

# **GENERAL REPORT**

**OF THE**

**MINISTER OF MINES**

**OF THE**

**PROVINCE OF QUEBEC**

**FOR THE YEAR ENDING MARCH 31st**

**1952**



Quebec, October, 1952.

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, 1952, 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, 1952

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To the Honourable C.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, 1951, to March 31st, 1952.

Your obedient servant,

A.O. Dufresne,  
Deputy Minister.

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THE MINING INDUSTRY OF THE PROVINCE OF QUEBEC

DURING THE FISCAL YEAR 1951-52

General:

The value of the mineral production of the Province of Quebec today represents 20 per cent of the total Canadian production and Quebec holds second place among the ten provinces. During the course of the year 1951, the value of the mineral production amounted to \$255,931,822, which is an increase of \$35,000,000 more than the total of the preceding year. The year under review is the fifth consecutive period during which a new record of production is established, and already the forecast for next year indicates that the ascending curve of these last few years will be maintained. Recent discoveries were such that in 10 years the value of our minerals was more than doubled, starting from \$100,000,000 in 1941 to more than \$255,000,000 in 1951.

Noticeable increases in the production of some metals and in the production of asbestos contributed chiefly to the new high registered. Of all the metals produced, gold still holds first place with a production of slightly more than one million ounces, having a value of approximately \$40,000,000. Copper and zinc follow closely with respective production valued at \$38,000,000 and \$34,000,000.

It is to be noted that in 1951, the cumulative value of the production of metals since 1927, viz., twenty-five years of production, by the mines of Western Quebec, exceeded the imposing amount of \$1,000,000,000 for more than 110,000,000 tons of processed ore. The metals mined in this region are copper, gold, silver, zinc, lead, selenium, tellurium, molybdenite, and bismuth, as well as arsenic and pyrite. During the war years tungsten was also produced in small quantities.

Industrial minerals also registered an increase of \$26,000,000 as compared with the value of the production of the preceding year. Asbestos continued to be the most important mineral substance from a point of view of value. Alone, it accounted for more than 30 per cent of the total value of all our minerals and brought in a sum of \$77,627,863 for 946,610 tons of asbestos in 1951.

In the category of mineral substances used as building material, an increase of \$8,000,000 was recorded. This group of minerals represents 18 per cent of the total value of the production and among the more important were cement, building stone and various clay products.

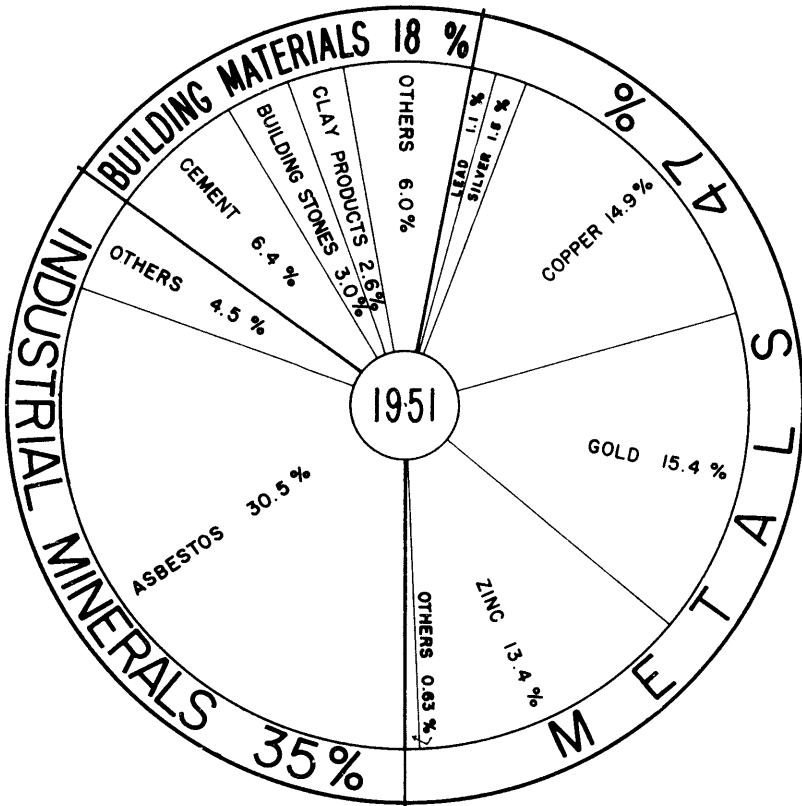
The following pie chart shows the values (in percentages) of the main substances produced during the year 1951.

Among the main activities concerning the mining development of the Province must be mentioned the progress accomplished in the following mining regions:

Western Quebec:

The mines of Western Quebec are still producing the major part of the mineral substances and ever since the first prospectors made discoveries of gold in that region, some fifty years ago, there has been a veritable rush to Abitibi and Temiscamingue. The existence of geological formations favourable to the presence of economic minerals continues to attract in that region numerous prospectors and the names of new mining companies will soon be added to the list of producers. During 1950 was uncovered in Barraute township a rich mineral deposit of zinc and silver. It seems certain that the new discoveries

MINERAL PRODUCTION  
OF THE  
PROVINCE OF QUEBEC



TOTAL VALUE: \$ 255,931,822

D.M.Q. No. 980

in Barraute township, where the ore reserves exceed several million tons, will be capable of supplying zinc in large enough quantities to sustain the new industry of zinc refining which is being established within the limits of the Province.

Chibougamau:

The region of Chibougamau is presently one of the most active centres of prospecting. Although no mine is yet in production, mineral reserves indicated by underground work and diamond drilling are more than sufficient to justify the enterprises already in progress. In the near future several mines in Chibougamau will be in a position to produce ore, the concentrates of which will be shipped via the new 150-mile highway linking this region to St-Félicien, west of Lake St. John.

Eastern Townships:

The metallic deposits of the Eastern Townships attracted prospectors as early as the middle of the XIXth century, and the geological reports of that time mention the presence of copper in nearly one hundred localities. A century later, new explorations through modern methods are being launched. Ores that could not be treated economically one hundred years ago have today an interesting commercial value and already a few metallic mines are producing, such as Moulton Hill and Suffield, while preliminary work is being completed for the exploitation of such old mines as Huntingdon, Eustis, Albert, Capel, Weedon, etc.

It is also along geological formations of a similar nature that numerous mining companies and prospectors from every part of the Province have staked promising claims in the southern part of the counties of Montmagny and Bellechasse, where deposits of zinc, nickel and precious metals have been uncovered.

Gaspé:

Discoveries made during the course of the last few years in the region of Gaspé likewise indicate a great mining impetus in this part of the Appalachians. The work accomplished in Holland township may be considered as the centre of the mining development of the York River region. The known deposits at this time contain 67,000,000 tons of copper ore of low grade. The reserves have been considered sufficient to justify the installation of a mill with a daily capacity of 7,000 tons. A sixty-mile road links the site of the future mining village to the town of Gaspe. The exploitation of the mineral deposits



of this region is scheduled to start almost immediately, and the concentrates of the copper ore will be shipped from the Gaspé Peninsula for final treatment in refineries.

In Lemieux township in the Cascapedia River region, prospecting and exploration work was started on deposits believed to contain zinc and lead. If the ore reserves are in sufficient quantities an adequate processing plant will be built near the mine. At the present time a 40-mile road links the mine site to the village of Cascapedia.

In the Marsoui River region, a complex ore containing lead, zinc, silver, and gold is being extracted from mining properties in Boisbuisson and Christie townships. A mill with a daily capacity of 50 tons of ore prepares concentrates which are then shipped outside of the Province of Quebec because there is no refinery for these minerals within its boundaries.

For the past several years exploration work for oil and natural gas has been in progress. Drilling has revealed the presence of oil and of petroliferous beds, but the quantities so far indicated are not sufficient to justify commercial exploitation of this important mineral.

#### New Quebec:

Construction and development work of the mineral deposits of New Quebec continued to expand as did that at Sept Iles, where storage and loading facilities for the ore are being advanced. During the last two years, an average of 3,500 men have been employed by Iron Ore Company of Canada. Construction work of the railroad between Sept Iles and Knob Lake was started at several points along the route. More than one hundred miles of land was levelled north of Sept Iles, while some 30 miles of road bed is ready in the region of Knob Lake. Twelve miles north of Sept Iles, a 2,250-foot tunnel has been completed and work has started on a second tunnel which will have a length of 600 feet and is 65 miles north of Sept Iles. A 700-foot steel bridge spanning Moisie river (at mileage 12) was also completed about the middle of March, 1952, and the foundations for two other steel bridges, one 54 feet in length at mileage 31 and the other a 160-foot structure at mileage 41, were also laid.

During the month of March, 1952, an average of one mile of railroad was being laid per day and it is expected that, at the end of this year, approximately 190 miles of railroad will be ready for use.

