

GENERAL REPORT

OF THE

MINISTER OF MINES

OF THE

PROVINCE OF QUEBEC

FOR THE YEAR ENDING MARCH 31st

1953



Quebec, October, 1953.

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, 1953, in accordance with Section 229 of the Quebec Mining Act.

Your respectful servant,

C.D. FRENCH,
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. 1953

To the Honourable Charles D. French,
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, 1952, to March 31st, 1953.

Your obedient servant,

A.O. Dufresne,
Deputy Minister.

THE MINING INDUSTRY OF THE PROVINCE OF QUEBEC

DURING THE FISCAL YEAR 1952-53

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 1952, the value of the mineral production was \$270,739,552, an increase of nearly \$15,000,000, as compared with the results obtained during the preceding year. This was the six consecutive year that a new high in production was established. Although a slight increase in the production value of the first three months of

1953 was noted for precious metals and the principal base metals, the trend of the prices paid being downward, it is probable that the total value for the year under review will be slightly inferior to that of 1952.

The value of the ten metallic substances produced during the course of 1952 was about the same as that for the preceding year, that is \$120,283,133, in comparison with \$120,257,513 for 1951. Values obtained were increased only for copper, ingot iron, molybdenite and lead, whereas decreases were registered for silver, bismuth, titaniferous iron, gold, selenium and zinc.

In relation to quantities produced, slight inclines were registered for silver, ingot iron, lead and zinc, whereas declines were recorded for bismuth, copper, titaniferous iron, molybdenite and selenium. The most important metals produced were copper, gold and zinc, which accounted for more than 40 per cent of the total value of the mining industry.

There are at present in the Province of Quebec seventeen ore-dressing plants producing gold exclusively. Their maximum daily capacity is nearly 15,000 tons, whereas base metals ores are milled at a rate exceeding 25,000 tons per day.

A few plants are under construction. Their daily capacity will be approximately 10,000 tons per day, so that in the near future 50,000 tons of metallic ore of various kinds will be milled daily in the plants of the Province of Quebec.

Industrial minerals showed an increase of \$8,000,000 in comparison with the values received during the course of 1951. This increase is almost exclusively due to asbestos, which accounts for 31.5 per cent of the total value of all minerals produced and which, during 1952, was valued at \$85,248,098 for 906,223 tons of asbestos, representing an average value of \$94 per ton for the asbestos produced. Among the other industrial minerals, must be mentioned industrial lime, magnesitic-dolomite and brucite, sulphur and titanium oxide.

In the category of mineral substances used as building material, an advance of \$6,000,000 was recorded. This group comprises eleven mineral substances and accounts for 19.7 per cent of the total value. The most important items of this group are cement, building limestone, and clay products.

MINERAL PRODUCTION
OF THE
PROVINCE OF QUEBEC

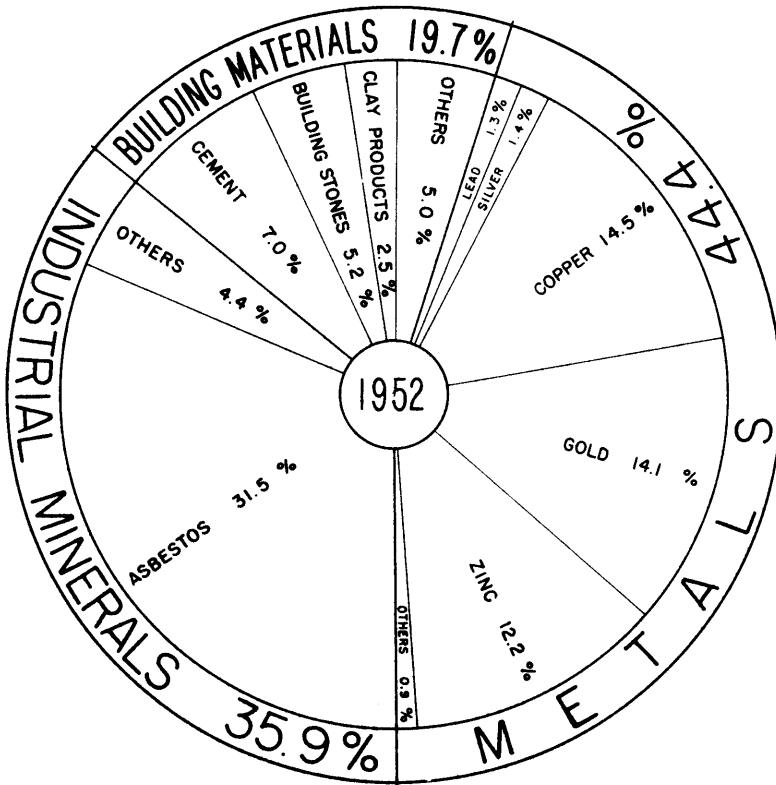


Table I.-Value of the Mineral Production of the Province of Quebec in Calendar Years 1951 and 1952
(Compiled by C.O. Beaudet, Chief, Division of Mineral Statistics of the Quebec Department of Mines)

	Value <u>1951</u>	Value <u>1952</u>
METALS		
Bismuth	\$ 56,232	\$ 27,171
Copper	38,151,738	39,297,212
Gold	(a)39,342,350	(a)38,143,709
Iron (ingots)	777,142	1,815,007
Lead	2,854,323	3,406,353
Molybdenite	228,958	409,831
Selenium	536,463	256,198
Silver	3,928,078	3,788,626
Titaniferous iron ore	9,790	459
Zinc	<u>34,372,439</u>	<u>33,138,567</u>
Sub-Totals	\$120,257,513	\$120,283,133
NON-METALLICS		
I.-Industrial Minerals		
Arsenic	\$ 35,029	\$ 5,399
Asbestos	77,627,863	85,248,098
Feldspar	425,370	293,007
Industrial lime	3,937,397	3,426,334
Industrial limestone	1,220,967	1,153,226
Magnesitic dolomite,brucite and magnesium.	2,437,773	2,715,266
Marl	17,031	25,992
Mica	125,753	79,544
Mineral water	146,521	165,593
Ochre and iron oxide	262,277	194,922
Peat (For fuel	800	---
Peat (Peat moss and humus	436,833	405,852
Quartz and industrial sand	579,633	583,644
Soapstone and talc	123,084	130,901
Sulphur	(b) 895,253	(b)1,567,953
Titanium oxide (in slag)	<u>738,577</u>	<u>1,238,103</u>
Sub-Totals	\$ 89,010,161	\$ 97,233,834
II.-Building Materials		
Building lime	\$ 641,501	\$ 608,197
Building limestone	7,689,181	8,817,186
Cement	16,633,377	18,838,458
Clay products (Brick	5,217,532	4,937,021
(Other products	1,556,777	1,706,455
Granite	3,141,177	4,873,257
Marble	144,968	165,056
Sand and gravel	10,616,701	12,744,630
Sand-lime brick	422,921	282,998
Sandstone	597,066	246,916
Slate and shale	<u>2,947</u>	<u>2,411</u>
Sub-Totals	<u>\$ 46,664,148</u>	<u>\$ 53,222,585</u>
Grand Totals	<u>\$255,931,822</u>	<u>\$270,739,552</u>

(a) Value in Canadian funds. The standard value at the rate of \$20.671834 per ounce troy is \$23,008,475 for 1952 and \$22,069,973 for 1951.

(b) Sulphur in pyrite shipped and sulphur recovered in Quebec from zinc concentrates.

Table II.-Subdivision of the Annual Value of the Mineral
Production of the Province of Quebec, 1947-1952

Year	Metals	Per Cent	Industrial Minerals	Per Cent	Building Materials	Per Cent	Total
1947	\$ 50,159,626	43	\$39,792,717	34	\$26,089,657	23	\$116,042,000
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

The pie diagram on page 7 shows the values expressed in percentages of the main mineral substances produced during the course of 1952.

Among the recent developments which have accelerated the mineral production must be mentioned the progress accomplished in the following mining regions:

Western Quebec

The mines of Western Quebec are still producing the greater part of the mineral substances. The existence of geological formations favourable to the presence of precious and base metals continues to attract large numbers of prospectors to that region. The mines of this region produced during the course of 1952, copper, gold, silver, zinc, lead, selenium, sulphur, arsenic, molybdenite, and bismuth, valued at \$106,170,770 for 9,149,525 tons of ore milled, representing an average value of \$11.60 per ton of ore dressed in the various mills.

Towards the end of 1952, Barvue Mines Limited, a subsidiary of Golden Manitou Mines Limited, started to produce concentrates of zinc and silver at its mill in Barraute township. The Barvue Mines Limited mill treats more than 4,000 tons of ore each day. Drilling has indicated the presence of some 18,000,000 tons of ore down to a depth of 700 feet.

During the month of July the ore-dressing mill of Bevcourt Gold Mines, in Louvicourt township, started to operate at a rate of 400 tons of ore per day and by November was milling more than 600 tons a day. Bevcourt Gold Mines is a former producer of gold, which

stopped operations towards the end of 1948. Drilling and development work were resumed during the course of 1950, however, when the company prepared to produce again and moved to its property the mill of Perron Gold Mines, which had ceased to operate.

Gaspé

Gaspé Copper Mines Limited, a subsidiary of Noranda Mines Limited, began development work on the low-grade copper deposits located in Holland township, in the electoral district of Gaspé-North. The mining of these deposits, estimated at 67,000,000 tons of ore with an average tenor of 1.3 per cent copper, will necessitate large-scale operations, including the construction of an ore-dressing plant with a daily capacity for milling 6,500 tons of ore and a smelter capable of producing 125 tons of copper anodes per day.

