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# Rock and Mineral Collecting in Canada

Ann P. Sabina

## Volume II

## Ontario and Quebec

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## ONTARIO and QUEBEC

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MISCELLANEOUS REPORT 8

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Cover photograph:
Jasper with magnetite from iron formation near Timagami Lake, Ontario.

Mineral specimens illustrated in the text are from the National Mineral Collection

# INTRODUCTION

In recent years mineral collecting has captured the interest of an increasingly large group of amateur mineralogists or 'rockhounds'. This publication has been prepared to assist them by providing a list of known mineral occurrences which are believed to be of particular interest. Included are localities which have been known to furnish material suitable for the lapidary arts and those which have yielded unusual or especially fine specimens.

Each mineral occurrence is followed by a brief description of the deposit together with precise location and how to reach it; in some cases, a map indicating the locality is included. Where there are several occurrences within a reasonably short distance, they are grouped into convenient collecting areas.

In most cases, the only map required to reach the collecting sites is a road map. For those who wish to use a topographical map, the name and number (National Topographic Series) of the appropriate map or maps are indicated for each collecting area. Unless otherwise stated, these maps are issued by the Surveys and Mapping Branch, Department of Mines and Technical Surveys, Ottawa.

The subject matter of this publication is based on information derived from published reports, from personal visits to localities, and from discussions with geologists, mineralogists and collectors. Wherever possible these sources have been

acknowledged in the text. The assistance rendered by many colleagues in the Geological Survey is gratefully acknowledged. In particular, the author wishes to thank Dr. D. D. Hogarth, Department of Geology, University of Ottawa, for providing much information on collecting sites in Ontario and Quebec, and Mr. D. J. Wells of the Lapidary, Rock and Mineral Society of British Columbia for supplying a number of the map locations for British Columbia.

## A Note on Canadian Gems

Although this country has never been regarded as a source of gem minerals, it has produced many popular ornamental stones of which perhaps the best known are labradorite and sodalite. The former is so typical of this country that it has been referred to as the 'gem of Canada'. Its potential as a gemstone was recognized soon after its discovery in 1770 on an island off the coast of Labrador. Today labradorite is quarried from a locality near the original occurrence. Sodalite from Princess Quarry at Bancroft, Ontario at one time had a considerable vogue for interior decorative work, but is now used mainly for jewelry.

Other minerals in this category are: jade (nephrite) from British Columbia; peristerite and amazonite from Ontario and Quebec; perthite and rose quartz from Ontario; and agate, chalcedony and jasper from various localities in British Columbia, Ontario and Nova Scotia. These minerals provide much of the material for amateur gem-cutters today.

Exploitation of Canada's mineral resources for ornamental purposes is now largely in the hands of the amateur collector

and gem-cutter. The extent to which this has become an industry is indicated by the rise in the number of commercial outlets for the sale of mineral and rock specimens, hand-crafted jewelry and *objets d'art*, and lapidary equipment. Whereas at one time such specialty shops were mainly in tourist areas, they may now be found in a number of cities and towns in nearly every province.

## Becoming Acquainted with Minerals

Although it is possible to learn about rocks and minerals without the benefit of a formal course in the geological sciences, the advantages gained by taking a short course in geology or mineralogy should be seriously considered. Courses on prospecting, elementary mineralogy, general geology, etc. are offered in various centres by Provincial Government agencies, by Universities and other interested groups.

For additional reading, the amateur mineralogist or novice may choose from a number of books written specially for him; a list of such publications is given in Appendix I. A necessary supplement to reading is the practical knowledge gained by handling actual specimens and by studying rocks and minerals in their natural surroundings, in mines, quarries and outcrops.

Because many collectors enjoy the association of others having similar interests, they form organized groups or clubs to study and to collect rocks and minerals. One advantage of joining such a group is that it usually has a field leader who is acquainted with local deposits and collecting areas. A list of amateur mineral clubs is given in Appendix II.

## Where to Look

Quarries, mine workings (pits, trenches, etc.), and mine dumps are usually good places to search for minerals, also road and railway cuts; rock exposures along cliffs and along the shores of sea, lake and stream; land-slide areas in the mountains; and beaches and stream beds. Shafts and tunnels in old abandoned mines are often unsafe and should only be visited with extreme caution.

Permission should be sought before entering a mine, quarry or other private property; in active mining areas arrangements for the visit should be made with the operators well in advance.

## Tools and General Equipment

Outdoor clothing such as worn for hiking and hunting is suitable for mineral excursions. Shoes or boots should be of a type to furnish a good secure grip on rocks, and should be sufficiently comfortable for long hikes. You may require heavier clothing or an extra sweater when visiting some mines where the temperature remains fairly low even on a warm day.

Safety goggles, such as those worn by skiers, should be worn when chipping rock or trimming specimens.

Insect repellent is essential when collecting in some areas, particularly in the spring and early summer.

The essential tool for removing specimens is the geological hammer. A chisel-edged hammer is useful for trimming and shaping specimens; the pointed pick type is useful for prying

loose rock and for removing moss and overburden, though for this purpose some may prefer a prospector's grub-hoe or a shovel. A two-pound hammer is suitable for most purposes. Where delicate crystals are to be preserved in a specimen, fewer blows with a heavier hammer and a chisel may lessen the possibility of shattering. A rock chisel is necessary for separating specimens from larger rock masses. To pry apart large slabs of rock, a wrecking bar should be used. Other equipment might include a gold-pan, an ultra-violet lamp and a Geiger counter.

Most collectors bring a few aids to assist in identification of minerals in the field. The most important are a small hand lens with magnification of about 10X and some means of testing for hardness, such as a pocket knife. Other items which are often useful are a magnet, a streak plate, and a vial containing dilute hydrochloric acid. If you wish to make a record of the occurrence, include a notebook and pencil and a camera.

## Care of Specimens

Trim your specimens to a reasonable size as you collect them, wrap them individually in newspaper or tissue and take them home in cloth sample bags. These can easily be made or purchased from a supplier. Careful packing will prevent disappointments; take special care with crystals, as they are so easily ruined in transit. It is a good idea to put field labels giving locality information with each collection as it is wrapped. Details are easily forgotten on a busy collecting trip. Wash the specimens with detergent and water when you get



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home; do not use stiff brushes on soft minerals. A few minerals dissolve in water and should be washed with alcohol. Label the specimens before final storage; if you use open cardboard trays, labels can go with the specimens. Some collectors paint a small area of white enamel on the specimen and write an index number on it with black ink. This number can be recorded in a book or card file with the name, locality and any other information you may wish to keep.

As your collection grows you may want to arrange it in a systematic manner. Many collections are organized according to Dana's system of mineralogy (see Bibliography). Simpler arrangements could be made based on locality, crystal structure or any other method you might care to devise.

## Collecting in Canada

Within reason there are few restrictions on amateur rock and mineral collecting by Canadians or visitors in Canada. The rights of mine and property owners should be observed at all times. There are regulations concerning the removal of natural history specimens from the National Parks. For further information, write to the Superintendent of the park concerned or to the Director, National Parks Branch, Department of Northern Affairs and National Resources, Ottawa, Canada.

## Mineral and Rock Sets

To assist the amateur mineralogist and student in identifying and recognizing rocks and minerals, the Geological Survey

of Canada makes available three sets of specimens. The sets consist of: (1) 35 common minerals at two dollars per set; (2) 35 rock chips at two dollars per set; (3) 120 specimens representing the raw materials of Canada's mineral industry at twenty-five dollars. These sets can be shipped only to addresses in Canada; orders should be sent to the Director, Geological Survey of Canada, Ottawa.

## ABBREVIATIONS USED IN REFERENCES

*Am. J. Sci.*—The American Journal of Science.

*Am. Mineralogist*—The American Mineralogist (Mineralogical Society of America.)

*B.C. Dept. Mines, Bull.*—British Columbia Department of Mines, Bulletin.

*Bull. C.I.M.M.*—The Canadian Mining and Metallurgical Bulletin. (Canadian Institute of Mining and Metallurgy).

*Bull. Mus. Comp. Zool., Harvard Coll., Geol. Ser.*—Bulletin of the Museum of Comparative Zoology, Harvard College, Geological Series.

*Can. Field Naturalist*—The Canadian Field Naturalist.

*Can. Min. Ind.*—The Canadian Mineral Industry, Department of Mines and Technical Surveys.

*Can. Mining J.*—The Canadian Mining Journal.

*Can. Mining Rev.*—The Canadian Mining Review.

*Can. Rockhound*—The Canadian Rockhound, Bulletin of the Lapidary and Mineral Society of British Columbia.

*Dept. Geol., Princeton Univ.*—Department of Geology, Princeton University, Princeton, New Jersey.

*Dept. Geol. Sci., McGill Univ.*—Department of Geological Sciences, McGill University, Montreal.

*B.C. Min. Mines, Ann. Rept.*—Annual Report of the Minister of Mines, British Columbia.



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*Bull. G.S.A.*—Bulletin of the Geological Society of America.

*Dept. Geol., Univ. West. Ont.*—Department of Geology, University of Western Ontario, London, Ontario.

*Econ. Geol.*—Economic Geology and the Bulletin of the Society of Economic Geologists.

*Gems and Precious Stones of N. Amer.*—Gems and Precious Stones of North America by G. F. Kunz (The Scientific Publishing Company, New York, 1890).

*Gemstones of N. Amer.*—Gemstones of North America by John Sinkankas (D. Van Nostrand Company, Inc., 1959).

*Geol. Can. Indust. Min. Dep.*—The Geology of Canadian Industrial Mineral Deposits, 6th Commonwealth Mining and Metallurgical Congress, 1957.

*GSC, Ann. Rept. (New Ser.)*—Geological Survey of Canada, Annual Report, New Series.

*GSC, Bull.*—Geological Survey of Canada, Bulletin.

*GSC, Internat. Geol. Congr. Guide Books*—Geological Survey of Canada, Guide Books for the 12th International Geological Congress.

*GSC, Mem.*—Geological Survey of Canada, Memoir.

*GSC, Min. Res. Bull.*—Geological Survey of Canada, Mineral Resources Bulletin.

*GSC, Mus., Bull. Geol. Ser.*—Geological Survey of Canada, Museum Bulletin, Geological Series.

*GSC, Paper*—Geological Survey of Canada, Paper.

*GSC, Rept. Prog.*—Geological Survey of Canada, Report of Progress.

*GSC, Sum. Rept.*—Geological Survey of Canada, Summary Report.

*Guidebook, G.S.A. and G.A.C.*—Geological Society of America and Geological Association of Canada Guidebook for Field Trips in Ontario (1953).

*J. Can. Mining Inst.*—The Journal of the Canadian Mining Institute.

*J. Gemm.*—The Journal of Gemmology and Proceedings of the Gemmological Association of Great Britain.

*Lapidary J.*—The Lapidary Journal.

*Man. Dept. Mines*—The Manitoba Department of Mines and Natural Resources, Mines Branch Publication.

*Mem. Am. Acad. Arts, Sci.*—Memoirs of the American Academy of Arts and Sciences (Boston).

*Mineral Collecting, E. Ont.*—Mineral Collecting in Eastern Ontario by Beecher B. Woods and Lance B. Woods (Private publication).

*Mining Ind. Que.*—The Mining Industry of the Province of Quebec.

*Mines Br., Mem. Ser.*—Department of Mines and Technical Surveys, Mines Branch, Memorandum Series.

*Mines Br., Pub.*—Department of Mines and Technical Surveys, Mines Branch Publication.

*Mines Br. Rept.*—Department of Mines and Technical Surveys, Mines Branch Report.

*Mines Br. Sum. Rept.*—Department of Mines and Technical Surveys, Mines Branch Summary Report.

*N.B. Dept. Lands, Mines, Mining Sec.*—New Brunswick Department of Lands and Mines, Mining Section.

*Nfld. Dept. Mines, Res., Bull.*—Newfoundland Department of Mines and Resources, Geological Section, Bulletin.

*Nfld. Geol. Surv., Bull.*—Newfoundland Geological Survey, Bulletin.

*Nfld. Geol. Surv., Inf. Circ.*—Province of Newfoundland, Department of Mines and Resources, Information Circular.

*N.S. Dept. Mines, Ann. Rept.*—Province of Nova Scotia, Department of Mines, Annual Report on Mines.

*N.S. Dept. Mines, Mem.*—Province of Nova Scotia, Department of Mines, Memoir.

*N.S. Dept. Mines, Min. Geol. Guidebook*—Nova Scotia Department of Mines, Mineral and Geological Guidebook.

*Ont. Bur. Mines, Ann. Rept.*—Ontario Bureau of Mines, Annual Report.

*Ont. Dept. Mines, Ann. Rept.*—Ontario Department of Mines, Annual Report.

*Ont. Dept. Mines, Indust. Min. Circ.*—Ontario Department of Mines, Industrial Mineral Circular.

*Ottawa Field Naturalist*—Transactions of the Ottawa Field-Naturalists' Club.

*P.E.I. Dept. Ind. Nat. Res.*—Department of Industry and Natural Resources, Province of Prince Edward Island.

*Precambrian*—Precambrian Mining in Canada, Journal of the Manitoba Chamber of Mines.

*Proc. Geol. Assoc. Can.*—Proceedings of the Geological Association of Canada.

*Quart. Bull. Lap. Soc. B.C.*—Quarterly Bulletin of the Lapidary, Rock and Mineral Society of British Columbia.

*Que. Bur. Mines, Ann. Rept.*—Annual Report of the Quebec Bureau of Mines.

*Que. Dept. Mines, Geol. Rept.*—Department of Mines, Province of Quebec, Geological Surveys Branch, Geological Report.

*Que. Dept. Mines, Prel. Rept.*—Department of Mines, Province of Quebec, Geological Surveys Branch, Preliminary Report.

*Queen's Univ., Dept. Geol.*—Queen's University, Department of Geology.

*Sask. Dept. Min. Res.*—Department of Mineral Resources, Mines Branch, Geology Division, Province of Saskatchewan.

*Trans. C.I.M.M.*—Transactions of the Canadian Institute of Mining and Metallurgy.

*Trans. Mining Soc. N.S.*—Transactions of the Mining Society of Nova Scotia.

*Trans. Roy. Soc. Can.*—Transactions of the Royal Society of Canada.

*U.B.C., Dept. Geol.*—University of British Columbia, Department of Geology.

*Univ. Toronto, Dept. Geol.*—University of Toronto, Department of Geology.

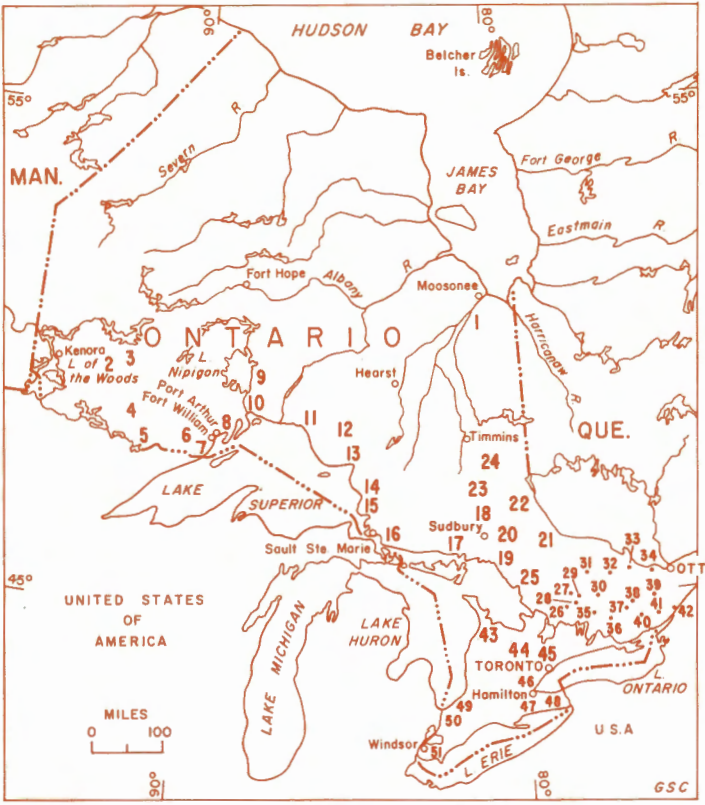
*Univ. Toronto Studies, Geol. Ser.*—University of Toronto Studies, Geological Series.

*Western Homes*—Western Homes and Living (The Mitchell Press Ltd., Vancouver).

