islet county, when he mapped the Rosaire-St.Pamphile area between latitudes $46^{\circ}45'$ - $47^{\circ}00'$ and longitudes $69^{\circ}45'$ - $70^{\circ}15'$.

Bellechasse and Dorchester Counties

W.A. Gorman extended the geological investigations southwestward from the nickel-copper zone of Montmagny county and mapped the Ste. Justine area, between latitudes $46^{\circ}15'$ - $46^{\circ}30'$ and longitudes $70^{\circ}00'$ - $70^{\circ}30'$.

Arthabaska, Richmond and Wolfe Counties

H.C. Cooke continued his geological studies of the Eastern Townships and in 1953 covered 200 square miles in the Warwick area in which is situated the important centre, Asbestos. This area is bounded by latitudes $45^{\circ}45'$ - $46^{\circ}00'$ and longitudes $71^{\circ}45'$ - $72^{\circ}00'$.

Laviolette County

Marcel Tiphane began an investigation of the region around La Tuque. The Chamber of Commerce and the Council of this town had requested that an investigation of the mineral possibilities of the region be made. In 1953, he covered the east half of the La Tuque area, between latitudes $47^{\circ}15'$ - $47^{\circ}30'$ and longitudes $72^{\circ}30'$ - $72^{\circ}45'$.

Montcalm, L'Assomption and Terrebonne Counties

I.H. Clark continued his investigations of the St. Lawrence Lowlands, with special attention to oil and gas possibilities. The principal section studied in 1953 was the eastern half of the Laurentides map-area, between latitudes $45^{\circ}45'$ - $46^{\circ}00'$ and longitudes $73^{\circ}30'$ - $73^{\circ}45'$.

Pontiac and Gatineau Counties

Robert Sabourin geologically mapped the Masham-Onslow area, between latitudes $45^{\circ}30'$ - $45^{\circ}45'$ and longitudes $76^{\circ}00'$ - $76^{\circ}15'$, where there are possibilities of finding molybdenum, uranium, iron and other minerals.

Water Supply Problems

Roland DeBlois, conducting hydrological investigations, had a very active year. Adding to the fact that even normally serious problems of water supply arise in many, widespread parts of the Province, the summer of 1953 was a dry season during which the supply of water reached low levels in several places. Mr. DeBlois was able to render greatly appreciated service to many municipalities, villages and aqueduct operators who were in difficulties and who requested aid. In all, he investigated 26 such places served by public water-supply systems, in the counties of Chateauguay, Argenteuil, Chambly, Stanstead, Joliette, Portneuf, Lotbinière, Frontenac, Beauce, Lévis, Quebec, Bellechasse, Montmagny, Kamouraska, Témiscouata, Bonaventure and Saguenay.

Other Work

Dr. McGerrigle and Mr. DeBlois, in addition to their principal tasks, as mentioned above, examined the many samples of rock obtained from various deep-drilling operations that are being conducted in the search for oil and gas in Gaspé peninsula and the St. Lawrence Lowlands. Visits were made also to occurrences of oil or gas that, from time to time, were reported from different parts of the province.

F.F. Osborne served in a supervisory and advisory capacity for geological investigations in the region southeast of Quebec City and in the Laurentian or Grenville section of the province.

M.M. Ritchie technically reviewed geological reports and maps for publication and assisted the Chief of the Branch in his administrative duties.

Members of the geological staff of this Branch represented the Department of Mines and contributed papers at meetings of engineering, prospecting and other scientific organizations that were held during the year. Some of these contributions, and other articles prepared by members of the staff, were published in various technical and scientific journals; they are listed in another part of this general report.

Equipment Section

Arthur Boucher, custodian of equipment, reports to Dr. I.W. Jones that, during the fiscal year 1953-54, his section furnished and maintained in good condition, the instruments and camping equipment

for 37 geological and engineering parties that were sent in the field for the Geological Surveys Branch, Mineral Deposits Branch and Civil Engineering Branch of the Department.

MINERAL DEPOSITS BRANCH

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

The technical officers of this Branch make geological investigations of mineral deposits, mining properties and mineralized areas with a view to furthering the development of the mineral industry within the province. Technical advice is also given to prospectors and to organizations engaged in exploration and development.

During the summer and early autumn, 12 parties were in the field, and, in addition, the resident geologists stationed at Rouyn, Val d'Or and Quebec made examinations of mining properties under development in each of their respective fields. The establishment of a resident geologist office in Quebec was a step forward taken by the Branch during the year. The field personnel included 16 geologists, 3 mining engineers, 10 student assistants and 13 labourers or other help.

Gilles Allard commenced detailed geological mapping of a part of the southwest quarter of McKenzie township. This project is part of the programme of detailed geological mapping underway in the Chibougamau area since 1951.

P.E. Bourret, Mining Engineer in charge of industrial minerals technology, examined 74 properties in various stages of development from mineral prospects to producing mines. These properties are situated mainly in the southwestern portion of the Laurentian plateau, in the Lake St. John area, in the St. Lawrence and Ottawa valleys, and in the Beauce-Little Megantic mountain area. Most of these examinations consisted of brief inspections in the course of which guidance of technical advice was given to the property owners regarding the development, mining and milling operations and the marketing of their products. In addition, detailed surveys of five granite quarries were made with the collaboration of Dr. O.D. Maurice.

J.J. Brummer commenced detailed geological mapping of the northwest quarter of Holland township, Gaspé Peninsula, where Gaspé Copper Mines is well advanced in the effort of bringing a very large

copper deposit to the production stage. The detailed geological mapping of this area and the study of the deposit itself will be of aid to the other organizations at present actively engaged in exploration.

F.W. Cornwall has commenced the study of wall-rock alterations in the vicinity of sulphide deposits in the Grenville geological sub-province. This is a continuation of a programme of research on geochemical prospecting methods with a view to establishing the possibility of the application of these methods to the search for metallic mineral deposits. The lead-zinc deposits at Anacon Lead Mines in Portneuf county and New Calumet Mines in Grand Calumet Island township were studied.

Jean Dugas, geologist attached to the office of the resident geologist in Rouyn, made a detailed geological study of the northwest quarter of Cadillac township in the Rouyn-Val d'Or mining belt of Western Quebec.

JrE. Gilbert, resident geologist at Rouyn, made visits to 37 mining properties in the development or exploration stage in his district. He also completed the compilation, at a scale of one inch equals 1,000 feet, of the geology of the southwest quarter of Dasserat township and the northwest quarter of Duparquet. The existing compilation of the geology of the northeast quarter of Rouyn township was revised. In collaboration with Jean Dugas a revised compilation of the geology of the Noranda-Senneterre mining belt was prepared at a scale of one inch equals four miles.

Henri Girard made a detailed survey of the Napierville peat bog in Napierville county. This examination includes studies of the drainage, investigations of the quality of the peat and its possible uses. In addition, he kept in touch with developments at the peat bogs which are in operation in the province.

PrE. Grenier was appointed resident geologist for the Quebec district in July, 1953, and during the remainder of the year made visits to 15 mining properties in the development or exploration stage in his district.

W.N. Ingham, resident geologist at Val d'Or, made visits to 56 mining properties in the development, exploration or production stage in his district. He also made 19 visits to mining properties in the Maniwaki district, in Gatineau and Pontiac counties, during a staking rush which followed the discovery of uranium deposits

in the area. The compilations of the geology, at a scale of one inch equals 1,000 feet, of the northwest and southeast quarters of Pascalis township were likewise completed.

