

GENERAL REPORT

OF THE

MINISTER OF MINES

OF THE

PROVINCE OF QUEBEC

FOR THE YEAR ENDING MARCH 31st

1949



Quebec, October, 1949.

To the Honourable

Major-General Sir Eugène Fiset, Kt., C.M.G., D.S.O., M.D.,
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, 1949.

I have the honour to be, Sir,

Your obedient 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, 1949

To the Honourable C.D. French,
Minister of Mines,
Quebec, Que.

Sir,

The Quebec Mining Act, (R.S.Q. 1941, chapter 196, section 229), provides that "the Minister of Mines shall submit, with his annual return to the Legislature, a statement respecting the mines of the Province".

In compliance with this provision, I have the honour to submit a summary report on the work carried out by the staff of the Department of Mines during the fiscal year of April 1st, 1948, to March 31st, 1949.

THE MINING INDUSTRY OF QUEBEC

The general activity of the mining industry in any given year is reflected in the value of the mineral production in that year, the annual value in dollars being the only common measure of comparison between the years.

In 1948, the total production of the mines and quarries of the Province of Quebec was a record figure of all time, i.e., \$152,285,045. The previous height of the value of our annual mineral production was for the preceding year, 1947, when it was \$116,042,000. We therefore record an increase of \$36,243,045 for 1948. All three classes of mineral substances - metallics, industrial minerals, and building materials - contributed to this result and each one shows an all-time high, as follows: metals, \$66,131,100; industrial minerals, \$50,722,426; and mineral building materials, \$35,431,519.

Average Prices of Metals
in 1947 and 1948

	1947	1948
Gold, per ounce fine	\$35.00	\$35.00
Silver, per ounce fine	0.72	0.75
Copper, per lb.	0.2039	0.2235
Lead, per lb.	0.1367	0.1804
Zinc, per lb.	0.1123	0.1393

On June 9th, 1947, the Canadian government repealed the control which had been put - as a war measure - on the price of base-metals, but retaining, however, control over the price of tin.

Therefore during the calendar year 1948, the Quebec mining industry was very active, as shown by the figures of production.

Of the metals, gold still holds first rank in value. The production during the calendar year was 771,071 ounces fine, valued at \$26,987,485 - an increase of \$5,420,800, as compared with that of the preceding year 1947. During the first quarter of 1949, ending with March 31st, the production was still on the increase - 215,439 ounces against 169,172 ounces in the same period of 1948, or 27 per cent. The same rate of increase appears to keep up in the second quarter of 1949.

The base metals have also been produced in greater tonnage in 1948, and moreover they have had the additional benefit of marked increases in the average prices, owing to the abandonment of the price control by the federal government. Copper in 1948 increased 13.5 per cent in tonnage, while the average unit price passes from \$0.2039 in 1947 to \$0.2235 in 1948. Lead increased 10 per cent in quantity and the unit price 40 per cent. The tonnage of zinc in 1948 increased 35 per cent, and the unit price 24 per cent over the figures of 1947.

In the non-metallic class, the value of asbestos not only tops the list, but is the highest item of the table of production of the calendar year 1948, with a value of \$42,231,475. This is an all-time high in both tonnage and value. Unfortunately, the prospect for 1949 is not for an increase, owing to labour troubles in the asbestos mines. In February, 1949, a general strike was declared which lasted over four months, and at one time comprised 5,000 workmen. This had an adverse effect on the production of asbestos for the first half of the year, reducing it to 154,624 tons as compared with 334,233 tons for the corresponding period of 1948. The demand for asbestos is still greater than the supply, and the Quebec asbestos industry keenly felt the consequences of this strike.

TABLE I. - Mineral Production of the Province of Quebec in Calendar
Years 1948 and 1947

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

METALLICS	1948	1947
Arsenic	\$ 27,246	\$ 50,968
Bismuth	26,406	30
Chrome	33,568	42,159
Copper	21,819,473	17,356,259
Gold	26,987,485	21,566,685
Lead	1,717,741	1,117,601
Manganese	88	-----
Molybdenite	137,143	309,048
Selenium	238,974	339,542
Silver	1,782,790	1,540,612
Titaniferous iron ore	21,091	36,036
Zinc	13,339,095	7,800,686
Sub-Totals	\$ 66,131,100	\$ 50,159,626
NON-METALLICS		
I.- Industrial Minerals		
Asbestos	\$ 42,231,475	\$ 33,005,748
Feldspar	464,926	320,964
Industrial lime	3,065,052	2,353,691
Industrial limestone	1,135,904	1,017,047
Magnesitic dolomite, brucite and magnesium	1,724,489	1,238,948
Marl	13,494	19,291
Mica	173,744	120,712
Mineral water	109,789	116,840
Ochre and iron oxide	193,619	257,621
Peat	434,125	392,755
Pyrite	263,330	187,112
Quartz and industrial sand	767,118	638,521
Soapstone and talc	145,361	123,467
Sub-Totals	\$ 50,722,426	\$ 39,792,717
II.- Building Materials		
Building lime	\$ 623,269	\$ 529,589
Building limestone	4,688,855	4,160,991
Cement	12,306,243	9,351,477
(Brick	3,740,165	3,253,058
Clay products (Other products ..	1,382,606	1,002,965
Granite	2,218,520	2,131,565
Marble	145,957	81,001
Sand and gravel	9,535,944	4,877,339
Sand-lime brick	249,656	263,760
Sandstone	538,304	435,332
Slate and shale	2,000	2,580
Sub-Totals	\$ 35,431,519	\$ 26,089,657
TOTALS	\$152,285,045	\$116,042,000

The production of mineral building materials - cement, clay products, lime, stone for construction - in 1948 was an all-time high mark with a value of \$35,431,519 as compared with \$26,089,657 in 1947; the first months of 1949 promise a still higher figure. The production of cement is, to a certain extent, a gauge of the activity of construction, and the figures for the first half of 1949 (3,402,820 barrels) were 15 per cent higher than for the corresponding period of 1948.

The Hollinger North Shore Exploration Company, Limited, during the field season of 1948 continued to carry out their extensive programme of exploration and development work in the area of 3,900 square miles, which it holds until 1952 on a rental basis in New Quebec, north of the Hamilton River basin. From this territory the Company will be allowed to select 300 square miles of mineral lands on long term lease. Exploitation must start before January, 1958.

The main aim envisaged is the production of iron ore on a large scale. The work of exploration was started in 1942, and the activities of the Company have been reported in the Annual Reports of the Department of Mines - "The Mining Industry of the Province of Quebec" for 1944 and subsequent years, and also in the "General Report of the Minister of Mines" submitted yearly to the Legislature.

In 1947 a federal charter was issued to the "Quebec North Shore and Labrador Railway Company Limited" organized to construct and operate a railway from the village of Sept-Iles, on the Saint-Lawrence, to the iron ore deposits, a distance inland of some 360 miles. Engineering parties have been at work on locating the line, and in 1948 final location was started.

Another large scale project has been in progress by "Quebec Iron and Titanium Corporation" - successor to Kennco Exploration Company and a subsidiary to Kennecott Copper Company and New Jersey Zinc Company. This undertaking concerns extensive deposits of titaniferous iron ore in the region of Allard Lake. They are situated 27 miles inland, north of Havre Saint-Pierre, Saguenay County, some 450 miles air-line below Quebec city. The objective is the exploitation of those deposits of ilmenite, the ore from which it is intended to treat for the production, in the main, of titanium oxide products and also of pig-iron of high quality. A railway, 27 miles in length is under construction to connect the Tio Lake deposits of the Company with the docks at Havre-St-Pierre.

LEGISLATION^x

In the course of the session of the Quebec Legislature which was held at Quebec from January 19th to March 10th, 1949, several measures of interest to the mining industry were passed, among which were the following:-

An Act to establish laboratories for research in mineralogy and metallurgy

(a) - The aim of such researches will be to study, invent or improve processes and methods of, extracting, transforming and utilizing ores, mineral substances, unused by-products of present practice in mining, milling and metallurgy, in order to secure more profitable results from the products of our mines and quarries.

(b) - To put the facilities of well equipped research laboratories, conducted by trained research technicians, at the disposal of small industries unable to provide such means themselves.

(c) - In general, to pursue any scientific and technical work which the Minister of Mines may deem advisable for the progress of our mining and metallurgical industries.

An Act to amend the Quebec Mining Act

This measure is to clarify, and to bring in minor changes in, Sections 33, 35, 38, 62, 64, 79, 85, 86, 91, 103, and 227 of the Quebec Mining Act of R.S. 1941, C. 196.

An Act to incorporate Romaine River Railway Company

This Company obtained a charter from the Quebec Legislature to construct a railway twenty-seven (27) miles in length, from the vicinity of Tio lake, in the township of Têtu, Saguenay county, to the loading wharf at Havre-Saint-Pierre, on the Saint-Lawrence river, for the purpose of connecting the mines and surface plants of the Allard Lake (Quebec) Mines Limited with the port of Havre-Saint-Pierre.

MINERAL RIGHTS BRANCH

During the fiscal year ending on March 31st, 1949, prospecting and search of mineral occurrences resumed its normal rate of before World War II. The number of miner's certificates issued during the year roughly reflects the activities of prospectors. In the year ending March 31st, 1949, there were issued 4,425 such certificates - which are permits to stake out mining claims. It is a slight

^xStatutes of Quebec, 13 Geo. VI, 1949.

decline as compared with the 5,119 issued the preceding year, whereas the average of these for the three years before the war was 4,340. During the five years of the war it fell to an average of 1,900, and in the three years following the surrender of Germany it rose to 7,310.

A miner's certificate entitles the bearer to stake out five mining claims of 40 acres each, or in all 200 acres. In the fiscal year under review 14,000 claims were staked out and recorded, against 16,735 in the preceding year.

Mr. J.X. Mercier is the chief of this branch of the Department of Mines.