# ONTARIO

## ROCK AND MINERAL COLLECTING AREAS, ONTARIO

1. James Bay
2. Dryden
3. Minnitaki Lake
4. Atikokan
5. Jasper Lake
6. Shabaqua–Kaministikwia
7. Silver Mountain–Rabbit Mountain
8. Thunder Bay
9. Lake Nipigon
10. Black Bay–Nipigon Bay
11. Marathon
12. White River
13. Michipicoten
14. Agawa Bay
15. Mamainse–Batchawana
16. Sault Ste. Marie–Bruce Mines
17. Espanola
18. Sudbury
19. French River
20. River Valley
21. Mattawa
22. Timagami Lake
23. Shining Tree
24. Matachewan
25. Parry Sound
26. Minden–Norland
27. Drag Lake
28. Gooderham–Tory Hill
29. Wilberforce
30. Bancroft
31. Madawaska
32. Craigmont–Lake Clear
33. Renfrew
34. Galetta
35. Blue Mountain
36. Madoc
37. Kaladar
38. Fernleigh–Clarendon
39. Perth
40. Sharbot Lake–Kingston
41. Lyndhurst–Morton
42. Brockville
43. Wiarton
44. Credit River
45. Toronto
46. Dundas
47. Grand River Valley
48. St. Catharines–Niagara Falls
49. Kettle Point
50. Croton
51. Amherstburg


HUDSON BAY
Belcher Is.
90°
80°
55°
MAN.
Severn R.
JAMES BAY
Fort George R.
Eastmain R.
Fort Hope
Albany R.
Moosonee
ONTARIO
Harricanaw R.
Kenora
L. of the Woods
L. Nipigon
Port Arthur
Fort William
Hearst
Timmins
QUE.
LAKE SUPERIOR
Sudbury
Sault Ste Marie
OTTAWA
45°
UNITED STATES OF AMERICA
LAKE MICHIGAN
LAKE HURON
TORONTO
Hamilton
L. ONTARIO
MILES
0 100
Windsor
L. ERIE
U.S.A
GSC

## 1. JAMES BAY AREA

*(42 I/NW Blacksmith Rapids; 42 NE Moosonee; 32 NW Rupert House)*

### Gypsum, Selenite

Crystals of selenite occur in the gypsum deposits in the vicinity of the Moose and Harricanaw rivers, south of James Bay. The selenite is transparent and is found as individual crystals up to ½ inch across and as clusters of crystals, some of them star-shaped. The gypsum is finely crystalline and usually snow white in colour, although pink, grey, green and brown varieties are also present. It is interbedded with shale, limestone and clay.

The gypsum outcrops on both sides of the Moose River below the mouth of the Missinaibi River. On the north bank, the outcrops extend continuously for 2½ miles downstream from opposite the middle of Murray Island. Along the south side of the river, the exposures extend for 1½ miles opposite Smith Island and for 1 mile opposite Wait Island, 5 miles below Smith Island. Gypsum is exposed continuously for 6 miles in cliffs along the south bank of the Cheepash River 16 miles from its mouth on the Moose River. Other outcrops are at Gypsum Mountain midway between the French and Abitibi rivers about 8 miles to the southwest of the forks of the French and Nettogami rivers; on the east bank of the French River (central branch) 6 miles above the mouth; on the west bank of the Harricanaw River opposite the head of Gordon Island, and along the west side of the southern half of the island. Gordon Island is about 8 miles from the mouth of the Harricanaw River.

Red crystalline selenite was found on the west bank of the Harricanaw River. Satin spar and selenite form layers 1 to 2 inches thick and several hundred feet long in limestone at the south end of Shoal Island which lies in the Harricanaw River about ⅜ mile west of the Ontario-Quebec border.

*References:*
Bell, J. M.: Ont. Bur. Mines, Ann. Rept., vol. 13, pt. 1, 1904, pp. 156-159.
Cole, L. H.: Mines Br., Pub. No. 714, 1930, pp. 43-45.
Remick, J. H.: Que. Dept. Mines, Prel. Rept. No. 458, 1961, p. 15.

## 2. DRYDEN AREA

*(52 F Dryden)*

### Medicine Lake, Beryl

Yellow beryl crystals up to 2 inches across are found with black quartz, cleavelandite, red and black garnet, and mica in a pegmatite dyke which has been exposed by trenching. The property, which belongs to E. Zabeski of Kenora, is located on the east shore of Medicine Lake in Tustin and Bridges townships. Noteworthy occurrences are in a shallow trench near the cabin 200 feet from the lakeshore, and one just west of the road about 300 feet east of the first occurrence. Medicine Lake is situated east of Linklater Lake which is just north of Highway No. 17 about 8 miles east of Hawk Lake village.

*Reference:*
Mulligan, Robert: GSC, Paper 60-21, 1960, p. 22.

### Eagle Lake, Soapstone Quarry

A light green medium-grained soapstone occurs in a talc-chlorite schist on the southwest shore of Eagle Lake. A small quarry was opened close to the edge of the lake and was worked from 1924 to 1928. The mine is 21 miles by water from either Vermilion Bay or Eagle River.

*Reference:*
Spence, H. S.: Mines Br., Pub. No. 803, 1940, p. 66.

### Dryden, soapstone

Soapstone occurs in several places near the village of Dryden. A dark grey soapstone containing rhombs of a brown carbonate is found in a gabbro on a rocky hill in the peninsula forming the western boundary

of Barritt Bay on the north side of Wabigoon Lake. The Wabigoon Soapstone Company did some development work on the property in 1926-27; the test pits and trenches are now partly grown over. The occurrence is 1500 feet from the Canadian Pacific railway and can be reached by way of the lake, or by a disused road leading from the railway tracks. Other occurrences of soapstone in the area include: one outcrop of medium-grained blotchy green and grey soapstone on the southeast shore of Mile Lake; another outcrop of a coarse-grained greenish soapstone on the northwest shore of the lake; exposures of massive medium-grained grey and green soapstone in islands Nos. 246 and 249 near the outlet of Trap Lake. Limited development work was done on these properties. Trap Lake is situated 9 miles south of Dryden and Mile Lake is ½ mile north of it.

*Reference:*

Satterly, J.: Ont. Dept. Mines, Ann. Rept. 50, pt. 2, 1941, pp. 53-55.

### Spodumene

Green and white spodumene is associated with quartz and feldspar in a dyke cutting chloritic mica schist and amphibolite at the Lun-Echo Gold Mines property. Black tourmaline is abundant in some parts of the dyke, and small grains of blue apatite are also present. The dyke has been exposed by stripping. The property is 10 miles northeast of Dryden and is reached by a side road which leaves Highway No. 17 at a point 6 miles east of Dryden.

*Reference:*

Mulligan, Robert: GSC, Paper 57-3, 1957, p. 16.

## 3. MINNITAKI LAKE

*(52 J Ignace)*

### Jasper

Alternating bands of jasper and siliceous magnetite are associated with a green schist which outcrops on the south side of Minnitaki Lake, about 12 miles south of Superior Junction.

*Reference:*
Lindeman, E. and Bolton, L. L.: Mines Br., Pub. No. 217, vol. 2, 1917, p. 53.

## 4. ATIKOKAN AREA

*(52 B Quetico)*

### Turtle Lake, Beryl

Yellowish green translucent beryl as slender prismatic crystals occurs in a quartz microperthite mica dyke exposed on an island located 2 miles east of the west end of Turtle Lake near the headland of Portage Bay. The crystals are reported to be up to 2 inches in length. No crystals of gem quality were found at this locality. Red garnet occurs with the beryl. Turtle Lake is situated to the west of Crowrock Lake about 15 miles north of Banning.

*Reference:*
Ellsworth, H. V. E.: GSC, Econ. Geol. Ser., No. 11, 1932, p. 169.

### Perch Lake, Jasper

Jasper is associated with the iron formations which occur extensively in this region. Red jasper as thin layers with a hematite-magnetite mixture is associated with the slaty iron formation which is exposed along the west shore of the main peninsula projecting into the northern part of Perch Lake. A few openings by pits and trenches were made near the lake shore. Perch lake is approximately 10 miles west of Atikokan.

*Reference:*
Tanton, T. L.: GSC, Sum. Rept., 1925, pt. C, p. 3.

### Steep Rock Iron Mine

Some exceptionally beautiful specimens of mineralogical interest have been obtained from the Steep Rock iron mine. Vugs lined with beautiful red and colourless quartz crystals measuring up to 1½ inches across are found in association with calcite and chert nodules in the

carbonate rock at Elbow point and in other areas where limestone appears. Some of the crystals are very clear; others grade from clear at one end to milky at the other.

Unusually attractive crystal specimens of manganite have been recovered from veins in the hematite orebody in various places in the mining area, notably at the Errington Pit.

*Reference:*

Personal communication; D. D. Hogarth.

The Steep Rock iron mine is operated by Steep Rock Iron Mines Limited. It is situated at Steep Rock Lake, north of Atikokan.

### Soapstone

Grey soapstone, as masses up to 25 feet wide, occurs at the contact between dark green chlorite schist and aplite in the vicinity of Banning. Outcrops have been noted on the west shore of Buttermilk Lake, 3 miles northeast of Banning. A similar exposure was seen 1400 feet west of the north end of the bay at the outlet of Arnold Lake. This occurrence is 4 miles east of the Buttermilk Lake occurrence.

*Reference:*

Tanton, T. L.: GSC, Sum. Rept., 1925, pt. C, p. 3.

## 5. JASPER LAKE

*(52 B Quetico)*

### Jasper Lake, Jasper

Alternating layers of purplish hematite and cherry-red jasper are enclosed in massive greenish grey greenstone exposed along the portage leading north from Jasper Lake. The layers are contorted and twisted, forming interesting and attractive patterns. This jasper-hematite band is about 40 to 50 feet wide and is straddled by the greenstones. Jasper Lake is to the north of the International Boundary west of Saganaga Lake.

*Reference:*
Smith, W. H. C.: GSC, Sum. Rept., vol. 5, 1890, p. 63G.

## 6. SHABAQUA-KAMINISTIKWIA AREA

*(52 SE Ignace-Fort William)*

### Jasper

The Matawin iron formation consisting of jasper interbanded with magnetite, and less commonly with hematite, extends from Greenwater Lake eastward, south of Shebandowan Lake to the Kaministikwia River, more or less parallel to the Canadian National railway. Notable occurrences are in the vicinity of Shabaqua where claims have been staked on both sides of the Matawin and Shebandowan rivers. Exposures in the following claims are reported to include jasper with magnetite and hematite: mining locations W211, W221, W222, W232-234, W236-239, W241-244; H.P. 673; R476 and R484 (½ mile north of the Matawin River); R412, R479, R480, R483, R490, R499, R509 and R511; claim T.B. 910.[1]

Subangular and rounded blocks of red jasper, and of white jasper streaked with red occur in an ellipsoidal andesite outcrop on a thinly forested rocky knoll 1 mile north of Glenwater station (Canadian National Railways). The blocks range up to 1½ feet in diameter. The andesite exposure measures 150 feet across. Banded red and white jasper make blocks up to 2 feet in diameter in lava which is exposed ½ mile southeast of Shabaqua station.

Jasper banded with hematite and magnetite occurs in the eastern extension of the Matawin iron range which outcrops in numerous places along both sides of the Kaministikwia River between Dona and Mokomon stations (Conmee, Ware, and Oliver townships). The hematite and magnetite bands vary in thickness from a film to 2 or 3 inches.

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[1] Mining claims are shown on N.T.S. Maps 52 A/SW and 52 A/NW (scale 1 inch to 2 miles).

Exposures have been noted in the bed of Brûlé Creek half-way between the east-west boundary of lot B concession V, Conmee township; in Mining Locations HVIII, R342, R393, R394, and R411; the Muirhead, Montgomery, Strathy, and Pumpelly-Smith claims; Mining Location R333 on Kaministikwia Mountain; and Mining Locations B.J. 128, 129 and 130.

*References:*

Lindeman, E. and Bolton, L. L.: Mines Br., Pub. No. 217, vol. 2, 1917, pp. 55-61.

Tanton, T. L.: GSC, Sum. Rept., 1924, pt. C, pp. 1-27.

## 7. SILVER MOUNTAIN-RABBIT MOUNTAIN AREA

*(52 A/SW Fort William-Port Arthur)*

### Amethyst, Silver Minerals

Amethyst is associated with the silver-bearing veins in a number of the old silver mines in the Silver Mountain-Rabbit Mountain area 25 to 30 miles west of the Lakehead. The veins carry varying amounts of calcite, barite, fluorite (green and purple), quartz (colourless, smoky, amethystine, and chalcedonic), galena, chalcopyrite, sphalerite, pyrite, native silver (wire and leaf forms), and argentite. The amethyst occurs as well-terminated crystals commonly ½ inch across; the colour varies from pale to medium-deep purple, the pale variety being most common. The crystals are generally too pale and too small to be used for cutting. Rabbit Mountain, Silver Mountain and the other flat-topped hills in the area are mesas, each capped by a diabase sill beneath which lie the nearly flat-lying Animikie shales. The silver-bearing veins occur in fissures along fault zones in the diabase and shale.

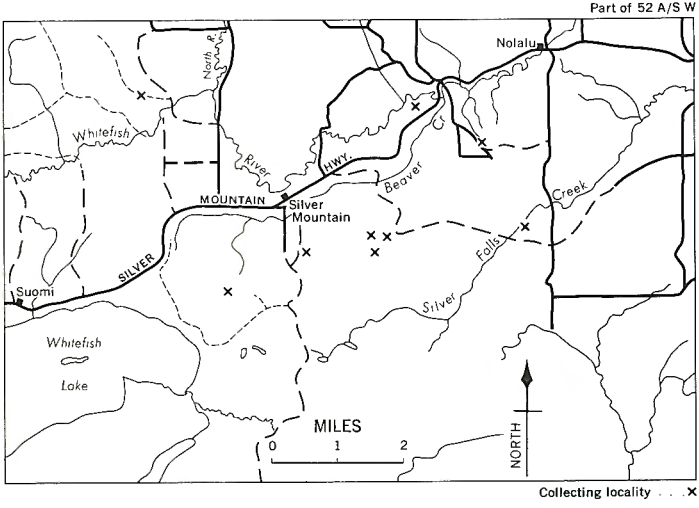
Mines on Rabbit Mountain were worked for silver from 1882 to 1892, those on Silver Mountain from 1884 to just after the turn of the century. Further development was subsequently conducted on some of the properties. In the 1920's some of the mines were worked for calcite which was used for stucco material. None of the properties is in operation at present.

The area is serviced by Highway No. 588, the Silver Mountain highway. Directions to reach the more accessible mines are given below; all mileages are measured from the south end of the bridge over the Kaministikwia River in Stanley.

*Victoria mine* (lot 7, concession C, Paipoonge township) lies 100 feet north of Highway No. 588 at a point 1.7 miles southwest of Stanley. In 1927 the property was owned by Mr. John McClure of Fort William.

*West Beaver mine* (mining location T140) lies 140 feet south of Highway No. 588 at a point 5.7 miles southwest of Stanley.

*Climax mine* (mining location T97) is reached by a dry weather road which leads south ½ mile from Highway No. 588 at a point 6.3 miles southwest of Stanley. This mine was the greatest single producer west of the Lakehead; rich pockets of argentite in leaf and nugget forms were encountered during mining operations.




WHITEFISH LAKE–SILVER MOUNTAIN AREA: Silver mines.

*Beaver Junior mine* (mining location T142) is on the south side of Highway No. 588 and ½ mile north of the Beaver mine. Of particular interest at this deposit is the occurrence of transparent, well-formed crystals of barite (up to 1½ inches in diameter) in white, medium-textured, crystalline aggregates of barite. When the property was being worked, vugs were found containing argentite nuggets in association with crystals of quartz.

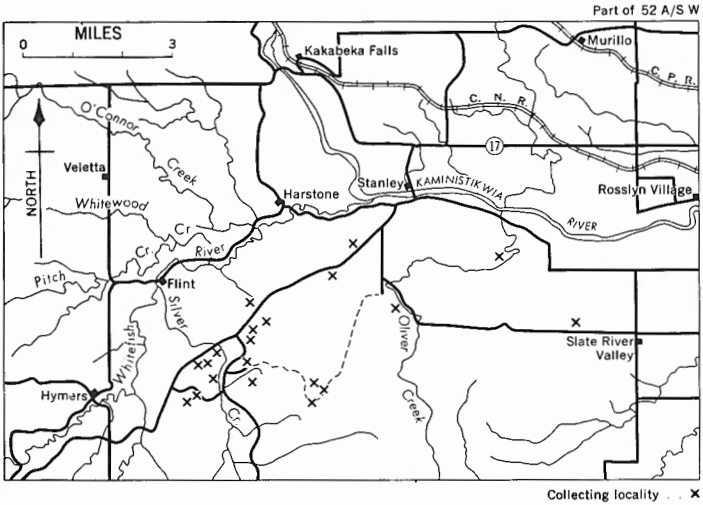
*Badger mine* (mining location T201)—Leave Highway No. 588 at a point 6.7 miles southwest of Stanley and proceed south along a dry weather road for about ½ mile to the dumps. During mining operations, argentite in leaf and nugget forms was obtained from pockets measuring a few feet in diameter.

*Silver Mountain mine; West end* (mining locations R55, R56, R57)—Leave Highway No. 593 at a point 1.1 miles south of the junction with Highway No. 588 and proceed east along a dry weather road for about 300 yards to a clearing; bear left and continue eastward along an old trail for about 200 yards to the dumps on the north side of the trail.

*Silver Mountain mine, East end* (mining locations R53 and R54). These workings lie about 1 mile east of the West end mine to which they are connected by a trail.