Maurice Latulippe, geologist attached to the office of our resident geologist in Val d'Or, completed detailed geological mapping of the northeast quarter of Lacorne township, Abitibi-East county, where large deposits of spodumene-bearing pegmatites are under development.

O.D. Maurice, geologist in charge of building materials, kept in contact with the quarry operators and visited 40 quarries, five of which were mapped in detail in collaboration with P.E. Bourret. In addition, six properties in the exploration stage were visited in order to give advice to discoverers and 19 lots were examined in detail to find evidence of mineralization in connection with requests for revocation of mineral rights.

L.G. Murray commenced his study of wall-rock alterations in the vicinity of the sulphide deposits in the Appalachian region. The deposits studied were the Ascot and Suffield mines of the Ascot Metals Corporation Limited near Sherbrooke, the Huntingdon mine under exploration by Quebec Copper Corporation Limited in Bolton township and the Weedon mine in the township of the same name which is operated by Weedon Pyrite and Copper Corporation Limited.

J.E. Riddell undertook a geochemical water and soil survey in an area including lead-zinc deposits of Lemieux township, Gaspé Peninsula. This programme of research was undertaken with a view to establishing the possibility of the application of these methods to the search for metallic mineral deposits.

J.R. Smith completed the detailed geological mapping of the southwest quarter of McKenzie township and part of the southeast quarter of the same township in Abitibi-East county. This project is part of the programme of detailed geological mapping in Chibougamau area that was commenced in 1951.

The Mineral Deposits Branch is also responsible for the acceptance of reports, maps and diamond-drill logs submitted in support of application for credit towards assessment work requirements through geophysical or detailed geological surveys and diamond drilling. During the year, 77 geophysical reports, 54 detailed geological

reports and 141 diamond-drill logs were examined. In addition, 127 reports or prospectuses were studied at the request of the Registrar, Quebec Securities Act. Finally, two engineers' reports submitted in support of application for mining concessions were studied.

Initiation Lectures on Prospecting

To awaken interest in prospecting and to initiate those interested in obtaining an elementary knowledge of geology and mineralogy, classes were organized in 11 different centres. In each centre, five evening lectures on theory and four afternoon practical meetings were held. These classes were generally well attended and apparently are appreciated both by beginners and by more experienced prospectors who found an occasion to discuss their problems with a geologist. O.D. Maurice prepared and presented the lectures in seven localities and P.E. Grenier in the other four.

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

Scotstown (20), Magog (13), Trois-Rivières (25), St-Fabien de Panet (68), Tring-Jonction (28), St-Magloire (61), St-Urbain (58), St-Siméon (60), Mont-Laurier (42), Maniwaki (48), Notre-Dame du Laus (16).

The services of P.E. Grenier were loaned to the Faculty of Sciences, Laval University, for the time necessary to give the courses on applied geology and prospecting methods to those who followed the five-week course on prospecting given by the University.

The geologists of the Branch are also called upon from time to time to prepare papers or lectures to stimulate interest in prospecting and in the mineral resources of the Province. In the course of the year, four such lectures were given to technical societies or school groups.

The search for new mineral deposits throughout the Province was pursued by prospectors and companies engaged in mining exploration. Exploration was particularly active in the iron-bearing belt in New Quebec and in iron formations in Saguenay county and in Mistassini territory. Reports of discoveries of uranium-bearing minerals and rare earths were followed by staking rushes in the counties of Gatineau and Pontiac, as well as in the Oka district, but it is as

yet too early to assert the importance of the discoveries. Exploration was actively pursued during the summer months. As usual, there was continued activity in such widely separated portions of the Province as the Chibougamau area, Gaspé Peninsula, the Appalachian region from Montmagny to Sherbrooke, and the Western Quebec mining belt. Exploration organizations have also continued the search for ilmenite deposits in areas underlain by anorthositic rocks in the southern part of the Laurentian Plateau region.

DIVISION OF TECHNICAL INFORMATION AND

DISTRIBUTION OF PUBLICATIONS

The Division of Technical Information and Distribution of Publications has charge of collecting all technical information concerning the mineral resources of the Province of Quebec and of answering enquiries and requests that may be received concerning pertinent information.

Jean-Paul Drolet, mining engineer, submits the following report on the work of the Division during the fiscal year ending March 31st, 1954.

A.- Requests for technical information concerning mining companies and the various mineral substances, approximately	1,000
Various enquiries and correspondence concerning mining companies, technology and mineral collections	1,135
B.- Verbal and written requests for publications of the Department of Mines	7,121
Publications sent out from mailing lists without notice	11,605

During the fiscal year ending March 31st, 1954, the distribution staff, under the direction of Mr. Noé Lamontagne, sent out 42,186 copies of the Department of Mines publications, in answer to requests of all kinds concerning geology and the mineral resources of the Province, as well as 11,605 other publications from our regular mailing lists.

This Division carried out the work of compilation and classifying numerous reports and plans sent in by the inspectors of

mines and outside technicians, as well as technological pamphlets concerning the mining industry and mining companies. It has also established a new system of classification, by subject and township, of all geological reports and plans received from engineers and geologists of the Department of Mines, as well as from outside sources.

Moreover, this Division also collects, compiles, classifies and prepares an index of all items of interest relating to the mining industry and mining companies clipped from technical reviews and newspapers. Photographs presenting a certain interest to geology and mining are also collected and classified.

The Division prepares numerous economic studies relative to the main projects directly associated with or bearing on the development of the mining industry in the Province of Quebec.

In addition to the functions mentioned above, this Division prepares the notices and advertising matter and articles for newspapers, technical reviews and periodicals, by which the Department of Mines gives notice of the issuance of new reports, maps, and works on the geology, mineral deposits, and the mining industry of the Province. These publications are the result of field-work by geologists, engineers and chemists of the Department of Mines. A list of these publications may be obtained on request addressed to the Department of Mines, Quebec, or to one of its agencies situated elsewhere within the province.

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.- the sampling and ore dressing plants at Val d'Or and Thetford Mines; IV.- University courses in prospecting; V.- the Department of Mines' museum and the displays at exhibitions.

The Director of this branch is Maurice Archambault and the Assistant-Director is P. E. Pelletier. G. S. Grant is the manager of the Sampling and Ore Dressing Plant at Val d'Or, while Henri Boileau is Chief of the Chemical Analyses Laboratories.

I.-Research Laboratories

During the course of the year under review, mineralogical and metallurgical research dealt with: a) technical assistance to prospecting; b) study of unused minerals; c) chemical utilization of our peat; d) expansion of the commercial value of our asbestos; e) metallurgy of titanium and the integral utilization of our titanium ores; f) utilization of pulp wood by-products in the mining industry; g) processing of iron, titanium, copper, lead, zinc, cobalt, bismuth, nickel, molybdenum, lithium, uranium and thorium ores.

The following progress is reported relative to those projects underway:

Project No. 8: Claude Frémont has reached the final stage of the construction of a micro-magnetometer small enough to be lowered into diamond drill holes to effect geophysical measurements. Certain difficulties in electronic screening and gyroscopic stability have delayed the completion of this work.

Project No. 39: B.J. Walsh and J.-P. Bolduc have proven that "lignosols" may be used to advantage in the dressing of certain of our ores having a particular constitution.

Project No. 54: J.U. MacEwan and J. Finlay have started a study of the electro processing of copper mattes into blister copper containing rare metals and directly amenable to electrolysis.

Project No. 78: L.-P. Bonneau has carried on his research work relative to cleaning of asbestos fibers with the help of experimental cyclones, before bagging the product.