At the present rate of progress, there is every reason to forecast that the first shipments of the ore will be made toward the

Table I.-Value of the Mineral Production of the Province of Quebec in Calendar Years 1950 and 1951

(Compiled by C.O. Beaudet, Chief, Division of Mineral Statistics of the Quebec Department of Mines)

	Value <u>1950</u>	Value <u>1951</u>
<b>METALS</b>		
Bismuth .....	\$ 65,261	\$ 56,232
Copper .....	34,141,997	38,151,738
Gold .....	(a)41,782,020	(a)39,342,350
Iron (ingots) .....	138,284	777,142
Lead .....	2,218,475	2,854,323
Molybdenite .....	60,059	228,958
Selenium .....	111,913	536,463
Silver .....	3,510,603	3,928,078
Titaniferous iron ore .....	7,706	9,790
Zinc .....	<u>26,861,397</u>	<u>34,372,439</u>
Sub-Totals .....	\$108,897,715	\$120,257,513
<b>NON-METALLICS</b>		
<b>I.-Industrial Minerals</b>		
Arsenic .....	\$ 35,809	\$ 35,029
Asbestos .....	64,361,529	77,627,863
Feldspar .....	378,782	425,370
Industrial lime .....	3,125,750	3,937,397
Industrial limestone .....	1,153,695	1,220,967
Magnesitic dolomite, brucite and magnesium	1,717,879	2,437,773
Marl .....	26,144	17,031
Mica .....	90,213	125,753
Mineral water .....	158,457	146,521
Ochre and iron oxide .....	262,632	262,277
Peat (For fuel .....	---	800
(Peat moss and humus .....	360,459	436,833
Phosphate .....	357	---
Pyrite .....	627,594	895,253
Quartz and industrial sand .....	498,852	579,633
Soapstone and talc .....	181,263	123,084
Titanium oxide (in slag) .....	<u>149,565</u>	<u>738,577</u>
Sub-Totals .....	\$ 73,128,980	\$ 89,010,161
<b>II.-Building Materials</b>		
Building lime .....	\$ 666,519	\$ 641,501
Building limestone .....	6,116,022	7,689,181
Cement .....	14,523,855	16,633,377
Clay products (Brick .....	4,849,145	5,217,532
(Other products .....	1,473,767	1,556,777
Granite .....	2,485,460	3,141,177
Marble .....	129,707	144,968
Sand and gravel .....	7,172,632	10,616,701
Sand-lime brick .....	389,156	422,921
Sandstone .....	830,225	597,066
Slate and shale .....	<u>1,920</u>	<u>2,947</u>
Sub-Totals .....	\$ 38,638,408	\$ 46,664,148
Grand Totals .....	<u>\$220,665,103</u>	<u>\$255,931,822</u>

(a) Value in Canadian funds. The standard value at the rate of \$20.671834 per ounce troy is \$22,069,973 for 1951 and \$22,699,369 for 1950.

Table II.-Subdivision of the Annual Value of the Mineral  
Production of the Province of Quebec, 1947-1951

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	109,047,280	49	72,979,415	33	38,638,408	18	220,665,103
1951	120,257,513	47	89,010,161	35	46,664,148	18	255,931,822

end of the summer of 1954. The plan of operation is set for a period of six months per year, the main haulage being suspended during the winter season because the ore would freeze during transit. Approximately two million tons of ore will be stored at Sept Iles so as to extend the loading of ore over a period of nine months during which period 10,000,000 tons of ore will be shipped.

Allard Lake:

One hundred and twenty miles east of Sept Iles, on the North Shore of the St-Lawrence river, at Allard Lake, a few miles north of Havre St-Pierre, opposite Anticosti island, was started the exploitation of titaniferous ore from the largest deposits of ilmenite known in the world. A total of 342,000 tons of the ore was mined during 1951 and approximately 332,000 tons was shipped to Sorel, where the ore is treated in electric furnaces. One furnace is already in operation while a second of a series of five is under construction; this installation at Sorel, once completed, will be able to mill 1,500 tons of ore a day. At the mine site, north of Havre St-Pierre, the construction of a crushing and grinding mill, the usual buildings, electric energy and transport facilities are almost completed. Within the next few months, the Allard Lake project will have embarked upon regular and sustained production.

LEGISLATION

During the fourth session of the twenty-third Legislature of the Province, which was held from November 7th, 1951, to January 23rd, 1952, the Quebec Mining Act was amended as follows:

(1°) Section 227 of the Quebec Mining Act (Revised Statutes 1941, Chapter 196), amended by section 11 of act 13 George VI, chapter 57, is again amended by adding thereto after paragraph 11, the following:

"12°- For permitting, in denuded and treeless places, the staking of the corners of each claim, by means of marks, different from those prescribed by section 60".

This Legislation was sanctioned January 23rd, 1952.

In order to comply with this new provision of the Act, Order-in-Council No.148 was issued on February 27, 1952, containing the following articles:-

"In denuded and treeless places, the prospector shall mark the corners of a claim by means of wooden or metal stakes, measuring four feet in length and at least one inch in diameter, to which it will suffice to affix, solidly, the metal plates bearing the number of the miner's certificate.

"These stakes shall be held in place by a mound of rocks or earth of at least thirty inches in diameter at the base and eighteen inches high.

"The said stakes of a claim may also be used for marking of adjacent claims by affixing thereto the required and suitable metal plates, provided, however, that the neighbouring claims be staked out by the same person or for the same persons".

(2°) During the course of the session of the Legislature that was held from January 24th, 1951, to March 14th, 1951, Section 9a, concerning the registration of mining titles for certain mining rights and mining concessions following letters patent issued before July 1st, 1911, had been included in the Quebec Mining Act after Section 9, as mentioned in our report for the year 1950-51.. This law was repealed during the following session.

#### 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, 1952, the number of miner's certificates issued by the various agencies of the Department of Mines was 7,531, as compared with 6,594 issued during the corresponding period of the preceding year.

The holders of certificates staked out 22,807 mining claims during the current fiscal year as against 19,787 in the preceding year.

The increase of more than 3,000 claims registered during the present year is due mainly to intensive prospecting in the Chibougamau region. Great activity was noted also in the counties of Montmagny, Bellechasse and l'Islet, where approximately 2,000 mining claims, in lots and half-lots, were registered after zones mineralized with nickel and zinc were discovered in Rolette township and its immediate neighbourhood.

Table III.-Various Titles Issued by the Department of Mines  
(Fiscal Years 1950-51 and 1951-52)

Designation of Title	1950-51	1951-52
Claims recorded at Amos .....	9,201	8,650
Claims recorded at Noranda .....	2,560	3,267
Claims recorded at Quebec .....	6,771	6,788
Claims recorded at Chibougamau .....	<u>1,255</u>	<u>4,102</u>
Total .....	19,787	22,807
Miner's certificates issued .....	6,594	7,531
Development licenses issued .....	1,014	1,382
Development licenses renewed .....	4,393	4,025
Mining concessions issued .....	9	8
Transfers registered .....	1,513	2,393
Reports of work: man-days reported .....	655,459	843,050
Reports of work: diamond drilling, in feet .....	458,122	604,592

The Chibougamau agency has been registering mining claims since November 1st, 1950, and, from that time to March 31st, 1951, 1,255 claims were registered. This total was not shown in our report for last year. To effect comparisons this figure should be added to Table IV on page 10 of the preceding report. Thus the total of claims registered in the four agencies in 1950-51 would thereby be increased.

Table IV.- Mining Titles Issued since 1942-43  
(Fiscal Years)

Fiscal Year	Number of Miner's Certificates	Number of Claims Recorded	Number of Development Licenses	Concessions		Transfers of Mining Rights
				Number	Acres	
1942-43	1,710	4,420	2,107	4	569	463
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

Table V.-Comparative Statement of Exploration Work  
on Mining Claims and Licenses During  
Calendar Years 1941 to 1951

Year	Number of Work Days (man-days)	Diamond Drilling (in feet)
1941	255,352	169,100
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

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 the purpose of inspection 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.

In the fiscal year 1951-52, a dust-counting laboratory was completed at the Noranda office of the Mines Inspection Branch. The Inspection of Mines Branch now has two ventilation engineers included in its personnel: Mr. Georges Courtemanche appointed to the post of Ventilation Engineer for the Western district and Mr. André Thibaudeau, Ventilation Engineer for the Eastern and Central districts of the Province. The latter replaces Mr. Maurice Lachance who resigned.

The above named officers carried out ventilation surveys in 25 mines, which involved the sampling and counting of 249 samples of airborne dust, as well as the flow of air in mines and surface plants.

Mr. Lucien Trudel, Senior Electrical Engineer, carried out 66 inspections of the electrical installations at mines and quarries.

Special agents, in Noranda and Thetford Mines, assist the inspectors in various phases of their work, and carry out other duties assigned to them.

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.

The Mine Rescue Training programme was continued without interruption. No emergency calls for mine fires were received. Since the establishment of Mine Rescue Stations in Western Quebec four years ago, a total of 376 employees have been trained in Rescue and Recovery

Operations; in the fiscal year under review, 67 new men completed training. These men are distributed throughout 22 producing mines. In the same period, 91 Department of Mines Certificates in First Aid to the Injured were awarded to successful candidates.

Orders-in-Council enacted during the fiscal year included eleven permissions to export concentrates, two 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, five new licenses were issued during the fiscal year; there were twenty-six license holders.

#### GEOLOGICAL SURVEYS BRANCH

I.W. Jones reports that this Branch, of which he is the Chief, had the most active year of its history. There were 19 geologists investigating widely separated parts of the Province.

After the field work these geologists prepared reports describing the geology, physiographic features and resources of their areas. With these reports are geological maps published on the scale of 1 inch to 1 mile. Most of the geological parties covered areas of about 200 square miles each.

The reports and maps prepared from the work of this Branch serve to indicate areas to which prospectors may direct their search for minerals. At the same time, particularly as many of them deal with hitherto little known regions, they furnish information that is useful to many other fields of activity.

The surveys carried out during the past season were as follows:

#### New Quebec (Ungava)

P.E. Imbault kept in touch with the important developments in this iron-bearing region, particularly in the northern part, where four companies are exploring for iron in the country south of Ungava bay.