*Crown Point mine* (mining locations R95 and R83) lies to the north of and adjacent to the East end (Silver Mountain) mine.

Other mines in the area which have yielded specimens of amethyst are: Star mine in lot 5, concession 5, Strange township; Scripture's vein on the east-facing cliff of Silver Bluff in mining location R61; Tchiatin's vein in mining location R115; in a vein which crosses Silver Falls Creek 800 feet northeast of the falls, in mining location R110 (Silver Falls Creek is bridged by Highway No. 588 at a point 5.5 miles southwest of Stanley); Porcupine mine in mining location T96; Climax (Keystone) mine in mining location T145; Silver Creek mine in mining location T95; the Black Fox vein on the north-facing cliff of the northwestern part of Rabbit Mountain, in mining location T146; Rabbit Mountain mine in mining locations T39 and T40; Rabbit Mountain Junior mine in mining location T57; the Elgin vein in lot 1,




RABBIT MOUNTAIN AREA: Silver mines.

concession F, Paipoonge township; Rothwell mine in lot 5, Concession D, Paipoonge township; the Big Bear vein exposed on both sides of a small stream about 600 feet above its junction with Oliver Creek, in lot 34, concession 2, Paipoonge township; Federal mine (Copeland's vein) on the north bank of Oliver Creek, in the south half of lot 26, concession B, Paipoonge township; Hidden Treasure mine in mining location E135; in veins along the Kaministikwia River in the vicinity of Kakabeka Falls. All the occurrences except the Kaministikwia River locality have been worked.

Other minerals associated with some of the deposits are: witherite as white, radial, fibrous crystalline aggregates at the Porcupine mine; well-formed, transparent pale brown barite crystals (up to ½ inch long) with pink and white calcite at the Hidden Treasure mine which lies about 3 miles southeast of South Gillies P.O. on Highway No. 595;

spectacular crystals (up to 2½ inches in diameter) of clear quartz at the Star mine (east dump).

*Reference:*
Tanton, T. L.: GSC, Mem. 167, 1930, pp. 88-90, 110, 113-121, 124-141.

## Jasper, Algal Chert

Beautifully patterned red jasper occurs as pebbles and boulders along the shores of lakes, in stream beds in the area and in some of the road-cuts. The most common variety is one composed of a deep red matrix which is speckled, streaked or banded with other shades of red; sometimes yellowish and brown shades are present. Bloodstone—the deep green jasper with rich red specks—is also found in the area but is not as abundant as the red jasper.

Specimens were found along the shores of Arrow Lake about 28 miles (via Highway No. 588) west of Nolalu; in the bed of the Whitefish River where it is bridged by Highway No. 588 (one bridge is 1.8 miles west of Nolalu; the other is 2 miles east of Nolalu); in the bed of the Whitefish River at the village of Nolalu; in the bed of Peerless Creek where it is bridged by Highway No. 588, 8 miles southwest of Stanley.

Algal chert and jasper are associated with the Gunflint iron formation in the area. The algal chert has a porous, tubular structure. In the bed of the Whitefish River at Hillside, (about 1¾ miles west of Nolalu) it forms cauliflower-shaped concretionary structures measuring 1 to 2 feet in diameter; smaller cabbage-like or biscuit-shaped concretions (up to 6 inches in diameter) occur at the same locality.

Exposures of finely contorted chert containing white and red granules are found north of Burnt Bridge on the Whitefish River. It often grades to a green and white banded chert with massive texture.

Finely banded red and white algal chert intimately associated with coarse red and black oolitic granules measuring up to ¼ inch across is exposed on the east and west flanks of Mink Mountain (which lies between the west end of Whitefish Lake and Little Gull Lake); beneath the diabase sill of Divide Ridge (which is on the north side of Highway

No. 588 just west of Silver Mountain); and along the banks of Whitefish River.

Algal chert may also be found along the shores of Arrow Lake and in the stream beds at Silver Mountain.

The algal cherts and jaspers of the Silver Mountain and Whitefish Lake areas present a variety of attractive patterns and textures in colours ranging from grey to brown and red. The material is used by local lapidarists for jewelry and ornamental objects.

*References:*

Goodwin, A. M.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 7, 1960, pp. 49, 51-53.

Moorhouse, W. W.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 7, 1960, p. 8.

### Concretions

Concretion-bearing rocks are exposed in the Slate River gorge and in the valley of the Kaministikwia River near the mouth of the Slate River. The concretions consist of finely crystalline calcite in grey or black mudstone. Pyrite is sometimes present in finely crystalline form, as platy layers, or as concretionary nodules measuring up to 1 inch in diameter. When broken, some concretions exhibit a well-developed septarian structure. In size, they range from a few inches to 8 feet in diameter.

The host rock consists of grey to black sediments of the Rove formation.

*Reference:*

Tanton, T. L.: GSC, Mem. 167, 1930, pp. 40-42.

## 8. THUNDER BAY AREA

*(52 A/SW Fort William-Port Arthur; 52 SE Ignace-Fort William)*

Amethyst has been reported from a number of the old silver mines to the west of Thunder Bay. The deposits are similar to those in the Silver Mountain-Rabbit Mountain area.

*Prince's Mine*—Coarsely crystallized amethyst is reported to occur with barite, galena, native silver and coarsely crystalline calcite in a vein cutting argillite and basic lava. The mine was worked in 1846 or 1847 and is the oldest mine in the district. It lies near the shore of Lake Superior at Prince Bay, about 20 miles south of Fort William. A similar deposit was worked on Spar Island to the east of Prince Bay.

*Central Avenue quarry*—Amethyst is associated with calcite, barite, fluorite (purple and green), sphalerite and marcasite in veins cutting nearly flat-lying Animikie sediments. The quarry is in the southwestern part of Port Arthur, about ½ mile east of the golf club and ¾ mile southwest of the Hewitson quarry. It is reached by a road which leads south from Highway No. 130 (Oliver road) at a point 0.4 mile west of the bridge over the McIntyre River.

*Osmun vein*—White quartz, amethyst, pink and white calcite, purple fluorite and very small amounts of galena and chalcopyrite occur in a vein which occupies a fault zone in shale and cherty iron carbonate of the Animikie iron formation. The deposit has been explored by a shaft and several pits.

The deposit is on the east side of Hilldale road at a point 0.8 mile north of Highway No. 17 (the junction of Highway No. 17 and Hilldale Road is at Jumbo Gardens). The property now belongs to Mr. M. Matson of Hilldale Road.

*Shuniah (Duncan) mine*—Amethyst, in shades ranging from pale to medium-deep purple, occurs with smoky and colourless quartz crystals, purple and green fluorite, white and lilac-coloured calcite, galena and sphalerite at this former silver mine. The ore minerals were native silver and argentite. Calcite from this deposit fluoresces pink. Country rocks consist of diabase, Animikie sediments, hornblende-chlorite schist, granite and syenite.

The mine was worked at intervals from 1868 to 1922. It is at the north end of Port Arthur. Take the road leading north from Boulevard Lake Scenic Lookout (above Black Bay bridge) to the radio tower, a distance of about ½ mile. At the tower, bear left and follow the trail for about 200 yards to the dump.

*Current River*—Amethyst with quartz, galena, and chalcopyrite occurs in veins in the bed of Current River for about 2 miles upstream from Black Bay bridge.

*Silver Harbour*—Amethyst with quartz, calcite, sphalerite, galena, pyrite, and chalcopyrite occurs in a vein exposed by pits along the Canadian National railway near Silver Harbour station. The amethyst forms good, sharp crystals (up to ½ inch across) and some of it is of a fairly deep shade of purple. Associated rocks are sediments, granite and lavas.

The vein is crossed by the Canadian National railway 700 yards northeast of the sign "Silver Harbour" which indicates the station. The pits are in a wooded area about 50 feet east of the railway. Leave Highway No. 17/11 at a point 9 miles north of Port Arthur and proceed east along the Silver Harbour road for a distance of about 300 yards to a railway crossing. Silver Harbour station is 0.3 mile northeast of the crossing.

*Keshkabuon (Caribou) Island*. Numerous small veinlets of amethyst, quartz and calcite are exposed along the southern shore of the western part of the island. Keshkabuon Island is in Thunder Bay east of Amethyst Harbour.

*Silver Lake*. Amethyst is associated with white quartz, galena, sphalerite and pyrite in a vein exposed at intervals for about 150 feet along the shore of Silver Lake. The vein, about 1 foot wide, contains galena in cubes up to 2 inches along an edge. The occurrence is on the west side of a peninsula 1,000 feet east of the west end of Silver Lake.

Along the south shore of the lake, a number of pits expose galena-quartz-calcite stringers and veinlets which occupy a fault zone between Sibley sandstone and red tuff. The deposit was worked for argentiferous galena.

The west end of Silver Lake is serviced by a road which leaves Highway 17/11 3.8 miles south of Pearl.

*Loon Lake*. Deep violet amethyst occurs as crystal groupings at a locality a few miles north of Loon Lake. The largest cluster of crystals obtained from the deposit measured about 3 feet by 2 feet by 1½ feet; individual crystals measured 3 inches across. The colour grades from

violet at the tip of the crystal to pale lilac toward the base; jasper sometimes coats the crystals; when the coating is very thin the crystals take on an attractive reddish-purple or plum shade.

The deposit has been staked by Mr. Rudy Hartviksen of Port Arthur.

*Detroit-Algoma mine.* Amethyst is reported to occur in a vein composed of white quartz, calcite, barite, galena, sphalerite, chalcopyrite and pyrite. The vein occupies the faulted contact between granite and Sibley sediments.

The mine was worked for silver intermittently from 1906 to about 1927. It is near the northwestern end of Pike Lake, which lies about a mile north of Pearl.

*Enterprise mine.* Dumps of this former lead mine yield amethystine, colourless, smoky and black quartz, orange-red barite as radiating bladed crystals, galena as cubes up to ½ inch across, and chalcopyrite. The most unusual specimens found during a recent visit are those showing small, well-formed black quartz crystals in small vugs. Associated rocks are sediments of the Sibley series and granite.

The mine was worked for galena at intervals between 1870 and 1927. It is situated on the west side of the Canadian National railway, a few miles northeast of Pearl. Leave Highway No. 17/11 at a point 1.5 miles north of Pearl and proceed east 0.7 mile to the railway crossing. (The turn-off is marked by a signpost "69-13".) Proceed north along the railway for a distance of 300 yards to the old workings.

*Caribou mine.* Greenish-grey chalcedony, white finely crystalline quartz, coarsely crystalline amethyst, chalcopyrite and galena are reported from this old mine. The minerals occupied a vein at the faulted contact of granite and diabase.

The mine lies on mining claim TB6592 in lot 3, McTavish township, about 2 miles northeast of Ancliff station on the Canadian National Railways. It was worked between 1865 and 1891.

*Bain mine.* Amethyst, white quartz, calcite, barite, galena, sphalerite, chalcopyrite and pyrite have been reported from the dumps of the old Bain mine 1½ miles east of Ancliff station and a mile south of the

Caribou mine. Associated rocks are sediments of the Sibley series and diabase. This deposit was worked at about the same period as the Caribou mine.

*Reference:*

Tanton, T. L.: GSC, Mem. 167, 1930, pp. 151-174, 189-190, 193-194.

## Pectolite, Prehnite

Pectolite as sheaf-like aggregates of acicular crystals occurs with prehnite in veins cutting diabase rock at the quarry of McNamara Construction Company, Limited about 1 mile northeast of the Port Arthur city limits. Excellent specimens are reported to have been obtained from the quarry.

*Reference:*

Personal communication; E. G. Pye.

## Silver Harbour, Datolite, Danburite

Specimens of datolite and of danburite were obtained from a calcite vein cutting greenish-grey diabase at the Canadian Dredge and Dock Company quarry at Silver Harbour. The datolite is white, colourless, or tinted pale yellow to pale green and has a vitreous lustre. It is granular or massive, and displays a columnar structure near the walls of the vein. The danburite is pale yellowish-white, brittle, with a glassy lustre; it is distinguished from datolite by its greater hardness.

The quarry lies near the shore of Lake Superior and northeast from the east end of Mary Island. The locality is about 12 miles east of Port Arthur.

*Reference:*

Tanton, T. L.: Trans. Roy. Soc. Can., vol. 42, ser. 3, sec. 4, 1948, pp. 77-79.

## Loon Lake, Datolite

Compact, creamy-pink datolite was found in boulders in a conglomerate exposed in a railway cut along the Canadian Pacific railway 1 mile west of Loon station on the south side of Loon Lake.

*Reference:*
Parsons, A. L.: Ont. Bur. Mines, Ann. Rept., vol. 22, pt. 1, 1913, p. 130.

## Jasper

Oolitic jasper occurs as lenses in taconite in the bed of the McIntyre River in Port Arthur.

*Reference:*
Personal communication; E. G. Pye.

Jasper, exhibiting concentric structures, outcrops along the Silver Harbour road, and along the Canadian National railway just north of Green Point which is situated between Melancon and Goose points.
Beds of jasper, up to 1½ feet thick, occur along the Neebing River north of Arthur Street.

*Reference:*
Moorhouse, W. W.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 7, 1960, pp. 8, 32.

## Concretions

Concretions, similar to those in the Silver Mountain-Rabbit Mountain area, occur at the Hewitson quarry in the southern part of Port Arthur. The quarry is reached by a road which leads south from Highway No. 130 (Oliver Road) at a point 0.4 mile west of the bridge over the McIntyre River.
Other occurrences are on the east side of Thunder Bay, north of Sawyer Bay; in a rock-cut along the Canadian National railway near Pass Lake; and on the south shore of Keshkabuon Island. The largest concretions (up to 8 feet in diameter) were found on Keshkabuon Island.

*Reference:*
Tanton, T. L.: GSC, Mem. 167, 1930, pp. 40-42.

## 9. LAKE NIPIGON AREA

*(42 E Longlac; 42 L Nakina; 52 H Nipigon)*

### Pectolite, Prehnite

Pectolite and prehnite are associated with lens-shaped masses of white chalcedony in veins cutting diabase rocks in the Pijitawabik Bay area. Pectolite occurs as white fibrous radiating masses in veins up to 6 inches wide. Creamy yellow to bluish green prehnite in spherical crystal aggregates is found in veins with or without pectolite. The diabase containing these minerals is exposed along the shores of Pijitawabik Bay southward for several miles from a point 1 mile south of Sandy Bay. The rock forms cliffs which drop almost vertically into the bay, leaving few shoreline beaches; investigation of the area would have to be made by boat. Pijitawabik Bay is the long narrow bay which extends southward from the southwest corner of Lake Nipigon to Orient Bay.

Similar veins are reported from rock cuts along the Canadian National railway between Orient Bay and Fairloch station, and in a cut a few yards from Warneford station. In these veins, crystals of white analcite are associated with the pectolite and prehnite.

*References:*

Burrows, A. G.: Ont. Bur. Mines, Ann. Rept., vol. 26, 1917, p. 246.
Walker, T. L. and Parsons, A. L.: Univ. Toronto, Geol. Ser. No. 22, 1926, pp. 15-19.
Wilson, A. W. G.: GSC, Mem. 1, 1910, p. 102.

### Spodumene

Light green spodumene occurs with quartz and feldspar in dykes which intrude biotitic quartzite, quartz-biotite schist and granitic rocks in the vicinity of Orient Bay. When altered, the spodumene changes to a dark green or soft brown woody mass. Spodumene has been reported from the following properties: Nama Creek Mines Limited, located 4.5 miles by truck road east of Highway No. 11 at a point 12.3 miles south of Beardmore; Ontario Lithium (Conwest) and Dunvegan (New-



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kirk), near the west end of Georgia Lake; Lun-Echo Gold Mines Limited, at Pine Portage; Aumacho River Mines Limited, at the north tip of Blay Lake, about 4 miles southwest of Georgia Lake. Tourmaline and small grains of blue apatite occur with muscovite at the Aumacho River property.

*Reference:*
Mulligan, Robert: GSC, Paper 57-3, 1957, pp. 13-15.

Spodumene occurs as prismatic crystals in a pegmatite dyke exposed along the Gorge Creek road at a point 9 miles east of Highway No. 11. Well-formed crystals of staurolite occur in mica-schists which outcrop in the vicinity of the spodumene-bearing dyke.

*Reference:*
Personal communication; E. G. Pye.

The Gorge Creek road joins Highway No. 11 about 23 miles north of Nipigon.

## Agate

Agates have been reported from the beach at West Bay on the western shore of Lake Nipigon, directly west of Kelvin Island.

*Reference:*
Wilson, A. W. G.: GSC, Mem. 1, 1910, p. 102.

## Jasper

Jasper, containing seams of hematite, occurs with grey schist in a few localities to the south of Lake Nipigon. Exposures have been noted on the southwest side of Black Sturgeon Lake, and at occurrences to the east of Nonwatin Lake and to the west of Fraser Lake.