Project No. 79: Raymond Paquet has carried out a complete mineralogical study of Quebec Copper Corporation ore with a view to establishing data for a maximum recovery of the copper.

Project No. 80: F. Claisse continued his research on the determination of the constant of oxygen diffusion into metallic titanium. With a "resistometer" specially made for this work, Claisse has obtained preliminary and concordant values of the diffusion coefficient.

Project No. 81: J. Risi and C.-E. Brunette continued their study of the complex chemical constituents of peat by fractionation of the samples taken from the peat bogs of L'Assomption, Holton

and Napierville. The continuation of this systematic inventory shows the organic composition of peat as being the potential source of supply for important raw materials for the Canadian chemical industry.

Project No. 82: R. Brais studied the integral utilization of titanium ores and their by-products. By proper selection of pyrometallurgical and hydrometallurgical treatments, it seems to be possible to split ilmenite into its pure components and thus increase its commercial value.

Project No. 85: J.-P. Girault demonstrated that samples showing crystallographic characters close to those of apatite, in reality, belong to the britholite-abukumalite family.

Project No. 86: J.-P. Girault studied the presence in the Province of Quebec of a natural spinel of formula $TiFe_2O_4$. Until now, this product was known only as an artificial one.

The following projects relative to the processing of various ores were the subject of special study by B.J. Walsh, J.-P. Girault, J.-P. Bolduc and R. Paquet.

Research on the Concentration of Ores

<u>Project No.</u>	<u>Ore</u>	<u>Supplier</u>
58	Titanium	Joannes Goldfields Ltd.
63	Lead, cobalt, bismuth, nickel, gold, silver	Touton Gold and Base Metal Corporation
65	Lead and zinc	Federal Metals Corporation
72	Lithium	Quebec Lithium Corporation
76	Iron	Fenimore Iron Mines Ltd
83	Lead, zinc and copper	Mindamar Metals Corp. Ltd.
84	Molybdenite	Portneuf Mineral Corporation
87	Iron	Cyrus S. Eaton, Jr. International Iron Ores Ltd.
88	Titanium	Laurentian Titanium Mines Ltd.
89	Uranium	Yates Uranium Mines Inc.

II.- Laboratories for Analyses and Assays

In the course of the fiscal year these laboratories of analyses and assays received (Thetford Mines plant included) 11,013

samples on which were performed 58,086 analyses and examinations. These figures comprise quantitative chemical analyses, microscopic, spectrographic, X-ray determinations (diffraction and fluorescence) and radioactivity measurements.

These were distributed as shown in the following table:

Table VI.-Summary of Analytical Work Done in Laboratories

	LABORATORIES			TOTALS
	Quebec	Montreal	Thetford Mines	
Samples received	9,023	1,829	161	11,013
Quantitative analyses	15,277	4,068	526	19,871
Qualitative analyses	15,307	---	---	15,307
Spectrographic examinations	11,651	---	---	11,651
X-ray examinations	8,914	---	---	8,914
Radioactivity	1,025	---	---	1,025
Research analyses	1,318	---	---	1,318
Total	53,492	4,068	526	58,086

The work of the Montreal laboratory consists of qualitative and quantitative chemical analyses for prospectors.

The Quebec Laboratories:

The main laboratories of the Department are at Quebec and comprise: 1.- a Division of Mineralogy and Petrography; 2.- a Division of Spectrography, Radiocrystallography and Radioactivity; 3.- a Division of Chemistry; 4.- a Division of Metallurgy.

Mineralogy and Petrography Laboratory

In the course of the year ending March 31st, 1954, the mineralogists examined 7,296 rock and mineral samples which required 15,307 mineralogical determinations. They also studied thoroughly 91 thin rock sections and 102 polished sections of ore.

The mineralogists also have charge of dispatching to the appropriate laboratories the various samples and specimens received for analysis. They also answered verbally, or in writing, numerous requests for information regarding the nature and economic possibilities of mineral samples and specimens submitted to them.

The Division of Mineralogy also looks after the preparation of collections of minerals and rocks used in schools and by prospectors. During the course of the year under review, 296 collections were completed and 778 others are being put together. At the same time, the collection of typical specimens of rocks from Quebec is far enough advanced as to guarantee the preparation of 2,000 collections of 30 specimens each.

Spectrography, Radiocrystallography
and Radioactivity Laboratory

In the course of the year under review, the personnel of this laboratory effected 21,590 analyses distributed as follows:

Spectrographic analyses	11,651
Radiocrystallographic analyses	8,914
Radioactivity determinations	1,025

In the above are included 454 determinations of silica and harmful elements of industrial dusts on behalf of the Department of Health and 97 analyses of foundry smoke besides four valuations made at the request of the Workmen's Compensation Commission.

The acquisition of an X-ray spectrograph, making use of roentgenic fluorescence of the elements under study, has made it possible to increase considerably the field of action of the Radiocrystallographic Section. For analysing radioactive elements, rare earths and heavy metals, it is an instrument of exceptional rapidity and accuracy.

Another precision Geiger counter was added to our radioactivity equipment. With this instrument, it is now possible to make as many as fifty BETA measurements per hour and to answer more adequately the numerous requests relative to the prospection for uranium.

Chemical Laboratory

The Division of Chemistry includes a laboratory for geochemical analyses as well as for the analysis of oils, a fire-assay laboratory, a laboratory for general assays and a fourth laboratory for flame photometry. All four laboratories are serviced with a trained personnel of chemists graduated from recognized universities.

During the fiscal year 1953-54, 16,625 quantitative analyses in duplicate were carried out in these laboratories. Quantitative determinations may be distributed as follows:

4,329 analyses of precious metals;
12,266 current analyses, including
1,318 research tests

Among special analyses must be mentioned 14 geochemical analyses of rocks and two complete analyses of crude petroleum from the Gaspé peninsula.

Metallurgical Laboratory

Studies on the corrosion of aluminum and magnetic determinations relative to the Curie point on titaniferous products were effected in this laboratory, besides the various works in connection with extractive metallurgy, during the course of the year under review.

A special piece of equipment to carry on thermogravimetric determinations with the Chevenard thermo-balance, under pressure or under controlled atmosphere, was studied and erected by our staff.

III.- Sampling and Ore Dressing Plants

Val d'Or Plant

This plant, situated near Val d'Or in Abitibi-East county, received the following shipments of ore for sampling, as well as for the recovery of gold:

Table VII.- Shipments of Ores

For Sampling:

Shipper	Type of Ore	Lots	Weight (pounds)
Martial Dumulon	Lithium	1	4,590
Soma-Duvernay Gold Mines Ltd	Gold	5	720
Quebec Tungsten Corporation	Tungsten and gold	5	4,020
Ex-Mother Lode Mines Ltd	Cobalt, zinc and silver	4	500
Sullivan Consolidated Mines Ltd. ...	Gold	13	1,423
Total		28	11,253

Table VII.- Shipments of Ores (Cont'd)

For Gold Recovery:

Shipper	Weight (pounds)	Lots	Ounces of Gold Recovered
Elder Mines Ltd	311	1	6.533
Albert Martin, Val d'Or	1,030	1	0.739
Total	1,341	2	7.272

Beside the above, ore-dressing tests were made on columbium and uranium ore submitted by New Kelore Mines Ltd. The 18,670-pound lot of ore was concentrated by jig and Wilfley table.