The first mining operations will be carried out on the Needle Mountain deposits, which are estimated at more than 25,000,000 tons of ore containing 1.8 per cent copper. This is slightly higher grade than the general average.

Such developments require the establishment of a mining town near the site of the deposits to be exploited. Plans have been prepared for the residential quarter to accommodate a population of about 4,000.

Access to Holland township is via a motor road covering the distance of 62 miles eastward between the mine site and the town of Gaspé. Another road to link the mine to Anse Pleureuse, twenty-four miles to the north and along the south shore of the St. Lawrence, is under construction. The shipping harbour of Mont-Louis is situated only four miles west of Anse Pleureuse.

Another project of interest for that part of the province and its future mining development is the construction of an electric power transmission line from Bersimis, situated on the opposite shore of the St. Lawrence river.

The development planned by Hydro-Quebec along the Bersimis river consists mainly in the construction of a dam at the outlet of Cassé lake, 85 miles north of Forestville. Plans are for the harnessing of 1,200,000 h.p.

An important part of the hydro-electric production will be diverted towards the Gaspé peninsula to meet the new needs created by the mining industry of that region. To this end an overland transmission line with a capacity of 150,000 volts will extend from the power plant to the point of Manicouagan. To cross the St. Lawrence river, 31 miles wide at that point, four submarine cables, having an initial capacity of 40,000 h.p., although they will be built to carry 100,000 h.p., will be installed. These cables will reach the South Shore at Les Boules, approximately 10 miles east of Mont Joli, whence another overland transmission line of 150,000 volts will be constructed to the mine in Holland township, a distance of approximately 135 miles. It is expected that this installation will be completed by the end of 1954, so that normal production at the mine may start early in 1955.

Chibougamau

Several companies are getting ready for mining production in this region. The construction of a 400-ton per day ore-dressing plant at the Opemiska Copper Mines Limited will be completed in December in Lévy township. A 21-mile road links the mine site to the main Chibougamau highway. Known reserves of ore at the Opemiska mine are estimated at more than 1,000,000 tons of ore containing copper, gold, and silver.

Campbell Chibougamau Mines Limited, whose properties are situated under the waters of Lac Doré, has leased part of the Merrill Island from the Corporation of the same name. Known ore reserves of Campbell Chibougamau Mines Limited (including the leased portion of Merrill Island property) were estimated at 2,500,000 tons containing mostly copper and gold.

With regards to Merrill Island Mining Corporation's adjacent holdings, drilling has revealed the presence of 700,000 tons of similar ore. This drilling was carried out to a depth of 300 feet. The total reserves presently known of these two companies, the exploitation of which will be combined, are in the neighbourhood of 3,300,000 tons.

A 4-compartment shaft was sunk to a depth of 1,000 feet at the Campbell Chibougamau mine on the property leased from Merrill Island Corporation. Following an agreement reached by both companies, the ore will be processed in the same mill, which will have a daily capacity of 1,700 tons when built.

A 600-foot shaft was started on the Chibougamau Explorers Limited properties in La Dauversière and Rohault townships. Diamond drilling on that property has showed reserves of 515,000 tons of ore containing gold and a small content of copper. The Department of Mines has completed the construction of a mine road from the site of the workings to the main Chibougamau highway.

Several other mining companies have carried out important developments in that region, but the reserves presently known are not sufficient to justify the exploitation of the deposits.

New Quebec

In the New Quebec region, development of the iron deposits on the property of Hollinger North Shore Exploration Co. Ltd. and construction of the railroad have been assiduously pushed forward at such a rate that the first shipments of ore may be expected next summer. Exploration carried out to date indicate the presence of 281,000,000 tons of ore in 25 deposits. These reserves were not increased during 1952. The drilling executed was directed for the purpose of obtaining the necessary information bearing on future open-pit mining.

As to the combined operations of Hollinger North Shore and Exploration Co. Ltd. and of Labrador Mining and Exploration Co. Ltd. which has a mining concession adjacent to the first in Labrador, officials of the latter company report the presence of 136,000,000 tons of iron ore. During the summer months about 6,000 men were employed by Iron Ore Company of Canada in constructing a railroad and in developing the deposits.

The other mining companies which hold mineral rights in this region are Norancon Exploration (Quebec) Ltd., Great Mountain Iron Corporation, Fort Chimo Mines Limited, Quebec Labrador Development Company Ltd., and Fenimore Iron Mines Ltd. These companies have continued their explorations but have not discovered any important new deposits during the year reviewed.

Two new mining companies, Atlantic Iron Ores Co. Ltd. and International Iron Ores Co. Ltd. have been incorporated during the course of the year in order to develop deposits of iron ore discovered the preceding year.

Atlantic Iron Ores obtained, under date of March 16, 1953, a mineral exploration license covering an area of 160 square miles in the region of Hopes Advance bay, whereas International Iron Ores obtained, under the same date, a mineral exploration license covering an area of 600 square miles, about 100 miles farther north.

LEGISLATION

During the first session of the twenty-fourth Legislature of the Province of Quebec, the Quebec Mining Act was amended as follows:

1.- The Quebec Mining Act (Revised Statutes, 1941, chapter 196) is amended by adding, after section 9, the following:

"9a. In the case of mines contemplated by section 9, when the mining rights and right of ownership of the land belong to the same person, the sale of such land for default of payment of municipal or school taxes shall not transfer to the purchaser the ownership of the mining rights on such land.

As from the date of such sale, the mines in the sub-soil of the land concerned and the mining rights attached thereto shall revert to the public domain of the Crown, and such mines may be opened to new staking or sold only in virtue of an order of the Lieutenant-Governor in Council, which shall take effect after ten days from its publication in the Quebec Official Gazette".

2. Section 37 of the said act is amended by adding in the twelfth line thereof after the word "mines" the words "as well as the operation of sand or gravel deposits".

3. The said act is amended by adding thereto, after section 117, the following:

"117a. Notwithstanding the provisions of section 120, the Lieutenant-Governor in Council may, upon conditions and restrictions as he may determine, in the case of mining land in whole or in part under a lake or water course, authorize the holder of the mining rights on this land or his assigns to carry out the drainage of the water and the removal of mud covering such mining land by any means he may deem appropriate.

"117b. With his request for the authorization of the work contemplated for in section 117a, the holder of the mining rights must submit for approval to the Lieutenant-Governor in Council the plans and specifications of the proposed work.

"117c. No person may hinder or limit by means of injunction the carrying out of works authorized by the Lieutenant-Governor in Council under section 117a and carried out in accordance with this authorization and with the plans and specifications submitted to him.

Nevertheless, the holder of the mining rights shall be liable for any damage occasioned to third parties through the execution of such works.

"117d. The holder of mining rights who has obtained authorization to carry out works under section 117a has the right to expropriate the immovables and real rights necessary to such execution provided that such immovables and real rights be described in the plans and specifications submitted to the Lieutenant-Governor in Council under section 117b.

"117e. The holder of mining rights who desires to take advantage of the provisions of section 117a must deposit at the registry office of the county in which are situated the lands affected by the carrying out of the works contemplated under section 117b a certified copy of the required plans and specifications and cause to be posted a public notice at the door of the church of each municipality.

The Lieutenant-Governor in Council will not take into consideration any plan or specification submitted in virtue of article 117b before a delay of thirty days from the date of such deposit and notice."

4. Section 121 of the said act is amended by replacing, in the fourth and fifth lines the words "Rouyn township and adjacent townships" by the words "the townships of Rouyn, Holland, and McKenzie and those contiguous thereto".

5. Section 122 of the said act is amended.

a. by replacing in the second and third lines of first

paragraph the words "the township of Rouyn and adjacent townships" by the words "the townships of Rouyn, Holland and McKenzie and those contiguous thereto";

b. by replacing, in the eighth line of the said paragraph the words "township of Rouyn" by the words "townships of Rouyn, Holland, and McKenzie and those contiguous thereto";

c. by replacing, in the twelfth and thirteenth lines of the first paragraph, the words "Director of the Bureau of Mines" by the words "chief inspector of the Department of Mines".

6. Letters patent dated February 29th, 1952, and amended on October 31st, 1952, respecting mining concession No. 373, and with reference to block "A" of the township of Ireland and to the block "D" of the township of Coleraine, county of Megantic, there declared valid and legal.

An "Act Organizing Mining Villages", chapter 24, was approved at the same session of 1952-53. This Act authorizes the Lieutenant-Governor in Council to set aside by letters patent any land that he considers suitable for the development of a mining centre and establish it as a village municipality.

The chief provisions of this Act provide for the formation of the first municipal council of this mining village nominated by the Lieutenant-Governor in Council for five years; the establishment of municipal funds; the nomination of a manager; etc.

MINERAL RIGHTS BRANCH

During the fiscal year ending March 31st, 1953, the number of miner's certificates issued was slightly higher than that for the previous year. These certificates are issued by the Department of Mines at Quebec or through one of its agencies situated at Noranda, in the electoral district of Rouyn-Noranda; Ville-Marie, in the district of Témiscamingue; Amos, Val d'Or, and Chibougamau, in the electoral district of Abitibi-East; Hull, in the electoral district of Gatineau; and at Montreal.

The number of claims staked and recorded in the fiscal year under review was 21,912, as compared to 22,807 during the preceding year. On the other hand, the number of development licenses issued and renewed was increased considerably from 5,407 to 6,562 for 1952-53.