TABLE II
Various Titles Issued by the Department of Mines
(Fiscal Years 1947-48 and 1948-49)

Designation of Title	1947-48	1948-49
Claims recorded, Amos	9,478	7,106
" " Noranda	2,733	2,994
" " Quebec	4,524	3,900
Total	16,735	14,000
Miner's certificates issued	5,119	4,425
Development licenses issued	921	854
Development licenses renewed	5,937	4,793
Mining concessions	14	5
Transfer of titles	1,448	1,431
Reports of work: days reported	2,087,891	303,822
Reports of work: diamond drilling, feet	1,670,188	457,174

TABLE III
Titles Issued Since 1936-37
(Fiscal Years)

Fiscal Year	Number of Miner's Certif	Number of Claims Recorded	Number of Development licenses(1)	Mining Concessions		Transfer of Mining Rights
				Number	Acres	
1936-37	7,099	23,823	2,398	2	990	2,400
1937-38	2,718	12,918	2,932	17	4,089	1,217
1938-39	3,221	10,337	2,777	7	2,123	830
1939-40	2,181	7,325	2,320	4	1,574	555
1940-41 (2)	965	3,015	1,538	2	1,029	334
1941-42	1,589	4,991	1,936	10	3,765	447
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

- (1) Prior to June, 1937, these licenses were designated "Mining Licenses".
- (2) Interim fiscal period of nine months, from July 1st to March 31st, owing to change in date of the commencement of the fiscal year.

TABLE IV
Comparative Statement of Exploration Work Performed on
Mining Claims and Licenses During the
Calendar Years 1935 to 1948

Calendar Year	Number of Days' Work	Footage of Diamond-Drill Holes
1935	543,094	146,425 feet
1936	730,295	202,623 "
1937	910,088	434,903 "
1938	774,709	517,587 "
1939	549,580	299,619 "
1940	335,499	240,370 "
1941	255,352	169,110 "
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 "

INSPECTION OF MINES BRANCH

R.H. Taschereau, Chief Inspector of Mines, submits the following report covering fiscal year 1948-49.

The basic duties of this Branch of the Department of Mines are the following:

- (1) The inspection of mines, ore-mills, quarries and gravel pits to ascertain that the regulations regarding sanitation conditions and the protection of workmen from accidents are strictly observed.
- (2) The administration of Mine Rescue Training in Western Quebec.
- (3) To report to the Department of Mines on the development and progress of the mining industry in the several mine-inspection districts.
- (4) To see that underground plans and surface plans of mines are kept up to date, and that copies of such plans, and any changes in them, are sent regularly to the Department of Mines.
- (5) To aid and advise in the solution of problems encountered by mine operators in the course of their work.
- (6) To investigate requests for permits regarding projected "tailings sites" and mill-sites and to report on the expediency of granting them. Also reporting on requests for permits to ship ore and concentrate out of the Province for treatment.
- (7) Carrying out the provisions of the "Unwrought Metal Sales Act".

In the performance of these duties the inspectors cooperate with other branches of the Department.

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

- 1.- The Eastern Quebec Inspection District, comprising all territory east of the Richelieu river to and including the Gaspé Peninsula, as well as parts of the counties of Laviolette, Roberval and Chicoutimi south of the 49th parallel of latitude.
- 2.- The Central Quebec District, comprising the area westward from the Richelieu river and St. Maurice county to and including the county of Gatineau, and the area south of the 46th parallel of latitude in Pontiac county.
- 3.- The Western Quebec District, comprising the counties of Abitibi-

East, Abitibi-West, Rouyn-Noranda, Témiscamingue and Pontiac.

4.- The undeveloped area lying to the north of the Eastern, Central and Western Districts, and including New Quebec, as well as the islands of Anticosti and the Magdalens.

Maurice Lafontaine, Assistant Chief Inspector of Mines, is in charge of inspection work in Western Quebec District with headquarters in Noranda. His staff includes Bernard Joyal, Inspector of Mines; Georges Lacaille, Mining Engineer; E.O. Larivière, Mine Constable; and Rosaire Demers, Special Agent. Lucien Trudel, Electrical Engineer, is also attached to the Western Quebec office.

A.G. Michaud, Inspector of Mines, is responsible for the inspection of mines and quarries in District No. 1. Arthur Baillargeon assists him in this work, and in the operation of the Quebec Standard asbestos-testing machine installed in the district office at Thetford Mines.

Edgar Bérubé was recently appointed Inspector of Mines for the Central (No. 2) District, with headquarters in Montreal.

The office of the mine Ventilation Engineer, Maurice Lachance, is in Quebec, as his duties call for visits to mines and quarries in various parts of the Province. During the year under review, he attended a special course in mine ventilation, including dust sampling and counting, at the U.S. Bureau of Mines Experimental Station in Pittsburgh.

The first of two mobile Mine Rescue Stations was received in August, 1948, and is stationed at the Mine-School at Val d'Or; the second was received in November and is stationed in Noranda. Noranda Mines, Limited, has had a fully equipped sub-station for a number of years, and new sub-stations have been established at the Normetal and Belleterre mines. Under the direction of the Assistant Chief Inspector, the Mine Rescue Superintendents, Leonard Babin and Alphonse Couture, have trained rescue crews at every producing mine in the district, and refresher courses are given at frequent intervals. During the year, two emergency calls for underground fires were answered, and effective service was rendered. Up to March 31st, 1949, 181 men had successfully passed their examinations and were awarded Department of Mines Certificates in Mine Rescue Work.

The mine constables and special officers assist the inspectors in various phases of their work, and carry out other duties assigned to them by the Minister.

In the fiscal year 1948-49, 342 inspections were made of mines, quarries and gravel pits, and reports of these inspections were

transmitted to the Department with information concerning developments and the safety of workmen.

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

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

1.- Permission to Export Concentrates.-

East Sullivan Mines, Limited
Golden Manitou Mines, Limited
New Calumet Mines, Limited
Normetal Mining Corporation, Limited
Waite Amulet Mines Limited

2.- Approval of Tailings Sites:-

Canadian Malartic Gold Mines, Limited

3.- Approval of Mill Sites:-

Candego Mines, Limited
Quémont Mining Corporation, Limited

Under the provisions of the Unwrought Metal Sales Act, five new licenses were issued during the fiscal year. Monthly reports of transactions were received from twenty-six license holders.

GEOLOGICAL SURVEYS BRANCH

This Branch, under the direction of I.W. Jones, continued its principal task of investigating and mapping the geology of regions in different parts of the Province. In this work, the nature, distribution, and structural relations of the rock formations in various sections of the country are examined by qualified geologists who subsequently prepare geological reports and maps showing the results of their investigations. These geological reports, with their accompanying maps, serve as guides to prospectors and other geologists in their search for mineral deposits.

The number of geological field investigations undertaken by this Branch during the fiscal year under review was slightly greater than that in preceding years, but there was still a scarcity of geologists and personnel. The fact that private interests are also seeking geologists makes it difficult for government services to maintain and build up the staff that is required to examine the vast, still unexplored territories in this country.

During 1948, eleven geologists were engaged on various projects for the Geological Surveys Branch. Only two of them were of the permanent staff, while the nine others had to be recruited on a temporary basis from outside sources: some from university teaching staffs and others from among geologists pursuing advanced research at universities towards the obtainment of doctorate degrees. Following is a summary of the work they accomplished:-

Northern Abitibi

J. Claveau examined the Waswanipi Lake area (west half), comprising about 250 square miles between longitudes 76°30' and 76°45' and latitudes 49°30' and 49°45'.

P.E. Imbault investigated 260 square miles of territory in the Goéland Lake area, between latitudes 49°45' and 50°00' and longitudes 76°40' and 77°00'.

J.E. Gilbert mapped and reported on the Branssat-Kreighoff area, covering 200 square miles between latitudes 49°45' and 50°00' and longitudes 75°45' and 76°00'.

M. Tiphane examined the Chaste area, comprising 270 miles between latitudes 49°00' and 49°15' and extending westward from longitude 77°45' to Harricana river.

The areas covered by the first three of these projects lie in the same general region as Bachelor lake where, in 1946 and subsequently, important discoveries of gold, silver, lead and zinc were made. The fourth area, covering Chaste and adjacent townships, lies about 40 miles north of Amos.

Papineau and Gatineau Counties

P. Mauffette continued the programme of geologically investigating the Laurentian region bordering Gatineau and Lièvre rivers that has been under way over a period of years. Lying mostly in Papineau county, the Val des Bois area covered in 1948 comprises about 140 square miles between latitudes 45°50' and 46°00' and longitudes 75°30' and 75°45'. It includes most of Bowman and Villeneuve townships and parts of the townships of Bigelow, Wells, Portland, and Derry. Mica, feldspar, and apatite (phosphate) have been mined in this region and,

many years ago, a piece of uranium ore was found in Villeneuve township.

Montcalm and Joliette Counties

R. Béland examined the Rawdon map-area, comprising 200 square miles in the Laurentians northeast of Montreal, between latitudes 46°00' and 46°15' and longitudes 73°30' and 73°45'. It includes parts of the townships of Rawdon, Kildare, Cathcart, and Chertsey.

Portneuf County

T.H. Clark continued his investigation of the St. Lawrence Lowlands between Montreal and Quebec, paying particular attention to the petroleum and natural gas possibilities of that region. Having completed that part of the region lying south of the St. Lawrence in 1947, he began investigating the country north of the river in 1948 and covered that part of the Portneuf map-area which lies north of the St. Lawrence. Along with the small area covered in the next project to be mentioned, examination of the Portneuf area, comprising 415 square miles between latitudes 46°30' and 46°45' and longitudes 71°30' and 72°00', has now been completed.

F.F. Osborne was responsible for investigating the Precambrian rocks that lie in the northern part of the Portneuf map-area. During much of the year, however, Dr. Osborne acted as a supervisor of the investigations in the Grenville sub-province: in the Val des Bois and Rawdon areas, already mentioned, and in the Bourget area, which is mentioned below.

Chicoutimi County

R.F. Jooste covered 200 square miles in the Bourget area, between latitudes 48°30' and 48°45' and longitudes 71°15' and 71°30'. This area includes most of Bourget and Bégin townships and parts of Labrecque, Taché, Kénogami, Falardeau, and Simard townships. Some titaniferous magnetite deposits, parts of which contain considerable quantities of the phosphate mineral apatite, were examined.