On the east side of Lake Nipigon, in the vicinity of Poplar Lodge, the iron formation consists of bright red jasper and specular hematite or magnetite bands cut by narrow veins of white quartz in a grey and green schist. Much of the area is covered with swamp and sand; known outcrops include those at mining locations: A.L. 414; at A.L. 413 and 412 (at the north end); A.L. 416; H.F. 1; H.F. 5; A.L. 402 to 408

(near the north bank of the Sturgeon River, 2 to 3 miles from its mouth); H.F. 10 to 13 (just west of Windigokan Lake); B.T.O. 1 (on the south shore of Still Lake); and H.F. 32, 35, 39 and 40 (at the northeast end of Watson Lake).

Bands of pure jasper, ½ inch to 50 feet in width, occur between bands of slate and greywacke in the iron formation of the Onaman ranges which lie to the north of Onaman Lake and are crossed by the Canadian National Railway 20 to 30 miles west of Nakina station. The two ranges extend nearly east and west, and are about 2 miles apart. The northern range extends from below Holliday Lake across the height of land and along Johnson Creek where it is cut by the railway. Outcrops are not continuous, but have been noted at the Maple Leaf, Height of Land, Winter Camp, and Miller claims. In the southern range, the most westerly outcrop lies along the south side of Castor Lake. Beginning 1 mile east of this exposure, the main portion of the range outcrops almost continuously for a distance of approximately 2 miles, the maximum width being 700 feet. Magnetite is associated with the jasper in both ranges.

Access to the occurrences in the vicinity of Poplar Lodge is by water from Lake Nipigon; access to the Onaman Lake occurrences is by water from the road which branches off in a northerly direction from the Geraldton-Nakina highway at a point approximately 5 miles southwest of Nakina.

*Reference:*

Lindeman, E. and Bolton, L. L.: Mines Br., Pub. No. 217, 1917, pp. 63, 65-70.

## 10. BLACK BAY-NIPIGON BAY AREA

*(42 SW Geraldton-White River; 52 SE Ignace-Fort William)*

### Edward Island

Native arsenic was obtained from a mine at the shoreline on the south end of the island, east of Horseshoe Cove. It occurred as reniform masses along the walls of veins composed of calcite, sphalerite, galena, chal-

copyrite, argentite and native silver. The vein cut grey granophyre. The deposit was worked prior to 1884.
Native copper (as tiny nuggets), zeolites, chlorite, agate and calcite fill amygdules in basic lava on the island, notably near the northern end.

*Reference:*
Tanton, T. L.: GSC, Mem. 167, 1930, pp. 186-187, 195.

## Porphyry Island

Pink laumontite occurs with chalcocite and chalcopyrite in a vein composed mainly of calcite along a fracture zone in basic lava on the east shore of the island, near its north end. The vein can be seen for a few feet on the shore and for about 100 yards under water.
Native copper, chlorite, agate, zeolites and calcite occur in amygdaloidal cavities in basic lava along the west shore of the island.

*Reference:*
Tanton, T. L.: GSC, Mem. 167, 1930, pp. 187-195.

## Black Bay Peninsula

Native copper, zeolites, calcite, agate and chlorite fill amygdules in basic lava along the peninsula east of Black Bay. Known localities are along the shore north of George Point and at Miles Bay.
The only known occurrence of agate "thunder eggs" on the Canadian side of Lake Superior is in the bay west of Agate Point.

*References:*
Tanton, T. L.: GSC, Mem. 167, 1930, p. 195
Waite, G. G.: Lapidary J., vol. 15, No. 4, 1961, p. 442.

## Jackfish River, Amethyst

Amethyst occurs with barite, coarse, white crystalline quartz and small amounts of galena, sphalerite, chalcopyrite, and pyrite in a vein composed mostly of calcite. The vein has been exposed by trenches on the east bank of the Jackfish River, 1½ miles above the Canadian Pacific railway bridge. It occupies a shatter zone in pegmatitic granite gneiss.

The occurrence is about 9 miles east of Nipigon. Highway No. 17 bridges the Jackfish River just south of the railway bridge.

*Reference:*
Tanton, T. L.: GSC, Mem. 167, 1930, p. 182.

## Rossport, Amethyst, Fluorite

Amethyst, fluorite, quartz and barite occur in seams and fracture planes in pink granite exposed in road-cuts along Highway No. 17 near Rossport. The amethyst grades from pale to medium-deep violet and is sometimes coated with jasper; it fills seams up to 1½ inches wide. The fluorite occurs as deep purple, well-formed cubic crystals measuring up to ½ inch across. Barite, as clusters of reddish-orange bladed crystals, is closely associated with the fluorite.

The road-cuts are on the west and east side of Rossport. One series extends westward for about 1½ miles from a point 6.8 miles west of the western turn-off to Rossport; the other road-cuts are on the north side of the highway just west of Billy Lake, about 9 miles east of Rossport.

## Islands in Nipigon Bay, Agate

The islands in Nipigon Bay furnish the main agate deposits in the western end of Lake Superior. They are accessible by boat from Rossport. A list of known localities follows:

*St. Ignace Island*—At Harrisons and St. Ignace locations on the shores of St. Ignace Bay, veins from a few inches to 5 feet in width are filled with calcite, laumontite and drusy crystalline quartz. Native silver and copper minerals were noted from veins in both locations, and quartz speckled with gold was reported from the St. Ignace location. A few pits have been sunk in the veins which strike east and west.

*Agate and Bowman Islands*—Agates have been collected from both islands.

*Simpson Island*—Agates are found along the south shore of the island except for a stretch between the eastern extremity and beyond Morn Harbour. Prehnite occurs ½ to ¾ of a mile west of McKay Cove, and zonochlorite geodes containing zeolites occur in a small cove farther to

the west. An opaque dark purple spotted agate was found at a small islet south of Simpson Island. Nodules filled with amethyst and smoky quartz occur on Simpson Island.

*Harry Island*—Small green agates occur in a small cove at the west end of the island which is situated south of Salter Island.

*Salter Island*—Zonochlorite is reported from a small beach to the west of the opening of Old Mans Pocket Harbour. The headland to the west produces green agates and pastel-shaded agates. Geodes measuring from 4 to 6 inches in diameter were observed in the water in some places.

*Wilson Island*—Agate and prehnite occur on the south shore of the island near its eastern end, and zonochlorite as small pieces is found at Greenstone Beach near the western end.

*Copper Island*—Grey to blue agates occur along the southern shore of the island.

*Reference:*

Waite, G. G.: Lapidary J., vol. 15, No. 4, 1961, pp. 434, 442, 446.

## Slate Islands, Jasper

Bright red jasper occurs as pebbles, up to 15 inches by 6 inches, in a green schist along the western shores of the largest of the Slate Islands group. A similar conglomerate is reported from the east shores of the same island. Small exposures of banded jasper are reported from the islands.

*Reference:*

Coleman, A. P.: Ont. Bur. Mines, Ann. Rept., 1902, pp. 137-138.

## Schreiber, Amethyst, Fluorite

Amethyst, barite and calcite occur in small veins cutting an iron formation along the shore of Lake Superior between Winston Point and Flint Bay, southwest of Schreiber. The iron formation is composed of banded silica and pyrite, chert, siderite and taconite.

Fluorite, specular hematite and chalcedony occur in quartz veins at mileage 111.6 on the Canadian Pacific railway, 7 miles east of Schreiber. The veins cut granite.

*Reference:*
Hopkins, P. E.: Ont. Dept. Mines, Ann. Rept., vol. 30, pt. 4, 1921, pp. 7, 9.

## 11. MARATHON AREA

*(42 SW Geraldton-White River)*

### Nepheline Syenite

A nepheline syenite rock characterized by a mottled effect due to a deep orange decomposition product (hydronephelite) of the nepheline occurs in the Marathon area. The orange hydronepheline, in patches up to half an inch across, is disseminated throughout the greyish-white rock. Long, lath-shaped, black crystals of hornblende are a minor constituent of the rock. The contrast between the bright orange hydronepheline and the light coloured matrix, produces a very striking appearance; when polished, the rock would make an attractive ornamental stone. The rock is associated with a red hornblende syenite. It can easily be recognized by a pitted appearance on the weathered surface.

The nepheline syenite is exposed in road-cuts along Highway No. 17 in the stretch between the Heron Bay turn-off and a point just west of the bridge over the Little Pic River (about 20 miles west of Marathon); it is most abundant in the vicinity of the turn-off to Coldwell. The rock occurs extensively in the Port Coldwell area; it surrounds Coldwell Harbour and extends eastward as far as Red Sucker Bay. Outcrops have been reported from the shoreline on the east and south sides of Coldwell Peninsula; the northeast coast of Big Pic Island; the shore of Big Pic Island westward from South Bay; Little Pic Island.

*Reference:*
Kerr, H. L.: Ont. Bur. Mines, Ann. Rept., vol. 19, pt. 1, 1910, pp. 109-211.

### Laurvikite

Laurvikite, a dark augite syenite is associated with red hornblende syenite in the vicinity of Marathon. Its colour is dark grey to black or dark greenish brown; the polished surface is bright lustrous black and



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exhibits a dark bluish schiller due to the feldspar laths. It is suitable for use as a decorative or ornamental stone. Except for a finer grain size, it closely resembles the famous Norwegian laurvikite.

In road-cuts it is readily recognized by its greenish tinge, by the bright lustre of the well-developed feldspar cleavage surfaces on the freshly broken rock, and by a dull, somewhat greasy appearance on the weathered surface.

Along Highway No. 17 it may be found at the following localities: in road-cuts between a point about 1 mile west of the bridge over the Little Pic River to a cut just east of the bridge; in a cut 0.7 mile west of the turn-off to Coldwell; in a series of road-cuts from 2.2 to 3.7 miles west of the turn-off to Marathon; in a series of cuts extending eastward from 200 yards east of the Marathon turn-off to about a mile from the turn-off.

Other occurrences are along the shore of Lake Superior between Coldwell and the Little Pic River and along the Canadian Pacific railway between these points; in the small islands in the vicinity of Johnson's Harbour; in the three small islands northeast of Big Pic Island; and in the vicinity of Peninsula Harbour. It has been quarried 400 yards west of Peninsula station on the Canadian Pacific railway, and west of this on the shoreline of Peninsula Harbour. The rock was used in the construction of the railway bridges over the Pic and Little Pic rivers. Blocks of the rock were obtained from a locality on the east side of the Canadian Pacific railway ¾ mile north of Angler station.

*Reference:*

Kerr, H. L.: Ont. Bur. Mines, Ann. Rept., vol. 19, pt. 1, 1910, pp. 214-218, 231-232.

## Hornblende Syenite

Red hornblende syenite is associated with the nepheline syenite and laurvikite in this area. The syenite is particularly coarse in road-cuts along Highway No. 17 at points 1.0 and 1.3 miles west of the bridge over the Little Pic River which is about 19 miles west of Marathon. The hornblende crystals are jet black with a high lustre on the fresh surfaces; they measure up to 1½ inches across and 5 inches long.

## 12. WHITE RIVER AREA

*(42 SW Geraldton-White River)*

### Epidote

Epidote forms coatings up to ½ inch thick along joint planes in granitic rocks exposed in road-cuts along Highway No. 17 at the following localities: in a series of cuts extending from ¾ mile west to 2 miles east of the junction of Highway No. 614; in cuts just east of the entrance to White Lake Provincial Park, about 23 miles west of White River village; in nearly all the road-cuts beginning just south of the turn-off to White River village and extending south for a distance of about 30 miles.

The epidote is often fresh-looking and can be obtained in specimens sufficiently thick to be cut.

## 13. MICHIPICOTEN AREA

*(41 NW Michipicoten-Sault Ste Marie)*

### Michipicoten Island, Agate

Michipicoten Island provides some of the most interesting collecting sites for agate in the Lake Superior area. The beaches along the shoreline of Agate Islet in the mouth of Quebec Harbour contain nodules of agate and carnelian in various sizes. One carnelian nodule from this locality measured 10 by 4 by 3 inches. Some of the nodules due to their peculiar carrot-like shape are popularly referred to as "spike amygdules": many consist of banded agate; others contain quartz, amethyst, green or red moss agate, or pink thomsonite. Large boulders of brilliant-coloured agates occur along the shoreline of Schafer Bay in the west end of Michipicoten Island. Other agates are found in the beaches along Channel Lake and in various places in the vicinity of Quebec Harbour. Jasper interbanded with white or greyish chalcedony occurs along the western and eastern shores of the island.



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The amygdaloidal lavas making up the headlands to the east of Cozens Harbour carry seams of chalcedony measuring from ⅛ to 1 inch in width; including pure white, bluish-coloured, red, green and banded agate, and bright red carnelian. Much-weathered chlorastrolite occurs in an outcrop on the shoreline in the vicinity of the old Quebec mine.

*Reference:*

Waite, G. G.: Lapidary J., vol. XV, No. 4, 1961, pp. 438-442, 451.

### Josephine Mine

Jasper occurs with chert, hematite and siderite at the Josephine iron mine (Michipicoten Iron Mines, Limited) which is located in mining claim Y451 and Y452 near the southeastern shore of Parks Lake, about 4 miles east-northeast of Hawk Junction. Boulders of the jasper-bearing rock may be found along the shores of the lake.

*Reference:*

Lindeman, E. and Bolton, L. L.: Mines Br., Pub. No. 217, vol. 2, 1917, p. 80.

### Chalcedony, Agate

Chalcedony-bearing amygdaloidal lavas occur along the shores of Lake Superior at Gargantua Harbour and in the islands nearby. Agates are reported to occur in cavities in the basalt, and as pebbles along the shore of the lake.

*Reference:*

Coleman, A. P.: Ont. Bur. Mines, Ann. Rept., vol. 8, pt. 2, 1899, p. 132.

## 14. AGAWA BAY AREA

*(41 NW Michipicoten-Sault Ste Marie)*

### Epidote

Epidote occurs as coatings up to ½ inch thick along joint planes, in granite which is exposed in road-cuts along Highway No. 17 just north of the entrance to Coldwater River picnic grounds, about 40 miles south of Wawa.

Pebbles and small boulders composed of epidote with translucent quartz and/or orange-red feldspar are found along the beaches of Lake Superior at the following localities: in the vicinity of the picnic grounds in Coldwater River park; in the bed of the Agawa River where it joins the lake; at the Agawa Bay picnic site; along the shore of the lake, just south of the bridge over the Montreal River. The pebbles are attractive in colour and pattern and are suitable for polishing.

## 15. MAMAINSE-BATCHAWANA AREA

*(41 NW Michipicoten-Sault Ste Marie)*

### Epidote

Epidote pebbles similar to those occurring in the Agawa Bay area have been found along the shore of Mica Bay, 65 miles north of Sault Ste Marie.

### Laumontite, Chlorite, Chalcedony

Pink laumontite, chlorite, red hematite, red jasper, calcite, chalcedony (some banded), epidote, prehnite and native copper occur in cavities in amygdaloidal basalt along the shores of Lake Superior in the vicinity of Point Mamainse and along Highway No. 17 where it passes that area. The rock is exposed in road-cuts for about 13 miles from just south of Mica Bay to about 2 miles north of the entrance to Pancake Bay Provincial Park.

The amygdules range up to ¾ inch across but most are smaller. The laumontite is intimately associated with chalcedony which gives the mixture a hardness approaching that of quartz. The material, if found in large enough patches, would be suitable for cutting.

*References:*

Coleman, A. P.: Ont. Bur. Mines, Ann. Rept., vol. 8, pt. 2, 1899, p. 132.
Hoffman, G. C.: GSC, Ann. Rept. (New Ser.), vol. 4, 1888-89, p. 32T.
Lane, A. C.: Mines Br., Pub. No. 111, 1911, pp. 13-15.
Waite, G. G.: Lapidary J., vol. 15, No. 4, 1961, pp. 438-450.

### Batchawana (Batchawaning) Mine

Jasper occurs with specular hematite at the old Batchawana iron mine which lies 3 miles directly north of the mouth of the Carp River on Batchawana Bay. A 3-mile trail leads north from highway No. 17 at the junction of Highway No. 563.

*References:*

Lindeman, E. and Bolton, B. L.: Mines Br., Pub. No. 217, vol. 2, 1917, p. 80.

Moore, E. S.: Ont. Dept. Mines, Ann. Rept., vol. 35, pt. 2, 1926, p. 77.

## 16. SAULT STE MARIE - BRUCE MINES AREA

*(41 K/8 E Lake George; 41 K/9 E, W Sault Ste Marie; 41 J/12 W Echo Lake; 41 J/5 W Bruce Mines)*

### Jardun Mine

Well-formed crystals of chalcopyrite occur as growths on calcite crystals at the property of Jardun Mines Limited, north of Sault Ste Marie. The deposit consists of galena, sphalerite, pyrite and chalcopyrite disseminated through chlorite schist. The sulphides are associated with calcite and specularite in quartz veins cutting the schist.

The mine was first worked in 1875. It lies immediately north of Sandy Lake near the boundary of Jarvis and Duncan townships, access by a 10-mile road leading north from Highway No. 17 at Garden River village.

*References:*

Personal communication: D. D. Hogarth.