J.X. Mercier is the Chief of this Branch. His assistant is Harry Ledden, Chief Registrar.

Table III.- Various Titles Issued by the Department of Mines

(Fiscal Years 1951-52 and 1952-53)

Designation of Title	1951-52	1952-53
Claims recorded at Amos	8,650	8,256
Claims recorded at Noranda	3,267	2,146
Claims recorded at Quebec	6,788	8,389
Claims recorded at Chibougamau	<u>4,102</u>	<u>3,121</u>
Total	22,807	21,912
Miner's certificates issued	7,531	7,577
Development licenses issued	1,382	1,454
Development licenses renewed	4,025	5,108
Mining concessions	8	9
Transfers of titles registered	2,393	2,410
Reports of work: man-days reported	843,050	815,039
Reports of work: diamond drilling, in feet..	604,592	512,165

Table IV.-Mining Titles Issued since 1943-44
(Fiscal Years)

Fiscal Year	Number of Miner's Certificates	Number of Claims Recorded	Number of Development Licenses	Concessions		Transfers of Mining Rights
				Number	Acres	
1943-44	3,113	8,941	2,788	3	341	978
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

Table V.-Comparative Statement of Exploration Work
on Mining Claims and Licenses During
Calendar Years 1942 to 1952

Year	Number of Work Days (man-days)	Diamond Drilling (in feet)
1942	175,338	115,056
1943	40,160	25,913
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

INSPECTION OF MINES BRANCH

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

The main duties of this Branch comprise:-

- a) the inspection of mines and quarries, including treatment plants, 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 addition, the Inspectors of Mines note and report on the observance of various sections of the Mining Act, notably those dealing with operational problems, such as mill-sites, tailings-sites, water supply, and permits to export ores and concentrates.

The Inspection of Mines Branch sees to the administration of the Mine Rescue Training Plan, carried out in collaboration with the Quebec Workmen's Compensation Commission and the Western Quebec Mines Accident Prevention Association.

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.

Technical personnel on the staff of this Branch include an Assistant Chief Inspector of Mines, four Inspectors of Mines, two Ventilation Engineers, and one Electrical Engineer. During the twelve-month period under review, Mr. Fernand Cloutier was appointed to the post of Inspector of Mines, and Mr. André Thibaudeau was engaged as Ventilation Engineer.

The two dust-counting laboratories, established at Quebec and Noranda, were operated throughout the fiscal year by André Thibaudeau and Georges Courtemanche, the two Ventilation Engineers assigned to these posts. Studies of atmospheric conditions in underground workings and surface plants were completed at 49 mines, and involved a number of extensive ventilation surveys as well as the taking of 474 samples of air-borne dust.

Mr. Lucien Trudel, Senior Electrical Engineer, carried out 70 inspections of the electrical installations at mines and quarries.

Special Agents, in Noranda and Thetford Mines, assisted the Inspectors in various phases of their work, and carried out other duties assigned to them. Early in 1953, the Special Agent at Thetford Mines was transferred to the Laboratories Branch.

The Mine Rescue Training programme was continued without interruption. A new Station with garage facilities and living quarters for the Superintendent was erected in the town of Bourlamaque. Two emergency calls for mine fires were received and response was immediate. Since the introduction of the Mine Rescue Plan in Western Quebec five years ago, 440 men have been awarded certificates of competency in Rescue and Recovery operations. Active personnel now consists of 265 men distributed throughout 22 producing mines. In the same period, 19 men were awarded Department of Mines certificates in First Aid to the Injured.

Orders-in-Council enacted during the fiscal year included twenty-two permissions to export concentrates, six approvals of mill-sites, and one lease for tailings purposes.

In accordance with the provisions of Section 196 of the 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 parties interested.

Under the provisions of the Unwrought Metal Sales Act, seven new licenses were issued during the fiscal year; there were 15 license holders apart from the producing mines.

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

GEOLOGICAL SURVEYS BRANCH

I.W. Jones, Chief of this Branch, reports an active year in carrying out the principal function of the Branch: investigating the geology of extensive regions in widely separated parts of the Province so that it may indicate areas to which prospectors and other geologists may direct their search for mineral deposits.

Difficulty in obtaining personnel, however, prevented surpassing the record of 1951 when nineteen geologists had been in charge of investigations. Because of this difficulty, and because of an insufficient number of students following geology at the universities, it was possible to have only twelve field investigations under way during the summer and autumn months of 1952. Of the twelve geologists in charge of these investigations, four were of the permanent staff, while the eight others had to be recruited on a temporary basis from outside sources: some from university teaching staffs and others from geologists pursuing advanced research at universities towards the obtainment of doctorate degrees.

In addition to the twelve geologists in charge of the various investigations, the parties sent out by the Geological Surveys Branch in 1952 gave employment to nine other graduate geologists, sixteen students, and sixteen other men engaged locally as canoemen, portageurs and cooks. Most of the parties covered areas of about 200 square miles each.

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

New Quebec (Ungava)

Robert Bergeron kept in touch with the important developments in this region, particularly in the northern part where, south and west of Ungava bay, six companies were exploring for iron-bearing deposits under geological conditions similar to those around the large deposits that are being prepared for production in the southern part of the region.

A timely report that has been much in demand was issued during the year on "Northern Quebec, A New Mining Area". It was prepared by J.E. Gilbert before he was transferred from this Branch to the Mineral Deposits Branch.

Chibougamau Region

Two geological parties examined areas southwest of Chibougamau lake where there is much prospecting activity and where some copper and gold mines are approaching the producing stage of their development.

P.E. Grenier geologically mapped the Gamache area, between latitudes $49^{\circ}15'$ - $49^{\circ}30'$ and longitudes $74^{\circ}30'$ - $74^{\circ}45'$.

H.B. Lyall covered the Brongniart-Lescure area, between latitudes $49^{\circ}30'$ - $49^{\circ}45'$ and longitudes $74^{\circ}45'$ - $75^{\circ}00'$.

A useful map, in two sheets, was issued during the year to show the geology of the region extending from Chibougamau to the Ontario boundary. It was compiled by P.E. Imbault before he left the Department to enter the services of a private company.

Saguenay County

H.R. Hogan continued the Department's programme of investigating the country bordering the railway that is being built to join Seven Islands with the rich iron field of Ungava. In 1952, he covered the Nipisso Lake area that lies between latitudes $50^{\circ}45'$ - $51^{\circ}00'$ and longitudes $65^{\circ}45'$ - $66^{\circ}00'$, about 45 miles northeast of Seven Islands.

G.E. Cooper, completing the geological mapping of the Johan Beetz area that he had begun in 1951, covered the ground between latitudes $50^{\circ}15'$ - $50^{\circ}30'$ and longitudes $62^{\circ}45'$ - $63^{\circ}00'$. This area is on the north shore of the St. Lawrence, about 25 miles east of Havre St. Pierre.

Gaspé Peninsula

H.W. McGerrigle continued investigating the country north of the large copper deposits that are being prepared for produc-

tion in Holland township. In 1952, he mapped the geology of the eastern half of the Madeleine River area, from latitude $49^{\circ}00'$ to $49^{\circ}15'$ and between longitudes $65^{\circ}15'$ and $65^{\circ}30'$.

Montmagny, Bellechasse and Dorchester Counties

A programme of geologically mapping the region around the newly discovered nickel-copper deposits of Rolette township was begun by Jacques Béland. In 1952, he covered the St. Magloire area, between latitudes $46^{\circ}30'$ - $46^{\circ}45'$ and longitudes $70^{\circ}00'$ - $70^{\circ}30'$.

Eastern Townships

H.C. Cooke continued his programme of geologically investigating and mapping the Eastern Townships and, in 1952, he covered the western half of the Richmond area (between latitudes $45^{\circ}30'$ - $45^{\circ}45'$ and longitudes $72^{\circ}15'$ - $72^{\circ}30'$) and also the eastern half of the Drummondville area (latitudes $45^{\circ}45'$ - $46^{\circ}00'$ and longitudes $72^{\circ}00'$ - $72^{\circ}15'$).

Marcel Tiphane, in addition to being associated with Dr. Cooke in the work just mentioned, made a detailed study of the geology of Brome and Shefford mountains.

Joliette, Berthier, Maskinongé and Richelieu Counties

Continuing his investigations of the St. Lawrence Lowlands, I.H. Clark completed mapping the Sorel area, between latitudes $46^{\circ}00'$ - $46^{\circ}15'$ and longitudes $73^{\circ}00'$ - $73^{\circ}30'$.

Gatineau County

F.F. Osborne, during part of the summer, completed mapping the geology of the Wakefield area (latitudes $45^{\circ}30'$ - $45^{\circ}45'$, longitudes $75^{\circ}45'$ - $76^{\circ}00'$) most of which had been covered the previous year by R. Béland.

Water Supply Problems

Roland DeBlois, by conducting hydrological investigations, continued to assist several municipalities and individuals in finding adequate water-supply.

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 for oil in Gaspé peninsula.

F.F. Osborne served in a supervisory and advisory capacity for geological investigations in Montmagny county and for problems relating to 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. He also spent a great deal of time as active secretary of the committee that organized and sponsored the Ninth Annual Conference of Ministers of Mines which was held in Quebec in September, 1952. He compiled and edited a voluminous report presenting the proceedings of the Conference and the several technical papers that were presented at it.

The chief of the Geological Surveys Branch, Dr. Jones, in addition to his administrative duties in connection with the various geological investigations mentioned above and with other matters of the Department, had frequent occasion to deal with requests for information concerning the geology of the Province and related subjects. He also represented the Department of the 19th session of the International Geological Congress that was held in Algiers in September, 1952.