M.M. Ritchie was assigned as Department of Mines geologist to the expedition that was organized and conducted by Dr. Jacques Rousseau, Director of the Montreal Botanical Garden, to examine the country east of Ungava bay. The valleys of Korok and Adloylik rivers were ascended and much information was obtained of a part of this far north-eastern corner of the province.

Dr. Jones joined Dr. Rousseau and Mr. Ritchie at the George River post of the Hudson's Bay Company when they completed their exploration, and the three of them proceeded to the large crater near the northern tip of the province. This crater, considered as having been formed by a falling meteor, is the largest known of its kind in the world. It has created much interest and, in 1951, was being studied by a scientific expedition led by Dr. V. Ben Meen and sponsored by the National Geographic Society, Washington, and the Royal Ontario Museum, of Toronto. The Department's Cartography Branch has been given a prominent part in the articles and photographs that are being published on this crater in magazines and journals throughout the world.

#### Mistassini Territory

E.R.W. Neale continued the programme, begun in 1947 by other geologists of the Department, of mapping the little known country around and northeast of Mistassini lake. In 1951, Mr. Neale covered some 200 square miles of territory in the Bethoulat Lake area, between latitudes  $51^{\circ}15'$ - $51^{\circ}30'$  and longitudes  $72^{\circ}15'$ - $72^{\circ}30'$ .

#### Chibougamau Region

Two geological parties of this Branch examined areas south and southwest of Chibougamau lake where, particularly since the Quebec Department of Mines built its Chibougamau highway, there is much prospecting activity.

J.E. Gilbert geologically mapped the Rohault area, between latitudes  $49^{\circ}15'$ - $49^{\circ}30'$  and longitudes  $74^{\circ}15'$ - $74^{\circ}30'$ .

S.E. Holmes covered the Fancamp-Hauy area that lies between latitudes  $49^{\circ}30'$ - $49^{\circ}45'$  and longitudes  $74^{\circ}30'$ - $74^{\circ}45'$ .

#### Abitibi

Resuming the programme of regionally investigating the country north of the railway in western Abitibi, S.H. Ross headed a party that mapped the Céloron area, about 45 miles northwest of Amos. The area lies between latitudes  $49^{\circ}00'$ - $49^{\circ}15'$  and longitudes  $78^{\circ}20'$ - $78^{\circ}45'$ .

Charlevoix and Saguenay Counties

M.L. Miller continued an investigation of the geology near the mouth of Saguenay river, in a region where some uranium minerals were found in 1950. In 1951, he covered the Tadoussac area which is bounded by latitudes  $48^{\circ}00'$ - $48^{\circ}15'$  and longitudes  $69^{\circ}45'$ - $70^{\circ}00'$ .

North Shore of Lower St-Lawrence (Saguenay County)

The country being opened up by the railway that is being built from Seven Islands to the rich iron-ore deposits of Ungava was given attention in the Department's geological programme. An area extending for 27 miles northeastward from Seven Islands was studied in 1939. In 1951, P.E. Grenier was assigned to continue the work northward and he covered the Nipissis River area between latitudes  $50^{\circ}30'$ - $50^{\circ}45'$  and longitudes  $65^{\circ}52'$ - $66^{\circ}08'$ .

G.E. Cooper continued exploration of the country north of Johan Beetz, which is about 40 miles east of Havre St-Pierre. He covered the eastern half of the Johan Beetz area, between latitudes  $50^{\circ}15'$ - $50^{\circ}30'$  and longitudes  $62^{\circ}30'$ - $62^{\circ}45'$ .

Gaspé Peninsula

In view of the importance of the copper deposits that are being prepared for production in Holland township, H.W. McGerrigle investigated the country extending northward from these deposits to the St-Lawrence shore. In 1951, he covered the west half of the Madeleine River area, from latitudes  $49^{\circ}00'$  to  $49^{\circ}15'$  and between longitudes  $62^{\circ}15'$  and  $62^{\circ}30'$ .

In the interior, central part of the peninsula, Côte Carboneau completed mapping the area that he began studying in 1950 and he covered the area comprising and bordering Clapperton and Clarke townships, between latitudes  $48^{\circ}30'$ - $48^{\circ}45'$  and longitudes  $66^{\circ}00'$ - $66^{\circ}15'$ .

Eastern Townships

H.C. Cooke investigated the western half of the Orford area, in Shefford and Brome counties, between latitudes  $45^{\circ}15'$ - $45^{\circ}30'$  and longitudes  $72^{\circ}15'$ - $72^{\circ}30'$ .

Champlain, St-Maurice and Lavolette Counties

J. Beland completed mapping the geology of the Shawinigan area by covering the ground between latitudes  $46^{\circ}30'$ - $46^{\circ}45'$  and longitudes  $72^{\circ}45'$ - $73^{\circ}00'$ .

Mr. Beland, in a short investigation, studied that part of the Three Rivers map-area that is occupied by rocks of Precambrian age.

#### Maskinonge, Berthier and Joliette Counties

T.H. Clark continued his investigation of the St-Lawrence lowlands and, in 1951, he covered the Sorel-Berthierville area, between latitudes  $46^{\circ}00'$ - $46^{\circ}15'$  and longitudes  $73^{\circ}00'$ - $73^{\circ}30'$ .

#### Gatineau County

Most of the Wakefield area, which lies between latitudes  $45^{\circ}30'$ - $45^{\circ}45'$  and longitudes  $75^{\circ}45'$ - $76^{\circ}00'$  was covered by R. Béland.

#### Surface Geology and Water Supply

R. DeBlois answered several requests for technical assistance in finding water from proprietors in rural areas who had encountered difficulty in obtaining adequate or proper water-supply. He met water-well drillers in various sections of the province and paved the way to cooperative efforts to gather and compile geological information that is made known by drilling operations. Furthermore, Mr. DeBlois continued his study of the surface geology of the region around Quebec City.

#### Other Work

Dr. McGerrigle and Mr. DeBlois examined the samples of rock obtained from the various deep-drilling operations that are being conducted in Gaspé peninsula in a search for oil.

F.F. Osborne served in a supervisory and advisory capacity in the geological investigations that were undertaken in the Laurentian or Grenville section of the province.

M.M. Ritchie devoted most of his time to technical reviewing of geological reports and maps for publication, and in assisting the Chief of the Branch in his administrative duties.

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 that, during the fiscal year, his section furnished and maintained in good condition instruments and camping equipment for 39 geological and engineering parties that were sent out by the Geological Surveys Branch, the Mineral Deposits Branch, and the Civil Engineering Branch.

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 companies 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 and Val d'Or made examinations of mining properties under development in each of their respective fields.

R. Blais spent three weeks in the fall of 1951 collecting samples at the O'Brien mine for a geothermometry study carried out in the Department of Geology at the University of Toronto. The objective of the research is a better understanding of the mode of formation of gold deposits.

P.E. Bourret, Mining Engineer in charge of industrial minerals technology, examined twenty-three quarries, sixteen industrial mineral prospects in varying stages of development and twenty-three producing mines. The properties are situated mainly in Southern Quebec, in the Lake St-John area and in Temiscamingue County. 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 geological surveys of ten quarries and two non-metallic mineral mines were made in collaboration with Ovide D. Maurice.

Jean Dugas made detailed geological and geophysical surveys of the iron sand deposits at Natashquan, Saguenay County. The Department undertook an airborne magnetic survey of an area of about

162 square miles in the vicinity of these deposits. Mr. Dugas' investigation included ground magnetometer and dip-needle surveys to check the anomalies disclosed by the airborne survey as well as preliminary sampling of the exposures between Natashquan Point and Kégashka, and also along the Natashquan river.

Peter Eakins concluded a programme of research on wallrock alteration in the vicinity of gold deposits of the Malartic area. A part of this project is a study of the feasibility of the application of geo-chemical prospecting methods.

Henri Girard made an examination of twelve 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. In addition, three new bogs were investigated.

R. Bruce Graham continued detailed geological studies in the Chibougamau area. During the season, he completed the sheet covering the northeastern quarter of Obalski township. In addition, he made reports on the progress of exploration on ten other mining properties situated in Mackenzie and Roy townships.

W.N. Ingham, resident geologist at Val d'Or, completed the compilation at a scale of one inch equals 1,000 feet of the geology of the southeast quarter of Vassan township, and the north half of Dubuisson township. A compilation at a scale of one inch equals half a mile was made of the Landrienne-Barraute-Carpentier area which has been the scene of important mining exploration. During the year, eighty-three visits were made to mining properties in his district.

Burdett Lee mapped an area of about fifty square miles to complete a three-year project of detailed geological mapping of a strip forty miles long extending from the Quebec-Ontario borders in the townships of Roquemaure-Hébécourt, Palmarolle-Duparquet, Poularies-Destor and Privat-Aiguebelle in the county of Abitibi-West. The purpose of this mapping is to guide exploration in the vicinity of a strong shear zone near which gold and base metal mineralization have been found by prospectors.

Ovide D. Maurice, geologist in charge of building materials, visited forty-three quarries for the purpose of reporting on development and advising the owners on the economic value and marketing of the products of these deposits. He also reported on exploration developments on seven metal mining properties in the Eastern townships as well as ten other properties in the exploration stage.

David J. McDougall continued a programme of detailed geological mapping in the eastern half of the Western Quebec Mining Belt. The southeast quarter of Pascalis township and a strip on the east side of lake Tiblemont were completed during the past season. In addition, a study was made of the relationship of the gold mineralization to fracture patterns and the distribution of minor minerals in the veins and wallrock at the Perron and Bevcourt mines.