Mistassini Territory

J.M. Neilson continued the programme, inaugurated in 1947, of geologically investigating the region near Mistassini and Albanel lakes where there are possibilities of finding iron, lead and other minerals. The Albanel Lake map-area, covered in 1948, comprises 380 square miles and lies between latitudes 50°45' and 51°00' and longitudes 73°00' and 73°30'. Some of the rock formations are similar to those of the important iron-bearing regions of New Quebec (Ungava) and the Lake Superior district.

Gaspé Peninsula

H.W. McGerrigle continued investigating the geology of interior Gaspé and, in 1948, covered a section of the Shickshock mountains. Comprising about 200 square miles between latitudes 48°45' and 49°00' and longitudes 66°15' and 66°30', the area includes parts of the townships of Courcelette, Lapotardière, Lemieux and Richard. The resulting map shows not only the geology of the area but also, by means of contour lines, its topography. This contoured map and others that this Geological Surveys Branch have prepared in Gaspé peninsula have proved very useful to forestry and other operations.

The mapping done in connection with the above-mentioned field-work was all on the scale of half-a-mile to one inch. Coloured geological maps will be printed on the scale of one inch to one mile. To make known the principal results of these investigations as soon as possible and especially to permit prospectors to make their plans for the coming season, preliminary geological reports, accompanied by black-and-white preliminary geological maps, were made available to the public within a period of one to three months after termination of the field-work.

In addition to the duties connected with their usual field-work, Drs. McGerrigle, Osborne, Claveau, and Gilbert examined mineral prospects and occurrences of minerals in various places outside their respective areas. Dr. McGerrigle also spent considerable office time in examining and recording the nature of the rocks encountered in the various deep-drilling operations that are being conducted in the search for oil in Gaspé.

It is of interest to note that, apart from compiling the usual information required for their geological reports and maps, several of the geologists conducted research of an advanced nature on various phases of the science of geology. Some of this research was done for the obtainment of doctorate degrees in 1949 by J.E. Gilbert, P.E. Imbault and R.F. Jooste at McGill University and by J.M. Neilson at the University of Minnesota. Furthermore, some senior assistants on the geological parties were able to gather material and make observations permitting them to subsequently carry out further research for the obtainment of Master degrees from their respective universities.

Members of the geological staff represented the Department of Mines and took part in various meetings of engineers and prospectors during the year.

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.

During the summer of 1948, Dr. Jones represented the Department at the 18th session of the International Geological Congress that was held in London, England. In addition to permitting the gathering of useful information and the exchanging of ideas with geologists attending the Congress from all parts of the world, the Congress furnished an opportunity to study the geology and mineral deposits of many places in England, Scotland and Wales. Observations were made that will help in dealing with geological and other problems that arise from time to time in our own country.

Equipment Section

Arthur Boucher, custodian of equipment, reports to Dr. Jones that, during the fiscal year 1948-49, instruments and camping equipment were furnished to 28 geological and engineering parties.

Close supervision of the equipment is maintained and, when returned from the different parties, it is all carefully examined, adjusted or repaired where necessary, and then conveniently arranged in store-rooms ready for further use at any time.

In this Section there also have been kept the extensive departmental collection of photographs and lantern slides. Members of the Department's technical staff, in 1948-49, added 814 photographs to the collection, which now totals 10,808 photographs.

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 occurrences, mining properties or mining districts 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, seven 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.

P.E. Auger continued the detailed study of an area in Témiscamingue county, centered around the Belleterre Mine in Guillet township. Sheet No. 4 of the Belleterre Map-Area was completed during the season. In addition, a detailed geological map was made of

lots 25 to 32, range IV, and the south half of lot 6, range VI N., in Fabre township.

P.E. Bourret, Mining Engineer in charge of Industrial Minerals Technology, examined 66 mines, quarries and prospects in the southern parts of the Province. The purpose of these visits is to advise the owners on the economic value of the deposits concerned and to furnish information regarding the development, mining and milling operations, and the marketing of their products. During the year, a special study was made of radioactive minerals occurring north of the St. Lawrence, between Berthier County and Quebec City.

H. Girard made a survey of the Lac-à-la-Tortue peat bog in Laviolette county, and also at frequent intervals gave technical advice to each of the operators engaged in the production of peat.

R.B. Graham completed the geological study of a strip of territory in Duparquet and Hébécourt townships with a view to tracing a structural zone of metallic mineralization as far as the western boundary of the Province. The area covered during the field season of 1948 was the western half of Hébécourt township.

W.N. Ingham, resident geologist for the eastern half of the Western Quebec Mining Belt, reported that the compilation of the geology of Malartic and Fournière townships was still under way to completion. These maps are prepared at a scale of one inch equals one thousand feet in sheets covering one quarter of a township each. Six of these sheets have been made available for distribution in the early part of the fiscal year 1949-50. In addition, twenty five mining properties under exploration in the district were examined and reported upon.

J.E. Riddell commenced a programme of research on Wall Rock Alteration in the Vicinity of Sulphide Deposits in Western Quebec. Four deposits were examined: Noranda, Quemont, Waite Amulet and McDonald. The results so far obtained encourage the hope that the study of the wall rock alterations in the vicinity of these deposits will furnish very useful guides for exploration.

W.G. Robinson, resident geologist for the western half of the Western Quebec Mining Belt completed compilations of the geology of the townships of Joannès and Bousquet, at a scale of one inch equals one thousand feet. In addition, twenty-one mining properties under exploration were visited and reported upon.

G.W. Waddington made an investigation on the limestone deposits of the Mingan islands and along the adjoining mainland. Samples were taken at sixteen localities. Three other limestone deposits were examined on Anticosti island and in the eastern townships. In

southern Quebec and on Anticosti and Mingan islands, twenty three deposits of marl were examined and sampled. Moreover, fifteen other mineral prospects in southern Quebec were also examined and reported upon.

W.W. Weber continued detailed geological surveying of an area centered about Amos, and during the year he completed the study of approximately seventy-six square miles comprising lots 28 to 62, ranges I to IX, Dalquier township, and lots 33 to 64, ranges VIII to X, Figury township.

In addition to their regular assignments for the season's work, officers of this Branch, or of the Geological Surveys Branch, may be called upon to make special examinations of mining properties or deposits. During 1948, fifteen such examinations were made.

At the Annual Meeting of the Prospectors' and Developers' Association, which was held in Toronto in March, 1949, two papers were presented by geologists of the Mineral Deposits Branch and eight panels of geological maps and claim maps were placed on exhibition.

This Branch is responsible for the acceptance of reports and maps dealing with geophysical and detailed geological surveys submitted to the Department in support of applications for credit towards assessment work requirements. During the year, 124 applications were reviewed; of these, 63 were geological reports and maps, and 61 reports on geophysical surveys. In addition, 60 reports or prospectuses were examined at the request of the Registrar, Quebec Securities Act. Finally, 15 engineers' reports submitted in support of applications for mining concessions were studied.

The search for new mineral deposits throughout the Province was pursued by prospectors and companies engaged in mining exploration. Notable achievements were reported from widely separated fields. The highlights of the results are outlined in the following paragraphs.

The Hollinger North Shore Limited concentrated upon exploration by drilling of the iron ore deposits of New Quebec. As result of the work done in the 1948 season, the indicated ore was more than doubled, and according to a company report, is now estimated at nearly two hundred and twenty-three million tons of which the grade is given in the following table:

<u>Tonnage</u>	<u>Grade</u>			
	% Fe	% Mn	% P	% SiO ₂
132,955,000	60.63	0.33	0.028	7.98 (Bessemer)
62,023,000	57.13	0.58	0.108	8.10 (Non-Bessemer)
27,796,000	50.38	7.74	0.092	7.51 (Manganiferous)

It was also announced that the total estimated reserves of the deposits in Quebec and Labrador had passed the objective of three hundred million tons, and that the company was now in a position to consider plans for the development of the deposits.

According to reports issued by the company, United Asbestos Corporation Limited have been successful in locating large deposits of asbestos in the Thetford-Black Lake district. The asbestos ore indicated by drilling is now estimated at sixty-eight million tons and the ground held by the company has not yet been all explored.

Once again, according to reports issued by Noranda Mines Limited, diamond drillings in 1948 on copper deposits at the headwaters of the York river in Gaspé Peninsula have enlarged the reserves of indicated low grade copper bearing material. These are now stated to be forty-one million tons, of which six million tons averages 1.8% copper and thirty-five million tons averages 0.9%.

DIVISION OF TECHNICAL INFORMATION AND
DISTRIBUTION OF PUBLICATIONS

This division, in the main, has charge of collecting all published and unpublished technical information concerning the mineral industry of the Province of Quebec, and of answering requests for information sent in to the Department by the public interested in the mining industry of the Province.

Jean-Paul Drolet, mining engineer, and his assistant, J.M. Lapointe, submit the following notes on the activities of the division during the fiscal year ending March 31st, 1949.

A.- Requests for information concerning mining companies ..	140
Various enquiries and correspondence:	
Annual reports of mining companies to shareholders; technology, mineral collections for educational purposes	350
B.- Requests from the public, for publications of the Department of Mines	4,407
Publications mailed from the mailing list and, on requests of members of staff	1,683
Mailed notices of issue of publications and periodical communiqués	5,735

In the course of the fiscal year under review the distribution staff sent out 16,906 copies of various publications in answer to 3,659 written requests from the public, and 3,547 from mailing lists.

In addition 748 visitors came to our offices, and requested 4,416 copies. Thus the number of copies of the various publications of the Department distributed during the year was 25,155, in answer to 11,825 requests.

Editions of various new publications received from the printers during the fiscal year totalled 24,900 copies.

This division also sent out, by mail or by express, 1,203 parcels, and received 1,908, addressed to the various branches and divisions of the Department.

The division carried on the work of compiling, classifying and indexing a large number of manuscript reports and plans, coming in from the departmental inspectors of mines, and technicians stationed in the various mining districts; technological leaflets concerning the mining industry and mining companies. It has adopted a new system of classification by subject, township, lot and range, of all geological reports and plans, of both the department and from outside sources.

The division also collects, compiles, classifies and prepares an index of items concerning the mining industry and the activities of mining companies, clipped from technical reviews, periodicals and newspapers.