Thetford Mines Plant

The installation of the Thetford Mines Plant was completed during the course of the year under review. This laboratory, built in the heart of the asbestos district, is a complete mill specially designed to study the problems of the asbestos industry. Prospectors, exploration companies and others may ship there lots of several tons of ore and complete valuations are made to establish the quality, tenor and commercial value of the fibres.

During the course of this first year of operation, 161 shipments of ore were treated at the plant and 526 fibre classification tests were performed on these shipments.

IV.- Courses on Mineral Prospecting
Given in Universities

The Department of Mines takes an active part in the formation of professional prospectors specially trained in the scientific methods of mineral prospecting. Since 1947, either at the Department of Geology at Laval University, or at l'Ecole Polytechnique of Montreal, any person interested in prospecting may follow a six weeks' course specially designed for that purpose. Judging from the interest shown by the mining companies in hiring certified prospectors and from the number of persons who have become career prospectors, due to these courses, it may be stated that this initiative has been a success.

During the course of the present year, 49 students followed prospecting courses at the Faculty of Science at Laval University and at L'Ecole Polytechnique of Montreal. This is the largest

number recorded since the start of these courses. Moreover, the Department has received numerous requests for information and registration from neighbouring provinces, as well as from the United States.

Table VIII
Courses on Mineral Prospecting Given at Universities 1947-1954

Fiscal Year	Number of Students		
	Quebec	Montreal	Total
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
Total	135	151	286

V.- Museum and Exhibitions

During the course of the year, the Department of Mines Museum acquired two new specimens, namely: a sample of asbestos of long and silky fibres from the East Broughton region and a small ingot of metallic titanium extracted by the new process developed in the laboratories of Shawinigan Water and Power Company.

As the 1953 theme of the Province of Quebec Exhibition was "Key to Progress: Our Mines", a special exhibit of the Department placed in evidence a large map of the Province of Quebec showing the abundance of its natural resources. The same type of exhibit was also shown at the regional exhibitions of Three Rivers, Sherbrooke, Rouyn-Noranda, Cookshire and Baie Comeau, and at the Metropolitan Commercial Exhibition at the Show Mart in Montreal.

During the months of February and March, 1954, in co-operation with Steel Company of Canada of Hamilton, Ontario, the Department of Mines exhibited in a show-window of the Hydro-Quebec Building in Montreal, a large animated drawing of a blast-furnace. This plan of a steel mill, prepared with great care, was of an exceptional educational value.

DRAUGHTING AND CARTOGRAPHY BRANCH

Léon Valois, P. Eng., is chief of this Branch and Armand Blanchette is assistant-chief.

The Draughting and Cartography Branch supplies the documents requested by the geological missions of the Department, documents consisting mostly of aerial photos and of compilations, at the desired scale, of base maps drawn from topographic surveys and aerial photos. In some cases, regions are photographed and mapped so as to supply an adequate basis of operation for these geological parties.

The Branch maintains up to date two sets of township maps on tracing linen; on one of these are drawn the outlines of all mining claims and on the other are shown the boundaries of lands held by mining companies. The first series, which shows the claims staked out, comprises 626 tracings on which are traced the boundaries of the 23,667 new claims recorded during the year; the second series comprises 219 tracings. From all these tracings, 10,405 blue 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 the printing of them.

Final Maps (coloured)

a) Completed

- No. 821 - Hébécourt W.
- No. 822 - Hébécourt E.
- No. 823 - Duparquet W.
- No. 824 - Duparquet E.
- No. 825 - Destor W.
- No. 909 - Allard River Area
- No. 917 - Témiscamie Area
- No. 918 - Albanel Lake Area
- No. 919 - Kensington West Area (reprint)
- No. 920 - Kensington East Area (reprint)
- No. 967 - Waswanipi Lake (East) Area
- No. 968 - Waswanipi Lake (West) Area
- No. 971 - Maicasagi Area

b) In Press

- No. 930 - Part of Lemieux Township
- No. 1000 - Gaspé Peninsula

c) In Preparation

- No. 924 - Chertsey Area
- No. 925 - Rawdon Area
- No.1026 - Tourelle Area
- No.1027 - Courcelette Area
- No.1028 - Branssat-Daine Area

Preliminary Maps

a) Completed

- No. 905 - Part of Fabre Township (reprint)
- No. 945 - Southeast Quarter of McKenzie
- No.1020 - Gamache Area (2 prints)
- No.1021 - Johan Beetz Area (West section)
- No.1022 - Brongniart-Lescure Area
- No.1029 - Wacouno River Area
- No.1032 - Surprise Lake Area

b) In Press

- No.1011 - Lanoraie Peat Bog (reprint)
- No.1013 - Farnham Peat Bog (reprint)
- No.1017 - Rivière-du-Loup Peat Bog (reprint)
- No.1031 - Gérardo Lake Area
- No.1034 - Onslow-Masham Area
- No.1035 - Rosaire-St-Pamphile Area

c) In Preparation

- No.1030 - Thetford Mines Area
- No.1036 - Charpeney-Coopman Area
- No.1037 - Ste-Justine Area
- No.1038 - Wakefield Area
- No.1039 - Dollier-Charron Area
- No.1040 - La Tuque Area

Our draughtsmen traced on linen thirty-nine other geological plans; thirty-five plans of furniture, machines, graphs, etc., and thirteen figures for illustrations of final reports.

Other works closely related to drawings, such as the mounting of maps on linen, various compilations, and classifications are also handled by the Draughting and Cartography Branch.

The new printing section which started to operate in October, 1953, has produced 3,733 copies of documents.

Table IX.-Comparative Table for the Years
Ending March 31st, 1951, 1952, 1953 and 1954

	1951	1952	1953	1954
Personnel	14	13	12	11
Tracings of mining claims	492	514	542	626
New claims	19,787	22,807	21,912	23,667
Tracings of mining companies	181	210	210	219
Copies distributed	9,316	10,845	9,923	10,405
Final maps (coloured)..	4	7	7	14
Preliminary maps	18	24	13	8
Geological plans	36	29	42	39
Various plans	59	34	34	35
Figures	38	59	59	13

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; b) Division of Mining Villages.

Division of Mine Roads

During the fiscal year 1953-54, the Division of Mine Roads built 30.26 miles of new roads, bringing to 1,444.9 miles the total length of roads built by the Department of Mines. In addition, during the course of the year under review, the Division improved or completed the construction of 132.23 miles.

The Department of Mines also contributed \$4,706,656.37 for the construction, improvement or completion of roads as well as for the construction of bridges. Of this sum, \$4,071,201.93 was paid by the Department of Mines out of its budget and \$635,454.44, by the mining companies.

New roads	\$ 1,442,997.50
Improvements - Completion	2,678,158.16
Bridges	585,500.71
	<hr/>
Total	\$ 4,706,656.37

To date the sum spent since 1925 by the Department for the construction, the improvement and the completion of mine roads has been \$20,763,608.57.

New mine roads built during the fiscal year 1953-54:

<u>Counties</u>	<u>Roads</u>
Gaspé North	Road from Gaspé Copper mine to l'Anse Pleureuse. Extension of one and one-half miles of the York River road.
Abitibi-East	Mogador Mine road. One and one-half miles.
Matane	Lac de Marne road on lot 28, Range IV, Matane township. 1.2 miles.
Pontiac	Yates Uranium Mine road. (Two miles).