Peter Riordon continued detailed geological study of the geology of the Thetford area and the asbestos deposits. The map-area is bordered by latitude  $45^{\circ}55'$  and  $46^{\circ}07'$ , and longitude  $71^{\circ}10'$  and  $71^{\circ}30'$ . This investigation is being made with a view to guide exploration for other deposits and the planning of development of the district.

W.G. Robinson, resident geologist for the west half of the Western Quebec Mining Belt, carried on the compilations at a scale of one inch equals 1,000 feet of the geology of the townships of Cadillac and Destor. Forty-four visits were made to mining properties under development in the area.

J.R. Smith commenced detailed geological mapping of the southwest quarter of Mackenzie township in the Chibougamau region, county of Abitibi-East.

W.W. Weber continued detailed geological mapping of an area centered about Amos, and during the year completed the study of the northeast quarter of Barraute township. The Barraute township area is the site of the discovery of large deposits of zinc and silver which according to plans announced by Barvue Mines Limited should be developed to the production stage before the fall of 1952. In addition to detailed geological mapping in Barraute township, Dr. Weber visited and reported on thirty-four properties under exploration in the Amos area.

This branch is responsible for the acceptance of reports, maps and diamond-drill logs submitted in support of applications for credit towards assessment work requirements through geophysical or detailed geological surveys and diamond drilling. During the year, 83 geophysical reports and maps were examined, as well as 33 detailed geological surveys and 250 diamond-drill logs. In addition, 77 reports or prospectuses were studied at the request of the Registrar, Quebec Securities Act. Finally, thirteen engineers' reports submitted in support of applications for mining concessions were studied. A series of elementary prospectors' courses of a week each were given in the afternoons and evenings in each of the following localities in the Province:-

Shawinigan, Notre-Dame des Anges, Ste-Thècle, Matane, Val d'Or, Rouyn, Amos, Montmagny and Disraeli.

These courses were prepared and presented by Ovide D. Maurice. The initiation courses on prospecting are intended to prepare a certain number of persons in prospecting methods which are much more extensively organized by the Laboratories Branch at Ecole Polytechnique in Montreal and at the Ecole des Mines of the University Laval in Quebec. 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, seven such lectures were given to technical societies or to university or school groups.

Carl Faessler completed a compilation of rock and mineral analyses made on specimens from the Province of Quebec.

The search for new mineral deposits throughout the Province was pursued by prospectors and companies engaged in mining exploration. It is noteworthy that the results were reported in such widely separated portions of the Province as the Chibougamau area, Gaspé Peninsula, the Sherbrooke area in the Eastern townships, the Barraute area in Abitibi-East and in New Quebec.

DIVISION OF TECHNICAL INFORMATION

AND DISTRIBUTION OF PUBLICATIONS

The Division of Technical Information and of Distribution of Publications is responsible for the collection of all technical information relative to the mineral resources of the Province of Quebec and for answering requests for informations which may be received.

The chief of this Division, Jean-Paul Drolet, mining engineer, submits the following report for the fiscal year ending March 31st, 1952:

- A.- Number of technical information requests relative to mining companies and various mineral substances, approximately ..... 550
- Various requests and correspondence concerning mining companies, technology and mineral collections ..... 864
- B.- Number of verbal and written requests for various publications ..... 6,571
- Number of publications forwarded without notice, from our mailing lists ..... 8,474

During the course of the fiscal year ending March 31st, 1952, the staff of the Distribution of Publications Division forwarded 33,551 publications, in answer to requests of all kinds received concerning geology and the mineral resources of the Province. Moreover, 8,474 publications were forwarded from our regular mailing lists.

The Division continued its work of collecting and classifying a considerable amount of reports and plans received from mine inspectors and field technicians, technological publications concerning the industry and mining companies. Furthermore, it established a system of classification, by subject and by township, of all the geological reports and plans received from engineers and geologists of the Department of Mines, as well as from those from the outside.

The Division also collects, compiles, classifies and indexes items of interest concerning the mining industry and the mining companies clipped from technical periodicals and newspapers. Photos having a certain amount of interest to geology and mining exploitation are also kept and classified.

Apart from these functions mentioned here, the Division prepares advertisements and articles for newspapers, magazines and technical periodicals, in which the Department of Mines announces the distribution of new reports, maps and works of the Department on geology, mineral deposits and the mining industry of the Province. These publications are the result of work in the field, and of research work carried out by geologists, engineers, and chemists of the Department. These publications may be obtained after consultation of a list of publications made available by the Department of Mines.

#### LABORATORIES BRANCH

The Laboratories Branch comprises the following sections:

I.- The laboratories of mineralogical and metallurgical research; II.- the laboratories of chemical analyses 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.- the university courses in prospecting; V.- the Department of Mines' museum, and displays at exhibitions.

The director of this branch is Maurice Archambault.



I.- Research Laboratories

The research work effected during the fiscal year was aimed at: a) assisting prospection; b) improving the various methods of chemical analysis of ores; c) increasing the chemical uses of the peat bogs; d) increasing the market value of our asbestos; e) improving the value of our iron, titanium, copper, lead, zinc, nickel, molybdenum and bismuth deposits.

Project No. 8: Claude Fremont continued his studies towards the design and construction of a miniature magnetometer. Towards this end, he built an oscillator having a stability of amplification of approximately four parts per million. He also perfected a system of detection which permits the reading of the variations of magnetic fields of a magnitude of five hundred-thousandths of one oersted.

Project No. 11: B.J. Walsh continued his investigations on the behaviour of zinc concentrates produced in the Province of Quebec when submitted to electrolysis. Zinc concentrates from the Anacon Lead Mines Limited and Ascot Metals Corporation received particular attention.

Project No. 22: J.U. MacEwan and J. Goth investigated the direct electrosmelting of copper concentrates with a view to establishing a process which would especially suit small industries. The thermal efficiency of this operation seems excellent.

Project No. 24: B.J. Walsh completed, on an industrial scale, his experimental studies of the ore from Molybdenite Corporation of Canada at Lacorne. Concentrates of molybdenite of high market value are now currently produced along with a high recuperation of the bismuth associated with molybdenite.

Project No. 30: Jean Girault carried out a detailed mineralogical study of two varieties of kornerupine which abundantly occurs near Lake Ste-Marie in Gatineau county.

Project No. 31: Fernand Claisse developed a method for determining the proportions of goethite in iron ores. Through a judicious handling of the Chevenard thermobalance, the content of goethite in the ore may be determined within one and three per cent.

Project No. 34: B.J. Walsh, Pierre Grenier and André Vézi-na investigated the desulfuration of ilmenite from Allard lake.

Project No. 35: J. Risi, C.-E. Brunette and Dorothy Spence effected the chemical fractionation of peat samples from the peat bogs of Rivière-du-Loup. The purpose of the work was to identify the chemical components of the peat with a view to determining the quantity and the quality of the products which could be sold as raw materials to the Canadian Chemical Industry, either rough or after certain treatments such as extraction, fermentation, hydrolysis, pyrolysis or catalytic hydrogenation.

Project No. 36: B.J. Walsh, J.P. Bolduc and J.P. Girault carried out metallurgical investigations on 120 samples of magnetic sands from Natashquan with a view to producing commercial concentrates of magnetite and ilmenite.

Project No. 37: Gerard Letendre and Arthur Dubé covered the greater part of a technical as well as economical comparative study of the various processes used for the reduction of iron ores with regard to the conditions prevailing in the Province of Quebec so as to determine the possibility of establishing in the Province one or several branches of the siderurgical industry. They also investigated the markets which could be served by a steel plant situated in the Province.

Project No. 38: L.P. Bonneau started the study of removing foreign dust from asbestos before bagging, so as to improve the quality of the asbestos fibres used in the textile industry and in the manufacture of heat insulating papers. Two methods of separating the dust from the fibres are presently investigated: the first, by electrostatic attraction in a powerful electric field; the second, by centrifugal force in a whirling mechanism. The results of one method are promising even to trade.

Project No. 40: B.J. Walsh and J.P. Bolduc carried out flotation tests on ores from Pershcourt Goldfields Limited, with a view to obtaining a maximum recovery of zinc, lead, and silver.

Project No. 42: Jean Girault examined various anthraxolites of the Province of Quebec to find standards which would permit their identification with accuracy. The work included tests with the Chevenard thermobalance, the study of polished sections under the metallographic microscope, and investigations of their behaviour with some chemical reagents.

Project No. 43: A. Dmitrieff-Kokline studied improvements which could be made to the reproductibility of analytical results obtained with Beckman's spectrophotometer. By correcting the flow of

gases in the burner and in changing the viscosity and the wetting power of the solutions, the performance and efficiency of the apparatus were improved remarkably.

Project No. 44: Dominique Lamontagne investigated the behaviour of beryllium, manganese and zinc towards the mercury drop electrode. It was demonstrated that polarography offers marked advantages over the current chemical methods when it comes to determining extremely small quantities of elements, or when there is analytical interference of one element with another, as in the case of the presence of manganese in titrating zinc in ores.

Project No. 45: Jean Laneuville investigated the relative disintegrability of the New Quebec Iron Ores in comparison with others from Sweden, the United States, Brazil, Algeria, Newfoundland and Ontario.

Project No. 46: Jean Laneuville has demonstrated that the difference between the sintering and fusion points of New Quebec Iron Ores is reduced by porosity which raises the sintering point and especially by the presence of impurities which act as self-fluxing agents.

Project No. 47: Jean Laneuville investigated the porosity and the adsorption power of New Quebec Iron Ores versus standard ores from foreign sources.

Project No. 48: Constance Tousignant developed a new spectrographic method for the analysis of steels. This new technique utilizes the electric arc instead of the electric spark and while increasing the sensibility of detection, it does not affect at all the reproductibility.