Alcock, F. J.: GSC, Econ. Geol. Ser., No. 8, 1930, pp. 183-184.

## Jasper Conglomerate

Jasper conglomerate is associated with quartzite rocks of the Huronian series which occur extensively in the area north of Lake Huron. The rock is composed of a creamy-white matrix containing pebbles of variously-coloured jasper (red, yellow, green or black) and of smoky- or other-coloured chalcedony. It takes an excellent polish and makes a very handsome ornamental stone. The cornerstone in the Geological Survey of Canada building in Ottawa is of this rock.

The rock outcrops along Lake Superior (north of Goulais Bay), on the eastern shores of Lake George, and along the north shores of Trout Lake. Large boulders of the rock occur along the shores of lakes and rivers in the area. Notable occurrences are: along the shores of Lake Superior, north of Goulais Bay; in the St. Mary's River, about 4 miles west of Campment d'Ours; along the shores of Lake Huron, in the vicinity of Bruce Mines.

The most accessible occurrences are along Highway No. 17 in the vicinity of Bruce Mines village. Jasper conglomerate occurs as boulders and broken blocks along the highway, and in road-cuts. Occurrences have been noted at points 0.2 mile west and 0.6 mile east of the junction with Highway No. 548; along a hillside on the north side of the highway near the tennis court in Bruce Mines village; in boulders at the east end of Bruce Mines village; in blocks of broken rock at a point 2.6 miles east of the junction with Highway No. 561.

The conglomerate is quarried a few miles north of the east end of Echo Lake. It is associated with a pea-green quartzite used as ornamental material by local lapidarists. Access is by a 12-mile, very rough road north from Highway No. 17 at Echo Bay village.

*References:*

Personal communication: M. J. Frarey.

Coleman, A. P.: Ont. Bur. Mines, Ann. Rept., vol. 8, pt. 2, 1899, p. 124.

Coste, E.: GSC, Ann. Rept. (New Ser.), vol. 3, 1887, p. 72S.

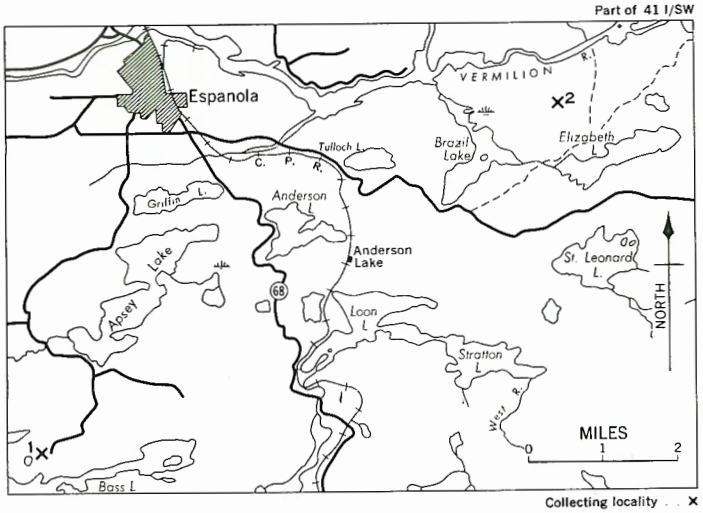
Johnston, R. A. A.: GSC, Mem. 74, 1915, p. 137.

## 17. ESPANOLA AREA

*(41 I/4 E, W Whitefish Falls; 41 I/5 W Espanola)*

### Magnetite

An unusual form of magnetite occurs near the north shore of Bass Lake, 4 miles south of Espanola. The magnetite forms botryoidal and mammillary masses consisting of radiating columns which sometimes extend across the vein, or branch into radiating groups of columns. Some of the columns exhibit feather-like structure. On the fresh surface, the magnetite is bluish black with a high, glistening lustre. It is associated with veinlets of calcite and serpentine; the latter may be fibrous or of the porcelaneous variety. The magnetite vein is about 6 inches wide; it cuts peridotite rock near the peridotite-granite contact.




ESPANOLA AREA: 1. Magnetite; 2. Cobaltite.

The deposit is exposed by a pit on a small ridge in an area formerly prospected for nickel. The pit is about 50 yards west of the road; there are a couple of old shacks to the south and east of the pits. The property belongs to Mr. Jack Owen of Espanola.

References:
Moore, E. S.: Econ. Geol., vol. 27, 1932, pp. 387-390.
Phemister, T. C.: Ont. Dept. Mines, Ann. Rept., vol. 48, pt. 10, 1939, p. 28.

### Cobaltite

Cubic and pyritohedral crystals up to 1 inch across have been obtained from a pit north of Elizabeth Lake about 5 miles east of Espanola. The cobaltite occurs in a matrix composed largely of dolomite.
To reach the occurrence leave Highway No. 68 at the south end of Espanola and proceed east along the Penage (Panache) Lake road for a distance of about 5 miles; turn left (north) and follow the Elizabeth Lake road for 1¼ miles to a camp near the west end of the lake. Walk north along a bull-dozed road to a tunnel (about 1 mile); the pit is on a rise of land just beyond the tunnel.

## 18. SUDBURY AREA

*(41 I/SE Sudbury; 41 I/NE Capreol)*

### Wanapitei, Kyanite, Garnet

Kyanite as blue, green and grey bladed and prismatic crystals measuring up to 4 inches long and from $\frac{1}{16}$ to $\frac{1}{2}$ inch wide are associated with fibrous sillimanite and pink to mauve-red garnet in a gneiss which extends northeastward from lot 9, concession III to lot 3, concession IV, Dryden township. The claims are held by the Hoyle Mining Company, Limited. In some places attractive specimens consisting of blue kyanite blades in white quartz can be found, but these are more difficult to separate from the rock.

Exposures of kyanite in gneiss and of kyanite in quartz veins have been observed at the following localities: in a railway-cut, ½ mile east of Wanapitei station; in a trench located 100 yards north of the Canadian Pacific railway 2½ miles east of Wanapitei; in outcrops 100 yards south of Highway No. 17, 2½ miles east of Wanapitei, and in another band of outcrops 100 yards north of the Canadian Pacific railway 2¾ miles east of Wanapitei.

*Reference:*
Hewitt, D. F.: Ont. Dept. Mines, Indust. Min. Circ., No. 4, 1952, pp. 4-5.

Large pink garnet crystals occur in the quartz-biotite gneisses to the east and south of the kyanite occurrences. Nearly perfect dodecahedral crystals up to 1½ inches in diameter are reported from the MacDonald property in the west half of lot 12, concession I, Loughrin township, about 3 miles north of Markstay. Garnet crystals measure up to 5 inches across at another deposit, known as the Page deposit, 5½ miles north of Markstay, in the north half of lot 14, concession III, Loughrin township. Garnets up to 2 inches across are found in a biotite schist exposed in railway-cuttings on the east bank of the Wanapitei River, 1½ miles north of St. Cloud station. Outcrops can be traced from the river northeastward for several hundred yards. This occurrence is referred to as the Coulis deposit.

*References:*
Eardley-Wilmot, V. L.: Mines Br., Pub. No. 677, 1927, p. 18.
Ross, J. S.: Mines Br., Rept. IR59-65, 1959, pp. 2-3.

## 19. FRENCH RIVER AREA

*(41 H/NE Byng Inlet; 41 I/SE Sudbury)*

### French River, Cancrinite, Sodalite

Nepheline syenites in the French River area carry a variety of minerals. Cancrinite occurs as pure orange to lemon-yellow masses up to 4 inches across in rock cavities, especially along the south shore of French River.

Sodalite occurs in these rocks, but it is not plentiful as in the Bancroft nepheline syenites. Other associated minerals include zircon in brownish red crystals, aegirine-augite in radiating tufts of fibrous yellow-green crystals, also garnet, hastingsite, titanite, apatite, corundum, hydronephelite and graphite.

Some of the best exposures of the nepheline syenite are along the shores of French River about 4 miles below French River station, extending west for almost ½ mile. Small grey corundum crystals and graphite flakes were noted in a syenite pegmatite exposed by a test pit on the north side of the road leading west from Ham Lake in lot 10, concession XI, Bigwood township, about 1 mile from the southern tip of Ham Lake. Directly south on the opposite side of the road, red garnets up to 2 inches in size were observed in the syenite pegmatite. Thin veins of blue sodalite occur in the pegmatite on the south shore of French River, about 500 feet west of the eastern boundary of lot 10, concession I, Bigwood township. This occurrence is approximately 2 miles east of the eastern end of Potvin Island.

*References:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, pp. 174-177.

Pegrum, R. H.: Ph. D. Thesis, Dept. Geol., Princeton Univ., 1927, p. 90.

Walker, T. L. and Parsons, A. L.: Univ. Toronto, Geol. Ser., No. 22, 1926, pp. 5-14.

## Quartzite

Glassy white and translucent, it occurs in large masses, sometimes comprising entire ridges, in the French River area. The quartzite is reported to be very pure and attractive, and has been suggested for use as a monumental stone. Its potential as an ornamental material for bookends, lamps, paper weights could be investigated. Exposures are found in the band which extends in a northeast-southwest direction across the Wanapitei River near Waterfall station on the Canadian National Railways; in another band 100 feet wide extending southward from Kakekiwaganda Lake for about 7 miles along the Canadian National railway;

in a narrow band extending north along the Murdock River for 13 miles from the Pickerel River with outcrops mainly on the west side of the river; along the Rutter-Murdock River road at a point 1 mile east of Rutter; in high ridges which extend from 4 miles east of Rutter to the boundary of Bigwood and Mason townships; and at a quarry near the railway at Quartz station.

*Reference:*
Quirke, T. T.: GSC, Sum. Rept., 1924, pt. C, pp. 90-92.

## Caribou Lake, Peristerite

Peristerite occurs in a feldspar pit less than one mile north of the northwestern end of Caribou Lake in lot 16, concession V, McConkey township. The pit lies just south of a small pond. The peristerite has an attractive bluish sheen and is being effectively used by local lapidarists for jewelry.

Take the road from Loring to the eastern end of Caribou Lake. Proceed by boat across the lake to a tourist camp on the north shore of the lake; walk northwest about two hundred yards to the pit.

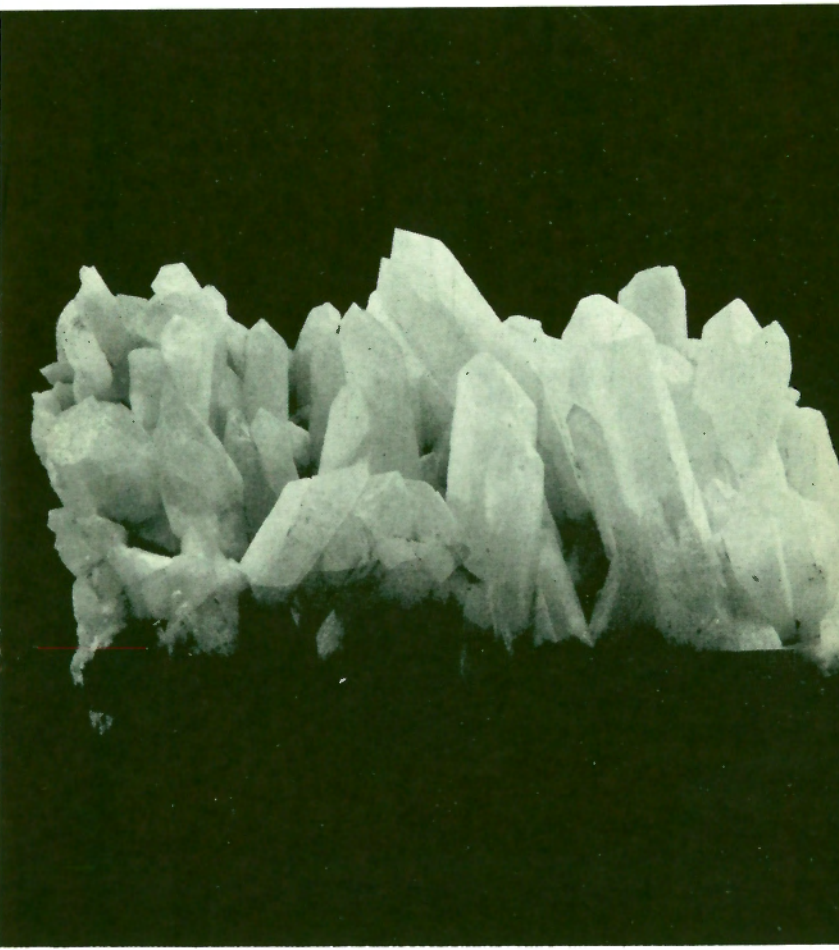
*Reference:*
Personal communication: Beecher B. Woods.

## Sunstone

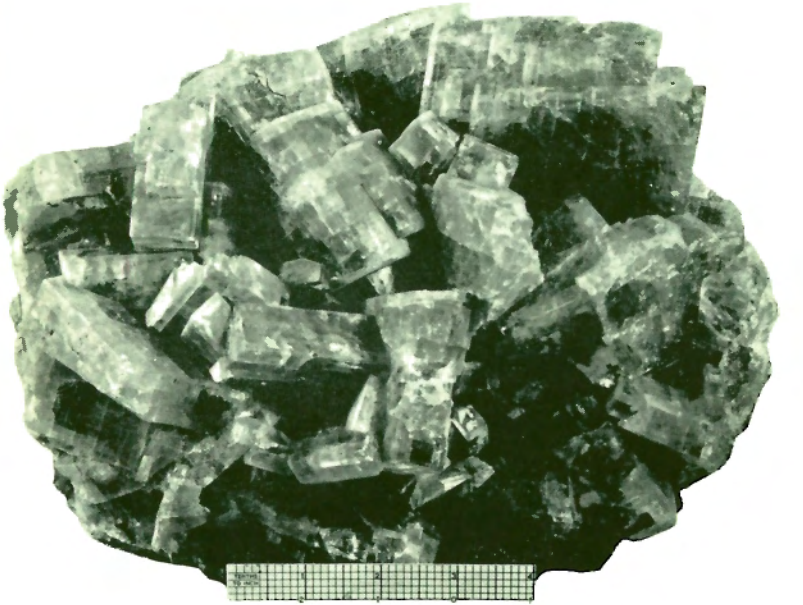
The sunstone is a flesh red feldspar characterized by golden reflections; when polished it makes a very appealing stone. It occurs in a large granite vein in gneiss on the northeast shore of Lake Huron, 20 miles east of the French River.

*Reference:*
Parks, Wm. A.: Mines Br., Pub. No. 100, 1912, p. 341.

Other minerals which occur in the area are beryl, garnet and selenite. Scattered small blue-green beryl crystals were noted in a pegmatite with brown garnet, cyrtolite (zircon) and hornblende (altered) crystals, thucolite, uraninite, and allanite at the Bessner mine located about 2 miles east of the Britt cut-off from Highway No. 69. It is accessible by

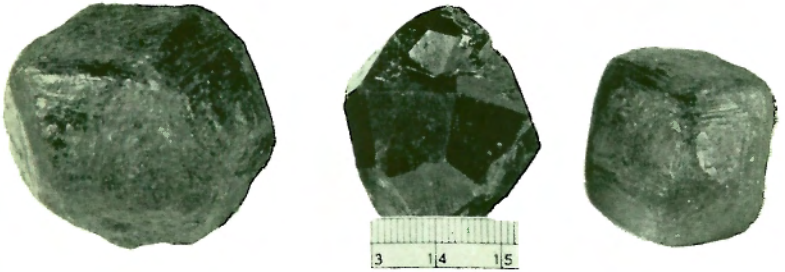


Quartz crystals from the Black Rapids mine, Lyndhurst, locality 41, Ontario.



Tabular barite crystals from the Bailey mine, Madoc, locality 36, Ontario.

Pyrite-coated fluorite cubes on jasper-coated amethyst crystals, Mackenzie River, Thunder Bay, locality 8, Ontario.




Garnet crystals from River Valley, locality 20, Ontario.

a farm lane passing easterly from the highway through fields in lot 5, concession B, Henvey township. Pink and purplish garnets are found in the contact zone between diorite and granite which outcrops along the Canadian National railway between Hartley Bay and Pickerel River, and in the sands at Collins Inlet, to the east of Killarney. Selenite crystals were found in an outcrop of grey and white massive gypsum along the east branch of the French River, 6 miles above its mouth.

*References:*

Cole, L. Heber: Mines Br., Pub. No. 714, 1930, pt. 45.
Rose, E. R.: GSC, Paper 59-10, 1960, pp. 19-20.
Quirke, T. T.: GSC, Sum. Rept., 1924, pt. C, pp. 93-94.

## 20. RIVER VALLEY

*(41 I/9 E Glen Afton)*

### River Valley Garnet Mine and 'Black Granite' Quarry

Pink to purplish red garnet occurs in biotite schist and gneiss at the Industrial Garnet Company, Limited property in Dana township (claims S45216 and S45217, S45218). A few garnet crystals found here measured up to 7 inches across, but most are smaller. Many of the crystals, especially the smaller ones, have sharp well-developed faces. Often the garnets are completely enclosed in the biotite.