Bridges built during 1953-54:

<u>Counties</u>	<u>Bridges</u>	<u>Span</u>
Roberval	Bridge on Vermillon river	79 feet
	Bridge on Chaudière river	75 "
	Bridge on Argenson river	75 "
	Bridge on discharge of Pauvre lake	44 "
	Bridge on Chigoubiche river	290 "
Montmagny	Bridge on Nord-Ouest river	44 "
Abitibi-East	Merrill island jetty	34 "
Rouyn-Noranda	On discharge of Dufault lake	40 "
Gaspé-South	Completion of the two bridges across York river	80 ft. and 120 "

Roads improved and completed during 1953-54:

<u>Counties</u>	<u>Roads</u>
Gaspé North	Reconstruction of the Candego Mine road in Christié township
Gaspé South	York River road
Abitibi-East	Road to Openiska Copper Mines Ltd., in Lévy township
	Campbell Chibougamau Mine road in Obalski township
	Chibougamau Explorers road in La Dauversière township
Roberval	Lake Cameron to O'Sullivan River road
	Reconstruction of a section of the St-Félicien-Chibougamau road

Roads improved and completed during 1953-54 (Cont'c)

Rouyn-Noranda Improvements to the MacDonald Mine road in
Dufresnoy township
Montmagny Eastern Metals Corporation Mine road in Rolette
township

Roads maintained in 1953-54:

During the fiscal year 1953-54 the Department of Mines maintained open 273.17 miles of mine roads, at a cost of \$124,968.22.

<u>Counties</u>	<u>Roads</u>
Abitibi-East and Roberval	Chibougamau road
Abitibi-East	Bachelor Lake road
Gaspé South	York River road
Bonaventure	Grand Cascapédia River road
Matane	Levasseur Lake road
Rouyn-Noranda	MacDonald Mine road
Mégantic	Broughton Soapstone road
Shefford	Oxford township road
Rivière-du-Loup ..	Isle Verte Peat Bog road
Saguenay	Lac des Isles road in Letellier township

Drainage of Peat Bogs

Pursuant to the provisions of the Quebec Mining Act, the Civil Engineering Branch gave grants totalling \$16,400.00 to certain operators of peat bogs to assist them financially in the drainage of their property. A total length of 102,148 feet of drainage ditches was opened in the counties of Matane, Rimouski, Rivière-du-Loup and Dorchester.

Division of Mining Villages

The following developments in mining villages took place during the course of the year under review:

Bourlamaque

Home building was very active in the residential districts and called for proportionate developments in municipal projects. Population: 2,800.

Val d'Or

The town of Val d'Or continues to develop. A certain number of lots in the new subdivision were sold in blocks 61 and 62. The population also increases from year to year. This year it had reached 10,104.

Cadillac

There is no development worth mentioning in this municipality for 1953-54. Population: 2,800.

Malartic

Important municipal projects took place in this town during the course of the year. Private home building was also very active. The town of Malartic made capital expenditures amounting to more than \$100,000 for the construction of sidewalks, the paving of streets, the extension of waterworks, and the purchase of equipment. Private and industrial construction amounted to more than a quarter of a million dollars. The construction of a new Post Office building was also started. The building will cost \$250,000.00. Population increases each year and has now reached 7,000.

Rouyn

The miners' strike which paralyzed the mining industry during six months has slowed down activity in this town.

Noranda

Activity in construction and in the life of this town was slowed down considerably during 1953-54 because of the six months' strike at the mines. Population: 10,211.

Belleterre

There was nothing worth mentioning relative to this municipality during the course of the year.

Chibougamau

The Department sold a large number of lots in this village which progresses rapidly. New subdivisions were made in

block "D". During the autumn months, the waterworks system of the village was inaugurated. There were important construction projects such as two banks, one school, a recreation centre and a considerable number of private homes. Everything seems to indicate that the development of this village will continue with greater intensity in the future. Population: 550.

Murdochville

This municipality develops rapidly. A new subdivision of the Crown lands permits the population to build. There is a great activity in the domain of residential construction as well as commercial. Population: 1,818.

Schefferville

The organization of the village of Schefferville was authorized in January 1954. Preliminary plans have been studied and important developments are expected for 1954-55.

DIVISION OF MINERAL STATISTICS

This Division, under the direction of C. O. Beaudet, is responsible for the compilation of monthly and annual statistics relative to the mining industry of the Province of Quebec and for answering inquiries concerning them.

These statistics are compiled from reports which are received from mine and quarry operators on the appropriate forms that are supplied them from time to time.

These statistics comprise the production, shipments, personnel employed, exploitation material used, supplies of all kinds, machinery and equipment purchased, main taxes paid, dividends paid out, etc.

Pursuant to an agreement which dates back to 1925, the Department of Mines and the Federal Bureau of Statistics work in collaboration for the collection and the compilation of these statistics, except for certain special surveys. Both administrations use the same reports. This practice reduces the number of the various reports which the operators of mines must fill. It further has the advantage of permitting both organizations to come to the same final figures.

The Federal Bureau of Statistics supplies all the forms to be filled, which are prepared in such a manner as to meet our needs as well as theirs. The Department of Mines sends out these forms to the operators and sees to it that they are filled and returned. It also sends all the necessary notices to those who neglect to file their report in due time.

The reports when completed are forwarded in duplicate to the Department which transmits a copy to the Federal Bureau of Statistics, but only when they are considered acceptable. The Department takes the responsibility for all the necessary correspondence to complete or correct those reports that are not satisfactory. The compilation of the information collected is made at both places and the results are then compared.

The following is a summary of the statistics tabulated during the course of the calendar year 1953 and also the number of returns received:

	<u>Number of</u> <u>Returns Received</u>
Reports on the mineral production and mining operations:	
Annual returns	2,901
Monthly returns	644
Annual report on the timber used in mines	98
Annual reports on the capital received by mining companies	705
Annual report on stone, gravel and sand used by certain contractors in construction....	73
Annual reports on expenditures by mining operators for the welfare of their employees and their families	45
Total number of reports received: ..	<u>4,466</u>

Of the 2,901 reports regarding mineral production and mining operations, which cover nearly all the mines of any importance, 1,409 came from mines and quarries which were in production or which made some shipments of mineral product; 267 came from mining properties not yet producing but on which exploration work or development work was effected during the year, and 1,225 consisted in statements that the properties concerned were inactive the whole year.

The capital received by the mining companies includes only those funds which the companies operating in Quebec have effectively received during the course of the year after such transactions as the following: the sale of capital shares; the sale of bonds or other titles which the companies issue; and long-term loans. From the reports gathered, the amount of \$44,300,000 was received from these three sources during 1953. In 1952 that amount was \$36,000,000.

The number of mining companies listed below, along with the date of their incorporation, their head office, and their capitalization, was slightly lower in 1953-54 than in 1952-53. During the period under review, 82 companies were formed under the laws of the Province of Quebec. Besides, six were incorporated under the Ontario laws and three under Federal charter. The total of new companies incorporated during the year to operate in the Province of Quebec was therefore 91. In 1952, there were 104, of which 94 held Quebec charters, 9 held Ontario charters, and one was incorporated under Federal charter.