Project No. 49: B.J. Walsh, J.P. Bolduc and R. Paquet carried out concentration tests on ores from Weedon Pyrite and Copper Corporation Ltd. in order to determine the best conditions for recovering chalcopyrite (copper), sphalerite (zinc) and pyrite (sulphur).

Project No. 50: Jean Girault and Fernand Claisse carried out research work on nickel-bearing minerals from Montmagny county.

## II.-Laboratories for Chemical Analysis and Assays

In the course of the fiscal year the laboratories for chemical analyses and assays received 11,468 samples on which were performed 76,708 analyses and examinations. These figures comprise quantitative chemical analyses, determinations under the microscope, spectrograph, X-ray and radioactivity measurements.

These were distributed as follows:

Table VI.-Summary of Analytical Work Done in Laboratories

	LABORATORIES			Totals
	Quebec	Montreal	Thetford Mines	
Samples received .....	10,104	1,328	36	11,468
Quantitative analyses .....	24,240	3,465	124	27,829
Qualitative determinations ....	16,560	-	-	16,560
Spectrographic examinations ...	24,607	-	-	24,607
X-ray examinations .....	4,310	-	-	4,310
Radioactivity .....	231	-	-	231
Research analyses .....	3,163	-	-	3,163
Totals .....	73,111	3,465	124	76,708

The work of the Thetford laboratory is limited to physical tests on the quality and classification of asbestos fibres. The Montreal laboratory does routine qualitative and quantitative chemical analyses for prospectors.

The main laboratories are located in Quebec City 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, 1952, the mineralogists examined 8,840 samples of rocks and minerals, which required 16,560 mineralogical determinations. The mineralogists also studied 34 thin sections of rocks.

The mineralogists also have charge of routing through the other sections of the laboratories, the samples received for analysis or study.

They also answered verbally or in writing numerous inquiries regarding the nature and economic possibilities of mineral samples and specimens submitted to them. Finally they advised prospectors.

The Mineralogy and Petrography Division also looks after the preparation of collections of rocks and minerals for distribution to those who are interested in natural sciences and prospection.

Spectrography, Radiocrystallography  
and Radioactivity Laboratory

The year under review was the most active ever experienced by this laboratory. The personnel of this laboratory effected more than 30,354 operations distributed as follows: 24,799 spectrographic analyses, 4,324 radiocrystallographic analyses and 231 radioactivity measurements. In this total are included 1,206 research determinations and 252 radiocrystallographic quantitative analyses, the majority of which were for the division of Industrial Hygiene of the Quebec Department of Health.

Several of the research work enterprises carried out by the personnel of this laboratory had concrete and immediate results, which proved to be very useful.

Chemical Laboratory

This laboratory had a much more active year than the preceding one. In fact, there was an increase of 7,265 quantitative determinations in duplicate over the preceding year. A total of 26,201 analyses was effected by this laboratory during the year under review.

The quantitative determinations effected by this laboratory are distributed as follows: 8,167 quantitative analyses of precious metals, 18,936 general analyses, of which 1,961 dealt with research projects.

Under the heading of special analyses may be mentioned the complete analysis of one mineral water and 55 geochemical analyses for the geological study of various mining districts of the Province.

Metallurgical Laboratory

This laboratory, where many of the research projects mentioned earlier in this report were conducted, made additions of important pieces of equipment during the course of the year under review.

Among these additions were a high temperature furnace operating under high vacuum for the measurement of small quantities of gases present in metals in combined or mixed state; a "Sink and Float" concentrator for ores and a Humphreys spiral for the gravimetric separation of minerals.

III.-Sampling and Ore Dressing Plant

This plant, near Val d'Or in Abitibi-East county, has received the following samples of ores for bulk sampling:

Table VII.-Samples of Ores Received  
at the Plant for Bulk Sampling

	Type of Ore	Number of Lots	Weight (pounds)
North Whitney Mines Ltd .....	Scheelite	1	13,500
Rosario Demers .....	Gold	3	1,270
Wendell Mineral Products Ltd. ..	Gold and Copper	1	7,875
Bordulac Mines Limited .....	Scheelite and Gold	1	7,090
Ex-Mother Lode Limited .....	Gold and Copper	1	25
Total .....		7	29,750

The plant has equally received for treatment and recovery of gold:

Table VIII

Shipments	Number of Lots	Weight (pounds)
N. Hermeston (Cleaning up of the Siscoe Plant) .....	1	5,190
" " " "	1	7,417
" " " "	1	6,490
Totals .....	3	19,097
Gold recuperated: 73,369 ounces		

The plant carried out experimental work on the following shipments:

Table IX.-Summary of Ore Dressing by Plant

Shipped by	Type of work	Type of mineral	Weight (pounds)
Barvue Mines Limited .....	Crushing and screening	Zinc	1,050
Mastodon Mines Limited .....	Crushing and screening	Lead and zinc	150
Wendell Mineral Products Ltd ..	Crushing and screening	Rhyolite	4,450
Shawinigan Chemicals Limited ..	Dry crushing	Ferro-silicon	59,840
Totals .....			65,490

IV.-University Courses on Mineral  
Prospecting

University courses, inaugurated in 1947 and subsidized by the Quebec Department of Mines, were again given this year at the Faculty of Science at Laval University and at the Ecole Polytechnique of Montreal.

The programme included the study of chemistry, fire assaying, mineralogy, geology and prospecting. More elaborate courses were added to the programme of preceding years to make the students more familiar with the Quebec Mining Act, the operations of the various divisions and branches of the Department of Mines, and the organization and the financing of mining syndicates. Excursions in the field were arranged during the courses which lasted five weeks. Diplomas were awarded to those students who passed the examinations.

Fifty student-prospectors followed assiduously the courses at Quebec and at Montreal. Some of the students found immediate employment with mining companies while others did prospecting on their own.

V.-Displays and Exhibitions

During the course of the year, a specimen of a mineral taken from the Suffield mine by Ascot Metals Corporation Limited, Sherbrooke, P.Q., was added to the collection of minerals in the Department's show-cases at Quebec.

The Department of Mines participated in the Trois-Rivières, Sherbrooke, Cookshire, and Rouyn regional exhibitions. At Trois-Rivières and at Sherbrooke the exhibit brought the attention

of the visitors to the importance of our mines in regards to other Canadian and Foreign Industries. At Cookshire and at Rouyn, the exhibits consisted in a lighted map showing the main mining centres of the Province together with data on the value of their respective production.

#### DRAUGHTING AND CARTOGRAPHY BRANCH

Léon Valois, P. Eng., is chief of this Branch, and Armand Blanchette is the assistant-chief. Ten draughtsmen and one stenographer complete a staff of thirteen.

The Draughting and Cartography Branch supplies the documents required by the geological missions of the Department. These documents consist mainly of aerial photos, compilations at a desired scale, base maps representing only topographic surveys and aerial photographs. In some cases, areas are photographed and mapped so as to supply an adequate basis of operation for geological field work.

The Branch maintains two up-to-date sets of township maps on tracing linen; on one of these are drawn the outlines of mining claims, on the other set are shown the boundaries and identification marks of lands held by mining companies. The first series, which shows the staked-out claims, comprises 514 recorded tracings, on which are traced the boundaries of the 22,807 new claims recorded during the year. The second series comprises 195 tracings. From all these tracings 10,845 blue prints were struck off to meet requests from the public.

The following geological maps were prepared by the Branch which also supervised the printing of them.

#### Final Maps (coloured)

##### a) Completed

- No. 791 - Montreal area, Mont-Royal
- No. 799 - Montreal area, vertical cuts
- No. 800 - Montreal area, Laval sheet
- No. 801 - Montreal area, Lachine sheet
- No. 852 - Bachelor Lake area
- No. 853 - Iserhoff River area
- No. 857 - Olga-Goéland area

##### b) In press

- No. 807 - Belleterre area
- No. 910 - Canimiti River area

##### c) In preparation

- No. 821 - Hébécourt W.



- No. 822 - Hebecourt E.
- No. 823 - Duparquet W.
- No. 824 - Duparquet E.
- No. 825 - Destor W.
- No. 909 - Allard River area
- No. 917 - Temiscamie area
- No. 918 - Albanel Lake area
- No. 919 - Kensington West area
- No. 920 - Kensington East area
- No. 921 - Lake 31 Miles area
- No. 922 - McGill area
- No. 924 - Chertsey Township
- No. 925 - Rawdon Township

Preliminary maps

a) Completed

- No. 125 - Asbestos South of Quebec (reprint)
- No. 619 - Chibougamau Highway (reprint)
- No. 830 - Denholm-Hincks (reprint)
- No. 831 - Mazarin (reprint)
- No. 836 - Temiscamie Mountains (reprint)
- No. 854 - Part of Roquemaure and Palmarolle (reprint)
- No. 856 - Part of Palmarolle and Poulariès (reprint)
- No. 878 - North-West Obalski (2 colours)
- No. 879 - Dalquier, Figuery, Landrienne
- No. 880 - Barraute (2 printings)
- No. 881 - Queylus
- No. 882 - Rinfret
- No. 883 - St-Siméon
- No. 884 - Beetz Lake
- No. 885 - Southeast Duprat
- No. 886 - Alembert River and Dufresnoy Lake
- No. 904 - Takwa River
- No. 905 - Part of Fabre Township
- No. 907 - Béthoulat Lake
- No. 935 - Johan Beetz (East half)
- B-484 - Amos-Duverny-Barraute (2 printings)
- B-491 - Chibougamau mining map (reprint)

b) In preparation

- No. 933 - Rohault
- No. 943 - Lac-à-la-Tortue peat bog
- No. 947 - Tadoussac
- No. 948 - Gaspé - tenor of heavy metals
- No. 960 - Fancamp-Haÿ
- No. 961 - Abitibi-North and Chibougamau

Our draughtsmen have traced on linen twenty-nine other geological plans; thirty-four plans of furniture, machines, etc., as well as thirty-two figures serving as illustrations for final reports.