In addition to the functions mentioned above, this division writes the copy for newspapers, mining publications and periodicals, by which the Department of Mines makes known the publication of new reports and maps issued by the Department relating to the geology, the mineral deposits and the mining industry of the Province. All these publications are the results of the field-work of the geologists, mining engineers, and of the laboratory research and analytic work carried on by the staff of chemists. This division has charge of the distribution of all this valuable documentary literature regarding the mining industry and the mineral industry of the Province. An up-to-date catalogue of all the publications may be obtained on application to the Department.

LABORATORIES BRANCH

The chief of the Laboratories Branch, Maurice Archambault, submits the following report:

An Act to establish laboratories for research in "mineralogy and metallurgy" was adopted by the Legislative Assembly and was assented to on February 17th, 1949. This law will enable the laboratories to contribute more efficiently to the progress of the mineral industry of the Province, thanks to enhanced scientific researches, on matters and subjects of general interest.

The "Laboratories Branch" groups under the same direction the following services: I- the laboratories of the Department of Mines established at Quebec, Montreal, and Thetford Mines;

II- the sampling and ore dressing plants at Val d'Or; III- the elementary courses on mineralogy and geology to prospectors; IV- the university courses on prospecting including geophysics methods; V- the Department of Mines museum; and VI- mineral and metallurgical displays at exhibitions. The director has as chief assistants: G.S. Grant, manager of the Sampling and Ore-Dressing plants; P.E. Pelletier, chief of the laboratory of spectrography and radiocrystallography; Henri Boileau, chief of the Chemical Laboratory.

I- The Laboratories

The number of samples received, and of specimens examined, greatly exceeded those of the preceding year. During the fiscal year under review 10,347 samples were submitted to the several laboratories, on which 50,855 assays, analyses and determinations were performed.

These operations include microscope, spectrograph, X-rays and Geiger counter determinations. The work done is distributed as follows:

Table V

	Laboratories			
	Quebec	Montreal	Thetford Mines	Totals
Samples received	10,347	648	205	11,200
Quantitative analyses	18,123	1,376	646	20,145
Qualitative determinations	17,535	---	---	17,535
Spectrographic examinations	8,832	---	---	8,832
X-ray examinations	4,044	---	---	4,044
Radioactivity	299	---	---	299
Totals	48,833	1,376	646	50,855

Spectrography, Radiocrystallography
and Radioactivity Laboratory

During the fiscal year under review, the staff of this laboratory performed 13,175 examinations, distributed as follows: spectrographic analyses, 8,832; radio-crystallographic analyses, 4,044; radioactivity measurements 299.

In September, 1948, the laboratory acquired a Geiger Müller of great accuracy, for radioactivity measurements. By comparison with recognized standards, this apparatus will detect,

quantitatively, tenors as low as 0.01 per cent of uranium oxide. It thus completes the qualitative data obtained in the field by simplified counters.

Owing to the difficulties met with in the study of clays, the knowledge regarding their construction is still imperfect. However, it is important to be able to give to the ceramic industry the information and guidance which its specialists need and seek regarding these mineral products. Generally, satisfactory results may be obtained by supplementing the radiocrystallographic study of clays, with a differential thermal analysis. This laboratory has acquired a specially constructed apparatus for differential thermal analysis. The apparatus is also suited to study any mineral substance which undergoes changes under the action of heat, and would aptly apply to the examination of certain constituents of iron ores.

At the end of the year a flame spectrophotometer was tested for the quantitative determination of alkaline metals and of alkalino-earths metals, by methods recently developed. Compared to the usual methods, this apparatus permits a rapid quantitative determination of the alkaline metals, of the alkaline-earths metals and of the rare earths.

Chemical Laboratory

The chemistry division comprises a laboratory for general chemical analyses, a fire assay laboratory, a fuel and electrolysis laboratory, to which a geochemistry section will soon be added. These laboratories are all staffed with chemistry graduates from recognized universities and who have had years of experience.

This staff performed, during the year, 18,123 doubly checked determinations, which is an increase of 6,436 as compared with the preceding year. Of this number 9,002 were general quantitative analyses, and 9,121 were assays for precious metals.

Thirty-six (36) special analyses were performed, of which: eight (8) were complete analyses of clays, and eleven (11) complete chemical analyses and physical tests of foundry sands. Complete geochemical analyses of thirteen (13) typical rocks and of three (3) mineral waters were effected during the year.

The requests for special analyses, particularly rock analyses, are getting more and more numerous. Up to the present time, the lack of personnel, as well as the limited space allotted for this important work, has not enabled the laboratory to give adequate service.

Laboratory of Mineralogy and Petrography

During the fiscal year under review the mineralogists have examined 10,347 specimens which required 17,535 determinations. The equipment of this laboratory was improved. The exact measurement of the hardness of specimens submitted to the laboratory is an important point for the determination of ores of metal, in polished sections, therefore, a "microcharacter" was acquired. This apparatus, for research work, enables the measuring, with precision, of the hardness of an ore in all orientations. This laboratory also possesses an electrical integrating stage to measure the percentages of the constituents of rocks and ores.

Laboratory for Metallurgy and Special Tests

B.J. Walsh carried out:

- 1°- concentrating tests on a titaniferous magnetite, containing apatite, from Bourget township;
- 2°- studies on the possibility of recovering the graphite content of a sample submitted by Val d'Or Consolidated Mines, Limited;
- 3°- amalgamation and cyanidation tests of samples from the Beauce district;
- 4°- preliminary research work on the concentration of the zinc ores of the Province.

Joseph Risi and assistants continued the study of the chemical utilization of the peats from the Province's bogs. This study was started last year. They have devised a method of quantitative analysis of peat, for the determination of its chemical constituents. A complete report on this work is in preparation and will be published in a near future.

Jean Laneuville is carrying out a chemical and metallurgical study of the iron ores of New Quebec Territory.

Jean-Paul Girault has undertaken a detailed mineralographic study of the iron ores of New Quebec Territory. This study is at present in progress.

Pierre Grenier has completed an inventory of the European and North American legislations on pollution of the air by industrial establishments. He has also carried out an enquiry on the possibilities of utilizing the white arsenic obtained as a by-product from the treatment of some of the mines of Western Quebec. He has begun a series of experiments to devise an inexpensive refining process of this arsenic.

II.- Sampling and Ore Dressing Plant

This plant is located near Val d'Or, Abitibi-East county. Its activities during the year under review were as follows:

Sampling Plant:

The mill received the following ore shipments:

A lot of 155.1 tons of ore from New Goldvue Mines, Limited, to be sampled in bulk, concentrated, and the concentrate to be amalgamated.

A lot of 7.89 tons of ore sent by Séraphin Bolduc, of Beauceville. This ore has a low tenor of gold and zinc and was treated by cyanidation.

A lot of 6.393 tons, of high grade in gold and silver, of a residuent from previous treatment, sent by Deloro Smelting and Refining Company. This residue was cyanided; it originated from a cobalt ore from Morocco, Northern Africa. The treatment was in progress at the end of the fiscal year 1948-49.

Preparation of Roofing Granules:

The crushing and screening tests of the 1,575-pound sample of rhyolite, submitted by Wendell Gold Mines, Ltd., in view of the possibility that this rock be used for making roofing granules, was continued.

Extension of the Plant:

The work of enlarging the plant, which was started during the preceding year, was completed this year. In the new part of the plant the following equipment was set up: a vacuum pump, a 250 cubic-foot compressor, and a 6-foot filter with two discs, and an operating switchboard.

III.- Course of Lectures to Prospectors

There were no courses of elementary lectures to prospectors given during the fiscal year under review.

IV.- University Course of Lectures on Prospecting

The university courses, which were organized two years ago, and are subsidized by the Department of Mines, were again given in 1948-49 at the Science Faculty of Laval University at Quebec, and at Ecole Polytechnique of the University of Montreal.

The programme of this course comprised chemistry, fire-assaying, mineralogy, geology and prospecting; there were excursions for field-work. This course lasted five weeks, and diplomas were granted to the students who successfully passed the examination at the end of the course.

	Total hours of lectures	Number of students	Diplomas granted
Laval University	160	9	9
Ecole Polytechnique	150	14	7

V.- Museum

In the year under review the following specimens were added to the museum of the Department of Mines:

1^o- Brown iron ore, from Burnt creek deposit No.5, New Quebec, gift of Hollinger North Shore Exploration.

2^o- Limonite, from lot 26, range IV, of fief Saint-Etienne, Saint-Maurice county.

3^o- Chrysotile asbestos (long fibre) from an occurrence on lot 39, range V, Destor township, Abitibi-East county.

VI.- Displays at Exhibitions

During the fiscal year 1948-49, the Department of Mines took part in the regional exhibitions of Sherbrooke, Brome, and Noranda.

In these three centres, the Department exhibited a very large scale map, with sets of electric lights, operated from a switch-board panel, illustrating the mineral resources of the Province. The map keenly interested the visiting public, and the department received numerous testimonies of appreciation.

At the request of the authorities of the Arts and Trades School of the city of Rouyn, the department donated the map to that institution. The map is permanently mounted on exhibition at the school.

The Department of Mines has donated to the "Palais de la Découverte" at Paris, France, a collection of the main minerals and rocks of the Province.

DRAUGHTING AND CARTOGRAPHY BRANCH

The personnel of this branch consists of Léon Valois, Prof. Eng., as chief, Armand Blanchette, assistant chief, nine draughtsmen and a stenographer, a staff of twelve in all.

During the year under review, field-maps were compiled and prepared for the field-work of the geological parties of the Department of Mines; several manuscript maps, geological plans, and field-notes of previous field-work, were compiled and prepared for reproduction and publication.

Two sets of township tracings on linen are carefully and

strictly kept up to date. One of these sets shows all mining claims in good standing; the other set, the outlines and boundaries of mining properties and lands held by mining companies. The first set, showing all the claims staked out, consists of 458 separate plans. On these were plotted the outlines of 14,000 new claims, staked out during the year under review; the second set consists of 160 separate plans. From all these linens, a total of 7,391 blue-prints were struck off during the year in answer to requests from the public.