Members of the geological staff of this Branch represented the Department of Mines at meetings of engineering, prospecting and other scientific organizations that were held during the year. Several of them contributed papers to these meetings.

Equipment Section

Arthur Boucher, custodian of equipment, reports to Dr. I.W. Jones that, during the fiscal year 1952-53, his section furnished, and maintained in good condition, instruments and camping equipment for the 38 geological and engineering parties that were sent in the field for the Geological Surveys Branch, the Mineral Deposits Branch and the 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 given to prospectors and to organizations engaged in exploration and development.

During the summer and early autumn, 10 parties were in the field, and in addition the resident geologists stationed at Rouyn and Val d'Or made examinations of mining properties under development in each of their respective fields. The field personnel included 17 geologists, two mining engineers, eight student assistants, and eight labourers or other help.

R. Blais spent two weeks in the fall of 1952 collecting further samples at the O'Brien mine for a geothermometry study carried out in the Department of Geology at the University of Toronto. This is a continuation of a Laboratories research project, the objective of which is a better understanding of the mode of formation of gold deposits.

P.E. Bourret, Mining Engineer in charge of industrial minerals technology, examined sixty properties in various stages of development from mineral prospects to producing mines. These properties are situated mainly in the southern part of the province and in the lake St. John 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 eight quarries were made in collaboration with Ovide D. Maurice.

J.E. Gilbert, resident geologist at Rouyn, made visits to thirty-three 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 east half of Duparquet township and the whole of Cadillac township. The existing compilation of the geology of the southwest quarter of Rouyn township was revised. The revision of the geology of the northeast quarter of

Rouyn township was undertaken by Jean Dugas, assistant to the resident geologist at Rouyn.

Henri Girard made an examination of thirteen peat bogs which are in operation in the Province. These examinations include studies of the drainage, investigations of the quality of the peat and its possible uses. Two peat bogs were sampled with a view to obtaining material for chemical research on Quebec peat.

R. Bruce Graham visited twenty-seven mining properties under development and exploration in the Chibougamau area.

W.N. Ingham, resident geologist at Val d'Or, revised the compilations, at a scale of one inch equals 1,000 feet, of the geology of the northeast quarter of Fournière township and the northwest quarter of Dubuisson township. Together with his assistant, Maurice Latulippe, he undertook the detailed geological survey in the north half of Bourlamaque township. During the year seventy-five visits were made to mining properties in his district.

Burdett Lee undertook reconnaissance and detailed surveys in the Buckingham district for the purpose of guiding prospectors in the search for graphite deposits.

Ovide D. Maurice, geologist in charge of building materials, kept in contact with the quarry operators and visited twenty quarries and six brick yards to report on development, to give technical advice and to collect information for a general report on the building stones in Quebec. Detailed geological mapping of eight of these quarries was done in collaboration with P.E. Bourret. In addition, nine properties in the exploration stage and four producing mines were visited in order to report on the value of the mineral occurrences or to give technical advice.

David J. McDougall continued a programme of detailed geological mapping in the eastern half of the Western Quebec Mining Belt. The area covered by the party was the south half of Barraute township which includes the probable extension of the formations in which have been discovered the large deposits of zinc and silver successfully developed to the production stage in October, 1952, by Barvue Mines Limited.

L.G. Murray commenced a study of wall-rock alterations in the vicinity of the sulphide deposits in the Appalachian region. 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 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 has recently been rehabilitated for production by the Weedon Pyrite and Copper Corporation Limited after a period of many years of inactivity.

Peter Riordon completed a detailed geological study of the Thetford area and the asbestos deposits. This marks the completion of a three-year programme of detailed geological mapping with a view to guide exploration for other deposits and the planning of the development of the district.

This 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, 127 geophysical reports, 48 detailed geological reports and 173 diamond-drill logs were examined. In addition, 162 reports or prospectuses were studied at the request of the Registrar, Quebec Securities Act. Finally, fifteen engineers' reports submitted in support of application for mining concessions were studied.

Initiation Lectures on Prospecting

Initiation lectures on prospecting were given in eleven municipalities and were generally well attended. The purpose of these lectures is to initiate the general public to the principles of geology and mineralogy, and to discuss various aspects of the Quebec Mining Act useful to a beginner. The more active prospectors appreciate this occasion to discuss their problems with a geologist who often helps them to identify mineral samples of their collection. These lectures were prepared and presented by Ovide D. Maurice.

Following is a list of municipalities visited, and the average attendance at each of the nine weekly lectures:-

Warwick (23), Ste-Anne des Monts (14), Gaspé (4), New Richmond (31), Sherbrooke (34), Hull (25), Buckingham (13), Bryson (25), Senneterre (23), Malartic (17), LaSarre (24).

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 mineral resources of the Province. In the course of the year, five such lectures were given to technical societies or to university 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. As usual, there was continued activity in such widely separated portions of the Province as the Chibougamau area, Gaspé Peninsula, the Sherbrooke area in the Eastern Townships and the Western Quebec mining belt. Attention was also focussed on ilmenite deposits in the area north of Montreal.

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, 1953.

A.- Requests for information concerning mining companies and the various mineral substances, approximately	800
Various enquiries and correspondence concerning mining companies, technology and mineral collections	1,067
B.- Verbal and written requests for publications of the Department of Mines	6,120
Publications sent out from mailing lists without notice	8,213

During the fiscal year ending March 31st, 1952, the distribution staff of the division sent out 30,205 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 8,213 other publications from our regular mailing lists.

This Division carried out the work of compiling 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 and other sources.

Moreover, this Division also collects, compiles, classifies, and prepares an index of all items of interest concerning 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.

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.

LABORATORIES BRANCH

The Laboratories branch comprises the following sections: I.- Laboratories for mineralogical and metallurgical research; II.- Laboratories for chemical analysis and assays of the Department of Mines established at Quebec, Montreal and Thetford Mines; III.- The sampling and ore dressing plant at Val d'Or; 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, while Henri Boileau is chief of the Chemical Analysis Laboratories.

1.-Research Laboratories

During the course of the present fiscal year, research work carried on dealt with: a) technical assistance to prospecting; b) improvement of analytical methods of ore analysis; c) chemical utilization of our peat; d) expansion of the commercial value of asbestos; e) metallurgy of titanium; f) utilization of pulp wood by-products in the mining industry; g) processing of iron, titanium, copper, lead, zinc, cobalt, bismuth, nickel, and lithium ores.

The following progress is reported relative to several projects underway:

Project No. 8 Claude Frémont completed the theoretical study of a magnetometer small enough to be lowered into diamond drill holes. The practical fabrication of this apparatus has reached its final phase.

Project No. 22 J.U. MacEwan and J. Goth completed their study and report on the obtainment of matte from the electrosmelting of copper concentrates.

Project No. 38 L.P. Bonneau continued his work on the separation of rock dust from asbestos fibre before bagging the product. To this end an experimental cyclone was built.

Project No. 39 B.J. Walsh and J.P. Bolduc studied the behaviour of "lignosols" as flotation reagents for the processing of minerals.

Project No. 53 B.J. Walsh studied the magnetic concentration of ilmenite at St-Urbain in Charlevoix county.

Project No. 55 J. Risi, C.E. Brunette and Dorothy Spence studied the chemical properties of peat extracted from both the "Little Tea Field" and "Large Tea Field" bogs in the county of Huntingdon. Waxes from these peats were also the object of an elaborate project of classification in relation to their commercial value.

Project No. 56 B.J. Walsh and J.P. Bolduc studied the flotation behaviour of ore from Barvue Mines Limited.

Project No. 57 B.J. Walsh, J. Girault and J.P. Bolduc studied the possibilities of upgrading the ilmenite in ore from Pershing Amalgamated Mines Limited.

Project No. 58 B.J. Walsh, J.P. Bolduc and R. Paquet experimented with the concentration of ore from Joannes Goldfield Limited.

Project No. 59 Maurice Archambault and Fernand Claisse studied the thermic behaviour of ilmenite from Allard Lake both with and without addition of reagents.

Project No. 60 B.J. Walsh, J.P. Bolduc and R. Paquet did flotation tests on ore from Nocana Mines Limited, with the object of obtaining zinc and copper concentrates.

Project No. 61 B.J. Walsh, J.P. Bolduc and R. Paquet studied the flotation of ore from Chateau Mines Limited.

Project No. 62 B.J. Walsh and J.P. Bolduc carried out gravimetric separation by the sink and float method on ore from Consolidated Candego Mines Limited.

Project No. 63 B.J. Walsh, J. Girault and J.P. Bolduc studied Touton Gold and Base Metals Corporation ore with a view to obtaining cobalt, nickel, lead, bismuth, and precious metal concentrates.

Project No. 64 B.J. Walsh, J. Girault and J.P. Bolduc studied 36 samples of magnetic sands of the Iron Ore Company of Canada Limited, to obtain iron and titanium concentrates.

Project No. 65 B.J. Walsh, J.P. Bolduc and R. Paquet carried out sink and float tests on Federal Metals Corporation ore to obtain zinc and lead concentrates.

Project No. 66 A. Dmitrieff-Kokline pursued his research work on flame spectrophotometry in order to increase detection sensitivities and to improve the reproducibility of analytical results by the choice and control of the delivery of combustible gases.