Other works closely related to draughting, such as the mounting of maps on canvas, compilations and various classifications, are also included in the scope of the Draughting and Cartography Branch.

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 1951-52, the Division of Mine Roads built 53.83 miles of new roads, bringing to 1,357.49 miles the total length of roads built by the Department of Mines; it improved or completed the construction of 68.98 miles. The Department contributed a sum of \$65,833.04 towards the construction or the improvement by other organizations of the government for roads necessary to mining operations.

The total expenditure during the course of the year for the construction of new roads and the improvement or maintenance of existing roads amounted to \$1,048,900.81, namely:

New roads .....	\$ 88,432.30
Improvements or completion .....	887,338.35
Bridge across the Marsoui river .....	7,297.12
Contributions from our Department to work accomplished by other Departments	<u>65,833.04</u>
TOTAL .....	\$1,048,900.81

During the course of the year, the Department received in contributions, either from mining companies or from other organizations interested in the construction of various roads, an amount of \$23,288.00.

To date, the grand total spent by our Department since 1925 for the construction, improvement, and completion of roads is \$13,797,725.93.

New mine roads built during the fiscal year 1951-52:

<u>Counties</u>	<u>Roads</u>
Abitibi-East .....	De la Dauversière township, Chibougamau Explorers Winter Mine road.
Abitibi-East .....	Obalski township, Scott and Levy, Opemisca Mine Winter road.
Abitibi-East .....	Road between Bourbeau Lake deposits and Chibougamau village.
Abitibi-East .....	Consolidated Duquesne Mining Co. Ltd., Mine road.
Labelle .....	Joly township (Clot mine), road leading to a graphite deposit.
Temiscamingue .....	Duhamel township, road between Wright mine and Highway No. 46.
Rouyn-Noranda .....	Joannès township, Heva Mine road.
Champlain .....	Sherwin Williams Ltd., red mill, road leading to ochre deposit.

Roads improved and completed during 1951-52:

<u>Counties</u>	<u>Roads</u>
Abitibi-East .....	Fournière township, Forestry colony road.
Abitibi-East .....	Senneterre to Madeleine Lake road.
Gaspé-North .....	York River road.
Portneuf .....	Road between Marvel Granite quarry and Pont-Rouge-St-Raymond.
Chicoutimi .....	Road between Bagotville peat bogs and Bagotville-Chicoutimi road.
Mégantic .....	St-Antoine de Pontbriand road.
Mégantic .....	Road giving access to Broughton Soapstone quarry.
Temiscamingue .....	Road from Belleterre mine to Laforce village.

Maintenance of Mining Roads:

The Department of Mines maintained 189.1 miles of roads at a cost of \$71,153.29, namely:

<u>Counties</u>	<u>Roads</u>
Abitibi-West .....	Hébécourt township, mining road.
Bonaventure .....	Grande Cascapedia road.
Gaspé-North .....	Road from Levasseur lake to Gaspé Park Highway.

Rivière-du-Loup ..... Road leading to Premier Peat Moss Co. bog.  
Roberval ..... Road from Chibougamau to St-Félicien.  
Rouyn-Noranda ..... Quemont, Donalds, Eldona, McDonald mines road.

#### Peat Bog Drainage

In conformity with the provisions of the Quebec Mining Act, the Civil Engineering Branch made grants totalling \$18,093.13 to certain operators of peat bogs to assist them financially in the drainage of their properties. Drainage ditches totalling 117,672 feet were opened in the counties of Matane, Rimouski, Rivière-du-Loup, Lévis, and Chicoutimi.

#### Division of Mining Villages

Despite the slackening in the development of the gold industry of the Province, the mining villages of Abitibi continued to grow during the last fiscal year. Important operations undertaken in copper, zinc and lead mines have more than compensated for this decline and have stimulated progress in already existing villages and have even resulted in the establishment of new villages.

#### Bourlamaque:

Construction in the village of Bourlamaque was satisfactorily active during the course of 1951-52. Municipal projects were developed proportionally. The population is 2,465.

#### Val d'Or:

The demand for building lots caused our Department to subdivide certain Crown lands into approximately 100 lots. These lots are east of the hospital. However, none of these lots was sold during 1951-52. The population is 8,760.

#### Cadillac:

There was no important development to report in this municipality during the course of the year under review. The population is 1,466.

#### Malartic:

The sale of lots in the town of Malartic was much reduced during the year 1951-52. However, some municipal projects were executed and it can be reported that this town continues to progress. The population is 5,743.

#### Rouyn-South:

The sale of lots was relatively active and the assessment rate was greatly improved.

Noranda:

This model town continued to develop about the same as it did in the past years. Building is very active and brought about important municipal projects. The population is 7,605.

Belleterre:

There was no important development in this municipality except perhaps in the reduction of the number of "squatters" in the regions of Mud Lake and Gainsmoor.

Chibougamau:

Our Department sold several residential lots in this village. Approximately twenty buildings were erected and, with the installation of water works and sewerage systems in perspective, it may be forecast that several residences and stores will be built in the near future.

New Villages

During the course of the year 1951-52 the Department of Mines studied the organization of three (3) new villages:

- 1 - In Holland township, in Gaspé-North County, near the Gaspé Copper Mine property.
- 2 - In Barraute township near Barvue mine.
- 3 - In Louvicourt township near the Bevcourt Mine property.

DIVISION OF MINERAL STATISTICS

This Division is responsible for the tabulation of yearly and monthly statistics concerning the mining industry in the Province of Quebec and also the answering of queries relative to this information.

These statistics cover the following: production, quantity, and value of each mineral being mined in the Province, the number of persons employed, the number of man-hours of work, salaries and wages paid, quantities of fuel and of electricity and of other exploitation supplies consumed, timber used in mine buildings and mining, cost of all sorts of supplies purchased, cost of machinery and equipment purchased, main taxes paid, dividends paid by companies, capital received from various sources by companies, etc.

Part of this information is given in other chapters of this report and in our report of "The Mining Industry in the Province of Quebec". Information pertaining to monthly production is published in monthly and quarterly bulletins which are regularly forwarded

to approximately 325 interested newspapers or individuals, companies and institutions. Other publications, of less general interest, are filed for reference by the various services of the Department and by whosoever may request them.

In its efforts to obtain the data necessary to establish the statistics for the year 1951, this Division had to gather the following reports, which the mine and quarry operators stated on forms prepared by it:

Reports on mineral production and mines operations:	<u>Number</u>
Annual reports .....	2,825
Monthly reports .....	669
Annual reports from construction contractors .....	133
Annual reports on timber used in mines .....	118
Annual reports on capital received by mining companies .....	<u>705</u>
Total .....	4,450

Of the 2,825 annual reports on mineral production and mining operations, 1,340 report shipments of products, 311 mention only data concerning exploration work and development of properties not in production, and 1,174 state that nothing was done during the course of the year on the properties concerned.

The reports on capital received from mining companies indicate the sums of money these companies received during the year either from the sale of shares of their capital stock or from the sale of bonds or other titles that they might have issued and from long term loans. The total from these three sources in 1951 was \$32,250,000. A similar survey for the year 1950 had shown a total of \$48,650,000.

The number of new mining companies was not much over that of the previous year. During the course of the year, 54 companies were formed with Quebec charters. Twelve companies were formed in 1951 with Ontario charters, and three with Federal charters acquired mining rights in this Province. This brings to 69 the number of new companies organized to operate in Quebec. In 1950 there were 66 companies, of which 50 held Quebec charters, 15 Ontario charters, and one a Federal charter.

The following tables give the list of the mining companies organized in 1951, the date of their incorporation, their head office and their authorized capital.

Mining Companies Incorporated  
in the Province of Quebec during 1951

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Abitibi Metals Mines Ltd...	Val d'Or	July 12	3,000,000	\$ 1
Adnor Mines .....	Montreal	July 31	3,000,000	\$ 1
Albert Metals Corp. Ltd. ..	Sherbrooke	Jan. 11	4,000,000	\$ 1
Amalgamated Mines and Minerals Corporation ....	Montreal	May 15	6,000,000	\$ 1
Atlas Granite Company Ltd..	Montreal	Nov. 8	500	\$100
Atlas Sulphur and Iron Company Limited .....	Montreal	May 16	2,500,000	\$ 1
Ausable Mines Limited .....	Montreal	Sept. 7	3,000,000	\$ 1
Bar Metals Mines Ltd .....	Val d'Or	Sept. 27	3,000,000	\$ 1
Barvallee Mines Limited ...	Montreal	Sept. 10	4,000,000	\$ 1
Barvin Mines Limited .....	Montreal	Jan. 4	3,000,000	\$ 1
Barvue Extension Ltd .....	Montreal	Feb. 17	4,000,000	\$ 1
Beattie-Duquesne Mines Ltd.	Duparquet	Dec. 10	5,000,000	\$ 1
Beupas Mines Limited .....	Montreal	August 3	4,000,000	\$ 1
Belville Zinc and Copper Mines Limited .....	Val d'Or	Sept. 27	3,000,000	\$ 1
Brique de Québec Ltée (La).	Quebec	March 3	400	\$100
Buckingham Feldspar Ltd....	Montreal	Aug. 6	100,000	\$ 1
Chatelet Mines Limited ....	Bourlamaque	May 21	3,000,000	\$ 1
Consolidated Marcourt Mines Limited .....	Montreal	Nov. 23	4,000,000	\$ 1
Dockie Mining Corporation..	Val d'Or	Oct. 4	4,400,000	\$ 1
Dominion Silica Corporation Limited .....	Montreal	Oct. 20	(a) 3,000,000	\$ 1
			1,000,000	\$ 1
Dupas Metals Limited .....	Montreal	Feb. 15	4,000,000	\$ 1
Eastern Metals Corporation Limited .....	Sherbrooke	Aug. 30	5,000,000	\$ 1
Eastman Copper Corporation Limited .....	Montreal	Jan. 18	40,000	\$ 1
Ex-Mother Lode Mines Ltd ..	Val d'Or	Nov. 29	4,000,000	\$ 1
Flomic Chibougamau Mines Limited .....	Montreal	May 30	3,000,000	\$ 1
Golden Valley Granite Co. Ltd .....	Val d'Or	June 26	4,000	\$100
Lachance Mines Limited ....	Montreal	May 2	3,500,000	\$ 1
Laurentian Mining and Extraction Co. Ltd. ....	St-Jovite	June 9	1,000	\$ 10
Magog Copper Mines Ltd ....	Montreal	Oct. 13	3,500,000	\$ 1

(a) Preferred shares.