The property has been exposed by several pits along the side of a ridge. It belongs to the Industrial Garnet Company, Limited.

*References:*

Ross, J. S.: Mines Br., Rept. IR 59-65, 1959, p. 4.

An anorthosite rock suitable for some ornamental purposes is quarried a short distance from the garnet occurrence. The rock is black and takes a good polish. It is commonly referred to as "Black Granite". The property, which belongs to the Industrial Garnet Company, Limited, is situated near the garnet mine.

The properties are reached by proceeding northward along the road which parallels the Canadian National railway for nearly 1 mile from the bridge over the Timagami River at River Valley. From here a 2½ mile road branches off in a northeasterly direction to the anorthosite quarry. A 4-mile trail leading northward to the garnet occurrence leaves the quarry road at a point approximately 1 mile from its junction with the main road from River Valley.

## 21. MATTAWA AREA

*(31 L/SE Mattawa; 31 L/NW Tomiko)*

### Beryl

Kyanite, vesuvianite, tourmaline and garnet are among the minerals occurring in the vicinity of Mattawa. Beryl occurs sparingly with black tourmaline and red garnet in a pegmatite dyke in lot 13, concession IV, Calvin township. The beryl crystals found here were of the yellow variety, ranging from a honey yellow to yellow-green. The largest crystal is reported to measure 4 inches across and 7 inches long. The deposit is exposed by several pits and trenches.

The property lies 50 feet south of the Calvin-Galston road at a point approximately 1¼ miles west of Calvin. The Calvin-Galston road leaves Highway No. 17 at a point 3 miles west of Mattawa.

*References:*

Ellsworth, H. V. E.: GSC, Econ. Geol. Ser., No. 11, 1932, pp. 188-189.
Mulligan, R.: GSC, Paper 60-21, 1960, pp. 24-25.

### Purdy Mica Mine

Very large and clear muscovite crystals were recovered from the Purdy mine. One crystal measured 7 by 9½ by 3 feet; it yielded 7 tons of trimmed mica. The mica at this deposit is associated with epidote, allanite, chlorite, garnet, tourmaline, pyrite, euxenite, uraninite, beryl,

monazite and allanite in pegmatite dykes. The chief constituents of the pegmatites are quartz, potash feldspar, albite, muscovite and biotite. The deposit was worked from 1941 to 1953; during this time it was the largest mica mine in Canada. It is 1 mile from the Mattawa River and 2 miles north of Eau Clair village. It is reached by a 2½ mile road which leads north from Highway No. 17 at a point approximately 9½ miles west of Mattawa.

*Reference:*

Hewitt, D. F.: Geol. Can. Indust. Min. Dep., 1957, pp. 181-185.

## Crocan Lake, Kyanite

Kyanite occurs with garnet in a band of mica-quartz-feldspar gneiss which extends from southwest to northeast on either side and beyond the extremities of Crocan Lake, in Butler and Antoine townships. The kyanite is in blue to grey and green flat-bladed crystals ½ to 3 inches long and ⅛ to ⅜ inch wide, and the garnet crystals are pinkish-mauve up to ½ inch across. The kyanite-bearing gneiss outcrops along the east shore of Crocan Lake and for ¾ of a mile along strike ridges running northeast of the lake; along the lumber road from Timber Creek to Crocan Lake; and in a clearing at the northeastern end of the lake. Ink-blue crystals of kyanite are found in a pit on claim S58023 just northeast of the lumber road, and green kyanite is reported from the exposures (stripping and trenches) at the northeastern end of Crocan Lake. Massive, medium-grained blue to blue-grey kyanite lenses are associated with green mica and sulphides (pyrite, pyrrhotite, bornite) in quartzite gneiss and amphibolite rocks in a showing on a point on the west shore of the lake. A pegmatite containing dark green to brown vesuvianite crystals up to ½ inch across, blue-green blades of kyanite up to 2 inches long, yellow-brown slender tourmaline crystals up to 1 inch long, and smoky and clear quartz outcrops in an island at the southwest end of Crocan Lake. A similar outcrop is located northeast of the northeastern end of the lake.

The main deposit on the northeastern end of Crocan Lake is reached by a 22-mile motor road from Mattawa, to the southeast. The property is held by the Kyanite Corporation of Canada, Limited, and is situated 2 miles west of Ottawa River and 8 miles east of Highway No. 63.

*References:*

Hewitt, D. F.: Ont. Dept. Mines, Indust. Min. Circ., No. 4, 1952, pp. 3-4.
Pearson, W. J.: Ph. D. Thesis, Dept. Geol., Queen's Univ., 1959, pp. 153, 160.

## Rutherglen, Pyroaurite, Brucite

The rare mineral pyroaurite occurs in brucitic limestone which outcrops on both sides of Highway No. 17 at a point ¼ mile east of the bridge over Pimisi Bay which is situated 3 miles east of Rutherglen. The main outcrops extend in a northwesterly direction from a point on the highway 400 feet east of its junction with the saw-mill road to Pimisi Bay, a distance of about 1,000 feet. The exposure on the south side of the highway is 400 feet west of the main outcrops. The limestone band has been further exposed by a number of pits and trenches.

The limestone is composed of white calcite and dolomite in which small (up to 4 mm in diameter) granules of brucite are disseminated. The brucite is semi-translucent, white, cream, grey or brown and is characterized by a whorled structure. Magnetite, hematite, small rounded grains of serpentine and tiny graphite flakes occur as impurities. The pyroaurite is in small green tabular crystals. It is found in the magnetite-rich dolomite near the contact with gneissic rock. No brucite was seen in the particular area where pyroaurite occurs. Pale blue coarse-grained calcite, siliceous pale green dolomite, and a rock composed of mainly quartz crystals is associated with the dolomite in the outcrop on the south side of the highway.

*References:*

Goudge, M. F.: Mines Br., Pub. No. 781, 1938, pp. 130-132.
Mines Br., Mem. Ser. 75, 1939, pp. 11-14.

## 22. TIMAGAMI LAKE AREA

*(41 P/SE Maple Mountain; 31 M/SW Haileybury)*

### Jasper

Iron formations consisting of siliceous magnetite interbanded with variously coloured jasper and chert lie adjacent to the northeast arm of Timagami Lake in the three ranges: the Northeast Arm range, the Vermilion range, and the Ko-Ko-Ko range. The Northeast Arm range lies north of the northeast arm of Timagami Lake extending from a point $\frac{1}{10}$ of a mile west of the north end of Crooked (Snake Island) Lake through Turtle Lake to a swamp about 300 yards from Tetapaga Creek for a total distance of almost $5\frac{1}{4}$ miles. The width varies from 200 to 500 feet. The Vermilion range is located 1 mile north of the west half of the Northeast Arm range extending in a southwesterly direction from a little to the east of Vermilion Lake to about 3 miles to the west of Iron Lake. The widest portion, which measures over 1,000 feet, is just south of Iron Lake. The Ko-Ko-Ko range extends easterly for a distance of $1\frac{3}{4}$ miles from Ko-Ko-Ko Lake to within 3 miles of the western end of the Vermilion range. The jasper in the Ko-Ko-Ko range is famous for its brilliant colours. Exploration work has been done in all three ranges.

*Reference:*

Lindeman, E. and Bolton, L. L.: Mines Br., Pub. No. 217, vol. 2, 1917, pp. 106-107.

## 23. SHINING TREE AREA

*(41 P/NW Gogama)*

### Jasper

Red jasper occurs in an iron formation which extends for a distance of approximately 2,800 feet across mining locations W.D. 480, 481, 482 and 483 at Bigfour Lake, about 7 miles northwest of Shining

Tree Lake. The formation consists of variously coloured cherts, granular siliceous rocks, hematite, pyrite, and magnetite with jasper. A similar formation lies along mile 62 and mile 63 of the Sudbury-Timiskaming district line (mining locations W.D. 475 to 478), about 2 miles north of Shining Tree Lake. To the northwest of the district line, the formation extends for 1 mile with maximum width of 100 yards. The jasper found in this part of the range is not the bright red variety. To the southwest of the district line, the formation outcrops at intervals for a distance of 3½ miles. Here the jasper is the chief constituent of the iron range, and is often bright red in colour; in places it is interbanded with a purplish magnetite.

The Shining Tree Lake area is about 75 miles north of Sudbury; it is serviced by Highway No. 560.

*Reference:*

Lindeman, E. and Bolton, L. L.: Mines Br., Pub. No. 217, 1917, pp. 94-95.

## 24. MATACHEWAN AREA

*(42 A/SE Kirkland Lake; 41 P/NE Elk Lake)*

### Matachewan, Porphyry

A beautiful porphyry occurs north of Rahn Lake in Bannockburn township. The porphyry is composed of white to pinkish white feldspar crystals in a dark greyish black fine-grained matrix. The crystals vary in size, ranging up to 1½ inches long. Some have very sharp angular outlines, others are somewhat rounded. The contrast between the feldspar crystals and the matrix produces a most striking stone when polished. The polished rock has been effectively utilized for ornamental objects such as door-stops, book-ends, paper weights, etc. The material is known locally as the "Matachewan Porphyry".

The rock is exposed at the side of a mound a short distance north of Rahn Lake about 19 miles west of Matachewan village. Some blasting has been done on the deposit. To reach it, leave Highway

No. 566 at a point 17 miles west of Matachewan, and follow the lumber road leading south toward Rahn Lake. About 2 miles from the turn-off a trail branches off in a northeasterly direction and leads directly to the occurrence (about 200 yards from the lumber road).

*Reference:*

Personal communication: C. H. R. Gauthier.

## 25. PARRY SOUND AREA

*(31 E/NW Sundridge; 41 H/SE Parry Sound)*

### Depot Harbour, Garnet

Pale red garnets up to 2 inches in diameter occur in hornblende gneiss and mica schist on the north side of Parry Island, about ¾ mile southwest of Depot Harbour. The occurrence is outside the Indian reserve. The garnets in the schist are generally larger and of a deeper colour than the ones in the gneiss. The garnet-bearing rocks are in bands striking east and west, with outcrops near the shore and extending for about 200 yards inland. Some surface exploration work was done on the deposit. Blue and green kyanite crystals are associated with the garnet in a pegmatite 100 yards to the west of the creek which empties into the small bay. These occurrences are accessible by road from Depot Harbour.

*Reference:*

Eardley-Wilmot, V. L.: Mines Br., Pub. No. 677, 1927, pp. 15-17.

Deep, rich red garnets occur as small pebbles along the beach in the vicinity of the deposits described above. The garnets are clear and can be found in fragments large enough to furnish tumbling material.

*Reference:*

Personal communication: J. A. Cadieux.

### Cecebe Lake, Garnet

Garnet-bearing gneiss is exposed by stripping on lot 9, concession XII, Ryerson township, near the village of Cecebe.

The garnets measure up to 1 inch across, and in places average ½ inch across. The occurrence is near Cecebe Lake, about 30 miles northeast of Parry Sound. Proceed southeast from Cecebe along Highway No. 520 for a distance of 2¾ miles, then branch off onto a concession road leading northeast. Follow this road for about ¾ mile. The exposure is on the south side of the road.

*Reference:*

Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 51, pt. 2, 1942, p. 62.

## 26. MINDEN-NORLAND AREA

*(31 D/10 W Fenelon Falls; 31 D/15 W Minden)*

### Wilsonite

Reddish-purple wilsonite is associated with actinolite-scapolite rock which occurs as boulders and pebbles in a creek southwest of Minden. The wilsonite has a good colour and makes a most appealing gemstone. Proceed southwest from Minden on the road which runs along the north side of Gull River to the bridge over the creek which joins Bob Lake and Little Bob Lake. The distance from Minden to this bridge is approximately 5 miles. The boulders are found in the creek on the north side of the bridge and for a short distance north.

*Reference:*

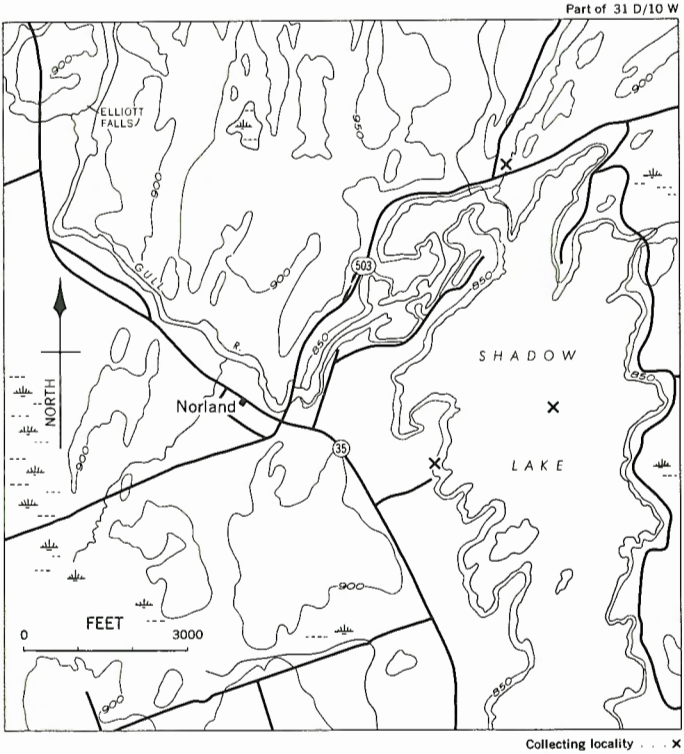
Personal communication: D. D. Hogarth.

### Paxton Iron Mine

Creamy white scapolite crystals, black garnet, magnetite, quartz, feldspar, calcite, hornblende, and diopside occur in pegmatite at the Paxton iron mine near Gull Lake. The deposit is exposed in two small pits located ½ mile north of the rough road between Kinmount

and Miners Bay. A trail leads north to the mine from a sharp southwesterly bend in the road about ½ mile east of the junction of Highway No. 35 and the Miners Bay-Kinmount road.

*Reference:*
Rose, E. R.: GSC, Bull. 45, 1958, p. 46.




MINDEN–NORLAND AREA: Scapolite and pyroxene (3).

### Mud Turtle Lake, Scapolite, Pyroxene

Green scapolite and green cleavable pyroxene, sometimes in radiating form, occur with molybdenite and pyrite in former molybdenum mines near the west and north shores of Mud Turtle (Shadow) Lake. Two adjoining mines, the Horscroft and the Ponton-Russell, are respectively adjacent to and on the west shore of the lake (lot 5, concession VI, Laxton Township, Victoria County). The deposits are reached by a ¼ mile east-leading road which leaves Highway No. 35 at a point ½ mile south of Norland. At the north end of the lake, just north of Highway No. 503 several pits have been sunk into the deposit. These are located 1½ miles northeast of Norland in lot 3, concession A, Somerville Township, Victoria County. A similar deposit is exposed on the island situated to the northeast of the Horscroft and Ponton-Russell mines.

*References:*

Parsons, A. L.: Ont. Bur. Mines, Ann. Rept., vol. 26, 1917, pp. 299-302.
Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 52, pt. 2, 1943, pp. 70-71.

## 27. DRAG LAKE

*(31 E/1 W Wilberforce)*

### Titanite, Scapolite

Well-formed crystals of titanite are found with scapolite and vuggy quartz in talus along the side of a cliff on the west side of a trail leading from the lodge on the southwestern end of Drag Lake to the forestry tower. The occurrence is about ¼ mile southeast of the lodge. Proceed 1¼ miles on a road which branches off in a northeasterly direction from Highway No. 121 at a point ¼ mile east of Haliburton Village.

*Reference:*

Personal communication: D. D. Hogarth.

## 28. GOODERHAM-TORY HILL AREA

*(31 D/16 E, W Gooderham)*

The minerals found in this area include cancrinite, zircon, sodalite, corundum, peristerite, sunstone, hydronephelite, and crystals of apatite, zircon, zeolites, scapolite and hornblende. Most of the occurrences are in nepheline syenite rock. An occurrence of ornamental marble is included in list of collecting sites for this area. Descriptions follow for each locality.

### Buckhorn Road

Blue sodalite, pink cancrinite, hyacinth zircon crystals up to ¾ inch long, magnetite, calcite, and small grains of purple fluorite are associated with nepheline syenite. The sodalite and cancrinite are common in small patches. The deposit is exposed by three small pits situated on the west side of the Buckhorn Road (Highway No. 507), ½ mile south of Gooderham.

*Reference:*

Armstrong, H. S.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, pp. 38-39.