Project No. 67 Fernand Claisse studied the reductibility of New Quebec Iron Ores with the aid of a large capacity thermobalance specially built for the purpose. The relationship existing between the chemical and physical properties of these ores was determined.

Project No. 68 F. East and F. Abesque established a method of determining brucite in rocks by the use of a Chevenard Thermobalance. This method is fast and accurate.

Project No. 69 J. Girault and J. Laneuville studied the thermic behaviour of kornerupine at high temperatures and high pressures. The results obtained confirmed those of a previous study on the nature of kornerupine.

Project No. 71 Fernand Claisse began a study of the influence of the dissolved elements in titanium on the orientation relationship in the alpha-beta transformation.

Project No. 72 B.J. Walsh, J. Girault and J.P. Bolduc carried out tests on Sullivan Consolidated Mines Limited spodumene ore with a view to shedding light on the possibilities of economic extraction of the spodumene contained and to value the other constituents of the ore.

Project No. 73 Fernand Claisse, in collaboration with the research laboratory of Quebec Iron and Titanium Corporation, carried out a radio-crystallographic study of the phase diagrams of titanium slags produced at Sorel.

Project No. 74 J. Girault, B.J. Walsh and J.P. Bolduc studied the mineralogy and the processing possibilities of the Anglo Pulp and Paper Mills Limited titaniferous iron ores from Betsiamite in the county of Saguenay.

Project No. 75 Joseph Gagnon established a chemical method of determining cobalt contained in ores and alloys. This colorimetric method is fast and gives accurate results.

Project No. 76 B.J. Walsh, J.P. Girault and J.P. Bolduc studied two lots of iron ore from Fenimore Iron Mines Limited, with the object of increasing its commercial value.

Project No. 77 Raymond Paquet did a complete mineralogical study of 18 samples of ores and concentrates submitted by Anacon Lead Mines Limited, in order to determine the fineness of grinding required for a good recovery of all valuable minerals.

Project No. 80 Fernand Claisse started work on the determination of the constants of oxygen diffusion in metallic titanium.

II - Laboratories for Chemical Analyses
and Assays

In the course of the fiscal year these laboratories received 11,184 samples on which were performed 65,006 analyses and examinations. These figures comprise quantitative chemical analyses, microscopic, spectrographic, X-ray determinations, 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	9,723	1,406	55	11,184
Quantitative analyses	25,427	3,141	204	28,772
Qualitative determinations	15,811	-	-	15,811
Spectrographic examinations	11,563	-	-	11,563
X-ray examinations	4,411	-	-	4,411
Radioactivity	187	-	-	187
Research analyses	4,262	-	-	4,262
Total	61,661	3,141	204	65,006

The work of the Montreal laboratory consists of qualitative and quantitative chemical analyses for the prospector. Heretofore, the work of the Thetford Mines laboratory has been restricted to physical tests on the quality and classification of asbestos fibres, but the installation of a sampling mill and a processing plant for asbestos ores is now almost completed.

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 fiscal year ending March 31st, 1953, the mineralogists examined 7,572 rock and mineral samples, which

required 15,811 mineralogical determinations. They also examined in detail 48 thin rock sections and 142 polished sections of ores.

The mineralogists also have charge of dispatching to the appropriate laboratories the various samples and specimens received for analysis. This was done in accordance with their mineralogical nature and/or to whatever research work is to be effected. In addition, they 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 and Petrography also looks after the preparation of collections of minerals and rocks used in schools and by prospectors.

Spectrography, Radiocrystallography
and Radioactivity Laboratory

In the course of the fiscal year under review, the personnel of this laboratory effected 17,137 analyses distributed as follows:

Spectrographic analyses	11,563
Radiocrystallographic analyses	4,411
Radioactivity determinations	187
Research analyses	976

In the above are included 189 radiocrystallographic analyses for the Department of Health, Quebec.

Chemical Laboratory

The number of quantitative analyses in duplicate carried out in the laboratories of the division of Analytical Chemistry, showed an increase of 2,512 determinations in comparison with the preceding year. Requests for analyses of uranium, thorium, lithium, columbium and tantalum also showed a considerable increase. These analyses were distributed as follows:

Precious metals	7,994
Routine analyses ...	17,433
Research analyses ..	3,286

Among special analyses must be mentioned 26 samples of rocks which necessitated 757 geochemical measurements of high precision.

The efforts of the personnel of the Division of Chemistry are not limited exclusively to straight analysis. Considerable work was done towards the perfecting of several methods of analysis, among them those for zinc and for cobalt by purely chemical methods and for limestone, magnesium, strontium, rubidium and caesium by flame photometry.

Metallurgical Laboratory

Besides physical studies in metallurgy several problems of extractive metallurgic research were studied in this laboratory during the course of the year.

An important addition to the equipment of the laboratory was an electromagnetic separator with cross-bands and a powerful magnetic field. This is used in the study of the processing of minerals difficult to magnetize.

III - Sampling and Ore Dressing Plant

This plant, situated near Val d'Or in Abitibi-East county, received four shipments of ore for processing.

TABLE VII

Shipper	Weight (pounds)	Type of Ore
Wendell Mineral Products Ltd	6,830	Rhyolite
L. Roy (Siscoe mill)	1,610	Gold
L. Roy (Siscoe mill)	324	Gold
Shawinigan Chemicals Ltd	59,840	Ferrosilicium
Total	68,604	

IV - Courses on Mineral Prospecting

Given in Universities

To serve as a complement to the elementary orientation courses of mineralogy and geology, the Department of Mines, every year, since 1947, has organized courses on mineral prospecting which are given at the universities.

These special courses are conducted for a period of five weeks and cover the broader knowledge and techniques connected with the search for mines: mineralogy, geology, chemistry, prospecting, mineral analysis, a study of the mining act, financial organization of the companies, etc. The student-pro prospector also has the opportunity to put into practice these theoretical notions by way of field excursions in the company of his teacher.

This year 46 students took the courses on mineral prospecting given at the Ecole Polytechnique of Montreal and at the Faculty of Sciences of Laval University in Quebec. Of this number, three immediately started permanent free-lance prospecting on their own while four others were employed by exploration companies.

V - Museum and Exhibitions

During the course of the year the Department of Mines Museum acquired a fine specimen of graphite found in Joly township in Labelle county.

On the occasion of the Centenary of Laval University, the Department of Mines paid homage to that institution through special exhibits at the Three Rivers, Sherbrooke, Cookshire, Rouyn, and Quebec Exhibitions, by illustrating the part played by the University in our mining development and progress.

The Department also participated in the exhibition of the International Congress of Natural Sciences under the auspices of the Canadian Society of Natural History and in the "Tool and Equipment Show" held at Palais du Commerce in Montreal.

DRAUGHTING AND CARTOGRAPHY BRANCH

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

The Draughting and Cartography Branch supplies the documents requested by the geological missions of the Department, documents consisting mostly in aerial photos and in compilations, at the desired scale, base maps representing only 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 set are shown the boundaries of lands held by mining companies. The first series, which shows the claims staked out, comprises 542 tracings on which were traced the boundaries of the 21,912 new claims recorded during the year; the second series comprises 210 tracings. From all these tracings, 9,923 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. 807 - Belleterre Area
- No. 910 - Canimiti River Area
- No. 919 - Kensington West Area
- No. 961 - Abitibi-North and Chibougamau
- No. 970 - New Quebec
- No. 974 - Chibougamau, Mining Map
- No. 975 - Index Map of Geological maps

b) In Press

- No. 917 - Temiscamie Area

c) In Preparation

- No. 821 - Hébécourt West
- No. 822 - Hébécourt East
- No. 823 - Duparquet West
- No. 824 - Duparquet East

- No. 825 - Destor West
- No. 909 - Allard River Area
- No. 918 - Albanel Lake Area
- No. 924 - Chertsey Township
- No. 925 - Rawdon Township
- No. 967 - Waswanipi Lake (East) Area
- No. 968 - Waswanipi Lake (West) Area
- No. 971 - Maicasagi Area
- No.1000 - Geology of Gaspé
- No.1002 - Nipissis River Area

Preliminary Maps

a) Completed

- No. 782 - Part of Dalquier and Figuery Townships (reprint)
- No. 881 - Queylus (reprint)
- No. 882 - Rinfret (reprint)
- No. 933 - Rohault
- No. 943 - Lac à la Tortue Peat Bog
- No. 944 - McKenzie Township
- No. 947 - Tadoussac
- No. 960 - Fancamp-Haÿy
- No. 964 - Nipissis River
- No. 999 - St-Magloire
- No.1001 - Nipisso Lake
- No.1011 - Lanoraie Peat Bog
- No.1013 - Farnham Peat Bog

b) In preparation

- No.1020 - Gamache

Our draughtsmen traced on linen forty-two other geological plans; thirty-four plans of furniture, machines, etc.; and fifty-nine figures for illustrations of final reports.

An edition of a special map of Abitibi, No. 985, was prepared to serve as index for the tracing of the townships of the Western part of the Province. On it are plotted the lands owned by mining companies. An edition of a similar map of the Chibougamau region was also published bearing No.965.

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 under review, the Division of Mine Roads built 57.15 miles of new roads, bringing to 1,414.64 miles the total length of roads built by the Department of Mines. In addition, last year, the Division improved or completed the construction of 51.02 miles. The Department of Mines also contributed the sum of \$22,133.30 for the construction and improvement, by other organizations of the Government, of roads necessary to mining operations.

The total expenditure, during the course of the year, for the construction of new roads, the improvement or completion of roads already started and the construction of bridges, was \$2,259,226.77.