Mining Companies Incorporated
in the Province of Quebec during 1953

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Abitibi Diamond Drilling Ltd.	Val d'Or	May 20	50,000	\$ 1
Absam Mines Limited	Montreal	May 28	3,500,000	\$ 1
Arcadia Nickel Corp. Ltd. .	Sherbrooke	Feb. 23	5,000,000	\$ 1
Atlantic Iron Ores Ltd. ...	Three Rivers	March 10	5,000,000	\$ 1
Bald Mountain Oil Company .	Montreal	Aug. 25	5,000,000	\$ 1
Barbizon Mines Limited	Montreal	April 9	3,000,000	\$ 1
Berrigan Mines Limited	Montreal	Jan. 28	40,000	\$ 1
Bersimis Mining Co. (The) .	Quebec	July 16	20,000	\$ 1
Briqueterie Mistassini, Inc. (La)	Mistassini	April 9	1,000	\$100
Brosnan Chibougamau Mines Ltd.	Chibougamau	April 24	4,000,000	\$ 1
Burnt Hill Tungsten Mines Ltd.	Montreal	Feb. 11	2,000,000	\$ 1
Calumet Uranium Mines Ltd..	Montreal	Oct. 14	5,000,000	\$ 1
Canadian Curling Stones Ltd.	Montreal	March 27	300,000	\$ 1
Canamer Nickel Ltd.	Montreal	April 7	3,500,000	\$ 1
Cape Breton Metals Ltd. ...	Montreal	April 22	5,000,000	\$ 1

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Carrière Grand'Mère Limitée	Grand'Mère	Sept. 17	400	\$100
Carrières Montréal-Est Ltée (Montreal-East Quarries Ltd.)	Montreal-East	Jan. 27	12,000 (a) 1,380	\$ 1 \$100
Central Asbestos Mines Ltd.	Montreal	Nov. 19	4,000,000	\$ 1
Chiboug Copper Corp. Ltd. .	Montreal	Jan. 24	5,000,000	\$ 1
Clearwater Exploration Ltd.	Montreal	June 23	10,000	\$ 1
Confederation Mining Corp. Ltd.	Montreal	March 11	5,000,000	\$ 1
Corinne Asbestos and Chrome Corp.	Montreal	Feb. 24	5,000,000	\$ 1
Coronation Consolidated Mines Ltd.	Montreal	March 20	4,000,000	\$ 1
Dawmac Mining and Oils Ltd.	Montreal	June 8	4,000,000	\$ 1
DeSales Uranium Mining Corp.	Montreal	April 10	4,000,000	\$ 1
Drummond Copper Corp. Ltd..	Montreal	March 4	4,000,000	\$ 1
Duvan Copper Company Ltd. .	Rouyn	Nov. 4	4,000,000	\$ 1
Eastern Nickel Ltd.	Montreal	April 7	3,500,000	\$ 1
Eastern Quebec Uranium and Nickel Corp. Ltd.	Sherbrooke	Nov. 7	3,000,000	\$ 1
Eastern Smelting and Refining Co. Ltd.	Quebec	May 6	5,000,000	\$ 1
East Trinity Mining Corp. .	Val d'Or	May 20	4,000,000	\$ 1
Fluor Bar Mines Ltd.	Montreal	Nov. 6	3,000,000	\$ 1
Gagnon et Fils Ltée	Ste-Thérèse	Aug. 3	990	\$100
Garland Mining and Development Co. Ltd.	Montreal	Sept. 17	4,000,000	\$ 1
Gatineau Uranium Mines Ltd.	Maniwaki	Oct. 6	5,000,000	\$ 1
Granit Industries Limitée .	Montreal	Dec. 31	20,000	\$ 1
Imperial Minerals Ltd.	Montreal	July 15	5,000,000	\$ 1
International Iron Ores Ltd	Three Rivers	March 10	5,000,000	\$ 1
Kemler Mining Co. Ltd.	Quebec	Dec. 2	1,000,000	\$ 1
Labrador Ungava Explorations Ltd.	Montreal	June 23	4,000,000	\$ 1
Lac Desert Ltd.	Montreal	Nov. 4	40,000	\$ 1
Maniwaki Kid Uranium Mining Corp. (The)	Montreal	Oct. 24	5,000,000	\$ 1

(a) Preferred shares.

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Marlow Mines Ltd.	Montreal	Jan. 10	3,000,000	\$ 1
Metropolitain Brick Inc. ..	Joliette	Oct. 27	100	\$100
			(a) 1,900	\$100
Murray Bay Exploration Co. Ltd.	Montreal	Feb. 24	3,000,000	\$ 1
New Brunswick Copper Corp..	Montreal	Oct. 6	5,000,000	\$ 1
Odyno Exploration and Development Ltée	Noranda	Nov. 26	60,000	\$ 1
Opawica Explorers Ltd.	Montreal	March 7	3,000,000	\$ 1
Oreland Mining Corp.	Montreal	July 24	4,000,000	\$ 1
Panet Metals Corp. Ltd. ...	St-Magloire	Feb. 11	4,000,000	\$ 1
Papineau County Explorers Co. Ltd.	Montreal	Aug. 24	3,000,000	\$ 1
Pine Beach Sand Ltd.	Montreal	Feb. 5	500	\$100
Pinnacle U. Copper Corp. Ltd.	Montreal	March 4	3,500,000	\$ 1
Pomerleau Sand and Gravel Co. Ltd.	Montreal	March 31	400	\$100
Quebec Beryllium Ltd.	Montreal	April 22	3,500,000	\$ 1
Quebec Developers and Smelters Ltd.	Montreal	March 24	4,000,000	\$ 1
Quebec Graphite Corp.	Montreal	April 28	3,000,000	\$ 1
Quebec North Mines Ltd. ...	St-Michel	Aug. 24	3,000,000	\$ 1
Quebec Tantalum and Lithium Mining Co. Ltd. .	Quebec	June 19	100,000	\$ 1
Quebec Ungava Ore Corp. ...	Montreal	Nov. 7	1,000	\$ 1
Rawdon Iron and Titanium Inc.	Marieville	July 16	4,000,000	\$ 1
Red Lake Mines Ltd.	Montreal	June 12	4,000,000	\$ 1
Richelieu Oil and Gas Co. Ltd.	Montreal	June 5	80,000	\$ 1
			(a) 200	\$100
Riverside-Chibougamau Mines Ltd.	Montreal	April 7	3,000,000	\$ 1
Rolga Chibougamau Mines Ltd	St-Félicien	Jan. 15	1,000,000	\$ 1
St. Lawrence Valley Exploration Co. Ltd.	Montreal	June 5	80,000	\$ 1
			(a) 200	\$100
St. Pierre Granite Inc. ...	Montreal	Jan. 23	350	\$100
			(a) 1,000	\$100
Sable-Mont-Rolland Ltée ...	Ste-Dorothée	Nov. 27	400	\$100

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Sablère Calumet Ltée (La). Silver Granite Corp.	Montreal St-Samuel de Gayhurst	Feb. 24	200	\$100
Southern Asbestos Co. Ltd..	Sherbrooke	Jan. 19	100	\$100
Spar-Mica Corp. Ltd.	Montreal	Oct. 29	4,000,000	\$ 1
Steel Graphite Co. Ltd. ...	Montreal	March 19	5,000,000	\$ 1
Sun Metals Ltd.	Montreal	Jan. 9	3,000,000	\$ 1
Tar Point Oil Company	Montreal	Sept. 22	3,000,000	\$ 1
Titanium Derivatives and Alloys Corp.	Montreal	May 13	5,000,000	\$ 1
Tourbière Livaudière Inc. (La)	Montreal Victoria- ville	Aug. 17	40,000	\$ 1
Trans-Dominion Mining and Oils Corp.	Victoria- ville	May 26	400	\$100
Trican Petro-Chemical Corp.	Montreal	Aug. 3	5,000,000	\$ 1
Vendôme Mines Ltd	Montreal	June 1	5,000,000	\$ 1
Vug Mining and Develop- ment Corp.	Barraute	April 25	3,500,000	\$ 1
Windsor Mine Corp.	Montreal Asbestos	May 21	3,000,000	\$ 1
		April 9	400	\$100

Mining Companies Incorporated in 1953 by Letters Patent of
Ontario and Holding Mining Rights in Quebec

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Delsohn Bathurst Mines Ltd.	Toronto	Aug. 27	3,000,000	\$ 1
Loch Lomond Mines Ltd.	Toronto	Sept. 18	4,000,000	\$ 1
Milhol Exploration and Development Ltd.	Toronto	Feb. 1	100,000	\$ 1
Mining Futures and Holdings Ltd.	Toronto	(a)10,000	3,000,000	\$ 1
Tetra Uranium Mines Ltd. ..	Toronto	June 1	2,000,000	\$ 1
United Montauban Mines Ltd.	Toronto	March 13	2,000,000	\$ 1
		Feb. 18	5,000,000	\$ 1

(a) Preferred shares.