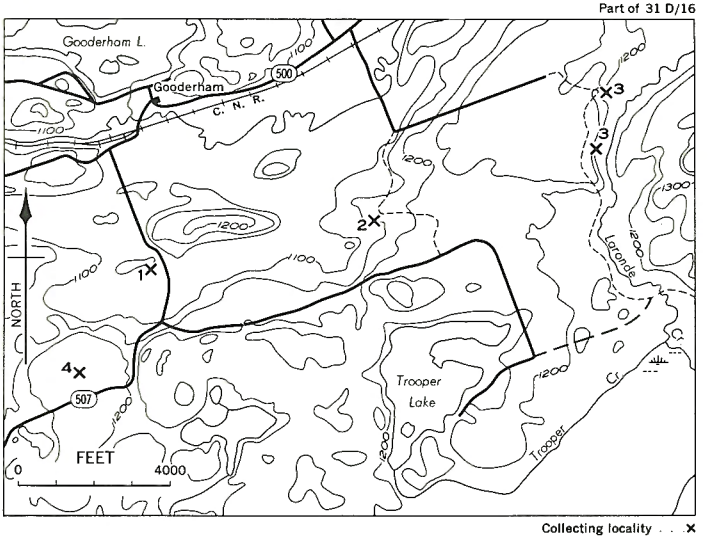
### Fraser Quarry

Nepheline pegmatite is composed of grey albite, nepheline, biotite, hornblende, zircon, calcite, sodalite (rare), corundum and pinkish purple hydronephelite. The quarry is about 2½ miles by road from Gooderham. Proceed east (from Gooderham) along Highway No. 500 for about 1 mile, then south for about ½ mile to the point where the road swings eastward. From this corner, a trail leads in a southerly direction to the quarry which is on the west side of the trail.

*References:*

Armstrong, H. S.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, pp. 39-40.

Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 52, pt. 2, 1943, pp. 71-73.




GOODERHAM–TORY HILL AREA: 1. Buckhorn Road deposit; 2. Fraser quarry; 3. Gill quarries; 4. Black gabbro quarry.

## Gill Quarries

Two quarries about 600 yards apart are on the slope of a ridge north of Laronde Creek. The upper quarry exposes nepheline-albite pegmatite containing biotite, green apatite, zircon, orange cancrinite, blue

sodalite, and hydronephelite. At the lower quarry the nepheline-albite pegmatite is in contact with crystalline limestone. Zircon crystals are found along the contact zone. This property is about 3 miles by road from Gooderham. Leave Highway No. 500 at a point 1 mile east of Gooderham and proceed south for ½ mile; turn left (east) and continue for about a mile to the point where the trail bends sharply south. The upper quarry is about 100 yards east of this turn. The lower quarry is reached by continuing south along the trail for about 330 yards to where it branches in two directions; the east fork leads to the quarry, a distance of 270 yards.

*References:*

Armstrong, H. S.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, pp. 41-42.

Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 52, pt. 2, 1943, pp. 73-74.

## Mackay Property

Pits and strippings have uncovered a nepheline pegmatite containing zircon, deep blue sodalite, black tourmaline, and green apatite prisms up to 2 inches long. Take Highway No. 500 from Tory Hill for ¾ mile toward Gooderham, then branch off to a road leading south (Hotspur road); continue on this road to the point where it bends eastward, a distance of about 2½ miles. A barn is situated on the west side of the road. The pits are across the field, about half a mile southwest of the barn.

*References:*

Armstrong, H. S.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, pp. 52-53.

Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 52, pt. 2, 1943, p. 77.

## Road-Cut, Highway No. 500

At Esson (Otter) Creek, 1½ miles east of Tory Hill, hastingsite, apatite, zircon, microcline, zeolites, titanite, cancrinite, pyrite, pyrrhotite, and magnetite occur in nepheline-albite rock.

*Reference:*

Armstrong, H. S.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, pp. 49-50.



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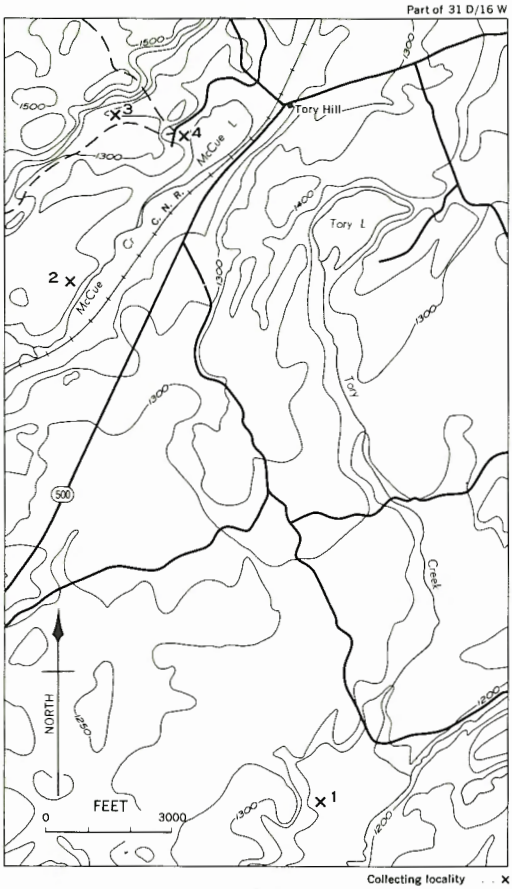


GOODERHAM–TORY HILL AREA: 1. Mackay property; 2. Old mica pit; 3. Millar's mine; 4. Sunstone.

## Road-Cut, Highway No. 121

About ¾ mile north of Tory Hill, very fine crystals of black tourmaline and doubly-terminated brownish-coloured apatite crystals occur with orange calcite in crystalline limestone.

*Reference:*

Personal communication: D. D. Hogarth.

## Road-Cut, Highway No. 500

Just west of Gooderham, green scapolite as radiating crystals occurs in metamorphosed limestone.

*Reference:*

Personal communication: D. D. Hogarth.

## Black Gabbro Quarry

Black massive gabbro is exposed in a small quarry located on the north side of Highway No. 507, 2 miles south of Gooderham. The rock takes a good polish and may have possibilities for certain ornamental-type objects.

*Reference:*

Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 52, pt. 2, 1943, p. 86.

## Old Mica Pit

Peristerite is found with hornblende, pyroxene, calcite, apatite, and amber mica along the north wall of a small pit located about 150 yards north of McCue Creek, about 20 yards west of the boundary between lots 13 and 14, concession X, Monmouth township. The occurrence is about 1¼ miles southwest of Tory Hill.

*Reference:*

Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 52, pt. 2, 1943, p. 57.

## Millar's Mine

Several old pits, a trench and an adit expose white carbonate veins carrying pale green apatite crystals. Crystals of pink feldspar and dark



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green hornblende line the wall of the trench. Mica, titanite, and green apatite crystals measuring up to 4 inches across have been found in the dump. The workings are on both sides of a road leading west from McCue Lake; the pits and adit are on the south side, and the trench is about 200 yards to the north, near the top of a hill. The locality is reached by taking Highway No. 121 north from Tory Hill, then the McCue Lake road to the point where two trails branch off from it. The trail leading west is followed for about ¼ mile to the workings. The total distance from Tory Hill is about a mile.

*Reference:*

Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 52, pt. 2, 1943, p. 20.

### McCue Lake, Sunstone

A very attractive sunstone occurs in a pegmatite which outcrops on the northwest shore of McCue Lake. Access to the occurrence is by a short walk from the mill at the end of the road which leads west from Highway No. 121 and roughly parallels the north shore of McCue Lake.

*Reference:*

Personal communication: D. D. Hogarth.

## 29. WILBERFORCE AREA

*(31 D/16 E Gooderham; 31 E/1 E Wilberforce)*

Calcite-fluorite-apatite pegmatite deposits comprise most of the mineral occurrences in this area. The deposits have been worked at various times for fluorite, apatite, mica, uranium and rare-elements minerals. They are generally characterized by veins of white or pink calcite banded or streaked with dark purple fluorite and carrying apatite crystals with varying amounts of hornblende, pyroxene, magnetite, ilmenite, titanite, molybdenite, zircon, allanite, ellsworthite, or uraninite. A brief description is given for each deposit.

## Liscombe Deposit

Clear green apatite crystals, some of gem quality, are associated with a phlogopite-pyroxene-calcite vein cutting gneiss on the western slope of a ridge ¾ mile southwest of Wilberforce. The vein has been exposed by a series of trenches. The apatite crystals are found along the walls of the openings and in the dump material.

*Reference:*

Meen, V. B. and Gorman, D. H.: Guidebook, G.S.A. and G.A.C., No. 2, 1953, p. 11.

## Richardson Property, Fission Mines Limited

Crystals of uraninite, grey to brown zircon, titanite (up to 1 inch across), hornblende, red to brown apatite (up to 6 inches in diameter) and magnetite occur with pyrite and molybdenite in calcite-fluorite-apatite veins. Of particular interest is the occurrence of uraninite crystals. It is from this mine that what has been regarded as the world's largest uraninite crystal was obtained; the crystal is on display at the Royal Ontario Museum in Toronto. Proceed northeast from Wilberforce on Highway No. 500 for approximately 3 miles to the junction of the gravel road leading east. Follow the gravel road for ¼ mile, then branch off to the south on the road leading directly to the mine. The total distance from Wilberforce is about 4 miles.

*References:*

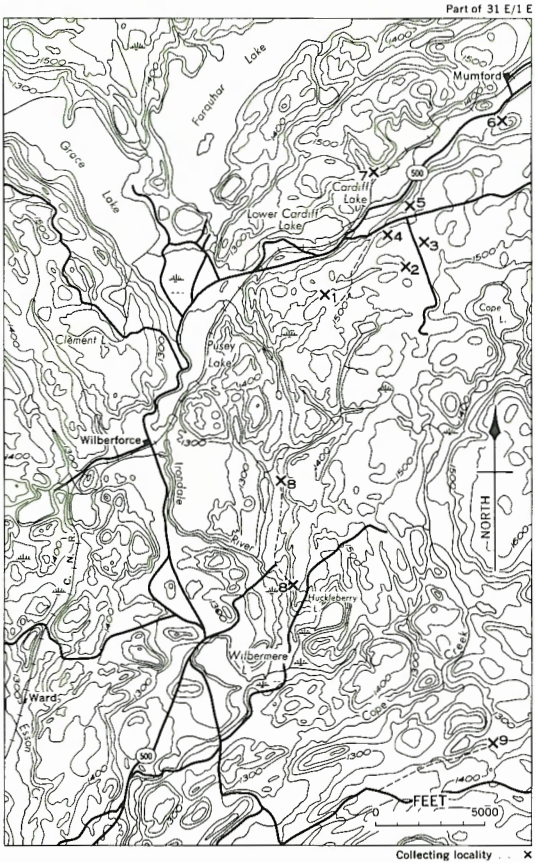
Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 66, pt. 3, 1957, pp. 66-67.

Meen, V. B. and Gorman, D. H.: Guidebook, G.S.A. and G.A.C., No. 2, 1953, pp. 10-11.

Rowe, R. B.: GSC, Bull. 23, 1952, pp. 12-16.

## Tripp Property, Haitian Copper Mining Corporation, Limited

Three pits have been sunk into a calcite-fluorite-apatite vein traversing syenite rock. The vein carries crystals of apatite (red), hornblende, and uraninite (⅛ to 1 inch cubes). The property lies less than a mile




WILBERFORCE AREA: 1. Richardson property; 2. Tripp property; 3. Montgomery property; 4. Dwyer property; 5. Schickler property; 6. Clark property; 7. Chondrodite; 8. Cardiff Uranium mine; 9. Kemp Uranium mine.

to the east of the Richardson property. Continue along the gravel road (same as for Richardson deposit) for about ½ mile east of the turn-off to the Richardson deposit; then proceed south on a gravel road for ½ mile. The workings are about 175 yards west of the road.

*Reference:*
Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 66, pt. 3, 1957, pp. 68-70.

## Montgomery Property, Nu-Age Uranium Mines, Limited

Large hornblende crystals, red and green apatite crystals up to 6 inches across, and uraninite crystals up to ¾ inch across occur in a banded fluorite-apatite-calcite vein cutting hornblende syenite. The pit lies across the road from the Tripp property approximately 250 feet east of the road.

*References:*
Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 66, pt. 3, 1957, p. 43.
Meen, V. B. and Gorman, D. H.: Guidebook, G.S.A. and G.A.C., No. 2, 1953, p. 12.

## Dwyer Property

An open cut on the slope of a hill exposes a calcite vein carrying purple fluorite and crystals of red apatite, and hornblende. The pit is situated 100 feet south of the gravel road (leading east from Highway No. 500) at a point 1,100 feet west of the turn-off to the Tripp and Montgomery properties.

*Reference:*
Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 66, pt. 3, 1957, p. 44.

## Schickler Property

Crystals of feldspar, hornblende, scapolite, and apatite occur along the walls of a calcite-fluorite-apatite vein exposed by a trench on the north side of the gravel road leading east from Highway No. 500 about 200 yards north of the turn-off to the Tripp and Montgomery properties.

*Reference:*
Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 66, pt. 3, 1957, p. 44.

## Clark Property, Topspar Fluorite Mines, Limited

Terminated crystals of pyroxene, apatite and scapolite occur with fluorite, calcite, feldspar and mica in a pegmatite which has been exposed by pits and trenches. The workings are on the top of a hill 200 yards south of Highway No. 500 at a point approximately 300 yards west of the turnoff to Harcourt.

*Reference:*
Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 52, pt. 2, 1943, p. 34.

## Chondrodite

Orange chondrodite occurs in limestone along the Canadian National railway where it crosses the front of lot 11, concession I, Harcourt township, about 1½ miles west of Harcourt station.

*Reference:*
Adams, F. D. and Barlow, A. E.: GSC, Mem. 6, 1910, p. 201.

## Cardiff Uranium Mines, Limited

Crystals of apatite (red and green) uraninite, pyroxene, and scapolite (yellow) occur in calcite-fluorite-apatite veins cutting hornblende-syenite and marble. The apatite is reported to be very clear and of gem quality. Allanite is associated with the deposit. The property is reached by proceeding south on Highway 500 for a distance of 1¾ miles from Wilberforce, then east on a gravel road for 1 mile. At this point the road branches off in two directions; the north fork leads to the north zone of the property (¾ mile away), the other fork leads ¼ mile to the south zone.

*Reference:*
Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 66, pt. 3, 1957, pp. 63-66.

## Kemp Uranium Mines, Limited

Doubly-terminated brown thorite crystals up to 3 inches in diameter occur in a pyroxene skarn zone. They are closely associated with pyroxene and calcite. A few pits and trenches have been sunk into the deposit which lies about 5½ miles southeast of Wilberforce from which it is reached by proceeding south on Highway No. 500 for about 2¼ miles, then east on the road to Cheddar for approximately 3 miles. From here a trail leads northeast for a distance of 1 mile to the deposit.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 66, pt. 3, 1957, p. 55.

## Fishtail Lake

Pink garnets, some clear and well-formed, measuring up to 1½ inches across are associated with minor cordierite in a dark brown basic gneiss or amphibolite along the north shore of Fishtail Lake (lots 11-13, concession IX, Harcourt township). The garnet-bearing rock outcrops in several places: on the southern shore of the narrows at the eastern end of the lake; on a small island in the main body of the lake at its northeastern end; and, at the mouth of a small creek about halfway down the north shore of the lake, where the rock outcrops for about 500 yards. The largest garnets are found in the north-shore outcrop.

Crystals of scapolite, dark green doubly terminated tremolite crystals, and pale green diopside aggregates are associated with metamorphic pyroxenite which is exposed along the edge of the north shore of Fishtail Lake.

Fishtail Lake is accessible by a 9-mile road which leads north from Harcourt (Mumford) via Kennaway.

*References:*

Eardley-Wilmot, V. L.: Mines Br., Pub. No. 677, 1927, pp. 11-12.
Eisenberg, E. H.: Univ. Toronto, Dept. Geol., M.A. Thesis, 1954.



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## 30. BANCROFT AREA

*(31 D/16 E Gooderham; 31 E/1 E Wilberforce; 31 F/4 E, W Bancroft)*

This area is one of the best known for mineral collecting in the province. It provides a variety of minerals including some excellent cutting material such as sodalite, cancrinite, corundum, the feldspars, amazonite and peristerite. Probably the most famous mineral here is the beautiful cornflower-blue sodalite from the Princess quarry. It is highly prized by lapidarists and has been widely used for jewelry and ornamental purposes.

Marbles from the Bancroft quarries have supplied material for many of Canada's public buildings. They have been used to decorate the interiors of the Parliament Buildings and the Royal Ontario Museum in Toronto, and the Parliament Buildings in Ottawa.