New roads	\$1,268,203.82
Improvements and completion	691,665.40
Bridges along the Gaspé-Murdochville road ...	279,524.25
Department's contribution to work executed by the Department of Roads	<u>22,133.30</u>
Total	\$2,259,226.77

To date the sum spent since 1925 by the Department for the construction, the improvement and the completion of mine roads has been \$16,056,952.70.

New mine roads built during the fiscal year 1952-53:

<u>Counties</u>	<u>Roads</u>
Montmagny	Road in Rolette township, on lot 22, range VI, connecting the nickel deposit mined by Eastern Metals Corp. to the road between St-Paul du Buton and St-Just de Bretenières.

Gaspé-North and
Gaspé-South ... York River road

Gaspé-North Gaspé Copper mine to Anse Pleureuse (tractor road)

Bridges built during 1952-53:

<u>Counties</u>	<u>Bridges</u>	<u>Length</u>
Gaspé-South	Bridge on La Petite Fourche	64 feet
" "	Bridge on La Grande Fourche	50 "
" "	Bridge across Mississippi brook	50 "
" "	First bridge across York river	80 "
" "	Second bridge across York river	120 "

Roads improved and completed during 1952-53:

<u>Counties</u>	<u>Roads</u>
Portneuf	Marvel Granite Co. Reg'd road
"	Montauban mine road
Abitibi-East (Chibougamau region) ..	Road to Opemiska Copper Mines Ltd.
" "	Road to Campbell Chibougamau Mines Ltd.
" "	Chibougamau Explorers road
Abitibi-East	Roads near Barvue mine
" "	Rainville Copper Mines road
Abitibi-West	Lyndhurst Mining Co., road, Poularies township
Rouyn-Noranda ...	Elder mine road
Gaspé-South	York River road
Labelle	Blackburn and Lac Bataille mines road
Matane	Lac Levasseur road

Maintenance of mine roads:

The Department maintained 186.15 miles of roads at the cost of \$669,932.40. Hereunder is the distribution:

<u>Counties</u>	<u>Roads</u>
Abitibi-East and Roberval	Chibougamau highway
Rouyn-Noranda	Quemont, Donalda and Macdonald mines road
Bonaventure	Grand Cascapedia River road
Matane	Lac Levasseur road
Labelle	Clot mine road

Drainage of Peat Bogs

Pursuant to the provisions of the Quebec Mining Act, the Civil Engineering Branch gave grants totalling \$20,000.00 to certain operators of peat bogs to assist them financially in the drainage of their property. A total length of 59,264 feet of drainage ditches was opened in the counties of Matane, Rimouski, Rivière-du-Loup, and Dorchester.

Division of Mining Villages

Despite a decline in the development of the gold industry in the Province, the mining villages of Abitibi continued to develop during the last fiscal period. Important development work in copper, zinc and lead mines more than counterbalanced this decline and has brought about noteworthy progress in the already existing villages and has even resulted in the study of plans for new villages.

Bourlamaque

Construction in the village of Bourlamaque was quite active during the year 1952-53. Municipal projects developed in proportion. Population: 2,813.

Val d'Or

The demand for building lots caused our Department to subdivide Crown lands, including some one hundred building lots. These lots are situated east of the hospital. However, none of these lots has yet been sold. Population: 9,247.

Cadillac

There is no important development to report in this municipality. Population: 1,526.

Malartic

The sale of lots in the town of Malartic was slow during the year. However, some municipal public work was done. The town continues to progress. Population: 6,192.

Rouyn-South

The sale of lots was relatively active and collection of taxes was satisfactory.

Noranda

This model town continues to expand at the same rythm as it did in the past years. Construction is very active and has resulted in more public works projects getting underway. Population: 8,214.

Belleterre

There was no important development in this town, except perhaps a decline in the number of "squatters" around Mud Lake and Gainsmoor.

Chibougamau

The Department sold several residential lots in this village. Around sixty homes and other buildings have gone up. A contract for the installation of waterworks and a sewerage system has been granted. The work should be completed during the summer of 1953.

Murdochville

A certain number of building lots were subdivided in blocks 1 and 9, in Holland township, with a view to establishing a mining village. The mining company has started to open streets and install waterworks and sewerage facilities. It also built a certain number of homes.

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, fuel, electricity, and other supplies pertinent to exploitation, timber consumed in mines and construction, the cost of material of all kinds, machinery and tools purchased, the cost of buildings erected and of machinery installed, the main taxes paid, dividends distributed by the companies, capital received from certain sources by the companies, etc.

Statistics relative to shipments are not limited only to the quantities and the total value received for each mineral. In the case of several minerals, such as asbestos, mica, clay products, limestones, lime, granite, sandstone and marble, these statistics are divided both in quantities and in value according to the nature or the quality of the products or to the uses which they will serve.

Statistics concerning the personnel employed include the number of employees, the number of man-hours of work accomplished and the amount of wages or salaries paid.

Some of these statistics, those pertaining to shipments, personnel employed, and dividends paid, are given elsewhere in this report, in the Department of Mines' annual report "The Mining Industry of the Province of Quebec", and in monthly and quarterly bulletins issued regularly by the Department.

Statistics tabulated for the year reviewed were compiled from reports received during the course of the year 1952, which are the following:

	<u>Number of</u> <u>Returns Received</u>
Reports on the mineral production and mining operations:	
Annual returns	2,871
Monthly returns	658
Annual report on the timber used in mines	116
Annual reports on the capital received by mining companies	754
Annual reports from building contractors	<u>101</u>
 Total	 4,500

Of the 2,871 reports regarding mineral production and mining operations, which cover nearly all the mines of any importance, 1,392 came from mines and quarries in production or which made some shipments of mineral product; 305 came from mining properties not yet producing but on which exploration work or development work was effected during the year, and 1,174 consist 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 \$36,500,000 was received from these three sources during 1952. In 1951 that amount was \$33,875,000.

The number of mining companies listed below, along with the date of their incorporation, their head office, and their capitalization, was much greater in 1952 than that during the preceding year. During the period under review, 94 companies were formed under the laws of the Province of Quebec. Besides, nine were incorporated under the Ontario laws and one under Federal charter. The total of new companies incorporated during the year to operate in the Province of Quebec was, therefore, 104. In 1951, there were only 69, of which 54 held Quebec charters, 12 Ontario charters, and three were incorporated under Federal charter.

Mining Companies Incorporated
in the Province of Quebec during 1952

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Acana Mines Limited	Montreal	Sept. 12	4,000,000	\$ 1
Acme Molybdenite Mining Co. Ltd.	Montreal	Sept. 17	3,000,000	\$ 1
Aconic Mining Corporation	Montreal	Feb. 1	3,500,000	\$ 1
Adstock Asbestos Limited	Quebec	Nov. 27	3,000,000	\$ 1
American Asbestos Co. Ltd. ...	Montreal	Sept. 8	4,000,000	\$ 1
Baker Talc Limited	Montreal	Jan. 21	500,000	\$ 1
Barv-Oil Corporation Ltd.	Montreal	March 20	1,980,000	\$ 1
			(a) 20,000	\$ 10

(a) Preferred shares.

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Barvue Extension Mines and Oils Ltd.	Montreal	Aug. 8	4,000,000	\$ 1
Belfort Mines Limited	Montreal	Nov. 7	3,500,000	\$ 1
Bellechasse Metals Co. Ltd.	Montreal	Dec. 31	4,000,000	\$ 1
Bellechasse Mining Corporation Ltd.	Montreal	Jan. 23	3,500,000	\$ 1
Bellren Mining Corporation Ltd.	Montreal	Feb. 11	4,000,000	\$ 1
Belpat Molybdenum Mines Ltd	Montreal	Nov. 21	4,000,000	\$ 1
Belvedere Copper Corp. Ltd.	Montreal	Sept. 26	4,000,000	\$ 1
Belvedere Petroleums Ltd...	Montreal	Sept. 8	10,000	\$ 1
Brompton Copper Corp., Ltd.	Sherbrooke	Aug. 25	3,500,000	\$ 1
Brunswick Quebec Development Ltd.	Montreal	April 2	3,000,000	\$ 1
Buckingham Asbestos Co. Ltd	Buckingham	Oct. 22	4,000,000	\$ 1
Cameron Copper Mines Ltd...	Montreal	Feb. 13	4,000,000	\$ 1
Canada Chibougamau Resources Ltd.	Montreal	May 30	4,000,000	\$ 1
Canado Mines Company Ltd. .	St-Jerome	Aug. 19	3,000,000	\$ 1
Canadian Dearborn Oil and Gas Corp.	Montreal	Sept. 10	4,000,000	\$ 1
Carrière Gouin Limitée (Gouin Quarry Limited)...	Trois-Rivières	Dec. 6	50	\$100
Carrière Pointe-Claire Inc. (Pointe-Claire Quarry Inc.)	Beaconsfield	March 14	500	\$100
Chibougamau Venture Ltd. ..	Noranda	Jan. 8	(a) 500	\$100
Chicoutimi Iron and Titanium Corporation	Montreal	Jan. 14	3,000,000	\$ 1
Christie Base Metals Ltd. .	Montreal	April 2	6,000,000	\$ 1
Clerduc Gold and Copper Mines Ltd.	Rouyn	April 3	4,000,000	\$ 1
Colblake Asbestos Co. Ltd..	Sherbrooke	April 18	3,500,000	\$ 1
Commonwealth Exploration Ltd.	Montreal	April 18	4,000,000	\$ 1
Compagnie de Prospection de Québec (La)	Montreal	May 15	3,000,000	\$ 1
Continental Asbestos Mines Ltd.	Montreal	Feb. 28	10,000	\$ 1
		Sept. 18	3,000,000	\$ 1