The following geological maps were prepared by the Branch during the year:

Final Maps

(a) Completed:

- No. 629 - Bergeronnes-Pontgravé Area
- No. 638 - Simon Lake Area
- No. 653 - Normetal Mine Area

(b) In Press:

- No. 667 - Forget Lake Area
- No. 672 - Wakeham Lake Area
- No. 676 - Upper Romaine River Area
- Nos. 686-687-688-689 - Péribonca River Area (black only)

(c) In Preparation:

Eastern part of Gaspé Peninsula

- No.661 - Upper York River Sheet
- No.662 - Dartmouth River Sheet
- No.663 - Gaspé Sheet
- No.664 - Saint-Jean River Sheet
- No.665 - Malbaie Sheet
- No.692 - Vertical sections
- No.693 - Vertical sections

Preliminary Maps:

- No.675 - Hébécourt Lake (2 colours)
- No.678 - Chertsey
- No.679 - McGill
- No.681 - Waswanipi Lake (West half)
- No.691 - Goëland Lake
- No.694 - Portneuf
- No.695 - Eranssat-Kreighoff
- No.696 - Bourget Lake
- No.697 - Val des Bois
- No.698 - Chaste
- No.699 - Albanel Lake

No.771 - Rawdon

No.683 - Belleterre (2 colours)

Our draughtsmen have traced on linen fifty-two geological plans not intended for publication; seven plans of furniture, machine, etc. have been drawn and traced, as well as eight figures to illustrate final reports.

An edition of a special map of Abitibi, No.685, has been traced on linen to be used as an index to the township plans of Western Quebec. On this map, locations of mining properties of mining companies are shown. An edition of a similar map of the Chibougamau region has also been issued bearing No.690.

CIVIL ENGINEERING BRANCH

L.A. St-Pierre, P. Eng., is chief of this Branch which comprises two distinct services, i.e., Division of Mines Roads and Division of Mining Villages. For the purpose of this report, these two divisions are reported upon separately.

Division of Mine Roads

Since 1937, when the Division of Mine Roads was organized, a total of 1,234.96 miles of mine roads has been built at the cost of \$10,152,712.33. During the fiscal period under review, 42.10 miles of new roads were built and 51.80 miles of existing mine roads were repaired or improved at a cost of \$2,132,266.61, of which amount, \$82,266.61 was contributed by other Departments of the Government or by mining interests benefiting by these roads.

Hereunder are listed the new roads built during this period:

<u>Counties</u>	<u>Road</u>	<u>Length in Miles</u>
Roberval and Abitibi		
East	Chibougamau Road	22.02
Wolfe	St. Gérard de Wolfe Quarry	1.90
Saguenay	Les Escoumains Peat Bog	2.00
Abitibi-West	Rapide Danseur (Hébécourt township) to Ontario Border	7.55
Fortneuf	Marvel Granite Quarry	0.80
Rouyn-Noranda	Quesabe Mines Limited	2.25
Arthabaska	Nicolet Asbestos Mines Limited .	5.58

a) Chibougamau Road

In addition to the section of 22.02 miles reported above, an additional 2.38 miles were partially completed, giving an overall length of 118.51 miles of finished road and leaving an approximate section of 28.0 miles remaining to be built to reach Gilman Lake which has temporarily been selected as the site of a mining village in the Chibougamau area.

A survey was initiated to set up mileage boards on the completed section of the road, to bring up the elevations to mean sea-level datum and to tie in the nearer lakes to this datum. During the winter months, a survey party worked out of Lake Gilman to locate the best possible site for a road giving access to Lake Wakonichi. This road would give water access to a vast but little explored section of the Province, and would contribute greatly to develop a territory, the mineral potential of which has never been established.

A bridge, 360 feet in length, with concrete piers and abutments, continuous steel beams and a wooden deck, was erected over the Chamouchouane river to replace a wooden structure built in 1938, much too weak to carry safely the heavy loaded motor trucks already plying along the built portion of the road. Two other bridges of similar design, are to be built over Rivière Boisvert and Rivière du Cran during the coming summer. This Division wishes to acknowledge the co-operation afforded by the Service of Bridges of the Department of Public Works on these projects.

Supervision of all work on this road was under the direction of Harry A. Gray, P. Eng., assisted by Serge Godbout, P. Eng.

b) St. Gérard de Wolfe Quarry Road

This road, leading to a granite quarry at St. Gérard de Wolfe, was built to replace a rudimentary road already existing.

All work was performed by day labour and an average of fifteen men were employed.

c) Road to a Peat Bog at Les Escoumains

This road was built to provide access to a peat bog from the Tadoussac-Baie Comeau highway. In view of the swampy nature of the ground, large sections of corduroy were laid although considerable difficulty was experienced in obtaining suitable timber in this area.

d) Road in Hébécourt Township

As a result of resurgent interest by mining companies in the mineral potential of the Duparquet-Hébécourt area, the Division of

Mine Roads undertook the construction of a road leading from a colonization road at Rapide Danseur, throughout the breadth of Hébécourt township to the Ontario border, eventually tying in with a road under construction by the Government of the Province of Ontario leading from the town of Matheson to the Ontario-Quebec border. As this road has opened new vistas for colonization and trade, it was built with the financial cooperation of the Department of Colonization. Extensive lumbering operations are being carried out in this area as a result of this road, and settlers are taking advantage of improved means of communication to homestead in this area.

e) Marvel Granite Reg'd.

A road in Saint Raymond Parish, Portneuf county leading from this quarry which is situated in the foothills of a mountain range, to the main highway, was initiated in 1947, and the work carried out this year was mainly in gravelling this road to provide an all-weather surface capable of carrying heavy loads of granite to various markets in the Province.

f) Quesabe Mines Limited

In order to provide vehicular access to the property of Quesabe Mines Limited, a road leading from a colonization road located between ranges IX and X, township of Beauchastel, to lot 25, range I, township of Duprat, was built during the fiscal year under review.

g) Nicolet Asbestos Mines Limited

This road connects the Nicolet Asbestos Mines Limited with the railway station of Tingwick. Work on this road was carried out by the Provincial Department of Highways, and the Department of Mines contributed an amount of \$25,000.00 in view of the importance of this road to the mining industry.

The following roads were maintained during the fiscal year:

a) Queumont, Donalds and MacDonald Mines

Work on this road, 9.5 miles in length, began in 1946, and has been carried out since. Money spent this year was mainly for the completion of a section leading to Macdonald Mines Limited, and for the gravelling of the overall length of the road. It may be added that this road is playing an important part in the economy of this district as it provides an egress for operating mines to haul their ore to milling plants in and around Rouyn-Noranda.

b) Roads Leading to Croinor Pershing Mines Ltd. and St. Maurice Molybdenum Ltd.

These two roads were built by the Department of Mines, but in view of the increasing logging and colonization interests, the Provincial Department of Highways has undertaken to maintain these roads.

c) Mine Road in Destor Township

Work consisted of widening and improving a 5.3 miles mine road already existent in Destor township and which serves as an entry to Thurbois Gold Mines Limited. This mine road has its start at the road between ranges II and III of the township of Destor and leads to the Thurbois property. Considerable traffic is routed over this road and repairs were imperative to provide a satisfactory rolling surface.

CUTTING OF WINTER ROADS:

A road was cut to give winter access by tractor trains to the mineralized area in LAKE BACHELOR district where important preliminary mining exploration work is being carried out. It has its start immediately south of Lake Cameron on the Senneterre-Lake Madeleine road, some 75 miles northeast of the town of Senneterre, and heads northeastward to the shores of Lake Bachelor, a distance of 38.57 miles. In addition to clearing a 20-foot road, the contractor undertook to repair and strengthen existing bridges and culverts to permit the haulage of heavy machinery from Senneterre to the junction of the existing road and the new winter road.

In addition to the construction work described above, the Department of Mines undertook the completion and improvement of 40.13 miles of road as follows:

<u>Townships and Counties</u>	<u>Road</u>	<u>Length in Miles</u>
Bonaventure county ..	Grand Cascapedia River Road ...	37.00
Stanhope, Stanstead County	Gingras et Frères Quarry	1.63
Rivière-du-Loup County	Peat bog of J.-Alex Michaud ...	1.50

a) Grand Cascapedia River Road

This road was built in the early twenties by the Federal Zinc and Lead Company Limited to give vehicular access to their property. In 1928, the government of the Province of Quebec purchased

the right-of-way of this road in order to make it available to the public due to intensified logging operation in this district, and to the influx of fishermen desirous of testing their skill on this famous salmon river. Last summer approximately 3,000 feet of retaining walls were built or repaired and certain sections of the roads were raised in spots considered vulnerable to flood waters. The road was widened and improved throughout its entire length and one 40-foot span and one 14-foot span bridges were rebuilt with new abutments and wing walls loaded with heavy boulders for anchoring purposes, and now have a twenty-ton tested capacity. Culverts were cleared, repaired or rebuilt where necessary and ditches were widened wherever feasible.

b) Road to Gingras et Frères Quarry

This road in Barnston township, Stanstead county, was started in 1947, to provide access to the main highway for granite quarried on the property of Gingras et Frères. Work this year consisted in the completion of the last section of the road and the spreading of a layer of unscreened gravel throughout its entire length.

c) Road Leading to a Peat Bog at Isle Verte

Work in this instance consisted of gravelling, cleaning ditches and strengthening culverts on a road built by the Department of Mines and which serves as an outlet to two important peat bogs near the railway station at Isle Verte.