Mining Companies Incorporated in 1953 by Federal Charter
and Holding Mining Rights in Quebec

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
New Jersey Zinc Exploration (Canada) Ltd.	Quebec	Aug. 19	500	\$100
Ownamin Ltd.	Toronto	Feb. 20	10,000	None
West Macdonald Mines Ltd. .	Montreal	April 1	1,000,000	None

DIVISION OF EDITING AND PRINTING OF PUBLICATIONS

The chief of this division, Maurice Brunet, submits the following report for the fiscal year 1953-54.

Following is a list of the publications of the Department of Mines edited during the fiscal year 1953-54. All publications are issued in French and in English.

- Elementary Mineralogy, Revised edition, by Jean Girault
- The Mining Industry of the Province of Quebec for 1952
- Geological Report No. 58 - Waswanipi Lake Area (West Half), by Jacques Claveau
- Geological Report No. 59 - Waswanipi Lake Area (East Half), by Donald A.W. Blake
- Geological Report No. 60 - Maicasagi Area, by P.-E. Imbault
- Geological Report No. 61 - Parts of Hébecourt, Duparquet and Destor Townships, by R.B. Graham
- Geological Report No. 62 - The Tourelle and Courcelette Areas, by H.W. McGerrigle

- Preliminary Report No.289- General Report of the Minister of Mines of the Province of Quebec for the year ending March 31, 1953
- Preliminary Report No.290- Wacouno River Area, by Roger-A. Blais
- Preliminary Report No.291- Gériido Lake Area, by Robert Bergeron
- Preliminary Report No.292- Surprise Lake Area, by A.-N. Deland
- Preliminary Report No.293- Onslow-Masham Area, by R.-J.-E. Sabourin
- Preliminary Report No.294- Rosaire-St.Pamphile Area, by J. Béland
- Preliminary Report No.295- Thetford Mines-Black Lake Area, by P.H. Riordon
- Preliminary Report No.296- Charpeney-Coopman Area, by M.A. Klugman

- Preliminary Report No.297- Sainte-Justine Area, by W.A. Gorman
Preliminary Report No.298- Wakefield Area, by René Béland
Preliminary Report No.299- Dollier-Charron Area, by E.R.W. Neale
Preliminary Report No.300- La Tuque Area (East Half), by Marcel
Tiphane
Preliminary Report No.301- A Chemical Study of the Peats of Quebec,
VI, VII, by Risi, Brunette, Girard

INFORMATION AND PUBLICITY

In order to keep the public informed on the progress of the development of the mineral resources of the Province and of its mining industry, the officers of the Department of Mines prepare lectures, talks, communiqués and news-letters, which are delivered at meetings of scientific and technical societies and elsewhere. Numerous articles are also written for technical periodicals and mining newspapers, as well as for the daily press. Numerous official publications of the Department of Mines on geology and the mining industry keep the interested public well informed on the progress achieved from year to year.

In this domain, the following articles were prepared and released to the public during the fiscal year under review:

By the Hon. C.D. French, Minister of Mines

- "Notes sur l'industrie minérale de la province de Québec", article published in "Le Devoir", Montreal, March 1954.
- "L'Expansion de l'industrie minière de la province de Québec au cours des dernières années", article published in "Le Canada", Montreal, May 1953.
- "The Mining Development of Quebec", address given during the Provincial Exhibition at Quebec, September 1953.
- "Years of Progress for Quebec's Varied Mining Industry", article published in the annual number of the "Northern Miner", November 1953.

By A.-O. Dufresne, Deputy Minister of Mines

- "Quebec Mining in 1953 - Well Distributed Progress", article published in "The Gazette", Montreal, January 1954.
- "L'importance économique de l'industrie minière dans Québec", address delivered before the members of the Chambre de Commerce du District de Montréal, February 1954.

- "The expansion of Quebec Mining Industry", article published in the "Financial Post", Toronto, February, 1954.
- "The Organization of the Department of Mines of the Province of Quebec", article published in the "London Times", London, England, February 1954.
- "Les richesses minérales de la Gaspésie", address delivered before the Association of Students of the Gaspé Peninsula, Quebec, April 1953.
- "Les Progrès de l'industrie minière de la Province de Québec", article published in "La Presse", Montreal, June 1953.

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

- "Quebec's Mining Economic Outlook", conference delivered before the members of the Victoria Curling Club, December 1953.
- "La moisson de la pierre", illustrated pamphlet on the mineral substances produced in the Province of Quebec, published by the magazine "Le Jeune Naturaliste", Vol. IV, No. 7, March 1954.
- Illustrated conference delivered before the students of the Quebec Seminary on the recent developments of the mining industry of Canada, November 1953.

By J.-E. Gilbert, Resident Geologist, Rouyn

- "The Mining Industry of the Province of Quebec", conference delivered before the members of the English Section of the Junior Chamber of Commerce, Rouyn-Noranda, April 1953.
- "The Origin of the Universe", conference delivered before the members of the Northwestern Quebec Mining Association, Rouyn, October 1953.

By Robert Bergeron, Geologist

- "Gérardo Lake Area, Northern Ungava", conference delivered at the annual meeting of the Prospectors and Developers Association, Toronto, March 1954.
- (In collaboration with James Harquail), "Prospecting and Exploring of Iron Deposits in Northern Ungava", conference delivered at the annual meeting of the Canadian Institute of Mining and Metallurgy, Edmonton, April 1953; published in the C.I.M.M. Bulletin, Vol. 47, No. 504, April 1954.

By Roger-A. Blais, Geologist

- "Structural and Deceppitation Features of the Gold Mineralization

at the O'Brien Mine, Quebec", conference delivered at the joint annual meeting of the Geological Society of America and of the Society of Economic Geologists, Toronto, November 1953; published in the G.S.A. Bulletin, Vol.64, No.12, Part 2, December 1953.

By T.H. Clark, Geologist

"Senigon Well, Noyan, Quebec", conference delivered at the annual joint meeting of the Geological Society of America and of the Geological Association of Canada, Toronto, November 1953; published in the G.S.A. Bulletin, Vol.64, No.12, Part 2, December 1953.

By H.C. Cooke, Geologist

"Some Structures of the Eastern Townships of Quebec", conference delivered at the annual joint meeting of the Geological Society of America and of the Geological Association of Canada, Toronto, November 1953; published in the G.S.A. Bulletin, Vol.64, No.12, Part 2, December 1953; later as a conference published under the title of "The Green Mountain 'Anticlinorium' in Quebec", Proc. Geol. Ass'n. Can., Vol.6, Part 2, May 1954.