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Copper Cliff Consolidated Mining Corporation	Montreal	Oct. 11	5,000,000	\$ 1
Cranbourne Minerals Explorations and Development Co., Ltd.	Montreal	May 17	1,000,000	\$ 1
Derogan Asbestos Corporation Ltd.	Montreal	Oct. 16	4,000,000	\$ 1
Desmeloizes Mining Corp., Ltd.	Rouyn	July 3	4,000,000	\$ 1
Duke-Chibougamau Mines Ltd.	Rouyn	June 2	3,500,000	\$ 1
Eastern Asbestos Co., Ltd.	Drummondville	Aug. 29	4,000,000	\$ 1
East MacDonald Mines Ltd. ..	Montreal	June 12	4,000,000	\$ 1
Empire Asbestos Limited	Montreal	March 26	4,000,000	\$ 1
Empire Oil and Minerals Ltd.	Montreal	Jan. 31	3,000,000	\$ 1
Federal Metals Corporation .	Montreal	Feb. 14	3,000,000	\$ 1
Gaspé Explorers Ltd.	Montreal	Oct. 8	3,000,000	\$ 1
Giant Chibougamau Mines Ltd.	Montreal	May 10	3,000,000	\$ 1
Grand Development Co. Ltd...	Montreal	Oct. 11	1,000,000	\$ 1
Granby Slate Mining Ltd. ...	Montreal	Dec. 24	3,000,000	\$ 1
Harrington Mining Corporation	Montreal	Aug. 6	3,000,000	\$ 1
Holannah Mines Ltd.	Montreal	Oct. 6	3,000,000	\$ 1
Jasper Oil Corporation	Montreal	April 10	1,500,000	\$ 1
Juno Metals Corporation	Montreal	May 27	3,000,000	\$ 1
Kenmac Chibougamau Mines Ltd	Montreal	March 8	4,000,000	\$ 1
Kenro Mines Inc.	Montreal	Jan. 24	40,000	\$ 1
Lachance Mining Inc.	Montreal	Oct. 17	40,000	\$ 1
Landscape Mineral Products Ltd.	Amos	Feb. 14	10,000	\$ 1
Laurentian Iron and Graphite Mines Limited	Montreal	Nov. 28	3,000,000	\$ 1
Laurentian Silica Mines Co. Ltd.	Montreal	Nov. 28	4,000,000	\$ 1
Laurentian Titanium Mines Ltd.	Montreal	Oct. 1	4,000,000	\$ 1
Mady Mining and Smelting Corp.	Montreal	March 29	100	None
Mariette Mines Limited	Montreal	July 10	3,500,000	\$ 1
Marston Copper Corp., Ltd. .	Thetford Mines.	Dec. 20	3,000,000	\$ 1

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Mellon Minerals Limited	Montreal	Feb. 11	3,500,000	\$ 1
Minerals Corporation of Quebec	Montreal	Jan. 10	10,000,000	\$ 1
Mineral Exploration Corp. Ltd. (The)	Quebec	May 15	10,000,000	\$ 1
Montgomery Mining Company Ltd.	Montreal	Jan. 9	3,000,000	\$ 1
Montmagny Copper Corp., Ltd.	Montreal	March 8	4,000,000	\$ 1
Polycarpe Moreau Inc.	Hebertville Station	Aug. 22	1,000	\$100
New Peninsular Oil Limited..	Montreal	Feb. 20	4,000,000	\$ 1
Normiska Mining and Exploration Limited	Montreal	March 26	3,500,000	\$ 1
North American Development Ltd.....	Montreal	Aug. 19	1,000,000	\$ 1
Oka Oil Ltd.	Montreal	July 28	3,000,000	\$ 1
Opemiska Explorers Limited..	Montreal	May 2	4,000,000	\$ 1
Palomoiil Corporation	Montreal	June 20	3,000,000	\$ 1
Portneuf Mineral Corporation	Montreal	Oct. 17	3,000,000	\$ 1
Quebec Cobalt and Exploration	Montreal	Jan. 30	3,500,000	\$ 1
Quebec Lithium Corporation..	Montreal	Oct. 29	3,000,000	\$ 1
Quebec Nickel Corporation Limited	Sherbrooke	April 1	5,000,000	\$ 1
Quebec Ore and Steel Development Corp.	Montreal	Aug. 22	100	None
Rohault Mines Ltd.	Montreal	Jan. 21	3,000,000	\$ 1
Romac Mines Limited	Val d'Or	Nov. 21	4,000,000	\$ 1
St. Roberts Metals Corporation	Montreal	June 28	4,000,000	\$ 1
Sables du Cap de la Madeleine Limitée (Les) ..	Cap de la Madeleine	Dec. 11	2,000	\$ 10
Seven Island Mining and Exploration Corporation Ltd	Montreal	Oct. 31	4,000,000	\$ 1
South Bachelor Mining Company Ltd.	Montreal	Sept. 23	3,000,000	\$ 1
Steel and Graphite Co., Ltd.	Montreal	Oct. 11	3,000,000	\$ 1
Temiscamingue Metal Ltée-Ltd	Latulippe	Jan. 24	100,000	\$ 1
Titanium Mining and Smelting Ltd.	Montreal	April 15	5,000,000	\$ 1

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Tourbière de Rivière-du-Loup, Inc., (La)	Rivière-du-Loup	April 21	10,000	\$ 5
Transatlantic Mineral and Ore Ltd.	Montreal	Dec. 30	100	\$100
Troysco Mines Limited	Montreal	July 11	4,000,000	\$ 1
United Metals and Petroleum Corp.	Montreal	July 30	6,000,000	\$ 1
United Stone Products Ltd. ..	Montreal	Nov. 7	20	\$100
			(a) 180	\$100
Valor Mines Limited	Malartic	Sept. 29	3,000,000	\$ 1
West Chibougamau Mines Ltd...	Montreal	May 15	3,000,000	\$ 1
Yorkton Oil and Gas Company Limited	Montreal	June 30	4,000,000	\$ 1

Mining Companies Incorporated in 1952 by Letters Patent of Ontario and Holding Mining Rights in Quebec

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Bornite Copper Mines Limited.	Toronto	July 31	3,000,000	\$ 1
Cran-Kor Metals Mines Limited	Toronto	Sept. 4	3,000,000	\$ 1
Cropsey-Gordon Mines Limited.	Toronto	May 15	3,000,000	\$ 1
Hazeur Chibougamau Mines Ltd.	Toronto	March 21	3,000,000	\$ 1
Meston Lake Mines Limited....	Toronto	Jan. 3	3,500,000	None
Overland Oils and Minerals Ltd.	Toronto	May 23	3,000,000	\$ 1
Ricky Petroleum and Mines Ltd.	Toronto	May 20	3,000,000	\$.50
Southbar Mines Limited	Toronto	July 18	4,000,000	\$ 1
Sulzinc Mines Limited	Toronto	Feb. 18	3,000,000	\$ 1

Mining Company Incorporated in 1952 by Federal Charter and
Holding Mining Rights in Quebec

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Trans World Prospectors Ltd.	Montreal	March 3	10,000	\$ 5

DIVISION OF EDITING AND PRINTING OF PUBLICATIONS

The chief of this division, Maurice Brunet, submits the following report for the fiscal year 1952-53.

Following is a list of the publications of the Department of Mines edited during the fiscal year 1952-53. All publications are issued in French and in English.

The Mining Industry of the Province of Quebec in 1951

Geological Report No. 53 - Albanel Area, by J.M. Neilson

Geological Report No. 54 - Témiscamie River Area, by W.G. Wahl

Geological Report No. 56 - Northern Quebec, by J.-E. Gilbert

Geological Report No. 57 - Allard River Area, by René Béland

Preliminary Report No.274- Part of Fabre Township, by Pierre Mauffette

Preliminary Report No.276- Disintegrability of Iron Ores from New Quebec Compared with Standard Ores, by Jean Laneuville

Preliminary Report No.277- Porosity and Adsorptivity in Iron Ores from New Quebec Compared with Standard Ores, by Jean Laneuville

Preliminary Report No.278- General Report of the Minister of Mines of the Province of Quebec for the Year Ending March 31, 1952.

Preliminary Report No.279- The St. Magloire Area, by Jacques Béland

Preliminary Report No.280- Nipisso Lake Area, by Howard R. Hogan

Preliminary Report No.281- A Chemical Study of the Peats of Quebec: II- Lac-à-la-Tortue Bog, by J. Risi, C.-E. Brunette, D. Spence, H. Girard

Preliminary Report No.282- A Chemical Study of the Peats of Quebec: III- Lanoraie Bog, IV- Farnham Bog, V- Rivière-du-Loup Bog, by J. Risi, C.-E. Brunette, D. Spence and H. Girard

- Preliminary Report No.283- Mining Properties and Development in Abitibi-East, Abitibi-West and Rouyn-Noranda Counties during 1950 and 1951, by R.B. Graham, W.N. Ingham, W.G. Robinson and W. Weber
- Preliminary Report No.284- The Gamache Area, by P.-E. Grenier
- Preliminary Report No.285- The Brongniart-Lescure Area, by H.B. Lyall
- Preliminary Report No.286 - Johan Beetz Area (West Half), by Gerald E. Cooper
- Preliminary Report No.287- Mining Properties and Development in Chibougamau Region during 1952, by R.B. Graham
- Preliminary Report No.288- Southwest quarter of McKenzie township, by J.R. Smith

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

"Mineral Resources Extracted from the Mines of the Province during the Course of the Year"; article published in the annual number of the Northern Miner, November, 1952.