During the fiscal year under review, the Department of Mines maintained 156.95 miles of existing mine roads at a cost of \$48,335.58, as follows:

<u>Townships and Counties</u>	<u>Road</u>	<u>Length in Miles</u>
Roberval	Chibougamau Road	77.30
Gaspé-South	York River Road	8.00
Abitibi-East	Road from Cadillac to Preissac ..	9.00
Bonaventure	Grand Cascapedia River Road	37.00
Abitibi-East	Croinor Pershing Mines Ltd	23.00
Mégantic	3rd Range Road	1.43
Rouyn-Noranda ...	Rouyn-Merger Gold Mines Ltd.	0.66
Charlevoix	Road to Excel Peat Limited	0.56

PEAT BOG DRAINAGE

Pursuant to a policy adopted by the Government of Quebec, the Civil Engineering Branch gave grants totalling \$17,399.26 to operators of peat bogs to assist them financially in the drainage of their properties. Bogs so assisted were as follows:

<u>Locality</u>	<u>Operator</u>	<u>Length of Trenches (Feet)</u>
Les Escoumains	J. Oscar Dubois	24,196
Isle-Verte	J. Alex Michaud	4,838
Isle-aux-Coudres	Excel Peat Moss Limited	6,040
Rivière-du-Loup	Trump Peat Moss Limited	18,600
St-Ulric de Matane	Roméo Roy	13,251
St-Ulric de Matane	Louis Roy	10,282
St-Marc des Carrières .	Clovis Bourque	4,875
St-Fabien de Rimouski .	Tourbière St-Fabien Inc.	17,072
Farnham	J.A. Cullen	445

MAINTENANCE OF WINTER ROADS

During the winter of 1948-1949, the Civil Engineering Branch paid a total of \$15,886.36 towards the cost of maintaining 322.05 miles of winter roads in the northwestern section of the Province. Hereunder is a list of roads so maintained.

<u>County</u>	<u>Road</u>	<u>Length in Miles</u>
Abitibi-East	Amos to Siscoe Gold Mines Ltd.	37.30
" "	Amos to Goldvue Mines Ltd., via St-Maurice de Dalquier	30.00
" "	Siscoe Gold Mines Ltd to Val d'Or	5.25
" "	Val d'Or to Norbenite Malartic Mines Ltd	10.50
" "	Val d'Or to Colombière	10.00
" "	Colombière to junctions of Highways 58 and 59	6.50
" "	Junction of Highways 58 and 59 to Senneterre	23.00
" "	Highway 59 at Pascalis to Pascalis R.R. Station, thence to Perron Gold Mines Ltd	8.20
" "	Senneterre to Groinor Pershing Mines Ltd	30.00
" "	Norbenite Malartic Mines Ltd to Heva Corner	15.30
" "	Heva Corner to Cadillac	9.00
Rouyn-Noranda	Section of Highway 46 between Waite-Amulet Mines Ltd and Rouyn	6.00
" "	Rouyn to Cadillac R.R. station	30.00
" "	Highway 46 from Rouyn to the Ontario border	24.00
Témiscamingue	Belleterre to the Ontario border via Notre-Dame du Nord	77.00

Division of Mining Villages

During the period under review, the Division of Mining Villages has undertaken the work of bringing several mining communities under authority of sections 35 et seq., of Chapter 196, R.S.Q. (1941).

Chibougamau Townsite

During the fall of 1948, a survey party, headed by Guy Goudreau, P. Eng., of the Division of Mining Villages, undertook the study and selection of possible sites for the location of a mine village in the Chibougamau area. In past years, several areas had been examined and in the light of these reports and careful study of all factors, it was decided that the ground immediately southwest of Lake Gilman, in Blocks D and E of McKenzie township, afforded the best possibilities for a satisfactory townsite. The chosen site is on a gradual slope leading to the shore of Lake Gilman and is covered by a deep layer of sand. A number of natural springs flowing into the lake offer sufficient volume to provide an adequate water-works system, in addition to natural drainage facilities.

A topographical survey of an approximate area of one-square mile, was completed and topographical plans are being prepared.

Bachelor Lake

Last August, in view of the satisfactory results of extensive preliminary work carried out by several large mining companies in the immediate vicinity of Bachelor lake, a careful study of the general area and of several possible sites for a town were examined. An area on the southwest shore of Bachelor lake was selected for the purpose. The ground is level, and the top soil is a mixture of clay and moss, considered suitable for building purposes. Two alternatives are afforded for the supply of potable water, i.e., directly from lake Bachelor by centrifugal pumps or from lake Bellie, a small body of water some five miles north of the village site. The latter contingency would naturally be the more expensive and therefore prohibitive until the population reaches a total sufficient to justify the expenditure. A topographical survey was made of the chosen site. A 4-mile square block in Lesueur township was cadastred and officially reserved for this village. A topographical plan was drawn of this area, and a tentative village of over 100 lots and streets, was superimposed over this map. It may be added that the winter road from lake Cameron to lake Bachelor has its terminus on the main street of the village, and that the landing base for aircraft flying into this area is immediately adjacent to it.

Normetal

Steps have been taken to regularize the status of the population established on the property of Normetal Mining Corporation. This settlement has been in existence for quite a number of years and has a population of 1,207. This village is situated some 12 miles north of the town of Dupuy, on the C.N.R. line and is served by a good gravel road and a 12 1/2 mile standard-gauge tramway, the property of Normetal Railway Company, a subsidiary of Normetal Mining Corporation.

This village is situated partly on a parcel of colonization land and partly on the mining concession of Normetal Mining Corporation. The section on colonization land has been subdivided by the owners and lots sold. A subdivision of 91 lots was prepared on the mining concession during the year. Municipal public utilities owned by Normetal Mining Corporation have been sold to the municipality.

Sullivan

The village of St-Bernard de Sullivan has been in existence for a number of years, and 63 building lots have been sold by the company, the majority of which now have houses on them. Requests for more lots have resulted in a subdivision of some 40 more building lots during the coming year. In co-operation with the Central Mortgage and Housing Corporation, the company is instituting a long range programme of housing as it is anticipated that the population now approximately 1,200, will continue to grow apace.

Sullivan Consolidated Mines Limited has invested some \$100,000 into the development of this town, through a waterworks and sewerage system, roads and sidewalks and other municipal improvements, and have so far partially reimbursed itself from the produce of the sale of these lots.

Val d'Or

This town, which celebrated its tenth anniversary last year, has a population of 8,000, and is the commercial and social hub of a population of some 25,000 people.

The acute shortage of housing is still a thorny problem. However, due to the efforts of civil authorities and service clubs, several new developments are planned, notably a new section named Goldhill where a block of 44 duplexes will soon arise. A sports arena, capable of seating some 5,000 people, is presently under construction, and will be of great utility to the community as no other large assembly place is available.

A 100-bed hospital is under construction. There is also a small company hospital in Bourlamaque capable of accepting a limited number of cases, and treatment is necessarily restricted to minor operations.

The town has instituted a long-range programme of public utilities in anticipation of the coming real estate boom and during the past year has contracted to furnish water to the village of St-Bernard de Sullivan.

Bourlamaque

The town of Bourlamaque increased its population by some 150 persons during the past fiscal year. Buildings, as in the case of Val d'Or, are being erected to meet the increasing population, and trade is flourishing. It is anticipated that it will soon become necessary to subdivide more land into building lots, and this project has been given consideration. The principal hotel in this town has enlarged its premises to accommodate travellers, and rooms are still at a premium.

Malartic

The town of Malartic has now reached a total population of slightly over 5,000. Several producing mines operate in and around the town, affording steady employment and the basis of the town's financial existence. Thirty-seven building lots were sold during the period under review.

Cadillac

With a population of some 1,500 souls, Cadillac is a progressive centre which attained the status of a town during the past year. O'Brien Gold Mines Limited, situated near this town, is the main labour employer in this district, although several flourishing small factories have been recently established. During the fiscal year, 14 new building lots were sold.

Rouyn

The town of Rouyn attained the status of a city during the period under review, in view of its population of over 12,000 people. It is also the financial hub of a fluid population of some 30,000 residents in the northwestern part of the province. Our Division is particularly interested in the section known as South Rouyn which is situated on Crown land. During the period under review, 35 building lots were sold. However, it was found that the increasing population justified new subdivisions of Crown lands, and, as a result, 258 new lots were cadastred and will be placed on sale during

the coming year. A certain parcel of Crown land was ceded to the authorities of the parish of St-Michel Archange, for the purpose of increasing the area of the town cemetery.

The city of Rouyn has instituted a long-range programme of civic improvements, notably the extension of waterworks and sewerage systems, paving of streets and laying of sidewalks and the rebuilding of a modern City Hall to replace the insufficient wooden structure which was destroyed by fire last winter, the work of incendiaries.

Noranda

As in the case of other towns and villages in the mining districts, the town of Noranda, with its population of 6,900 is developing rapidly. This town can be held as an example of intelligent co-operation between mine owners and the general population as it is considered as a model of town planning throughout the Province. Although the important Noranda mines and smelter are the main employers in this town, trade is being gradually accentuated and has attracted outside interests.

The d'Youville Hospital, which serves the twin cities of Rouyn and Noranda, was considerably enlarged during the year.

DIVISION OF MINERAL STATISTICS

G.O. Beaudet, chief of this division, reports as follows:

The main function of this division is to collect and compile, monthly and annually, figures of statistics relating to the mineral industry of the Province of Quebec. Such statistics are based on figures which are supplied by the operators of mines and quarries, on forms which we send them, with requests to fill and to return them. This work requires keeping strictly up to date an accurate list of all such operators; the preparation and revision of numerous forms which are mailed to mine operators at opportune times. When returned, they are examined and compiled. In many cases this entails subsequent correspondence for completing or correcting the figures of individual returns. In due time they are compiled as tables and mimeographed.

The following table gives figures relating to the work of collecting the statistics compiled for the calendar year 1948.

	<u>Forms sent out</u>	<u>Forms received</u>	<u>Forms unreturned</u>
Regular annual reports for the mineral production and mining operations	3,044	2,753	291
Annual reports of contractors of road construction	225	195	30
Annual returns of lumber and timber used	106	90	16
Annual returns of funds received by mining companies for capital account	969	726	243
Monthly reports on production ..	<u>715</u>	<u>683</u>	<u>32</u>
Total	5,059	4,447	612

Of the 2,753 annual returns received, 1,331 came from companies operating producing mines or quarries, or who shipped minerals from their mining properties; 284 returns were from properties not yet in production, but active in exploration or development work; the balance of returns, 1,138, indicate that no mining operations had been carried out during the year in question.

The returns give complete detailed figures of production, the number of employees, the number of man-hours work done, the amount of wages and salaries paid, the fuel, electricity, and supplies used in the mining operations and the figures of the H.P. of the plants. The returns from metal mines and asbestos mines give, in addition: the tonnage of ore hoisted; the tonnage treated or milled; certain definite taxes paid; the disbursements made on account of accident compensation and unemployment; the cost of supplies and of machinery purchased during the year; as well as other smaller items.