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Marcoland Mines Limited .....	Montreal	Sept. 17	4,000,000	\$ 1
Montbar Mines Limited .....	Montreal	Sept. 20	3,000,000	\$ 1
National Nickel Corp. Ltd. ..	Montreal	Nov. 5	4,000,000	\$ 1
Newbaska Gold and Copper Mines Limited .....	Val d'Or	Nov. 28	3,000,000	\$ 1
North Trinity Mining Corp. ..	Val d'Or	Oct. 12	4,000,000	\$ 1
O. Clot Graphite Mines Co. Ltd .....	St-Jovite	July 6	8,000	None
Pierre de Taille Archambault Limitée (La) .....	Village Bélanger	Feb. 27	1,000	\$100
(Archambault Cut Stone Ltd)				
Princess Gold Metal Limited .	Rouyn	Sept. 19	3,000,000	\$ 1
Cie d'Amiante Provinciale Ltée (La) .....	Sherbrooke	Nov. 24	4,000,000	\$ 1
(Provincial Asbestos Co. Ltd.)				
Quebec Metal Corporation Ltd.	Quebec	March 8	3,500,000	\$ 1
Quebec Mineral Exploration and Mining Co. ....	Ste-Margue- rite du Lac Masson	Jan. 25	1,000,000	\$ 1
Roymont Mines Limited .....	Montreal	Sept. 20	3,000,000	\$ 1
St. Lawrence Iron and Titanium Mines Limited ....	Montreal	Oct. 5	300,000	\$ 1
Signal Oils and Metals Co. Ltd.....	Montreal	Sept. 28	3,000,000	\$ 1
South Chibougamau Mining Ltd.	Montreal	July 31	3,000,000	\$ 1
Stratford Metals Limited ....	Montreal	Oct. 16	4,000,000	\$ 1
Strategic Metals Limited ....	Montreal	May 7	40,000	\$ 1
Taché Lake Mines Limited ....	Montreal	March 6	3,000,000	\$ 1
Terrebonne Titanium Co. Ltd..	Ste-Margue- rite du Lac Masson	Aug. 9	4,000,000	\$ 1
Temiska Copper Mines Ltd.....	Montreal	Nov. 17	3,000,000	\$ 1
Trans-America Petroleums Ltd.	Montreal	Oct. 29	4,000,000	\$ 1
Trans-Canada Petroleums Ltd..	Montreal	Nov. 7	4,000,000	\$ 1
Tri-Tor Oils Limited .....	Montreal	Oct. 12	3,500,000	\$ 1
United Lead and Zinc Mines Ltd .....	Montreal	June 13	4,000,000	\$ 1
Victoria Copper Zinc Mines Ltd .....	Montreal	Oct. 25	3,000,000	\$ 1



Mining Companies Incorporated in 1951 by Letters Patents  
of the Province of Ontario which have acquired  
mining rights in the Province of Quebec

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Abex Mines Limited .....	Toronto	Jan. 10	3,000,000	\$ 1
Chicobi Lake Mines Limited ...	Toronto	July 10	3,000,000	None
Cour-Bar Mines Limited .....	Toronto	Jan. 24	3,000,000	\$ 1
Foran Mines Limited .....	Toronto	Sept. 4	3,000,000	\$ 1
Grandines Mines Limited .....	Toronto	Feb. 2	3,000,000	\$ 1
Inmont Copper Mines Limited ..	Toronto	Oct. 2	3,000,000	\$ 1
New Concord Development Corporation Limited .....	Toronto	Nov. 1	3,500,000	None
Pantan Mines Limited .....	Toronto	Feb. 2	3,000,000	\$ 1
Parquet Mines Limited .....	Toronto	June 20	4,000,000	\$ 1
Sursho Mining Corporation Ltd.	Toronto	April 11	100,000	None
Uddlen Mines Limited .....	Toronto	Dec. 18	3,500,000	None
Vermont Zinc Mines Limited ...	Toronto	Oct. 5	3,000,000	\$ 1

Mining Companies Incorporated in 1951 by Dominion Letters  
Patents which have acquired mining rights  
in the Province of Quebec

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Asbestos Corporation (Explorations) Limited .....	Thetford Mines	March 19	50,000	None
Normalmac Mines Limited .....	Toronto	March 17	3,000,000	None
Stratmat Limited .....	Montreal	April 20	500	None

DIVISION OF EDITING AND PRINTING OF PUBLICATIONS

The chief of this division, Maurice Brunet, submits the following report for the fiscal year ending March 31st, 1952.

Following is a list of the publications of the Department of Mines edited during the fiscal year 1951-52.

All publications are issued in French and in English.

The Mining Industry of the Province of Quebec in 1950  
Notions élémentaires de minéralogie pour accompagner une collection  
de minéraux préparée pour l'usage des écoles et des prospecteurs.  
(In French only)

- Geological Report No. 46 - Geology of Montreal and vicinity, by T.H. Clark.
- Geological Report No. 50 - The Kensington Area, Gatineau and Labelle Counties, by E. Aubert de la R e.
- Geological Report No. 51 - Olga-Go eland Area, Abitibi-East County, by P.E. Imbault.
- Geological Report No. 52 - Canimiti River Area, Pontiac County, by N.B. Gillies.
- Geological Report No. 55 - Belleterre Area, Guillet Township, Temiscamingue County, by P.E. Auger.
- Preliminary Report No.257- Parts of Dalquier, Figuery and Landrienne Townships, Abitibi-East County, by W.W. Weber.
- Preliminary Report No.258- The South-West part of Pascalis Township, by David J. McDougall.
- Preliminary Report No.259- Cach  Lake Area. Northwest Quarter of Obalski Township, Abitibi-East County, by R. Bruce Graham.
- Preliminary Report No.260- General Report of the Minister of Mines of the Province of Quebec for the Year Ending March 31st 1951.
- Preliminary Report No.261- Parts of Palmarolle, Poularies, Duparquet and Destor Townships, Abitibi-West County, by Burdett Lee.
- Preliminary Report No.262- Special Report on the Iron Deposits of the Province of Quebec, compiled by H.W. Mcger-  
ricle and H. Girard.
- Preliminary Report No.263- Johan Beetz Area (Eastern half) Drucourt and Johan Beetz Townships, Saguenay County, by Gerald E. Cooper.
- Preliminary Report No.264- B thoulat Lake Area, Mistassini Territory, by E.R.W. Neale.
- Preliminary Report No.265- Sintering and Melting Points of Iron Ores from New Quebec, by Jean Laneuville.
- Preliminary Report No.266- Tadoussac Map-Area, Charlevoix, Chicoutimi and Saguenay Counties, by M.L. Miller.
- Preliminary Report No.267- Rohault Area, Abitibi-East and Roberval Counties, by J.E. Gilbert.
- Preliminary Report No.268- Hydro-chemical Analyses of Streams and Rivers in the Gasp  Peninsula, by John E. Riddell.
- Preliminary Report No.269- Anomalous Copper and Zinc Values in trees in Holland Township, Gasp -North County, by John E. Riddell.
- Preliminary Report No.271- Fancamp-Ha y Area, Abitibi-East County, by Stanley W. Holmes.

- Preliminary Report No.272- Nipissis River Area, Saguenay County, by Paul E. Grenier.
- Preliminary Report No.273- Southeast Quarter of Duprat Township, Rouyn-Noranda County, by R.L. L'Espérance.
- Preliminary Report No.275- Dalembert River-Dufresnoy Lake Area, Duparquet and Destor Townships, Abitibi-West County, by R.L. L'Espérance.

#### INFORMATION AND PUBLICITY

In order to keep the public informed on the progress of the development of the mineral wealth of the Province and of its mining industry, the officers of the Department of Mines prepare lectures, talks, communiques and news-letters, which are delivered at meetings of groups or societies. Numerous articles are also written for technical periodicals, 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.

The main articles follow.

##### By the Honourable C.D. French, Minister of Mines

- "Mining Developments in the Province of Quebec during the past Twenty-five Years"; article published in the "Western Miner", British Columbia, April, 1951.
- "L'industrie minière de la province de Québec au cours des dernières vingt-cinq années": article in "L'Echo Abitibien", Val d'Or, Que., April, 1951.
- "Recent Mining Developments in Quebec"; article published in the Quebec daily newspaper "Chronicle-Telegraph", March, 1952.