By P.E. Grenier, Geologist

"Geology of the Country Bordering the Southern Section of the Quebec North Shore and Labrador Railway", conference published in the Canadian Mining Journal, Vol.46, No.493, May 1953.

By E.R.W. Neale, Geologist

"Grenville Front in the Bethoulat Lake Area, Mistassini Territory, Quebec", conference delivered at the annual meeting of the Geological Society of America, Toronto, November 1953; published in the G.S.A. Bulletin, Vol.64, No.12, Part 2, December 1953.

By J.M. Neilson, Geologist

"Late Pleistocene Glaciation in North-Central Quebec", conference delivered at the annual meeting of the Geological Society of America, Toronto, November 1953; published in the G.S.A. Bulletin, Vol.64, No.12, Part 2, December 1953.

By F.F. Osborne, Geologist

"Petrology of the Charny Formation, Lower Cambrian, near Quebec City, Canada", conference delivered at the joint annual meeting of the Geological Association of Canada and of the Geological Society of America, Toronto, November 1953; published in the G.S.A. Bulletin, Vol.64, No.12, Part 2, December 1953.

By F. Abesque, Chemical-Engineer

"Identification roentgenographique des allanites métamictes", conference delivered at the annual meeting of ACFAS, October 1953.

By C.-E. Brunette, Chemical-Engineer, and J. Risi, Chemist

"Etude chimique des tourbes du Quebec. -VI.- Composition des tourbières 'Small Tea Field' et 'Large Tea Field'", conference delivered before the annual meeting of ACFAS, October 1953.

"A Chemical Study of the Peats of Quebec", report presented before the Chemistry Section of the Royal Society of Canada, June 1953.

By Alexis Dmitrieff-Kokline, Chemist

"Les sources d'émission en photométrie de flamme", conference delivered at the annual meeting of ACFAS, October 1953.

By Jean Girault, Mineralogist

"Note sur la découverte de britholite dans la Province de Québec", conference delivered at the annual meeting of ACFAS, October 1953.

"Sur la présence dans la Province de Québec d'un spinelle naturel, de forme $TiFe_2O_4$, conference delivered at the annual meeting of ACFAS, October 1953.

"Sur un spinelle titanifère, de formule $TiFe_2O_4$, provenant du lac de la Blache, comté de Saguenay", article published in "Le Naturaliste Canadien", Vol.LXXX, No.12, December 1953.

COLLECTION OF DUES ON MINES

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

During the fiscal year 1953-54, the Department of Mines received sworn statements on mineral production from 31 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 \$4,458,988.85 on net profits as defined by the law.

In addition to the above, which is a tax on the annual net profit of mines, 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 254 owners of unproductive properties. A sum of \$3,033.69 was collected from 109 holders of such dormant properties. The other 145 holders of unproductive properties sent in sworn statements that at least 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 above mentioned (Quebec Mining Act, Div. VIII, Sec. 50).

Table X.-Comparative Statement of Revenue Collected by the Department of Mines During the Fiscal Years 1951-52 to 1953-54

(Prepared by Gérard Gagnon, Chief Accountant)

	1951-52	1952-53	1953-54
Miner's certificates	\$ 83,770.00	\$ 75,090.00	\$ 104,240.00
Development licenses	512,615.06	534,318.48	545,988.97
Penalties	170.00	-----	-----
Exploitation leases	-----	100,000.00	100,000.00
Sales of mining concessions.	27,507.27	26,462.84	6,972.07
Fees for transfers of titles	23,961.00	24,100.00	21,540.00
Taxes on mining concessions.	2,672.68	2,890.28	3,033.69
Rights on townsite lots	1,665.71	14,379.77	13,441.76
Rentals on townsite lots ...	834.00	258.00	216.00
Dues on annual profits	4,010,073.45	5,017,541.97	4,478,200.36
Permits of sales of unwrought metals	12.00	18.00	20.00
Sales of maps, blue prints, etc.	4,566.97	4,330.30	4,712.10
Mineral collections	484.00	959.25	1,613.05
Fees for assay and analyses.	3,249.28	2,572.65	3,975.92
Miscellaneous	18,247.03	9,129.43	11,483.51
Casual revenue	1,125.00	-----	1,218.69
Total	\$4,690,953.45	\$5,812,050.97	\$5,296,656.12

There is a difference between the figures given in the above table 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".

THE LIBRARY

During the course of the year, the library received 2,895 additional units distributed as follows: 1,363 reviews, 593 reports, 321 pamphlets, 390 volumes, 16 manuscripts and 212 maps. This is an increase of 593 units as compared with the preceding year.

One hundred and thirty-five volumes were purchased by the Department. This is 20 more than last year. These volumes treat of various subjects of the mineral industry, metallurgy and related sciences: mineralogy, geology, physics and chemistry.

The Library also receives a number of volumes through exchanges made with the Federal Government and a few foreign countries, such as the United States, Europe, Asia and Africa, as well as with the other provinces of Canada.

Because of the periodicals, reviews and other publications received by the library, the technical staff of the Department is always able to keep up to date with the more recent mining developments. At present some twenty subscriptions to newspapers and periodicals, as well as about one hundred to magazines and reviews, are in force.

The public is always welcome at the library where it may either consult our reports or our maps, the number of which increases regularly, or, again, obtain information from the technical personnel.

The public seems to show a greater interest in mining questions as the number of visitors who come to the library revealed. During 1953-54 we had 650 visitors as compared with 500 the preceding year.

During the course of the year, André Champagne, the librarian, had 28 volumes, 18 reviews, and 130 reports bound, beside having 129 geological and topographical maps put on linen.

The interest of the public may be assessed partly by the number of loans granted during the year. During the year under review, 112 documents were loaned besides the large number of volumes and reports which were consulted inside the library by visitors and our technical personnel.

The library committee meets regularly once each month to decide on the purchase of volumes and to settle certain administrative questions.

SCHOLARSHIPS

In accordance with its policy of encouraging young men to adopt a career related with the mineral industry, the Quebec Legislature has placed at the disposal of the Department of Mines the sum of \$40,000 for the fiscal year 1953-54 to be spent in scholarships on students in geology, metallurgy or mining.

Following the procedure of the past years, the Minister of Mines commissioned a committee composed of representatives from universities and from the Provincial Department of Mines to choose candidates for these scholarships.

This committee was composed during 1953-54 of the following: A.-O. Dufresne, Deputy Minister of Mines; Adrien Pouliot, Dean of the Faculty of Science of Laval University; the Reverend J.W. Laverdière, Director of the Geological Department of Laval University; Henri Gaudefroy, Director of the Montreal Polytechnic School; J.U. MacEwan, Director of the Department of Metallurgy, McGill University, Montreal; I.W. Jones, Chief of the Geological Surveys Branch of the Department of Mines; and Miss Gisèle Landreville, Secretary of the Committee.

The committee proceeded, as in the past, to study applications. To begin with, it considered the applications of holders of diplomas who wish to obtain a Master of Science degree or a Doctorate; next, it studied the application of holders of scholarships of the preceding year who fulfilled all the requirements for a renewal; and, lastly, it considered the application of new candidates having matriculation in the order of merit and qualifications.

The Department of Mines awarded during 1953-54 fifty-six scholarships, distributed as follows:

Candidates to post-graduate courses	17
Students entering final year in science faculties	15
Students in less advanced years	24

The members of the Committee wish to express their thanks to the Government of the Province for the financial assistance given our young men who prepare themselves to play an important role in the mining industry.