Figures relating to production and to labour employed resulting from the compilation of all these data are published in the annual report of the department, entitled "The Mining Industry of the Province of Quebec in 1948".

The information furnished by the returns of building contractors and road contractors, includes the quantities of stone, gravel, and sand used during the year, and also the location of the deposits of these materials, as well as the names and addresses of the owners of these deposits. These details serve to reveal the existence of new quarries, sand and gravel pits. Some of these deposits may have been opened temporarily by the contractor himself to obtain materials for the fulfilling of his contract, and it is important that the division have a record of these new sources of mineral products.

The reports on lumber and timber used in mines are for the purpose of obtaining figures of quantities and costs of these materials - other than wood for fuel purposes - used by the mines.

The questionnaire concerning 'capital account' asks for the net amounts received by the mining companies from three main sources: sales of common shares; of bonds; debentures or other securities; and long term loans. The amounts given in answer to the questionnaire relating to funds from these sources, in 726 returns which were received for the year 1948, represent a total of \$14,500,000. In 1947, the total on this score was \$14,900,000.

The monthly reports are limited to the main items of ores and minerals. They are demanded from the mine operators producing gold, silver, copper, zinc, lead, asbestos and cement; also from the larger manufacturers of lime and of clay products. The object of these partial items of the mineral production, is to follow more closely month by month, the tendency of the activities of the mining industry. These statistics during 1948 were published as monthly and quarterly bulletins, of which some 325 copies of each were struck off.

Incorporation of New Mining Companies

The number of mining companies organized and incorporated during the calendar year 1948 continued to fall off.

During the period, 37 companies were incorporated with Quebec charters. In addition 16 companies with Ontario charters, and five (5), with federal charters acquired mining rights in the province. The total number of new mining companies organized to operate in the province of Quebec in 1948 was therefore 58. In 1947, the total number was 64, of which 41 with a Quebec charter and 23 with an Ontario charter.

Mining Companies Incorporated by Quebec

Charters in 1948

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Allied Asbestos Limited	Montreal	Aug. 6th	3,500,000	\$ 1
Allard Lake (Quebec) Mines Ltd.	Montreal	June 18th	5,000,000	\$ 1
Amiante Development Limited ...	Montreal	July 7th	4,000	\$ 10
Associated Quebura Mines Ltd ..	Hull ...	Dec. 22rd	200,000	\$ 1
Aurora Explorations Limited ...	Montreal	Dec. 21st	4,000	\$ 10
Barnat Mines Limited	Montreal	July 5th	4,000,000	\$ 1
Bernard Construction Ltee	Montreal	Dec. 29th	200	None
			(a) 380	\$ 50

(a) Preferred shares.

Mining Companies Incorporated by Quebec

Charters in 1948 (Cont'd)

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Buckland Mines Limited	Quebec	Oct. 26th	50,000	\$ 1
Carrière Bagot Quarry Inc.	St-Hya-	Dec. 13th	5,000	None
	cinthe		(a) 1,000	\$100
Cusau Mines Limited	Montreal	April 13th	3,000,000	\$ 1
Dunbrick-Dunstone Quebec Ltée .	Quebec	Dec. 16th	400	\$ 25
			(a) 2,000	\$ 25
Explorations Minières du Bas St-Laurent Inc. (Les)	Matane	June 3rd	100,000	\$ 1
Everlasting Granite Company Limited (The)	Lac Mégantic	Sept.21st	300	\$100
Granite Products Limited	Montreal	April 30th	(a)140,000	\$ 1
			9,000	\$ 1
Great Mountain Iron Corporation	Montreal	May 28th	5,000,000	\$ 1
Gulliver Limited	Montreal	Feb. 18th	500	\$100
Jervis Mines Limited	Montreal	April 1st	3,000,000	\$ 1
Kenzie Gold Mines Limited	Montreal	Feb. 4th	3,500,000	\$ 1
La Compagnie Cut Stone de Qué- bec Limitée (Cut Stone Com- pany of Quebec Limited)	Montreal	Nov. 17th	20,000	\$ 1
Leclerc et Fils Ltée (J.J.) ...	Drapeau	Feb. 19th	500	None
			(a) 500	\$100
Marsoui Mines Limited	Montreal	Jan. 27th	3,500,000	\$ 1
Mascouche Sand and Construc- tion Limited	Montreal	Oct.12th	490	\$100
Mictaw Mines Limited	Montreal	May 25th	3,500,000	\$ 1
Miller Copper Mines Limited ...	Montreal	April 9th	5,000,000	\$ 1
Montcalm Gold Mines Limited ...	Montreal	March 15th	3,000,000	\$ 1
Mont-Louis Mines Limited	Montreal	March 8th	3,500,000	\$ 1
Montreal Yellow Knife Gold Company Limited	Montreal	Feb. 23rd	4,000,000	\$ 1
Morgan Silver Cross Mines Ltd..	Montreal	Sept.21st	3,000,000	\$ 1
New Formaue Mines Limited	Montreal	May 17th	4,000,000	\$ 1
New Jersey Zinc Explorations Limited	Quebec	May 12th	1,000	\$100
Quebec Iron Mining Company	Montreal	Feb. 16th	4,000,000	\$ 1
Roc Idéal Construction Inc. ...	Quebec	Nov. 15th	200	\$100
Ste. Anne Mines Limited	Montreal	Jan. 27th	3,500,000	\$ 1
Tabletop Mines Limited	Montreal	Jan. 27th	3,500,000	\$ 1
Titanium Allied Minerals Inc. .	Montreal	Oct. 14th	3,000,000	\$ 1
United Asbestos Corporation Ltd	Montreal	Feb. 12th	3,000,000	\$ 1
United Dominion Mining Company Limited	Montreal	June 10th	5,000,000	\$ 1

Mining Companies Incorporated by Ontario Charters in 1948

Holderes of Mining Rights in Quebec

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Anacon Lead Mines Limited	Toronto	May 4th	3,500,000	None
Belkor Mines Limited	Toronto	June 10th	4,000,000	\$ 1
Camrose Gold and Metals Limited	Toronto	May 21st	3,500,000	\$ 1
Canadian Lithium Co. Ltd.	Toronto	March 18th	250,000	\$ 1
Chuco Gold Mines Limited	Toronto	Jan. 7th	3,000,000	\$ 1
Ducros Mining Company Limited ..	Toronto	Oct. 21st	30,000	\$ 1
Gordona Mining Corporation Ltd.	Toronto	Oct. 26th	3,000,000	\$ 1
Hewbet Mines Limited	Toronto	May 27th	3,000,000	\$ 1
Insul Mica Mining Limited	Toronto	Oct. 12th	100,000	\$ 1
Karraka Gold Mines Limited	Toronto	Jan. 3rd	3,000,000	\$ 1
La Roncière Gold Mines Limited	Toronto	March 25th	3,000,000	\$ 1
Melita Mining Company Limited ..	Toronto	Nov. 15th	3,000,000	\$ 1
Nova-Co Exploration Limited ...	Toronto	March 17th	3,000,000	\$ 1
Norvado Exploration Co. Ltd. ...	Capreol	Nov. 15th	3,500,000	None
Richard Copper Corporation Ltd.	Hailey-			
	bury	March 16th	5,000,000	\$ 1
Rouandah Gold and Metals Ltd....	Toronto	Nov. 15th	3,500,000	\$ 1

Mining Companies Incorporated by Federal Charters in 1948

Holderes of Mining Rights in Quebec

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Babcock Corporation Limited ...	Kaza-			
	bazua	Aug. 19th	200,000	None
Carnegie Mines Limited	Montreal	June 23rd	3,000,000	None
Kazabazua Mining Corporation Limited	Kaza-			
	bazua	May 18th	2,000,000	None
Kennex, Limited	Toronto	May 13th	15,000	\$ 10
31 Mile Lake Hematite Ltd.	Kaza-			
	bazua	Aug. 19th	200,000	None

DIVISION OF EDITING AND PRINTING OF PUBLICATIONS

Maurice Brunet, as editor in charge, submits the following report on the work of this division during the fiscal year ended March 31st, 1949.

In the course of the fiscal year 1948-49, the following publications of the Department of Mines were issued and distributed:

- The Mineral Industry of the Province of Quebec in 1947.
- Geological Report No.36 - Forget Lake Area, Saguenay county, W.W. Longley.
- Geological Report No.37 - Wakeham Lake Area, Saguenay county, Jacques Claveau.
- Geological Report No.38 - Upper Romaine River Area, Saguenay county, Jacques Claveau.
- Preliminary Report 217 - Waswanipi Lake Area (West half), Abitibi-East county, Jacques Claveau.
- Preliminary Report 218 - Goëland Lake Area, Abitibi-East county, P.E. Imbault.
- Preliminary Report 219 - The Chaste Map-Area, Abitibi-East county, Marcel Tiphane.
- Preliminary Report 220 - General Report of the Minister of Mines of the Province of Quebec for the Fiscal Year ending March 31st, 1949.
- Preliminary Report 221 - Branssat-Kreighoff Area, Abitibi-East county, J.E. Gilbert.
- Preliminary Report 222 - The Bourget Area, Chicoutimi county, R.F. Jooste.
- Preliminary Report 223 - Val des Bois Map-Area, Papineau and Gati-neau counties, P. Mauffette.
- Preliminary Report 224 - Albanel Lake Map-Area, Mistassini Territory, James N. Neilson.
- Preliminary Report 225 - The Portneuf Map-Area, Portneuf and Lotbinière Counties, T.H. Clark.
- Preliminary Report 226 - The Rawdon Area, Montcalm and Joliette Counties, René Béland.

In addition, the Department of Mines issued two special publications entitled "Les Ressources Minérales de la province de Québec" by J.P. Drolet, and "Survey of Research Activities in the Province of Quebec" by Roger Potvin.

PUBLICITY AND INFORMATION

To keep the public informed on the progress of the development of the mineral resources of the Province, the officials of the Department of Mines prepare numerous articles, technical papers, lectures and talks, which are read or presented at meetings of geological and mining societies, prospectors associations, printed in technical journals, and in the daily press. The object is to keep the interested public abreast of the progress achieved from year to year. These various articles and other writings are, in addition to the numerous government publications on the geology and the mining industry of the Province, issued by the Department of Mines.