By A.O. Dufresne, Deputy Minister of Mines

"Quebec - A Great Mineral Province"; article published in "The Gazette", Montreal, January, 1953.

"Méthodes modernes de Recherches minières", lecture delivered before the members of the Rotary Club, Quebec city, February 17, 1953.

"Principal Mining Developments now in Progress", article published in "The Gazette" and reproduced in the "Sherbrooke Daily Record", March 14, 1953.

By B.T. Denis, Chief of Mineral Deposits Branch

"Mining Development in Quebec", lecture delivered before the members of the Victoria Curling Club, Quebec, December, 1952.

"Current Mining Developments in the Mineral Industry", lecture delivered before the members of the Rotary Club, Montreal, March, 1953.

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

Lecture delivered October, 1952, before the members of the Engineering Institute of Canada, Quebec Section, on the various functions and fields of activity of the mining engineer.

By W.N. Ingham, Resident Geologist, Val d'Or

"Ore Deposits of the Val d'Or Area", lecture delivered before the members of the Harricana Section of the Canadian Institute of Mining and Metallurgy at Malartic, April, 1952.

Lecture delivered before the students of Laval University on a tour of Northwestern Quebec mines, May, 1952.

By R.B. Graham, Geologist

"Chibougamau, Its Mining Possibilities", lecture delivered before the members of the Quebec Section, Engineering Institute of Canada, April, 1952.

By Robert Bergeron, Geologist

"Etude microscopique de certains jaspes de l'Ungava", lecture delivered at the annual meeting of the "Association Canadienne-Française pour l'Avancement des Sciences" (ACFAS), Quebec, October, 1952.

"Visages du Nouveau-Québec", lecture delivered before the "Cercle d'Etudes de Ste-Foy", Quebec, October, 1952.

By I.H. Clark, Geologist

Lecture delivered at the University Club of New York on the mineral resources of Canada, April, 1952.

By H.C. Cooke, Geologist

"Tertiary Peneplains of the Eastern Townships of Quebec", lecture delivered at the June, 1952, meeting of the Royal Society of Canada at Quebec.

By H.W. McGerrigle, Geologist

"Pleistocene Glaciation of Gaspé Peninsula", lecture delivered at

the June, 1952, meeting at Quebec of the Royal Society of Canada and published in the Royal Soc. Can. Trans., Vol.XLVI, Ser. III, Sec. IV, 1952, pp.37-51.

By J.M. Neilson, Geologist

"Fault Pattern of the Mistassini Region, Northern Quebec", lecture delivered at the annual meeting of the American Geological Society, Boston, Mass., November, 1952.

By F.F. Osborne, René Béland and R.J.E. Sabourin, Geologists

"Meach Lake Breccia", paper delivered at the annual meeting of the Royal Society of Canada, at Quebec, June, 1952.

By M.M. Ritchie, Geologist

"The Country East of Ungava Bay", illustrated lecture delivered at the University Women's Club of Quebec, Quebec, April, 1952.

By Fernand Claisse, Physicist

"Contribution à l'étude des propriétés physiques des minerais de fer du Nouveau-Québec: leur réductibilité" lecture delivered at the annual meeting of ACFAS, October, 1952.

"Applications de la diffraction des rayons x à la recherche chimique", lecture delivered at the Faculty of Sciences, Laval University, Quebec, October, 1952.

By F. Claisse, Physicist, and J. Girault, Mineralogist

"Minéralographie d'un échantillon de sable noir de la Côte Nord du Saint-Laurent", lecture delivered at the annual meeting of ACFAS, Quebec, October, 1952.

"Certains minéraux nickélifères du comté de Montmagny", lecture delivered at the annual meeting of ACFAS, Quebec, October 1952.

By Alexis Dmitrieff-Kokline, Chemist

"L'émission spectrophotométrique à flamme", lecture delivered at the annual meeting of ACFAS, Quebec, October, 1952.

By Florian East, Physicist

"Nouvelle méthode d'analyse quantitative de la brucite dans les minerais", lecture delivered at the annual meeting of ACFAS, Quebec, October, 1952.

By Joseph Gagnon, Chemist

"Spectrophotometric Determination of Macro Amounts of Cobalt in Ores", paper delivered at the annual Congress of the Analytic

Chemistry Division of the Institute of Chemistry of Canada,
February, 1953.

By Jean Girault, Mineralogist

"Kornerupine from Lac Ste-Marie, Quebec, Canada", article published
in the "American Mineralogist", vol. 37, May-June, 1952,
pp. 531-541.

By J. Girault, Mineralogist and J. Laneville, Chemist

"Comportement thermique de la kornerupine", lecture delivered at the
annual meeting of ACFAS, Quebec, October, 1952.

By J. Risi, C.E. Brunette and D. Spence, Chemists

"Etude chimique des tourbes du Québec. V.-Composition de la tourbière
de Rivière-du-Loup", lecture delivered at the annual meeting of
ACFAS, Quebec, October, 1952.

By G. Welter, A. Choquet, Metallurgists, and F. Cloutier, Physicist

"Arc Melts of Titanium-Rich Alloys", article published in the
"Canadian Mining Journal", March, 1953.

COLLECTION OF DUES ON MINES

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

During the fiscal year 1952-53, the Department of Mines
received sworn statements on mineral production from 44 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 \$5,015,154.64^{*} 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

*Dues on annual profits of Mines:- There is a difference between the
amount of this item as given by the assessor's office, and the amount
given by the accountant's office. This divergence is due to the fact
that a part of "deferred revenue", on the date of March 31st, 1953, was
carried to the fiscal year 1953-54.

Mining Act, Div.VIII, Sec. 50). The Department of Mines received returns from 240 owners of unproductive properties. A sum of \$2,890.28 was collected from 98 holders of such dormant properties. The other 142 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 VIII.-Comparative Statement of Revenue Collected by the Department of Mines During the Fiscal Years 1950-51 to 1952-53
(Prepared by Robert Samson, Chief Accountant)

	1950-51	1951-52	1952-53
Miner's certificates	\$ 67,330.00	\$ 83,770.00	\$ 75,090.00
Development licenses	432,298.36	512,615.06	534,318.48
Penalties	-----	170.00	-----
Exploitation leases	-----	-----	100,000.00
Sales of mining concessions..	42,486.69	27,507.27	26,462.84
Fees for transfers of titles.	15,124.00	23,961.00	24,100.00
Taxes on mining concessions..	2,175.34	2,672.68	2,890.28
Rights on townsite lots	7,814.95	1,665.71	14,379.77
Rentals on townsite lots	735.00	834.00	258.00
Dues on annual profits	2,369,867.29	4,010,073.45	5,017,541.97
Permits of sales of unwrought metals	18.00	12.00	18.00
Sales of maps, blue prints, etc.	3,707.00	4,566.97	4,330.30
Mineral collections	565.50	484.00	959.25
Fees for assay and analyses..	4,364.44	3,249.28	2,572.65
Miscellaneous	6,261.77	18,247.03	9,129.43
Casual revenue	193.55	1,125.00	-----
Total	\$2,952,941.89	\$4,690,953.45	\$5,812,050.97

THE LIBRARY

During the course of the year, the library received 2,302 additional units distributed as follows: 1,180 reviews, 600 reports, 185 pamphlets, 188 volumes, 15 manuscripts and 134 maps.

One hundred and nine volumes were purchased by the Department. These treat of various subjects of the mineral industry,

metallurgy and related sciences: mineralogy, geology, physics and chemistry. A quantity of books come also from exchanges made with the governments of other provinces, the Federal government and a few foreign countries, such as the United States, France, Britain, the Scandinavian countries, Spain, India, and China.

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.

The number of persons who come to the library to obtain information increases every year, and during the course of the year under review nearly 500 persons made use of the facilities offered by the library. This number is double that of the preceding year, which shows that the public is more and more interested in the development of our mineral wealth. Although the library aims principally at assisting the technical personnel of the Department, the public is admitted. Visitors can be assured of a courteous reception, whether they come to consult the various reports and maps or to obtain information from our technical personnel.

André Champagne is the Department's librarian.

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 1952-53 to be spent in scholarships on students in geology, metallurgy or mining.

Fifty-eight scholarships were thus awarded by the Department during the course of the year in review.

Following the procedure of 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 of the following: A.O. Dufresne, Deputy Minister of Mines; J.U. MacEwan, professor of metallurgy at McGill University; Ignace Brouillet, director of l'Ecole Polytechnique;

Adrien Pouliot, Dean of the Faculty of Sciences at Laval University; Abbé J.W. Laverdière, director of the geological department of Laval University; I.W. Jones, chief of the Geological Surveys Branch of the Department of Mines; and 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 applications of holders of scholarships of the preceding year who fulfilled all the requirements for a renewal; and, lastly, it considered the applications of new candidates having matriculation in the order of merit and qualifications.

The fifty-eight scholarships awarded in 1952-53 were distributed as follows:

Candidates to post-graduate courses	20
Students entering final year in science faculties	13
Students in less advanced years	25

The members of the committee wish to express to the government authorities, and particularly to the Minister of Mines, their gratitude for the interest shown in the future of the mineral industry by their invaluable assistance to the youth of this province in facilitating the study of mining, geology, and metallurgy.