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

- "Quebec Boasts Mining Records Though Only 20 Per Cent Explored": article published in "The Monetary Times", October, 1951.
- "Progrès récents de l'industrie minière du Québec": lecture delivered before the Richelieu-St-Jean Club, November 15, 1951.
- "Intensive Mining Activity in Quebec"; article published in the "Montreal Gazette", January, 1952.
- "To-day and To-morrow in the Mining and Metallurgical Industries of Canada": lecture delivered before the Mining and Metallurgical Society, McGill, March 14, 1952.

By I.W. Jones, Chief of Geological Surveys Branch

"The Role and Importance of Government Geological Surveys": lecture delivered before the Monteregian Geological Club, McGill University, March, 1952.

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

¶Recent Developments in the Mining Industry of the Province of Quebec": conference at Montebello, June 18, 1951.

"Geology of Quebec City and District": conference given the Historical Guides Association, March 26, 1952.

By René Béland, geologist

"Le pseudo-conglomérat du lac Meach, près d'Ottawa": presented at the annual meeting of l'Association Canadienne Française pour l'Avancement des Sciences (ACFAS), Montreal, October, 1951.

By T.H. Clark, geologist

"New Light on Logan's Line": presented at the meeting of the Royal Society of Canada, Montreal, June 1951, and published in Trans. Roy. Soc. Can., vol.XLIV, Sec. IV, 1951, pp.11-22.

By J.E. Gilbert, geologist

"Etude du contact entre les sous-provinces du Témiscamingue et de Grenville dans les régions de Mistassini et de Chibougamau": presented at the annual meeting of l'Association Canadienne Française pour l'Avancement des Sciences (ACFAS), Montreal, October, 1951.

"Grenville-Témiscamingue Relations in the Chibougamau and Mistassini Lake Regions": presented at the annual meeting of the Prospectors' and Developers' Association, Toronto, March, 1952.

By P.E. Grenier, geologist

"The Nipissis Area on the Seven Islands-Knob Lake Railroad": presented at the annual meeting of the Prospectors' and Developers' Association, Toronto, March, 1952.

By P.E. Imbeault, geologist

"New Quebec": a talk given at the Victoria Club, Quebec, December, 1951.

"New Quebec": published in the Educational Record, vol.LXVIII, No.1 Quebec, Jan.-Feb. 1952, pp.26-31, and separate re-prints for distribution from Department of Mines, Quebec.

"Le Nouveau-Québec": published in l'Enseignement Primaire, Quebec, May-June, 1952, and separate re-prints for distribution from Department of Mines, Quebec.

By W.N. Ingham, resident geologist, Val d'Or

"Exploration Development in the Barraute District": lecture delivered before the members of the Canadian Institute of Mining and Metallurgy, Harricana Section, April 1951.

"Ore Deposits of the Val d'Or District": lecture delivered before the members of the Prospectors' and Developers' Association at their annual meeting in Toronto, March, 1952.

By W.W. Weber, geologist

"Geology of the Barvue Mine and Recent Exploration Development in the Barraute District": lecture delivered before the members of the Canadian Institute of Mining and Metallurgy, Quebec section, December, 1951.

By R.B. Graham, geologist

"Chibougamau, Its Mining Possibilities": lecture delivered before the members of the Canadian Institute of Mining and Metallurgy, Quebec section, December, 1951.

By Fernand Claisse, physicist

"Dosage de la goethite par la méthode thermpondérale": lecture delivered at the annual meeting of ACFAS, October, 1951.

By Alexis Dmitrieff-Kokline, chemist

"Amélioration de la reproductibilité du spectrophotomètre à flamme de Beckman": lecture delivered before the annual meeting of l'ACFAS, October 1951.

By Jean Girault, mineralogist

"Etude sur quelques anthraxolites de la province de Québec": lecture delivered before the annual meeting of l'ACFAS, October, 1951.

By Dominique Lamontagne, chemist

"Comportement du béryllium, du manganèse et du zinc à l'électrode à goutte de mercure": lecture delivered before the annual meeting of l'ACFAS, October, 1951.

By Jean Laneuville, chemist

"Nouvelle méthode pour la mesure de la désagrégabilité des minerais de fer": lecture delivered before the annual meeting of l'ACFAS, October 1951.

"Points de frittage et de fusion des minerais de fer du Nouveau-Québec": lecture delivered before the annual meeting of l'ACFAS, October, 1951.

"Etude sur le pouvoir d'adsorption des mineraux de fer du Nouveau-Québec": lecture delivered before the annual meeting of l'ACFAS, October, 1951.

By J. Risi, C.E. Brunette and Dorothy Spence, chemists

"Etude chimique des tourbes du Québec. IV.-Composition de la tourbière de Lanoraie. V.-Extraction des cires de tourbe": lecture delivered at the annual meeting of l'ACFAS, October, 1951.

By Constance Tousignant, physicist

"Etude d'une méthode d'analyse des aciers par spectrographie": lecture delivered at the annual meeting of l'ACFAS, October, 1951.

#### COLLECTION OF DUES ON MINES

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

During the fiscal year 1951-52, the Department received sworn statements on mineral production from 42 mining companies. Some reports contained a statement of profits along with vouchers as required by sections 12 to 24, division III, of the Quebec Mining Act. The Department of Mines collected \$3,004,101.91<sup>A</sup> from net profits as defined by the law.

In addition to the dues mentioned above, which is a tax on yearly net profits of mines, there is a small annual tax of 10 cents per acre imposed on mining concessions on which no mining exploitation or exploration work has been done during the course of the year reviewed (Quebec Mining Act, division VIII, section 50). The Department of Mines received returns from 242 unproductive holders of properties. The sum of \$2,672.68 was collected from 102 holders of mining concessions. The other 140 holders of mining concessions supplied sworn declarations attesting that a minimum of \$200 had been spent on mining work during the course of the year under review - a statutory condition for exemption from this taxation (Quebec Mining Act, div. VIII, section 50).

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<sup>A</sup>Dues on annual profits of mines- There is a difference between the amount of this item as given by the assessor and that supplied by the accountant. This divergence is due to the fact that a part of "deferred revenue", on March 31st, 1952, was carried over to the fiscal year 1952-53.

Table X.- Comparative Statement of Revenue Collected by the Department of Mines During the Fiscal Years 1949-50; 1950-51; 1951-52  
(Prepared by Robert Samson, Chief Accountant)

	1949-50	1950-51	1951-52
Miner's certificates .....	\$ 45,811.00	\$ 67,330.00	\$ 83,770.00
Development licenses .....	384,674.36	432,298.36	512,615.06
Penalties .....	150.00	-----	170.00
Sales of mining concessions.	18,050.70	42,486.69	27,507.27
Fees for transfers of titles	11,150.00	15,124.00	23,961.00
Taxes on mining concessions.	2,660.06	2,175.34	2,672.68
Rights on townsite lots ....	4,215.19	7,814.95	1,665.71
Rentals on townsite lots ...	839.00	735.00	834.00
Dues on annual profits .....	2,264,313.85	2,369,867.29	4,010,073.45
Permits of sales of unwrought metals .....	18.00	18.00	12.00
Sales of maps, blue prints, etc. ....	2,684.75	3,707.00	4,566.97
Mineral collections .....	607.55	565.50	484.00
Fees for assay and analyses.	2,621.75	4,364.44	3,249.28
Miscellaneous .....	6,324.44	6,261.77	18,247.03
Casual revenue .....	7,958.02	193.55	1,125.00
	\$2,752,078.67	\$2,952,941.89	\$4,690,953.45

THE LIBRARY

During the course of the year, the library received 1,724 additional units distributed as follows: 724 magazines, 293 reports, 165 pamphlets, 103 volumes, 18 manuscripts and 66 maps.

The Department purchased 76 books treating on the mining industry and metallurgy and related sciences, such as mineralogy, geology, physics and chemistry. A quantity of books also come from exchanges made with the government of other provinces, the Federal government and the governments of the United States, of South American countries, France, Britain and China.

The Library also subscribes to several periodicals, magazines and other publications on mining. For the fiscal year under review, the Library subscribed to 88 periodicals and magazines and 21 newspapers. Approximately ten magazines and several reports were bound into book form and 65 geological and topographical maps were placed on canvas.

The Library also registered 112 loans apart from books consulted on the premises.

As in the past, the public continued to show its interest in the development of our natural resources and upwards of 250 visitors came in for information during the course of the year. Several of them consulted our reports, our maps and also our technical personnel.

### SCHOLARSHIPS

In accordance with its policy of encouraging young men to adopt a career related with the mineral industry, the Quebec Department of Mines was authorized by the Legislature to spend \$30,000 in scholarships during 1951-52.

Forty scholarships were thus awarded by the Department during the course of the year in review to train mining engineers, geologists, metallurgists, etc.

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, as president; J.U. MacEwan, professor of metallurgy at McGill University; Ignace Brouillet, director of l'Ecole Polytechnique of the University of Montreal; Abbé J.W. Laverdière, director of the geological department of Université Laval; 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 non-graduates holders of a scholarship of the previous year and who had fulfilled all the requirements for a renewal; and, finally, new applications from non-graduates.

The forty scholarships awarded in 1951-52 were distributed as follows:

Candidates to post-graduate courses .....	21
Students entering final year in science	
faculties .....	4
Students in less advanced years .....	15



The members of the committee wish to express to the government and to the Minister of Mines their gratitude for the interest shown in the future of the mineral industry by encouraging the formation of competent technicians in the domain of the sciences connected with this industry.

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