During the fiscal year 1947-48, the principal activities in this secondary field, were as follows:

By Hon. Jonathan Robinson, Minister of Mines

"The future of Iron Ore mining in Quebec", presented at the meeting of American Institute of Steel Construction, at Chateau Frontenac, Quebec, October 5th, 1948.

By A.O. Dufresne, Deputy Minister of Mines

"Quebec Mining Forging Ahead" - article in Montreal "Gazette", January, 1949.

"Mining in Quebec" - A historical sketch - article published in the Canadian Mining Journal, October, 1948.

"The Department of Mines of the Province of Quebec", Canadian Mining Journal, October, 1948.

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

"Progress of Geological Investigations in Quebec", Canadian Mining Journal, October, 1948.

By Bertrand T. Denis, Chief of the Mineral Deposits Branch

"Geological Sketch on Metallic Mineral Deposits in the Province of Quebec", Canadian Mining Journal, October, 1948.

"Metallic Minerals of the Province of Quebec", Statistical Year Book of the Province of Quebec, 1948.

"Modern Methods of Mineral Exploration in Quebec", prepared for the British Empire Mining and Metallurgical Congress, London, August, 1949.

By Maurice Archambault, Chief of Laboratories Branch

"Department of Mines Laboratories Branch", in Canadian Mining Journal, October, 1948.

"Government sampling and ore-dressing plant, Canadian Mining Journal, October, 1948.

By F.F. Osborne and Maurice Archambault

"Chromitiferous Chlorite from Mount Albert, Quebec", paper read at meeting of Royal Society of Canada, June 28th, 1948.

By J.P. Drolet, Chief of Technical Information Division

- "Notre industrie minérale et l'Ungava", "Quebec Junior Board of Trade", May 3rd, 1948.
- "Les développements nouveaux de notre industrie minière", paper read at Kiwanis Club meeting, November 10th, 1948.
- "Le Domaine minier de la Province de Québec et son importance économique", paper read at Laval University, December 10th, 1948.
- "Historique de l'industrie minière, et Esquisse géologique du domaine minier de la Province de Québec", radio talk at Radio-Canada, February 9th, 1949.
- "Les substances minérales métalliques extraites de notre sous-sol", radio talk at Radio-Canada, February 16, 1949.
- "Les minéraux industriels extraits de notre sous-sol", radio talk at Radio-Canada, February 23, 1949.
- "Les ressources naturelles de la Province de Québec", radio-forum discussion at Radio-Canada, February 25, 1949.
- "Les matières premières de notre industrie de construction, et les entreprises minières et le public", radio talk at Radio-Canada, March 2nd, 1949.
- "La loi des Mines de Québec", article published in Revue du Barreau de la Province de Québec, Vol. 9, No. 3, March, 1949.

By R.H. Taschereau, Chief Inspector of Mines

"Inspection of Mines", article in Canadian Mining Journal, October, 1948.

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

- "Mineral resources east of Bell river and south of Canadian National Railway, Abitibi-East county", report prepared in November, 1948 for the Quebec Hydro Commission.
- "Monthly Correspondence", a series of six articles on mining activities in Val d'Or region published in bulletins of Canadian Institute of Mining and Metallurgy.
- "Distribution of Radioactivity in the Bourlamaque Batholith", article prepared for publication in a bulletin of the Geological Survey of America.
- "Course of eight lectures on mineralogy, geology, prospecting" given at Canadian Malartic mine to a group of prospectors in February and March, 1949.
- "Geology of part of Dubuisson township", talk at the meeting of the Harricana branch of the Canadian Institute of Mining and Metallurgy, August, 1948.

By W.G. Robinson, Resident Geologist, Noranda

"Prospecting for Radioactive minerals" talk given at a meeting of the Northwestern Quebec Prospectors Association, at Rouyn, June 15th, 1948.

"Monthly correspondence" a series of six articles on the mining activities in the Rouyn-Noranda district, published in the bulletin of the Canadian Institute of Mining and Metallurgy.

By W.N. Ingham and W.G. Robinson, Resident Geologists

"Recent Mining Activities in Northwestern Quebec", talk given at the Annual meeting of the Prospectors and Developers Association of Canada, held at Toronto, March, 1949.

By Maurice Lafontaine, Inspector of Mines

"Postes de Sauvetage dans les mines", radio-talk given at the Revue d'activités de Radio-Canada, February 7th, 1949.

By P.E. Auger, Geologist

"Belleterre Area" paper read at the annual meeting of the Prospectors and Developers Association, at Toronto, March, 1949.

By P.E. Bourret, Mining Engineer

"Non-Metallic Mineral Deposits" article published in Canadian Mining Journal, October, 1948.

By Henri Girard, Professional Engineer

"Peat Moss in Quebec" article published in Canadian Mining Journal, October, 1948.

By J.P. Girault, Mineralogist

"Géophysique ou Radiesthésie?" talk given at a meeting of Rotary club at Thetford Mines, October, 1948.

COLLECTION OF DUES ON MINES

S. Drouin, who is in charge of this Division, reports as follows:

In the course of the fiscal year 1948-49, the Department of Mines received sworn statements of production from twenty-seven (27) companies operating mines in the Province of Quebec. These returns are accompanied by vouchers presenting the data required by the Quebec Mining Act (Division III, Sections 12 to 24, incl.). A total of \$1,414,274.32, on the annual net profits of the mines as defined by the law, was collected from this source.

In addition to the above dues, there is an acreage tax of 10 cents an acre imposed on holders of mining concessions who have not carried out mining or development work on their mining lands during the year. Reports were received from 201 holders of such unproductive mining properties. A total sum of \$2,206.66 from this source was collected from 86 holders of mining concessions. The balance, 115 such holders, sent in sworn statements that at least two hundred dollars (\$200.00) had been spent in mining work on their concessions during the year. This is a statutory condition for the remittal of the acreage tax above mentioned.

Table VI.- Comparative Statement of Revenue Collected by the Department of Mines During the Fiscal Years 1946-47; 1947-48; 1948-49

(Prepared by Robert Samson, Chief Accountant)

	1946-1947	1947-1948	1948-1949
Miner's certificates ..	\$ 56,840.00	\$ 51,870.00	\$ 44,655.00
Development licenses ..	628,401.08	500,576.43	409,217.64
Penalties	1,200.00	1,797.50	350.00
Sales of mining concessions	36,870.33	23,631.62	9,042.60
Fees for transfers of titles	20,155.00	14,482.00	14,310.00
Acreage tax on mining concessions	1,535.13	2,342.67	2,206.66
Dues on townsite lots ..	30,879.35	18,960.46	10,613.30
Rents on townsite lots ..	-----	-----	579.00
Dues on profits of mines	896,941.21	1,007,375.40	(x)1,375,721.55
Permits of sales of unwrought metals ...	20.00	12.00	12.00
Sales of maps, blue prints, etc.	4,094.75	2,622.75	2,812.80
Sales of mineral collections	578.50	687.25	864.55
Fees for assays and analyses	2,952.10	947.50	1,157.25
Sampling Plant (Rent and sundries)	2,040.01	343.34	
Miscellaneous	1,397.35	2,283.90	2,805.24
Casual revenue	388.69	265.99	179.68
	\$1,684,293.60	\$1,628,198.81	\$ 1,874,527.27

(x) 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, 1949, was carried to the revenue of the fiscal year 1949-1950 (Ed.)

THE LIBRARY

The librarian of the Department of Mines, André Champa-gne, who succeeded Charles Dufault (deceased), submits the following report:

During the fiscal year 1948-49, the library received 188 books, technical works and reports relating to the mining industry. The number of volumes on the shelves of the library is now 8,498. The great majority of these volumes relate to the mining industry and to metallurgy, and to their allied sciences: mineralogy, geology, physics and chemistry.

A certain number of these yearly accessions are the result of exchanges of our publications with those of the mines departments of Canada, both federal and provincial, also of the United States, a few South American Countries, from France, and from Great Britain.

In addition, the library subscribes to one hundred and eight (108) technical periodicals, mining journals, and other publications regarding mines, minerals, metals and allied subjects.

The main object of this departmental library is as a source of references and information for the use of the personnel of the Department. But the public interested in these subjects is welcome to make use of it, and the technical staff is always eager to supply information and answer enquiries regarding the geology and the mineral resources of the Province of Quebec.

SCHOLARSHIPS OF THE DEPARTMENT OF MINES

In order to direct the attention of the young men of the Province, to the possibilities of careers in the mining industry and its allied branches, geology and metallurgy, the Department of Mines has been awarding scholarships in view of encouraging deserving young engineers of the province of Quebec to carry on advanced post-graduate studies in mining, geology and metallurgy, leading to Master's degrees and Doctorates.

Owing to the fact that the number of well qualified applicants is increasing year by year, the amount voted by the Legislature to be applied to scholarships for post-graduate studies in these branches of the mineral industry was raised from \$15,000 to \$20,000 for the year 1948-49.

The committee appointed by the Minister of Mines to make a choice among the candidates, and to submit recommendations of award was composed this year of: A.O. Dufresne, Deputy Minister of Mines, chairman; J.U. MacEwan, professor of metallurgy at McGill University; Ignace Brouillet, director of Ecole Polytechnique of Université de Montréal; Louis Cloutier, assistant-secretary of the Science Faculty of Université Laval; B.T. Denis, chief of the Mineral Deposits Branch of the Department of Mines, who was acting for I.W. Jones, in the absence of the latter; and Gisèle Landreville, secretary of the Committee.

In accordance with the established rule for the awarding of the scholarships, the applications of graduate engineers, carrying on post-graduate studies leading to the Master's degree, or the doctorate, were considered; next in order were considered the applications of scholarship holders of the preceding year who had satisfactorily fulfilled the conditions for a renewal; and lastly the applications of student undergraduates of engineering courses leading to university degrees in mining, geology, or metallurgy.

Thirty-four scholarships were awarded for the year 1948-49, distributed as follows:

Students in Post-graduate Schools	12
Students in final year of the Science faculties.	12
Students in other years	<u>10</u>
Total	34

Your obedient servant,

A.O. DUFRESNE,
Deputy Minister.

Quebec, October, 1949.