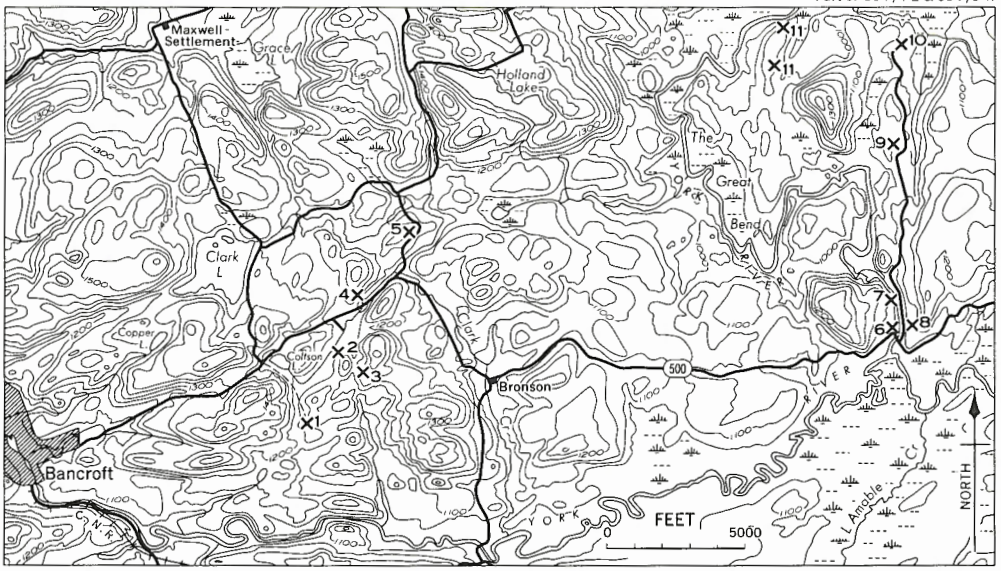
For the more serious collector, the area offers a wide variety of minerals including good crystal specimens. A partial list of the minerals would include apatite, fluorite, zircon, titanite, diopside, scapolite, garnet, calcite, and radioactive minerals. The occurrences at each locality are described briefly.

### Basin Property, Silver Crater Mines, Limited

Formerly a mica mine, this deposit was later worked for the radioactive mineral betafite. Black mica (lepidomelane) books up to 2 feet in diameter occur with large crystals of amphibole and albite in coarse white calcite. Betafite crystals up to 3 inches across and well-formed green apatite crystals up to 2 feet long are found with lesser amounts of zircon, fluorite, titanite, molybdenite and pyrrhotite. The mine lies 2 miles by a poor motor road north of the Monck road at a point about 8½ miles west of Bancroft.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 66, pt. 3, 1957, pp. 76-78.




BANCROFT AREA: 1. Robbins quarry; 2. Lily Robertson corundum deposit; 3. Cancrinite Hill; 4. Princess quarry; 5. Vardy quarry; 6. Golding-Keene quarry; 7. Egan Chute corundum; 8. Egan Chute miscellaneous minerals; 9. Morrison quarry; 10. Davis quarry; 11. York River corundum.

## Centre Lake Property, Bicroft Uranium Mines, Limited

Apatite, fluorite, calcite, zircon, titanite, molybdenite, allanite, pyrite, pyrrhotite, pyrochlore, betafite, anatase and umangite occur in pegmatitic and gneissic dykes which traverse amphibolite, silicated marble and sillimanite-garnet gneiss. Peristerite is one of the main constituents of the dykes. Epidote, tourmaline, and scapolite occur in the wall-rocks in the vicinity of the dykes and a bright orange chondrodite occurs in the marble. The mine lies south of Centre Lake on the Monck road approximately 1½ miles west of Cardiff village.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 66, pt. 3, 1957, pp. 18, 58-60.

## Canadian Dyno Mines Limited

Pegmatite dykes composed of peristerite, perthite and smoky quartz carry uranothorite, uraninite and uranophane with pyroxene, titanite, zircon, allanite, hematite, apatite and magnetite as accessories. The mine is 3½ miles by road north of Highway No. 28 at a point 15 miles southwest of Bancroft.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 66, pt. 3, 1957, pp. 62-63.

## Faraday Uranium Mines, Limited

The uranium-bearing minerals occur in granitic rocks consisting of feldspars, clear to smoky grey and rusty quartz, small to large dark green pyroxene crystals, and magnetite. The feldspars include pink microcline and microcline perthite, and peristerite which exhibits the characteristic blue play of colour. Accessory minerals include zircon in small brown doubly-terminated prisms, titanite in tiny red-brown crystals, black platy crystals of allanite (up to 3 inches across), pyrite (uncommon), marcasite (uncommon), fluorite, molybdenite, tourmaline, hematite, and calcite. Large, well-formed crystals of selenite are associated with coarsely crystalline purple anhydrite

(personal communication: D. D. Hogarth). One of the most spectacular minerals found at this mine is the calcite which occurs in clear honey-yellow crystals up to 5 inches across. Some of the crystals contain inclusions of chalcopyrite and tiny crystals of pyrite and hematite, the latter producing a turbid appearance. Hematite, in botryoidal form, often coats these crystals. The radioactive minerals are uraninite in minute cubes or grains, uranothorite in small orange to black grains, and thorite in small well-developed orange prisms. Secondary uranium minerals are uranophane which occurs as a yellow coating or, rarely, in fibrous clusters lining vugs, and beta-uranophane (very rare) which was found as radiating clusters of acicular crystals in a tiny vug in feldspar. The mine is ½ mile by road north of Highway No. 28 at a point 4½ miles southwest of Bancroft.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 66, pt. 3, 1957, pp. 70-75..

## Miner Card and William Card Farms

Crystals of apatite, purple fluorite, pyroxene, hornblende, zircon (cyrtolite), and pink feldspar line the walls of a pit sunk into pink granite at the Miner Card property. Apatite crystals up to 1 inch long occur with titanite in crystalline calcite. The property is on the north side of the Monck road about 4 miles west of Bancroft.

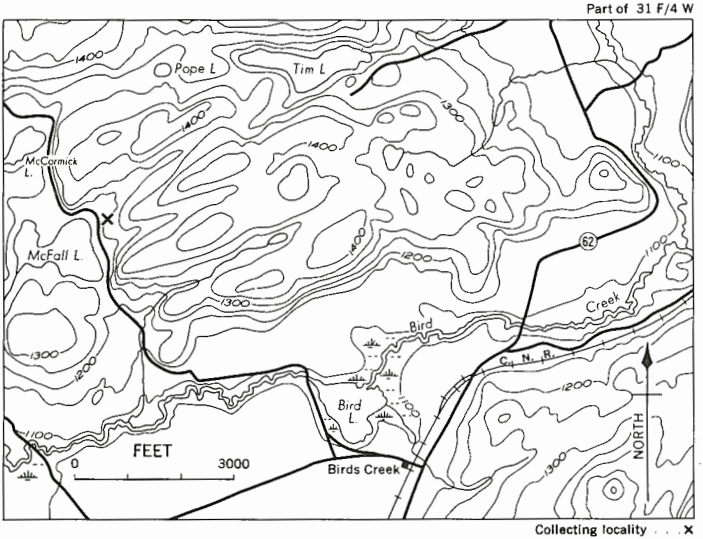
A pit near the barn on the William Card farm exposes apatite crystals (up to 1 foot long and 6 inches across) intergrown with calcite and pyroxene. The property lies north of the Monck road 3½ miles west of Bancroft.

*Reference:*

Thomson, Jas.: Ont. Dept. Mines, Ann. Rept., vol. 52, pt. 3, 1943, pp. 15-16.

## Greyhawk Uranium Mines, Limited

Peristerite occurs with accessory magnetite, titanite, apatite, zircon, epidote, allanite, uranothorite, uraninite, pyrochlore, and pyrite in




BANCROFT AREA: Birds Creek diopside.

pegmatite dykes which cut dark amphibolite. Titanite, tourmaline, microcline, apatite (rare), and clinozoisite (rare) occur in the amphibolite country rock. The mine is just south of Highway No. 28 approximately 3 miles southwest of Bancroft.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 66, pt. 3, 1957, pp. 75-76.

## Stewart Marble Quarry

The varieties of dolomite marble exposed in the quarry include: light blue medium-grained siliceous dolomite veined with white; brownish-pink fine-grained banded marble; pale, clouded green, fine-grained

marble with siliceous streaks containing, in places, feathery rosettes of green tremolite; serpentinous green fine-grained dolomite, known commercially as "Imperial Green" marble; and pink calcium marble. The marbles occur as bands which adjoin each other in the quarry. Brown tourmaline is associated with the serpentinous green variety. To reach the quarry, leave Highway No. 62 at a point 2¾ miles south of Bancroft and proceed east for 1 mile; the deposit is about 175 yards west of the road.

*Reference:*

Hewitt, D. F. and James, W.: Ont. Dept. Mines, Ann. Rept., vol. 64, pt. 8, 1955, p. 55.

## Barker Marble Quarry

Four varieties of marble are found here: "Laurentian No. 10" consisting of greyish-white and greenish-white dolomite fragments cemented by chocolate brown micaceous material; calcium marble in pink to red shades with irregular black and pale green veins; "Laurentian No. 14" composed of green and brown brecciated dolomite traversed by narrow white calcite veins; siliceous, fine-grained, banded brownish dolomite. "Laurentian Buff" a fine-grained buff dolomite veined and clouded with dark brown micaceous bands is exposed in a small quarry on the top of a cliff, 200 yards northwest of the Barker (main) quarry. The property lies north of L'Amable Lake on the northeast face of a hill about ¼ mile west of Highway No. 62 at a point 3 miles south of Bancroft.

*Reference:*

Hewitt, D. F. and James, W.: Ont. Dept. Mines, Ann. Rept., vol. 64, pt. 8, 1955, pp. 55-56.

## Robbins Quarry

The quarry exposes a nepheline pegmatite consisting of large individual crystals of nepheline and albite with accessories biotite, magnetite, calcite, apatite, sodalite, cancrinite, green "gieseckite", and hydrone-

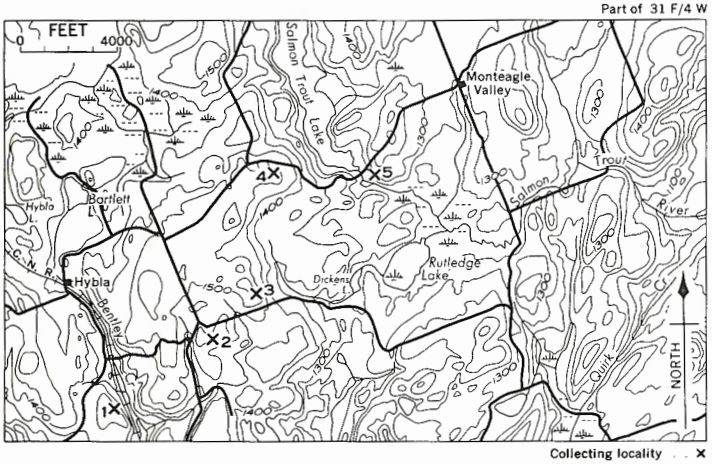
phelite. The pegmatite cuts nepheline gneiss. The quarry is on the southwest side of a hill and is reached by a trail, ½ mile long, which leads south from Highway No. 500 at a point 1¾ miles east of Bancroft.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, p. 68.

## Lily Robertson Corundum Deposit

Brown tapering corundum crystals (up to 3 inches across) occur with magnetite and spinel in nepheline pegmatite which has been opened by a pit on the north slope of Robertson Hill. A stripping 50 feet north of the pit exposes a pegmatite containing bronze-black corundum crystals up to 2 inches across. The corundum crystals make up 20 per




BANCROFT AREA: 1. McCormack mine; 2. Plunkett mine; 3. Macdonald mine; 4. Woodcox mine; 5. Genesee No. 2 mine.

cent of the rock. Purplish blue scapolite is associated with nepheline gneiss. To reach the deposit, leave Highway No. 500 at a point 2.3 miles east of Bancroft and proceed south on a farm lane to the Lily Robertson Cooney farm. A path from the farmhouse leads west, through a field, to the exposures.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, p. 68.

## Cancrinite Hill

Patches of yellow cancrinite and blue sodalite occur in biotite-nepheline-plagioclase gneiss and in nepheline pegmatite. Magnetite, tourmaline, cleavelandite, molybdenite, and hydronephelite are accessories in the pegmatite. A pit exposing the deposit is situated on the northwest face of Cancrinite Hill. A path ¼ mile long leads south from the Lily Robertson Cooney farmhouse to the deposit.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, p. 69.

## Princess Quarry

Deep blue sodalite, yellow cancrinite, and pink hydronephelite occur with biotite, calcite, and apatite in a nepheline syenite gneiss. Aventurine feldspar (sunstone) has been observed in patches along the edges of the sodalite deposit, where the sodalite merges with the nepheline rocks. Nepheline crystals up to 3 inches in size protrude from some of the joint faces along the walls of the quarry. The deposit now owned by Mr. Bosiak of Bancroft lies 100 yards north of Highway No. 500 at a point 2½ miles east of Bancroft. A path leads from the gravel pit on the north side of the highway to the quarry.

*References:*

Adams, F. D. and Barlow, A. E.: GSC, Mem. 6, 1910, p. 392.
Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, pp. 68-69.

## Vardy Quarry

Narrow veinlets of sodalite occur in nepheline syenite gneiss at this quarry which is on the north side of the Clark (Clear) Lake road approximately ½ mile north of its junction with Highway No. 500.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, p. 69.

## Golding-Keene Quarry

The quarry exposes nepheline pegmatite carrying zircon, sodalite, hydronephelite, apatite, cancrinite, and corundum. It is on the west bank of the York River approximately 100 yards north of Highway No. 500. Several small pits extending as far north as the falls at Egan Chute expose a similar deposit.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, pp. 75-76.

## Egan Chute

Blue corundum crystals up to 2 inches in size occur in grey muscovite-nepheline-plagioclase gneiss which outcrops on the west side of a path leading north along the west side of the York River, about ¼ mile north of Highway No. 500.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, p. 76.

Crystals of grossularite, diopside, vesuvianite, wollastonite, zircon, spinel, forsterite, and chlorite occur with massive blue calcite and feldspar in a skarn zone exposed by a pit on a hillside on the east side of the river, 200 yards north of Highway No. 500.

*Reference:*

Meen, V. B. and Gorman, D. H.: Guidebook, G.S.A. and G.A.C., No. 2, 1953, p. 20.

## Morrison Quarry

Sodalite and cancrinite occur in nepheline-albite pegmatite which contains crystals (up to 8 inches across) of nepheline and albite. The quarry is on the east side of the York River, 1½ miles north of Highway No. 500. The road to the deposit leaves the highway just east of the bridge.

*Reference:*
Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, p. 76.

## Davis Quarry, Canada Flint and Spar Mine

Hackmanite and zircon are associated with microcline, tourmaline, biotite, apatite, pink cancrinite, "gieseckite", muscovite, galena, calcite, and allanite in a nepheline-albite pegmatite. The zircon occurs as large crystals up to 4 inches long and as crystal masses up to 8 inches across. This quarry is ¾ mile north of the Morrison quarry to which it is connected by road.

*Reference:*
Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, p. 77.

## York River, Corundum

Crystals up to 2 inches in size occur with garnet, zircon, hornblende, biotite, apatite, muscovite, tourmaline and scapolite in nepheline-andesine gneiss. The corundum is semi-opaque and pale blue; some crystals are a transparent blue in the centre but grade to white or grey toward the edges. They are usually fractured. A crystal from this locality was exhibited as true sapphire at the Pan-American exhibition in Buffalo in 1901. The corundum-bearing rock occurs in a ridge, 80 feet high, which extends southward from the York River for ¼ mile at a point 2 miles north of Egan Chute. Pits and trenches expose the deposit at the top of the ridge about ¼ mile south of the river. The occurrence is accessible by boat.

A similar occurrence is on the east side of the York River in lot 5, concession 16, Dungannon township about 1½ miles north (as the crow

flies) of the Davis quarry. The exposure is about 200 yards east of the river. This occurrence is reached by boat.

*Reference:*
Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 64, pt. 8, 1955, pp. 44-45.

## Bessemer Iron Mine

Coarse dark brown garnet, epidote, pyroxene, amphibole, and calcite are associated with magnetite in a skarn zone exposed by several pits at this old iron mine, just east of Little Mullet Lake. The country rocks consist of crystalline limestone, amphibole and quartzite. A road from Hermon leads south to the mine, a distance of 5¼ miles.

*Reference:*
Rose, E. R.: GSC, Bull. 45, 1958, pp. 20-22.

## Childs Iron Mine

Calcite, garnet, zoisite, epidote, pyroxene, and hornblende occur with magnetite in a skarn zone. This deposit is similar to that of the Bessemer mine. The workings consist of several pits, some trenches and stripping. The mine lies on the west side of the road leading south from Hermon at a point 2¾ miles from Hermon.

*References:*
Hewitt, D. F. and James, W.: Ont. Dept. Mines, Ann. Rept., vol. 64, pt. 8, 1955, p. 52.
Rose, E. R.: GSC, Bull. 45, 1958, pp. 32-33.

## Road-Cut on Highway No. 62

Metamorphic pyroxenite carrying diopside or augite, phlogopite, scapolite, carbonate, apatite, pyrite, tremolite, and feldspar is exposed on the road-cut just north of the golf club, 3.3 miles north of Bancroft. Good terminated crystals of hornblende, augite and calcite, and doubly-terminated crystals of apatite occur here.

*Reference:*

Hewitt, D. F., Peach, P. A., and Moyd, L.: Guidebook, G.S.A. and G.A.C., No. 1, 1953, p. 16.

## Birds Creek, Diopside

Green, stubby, doubly-terminated crystals of diopside are associated with pink calcite in crystalline limestone. The crystals measure up to 3 inches in length. Some are reported to be transparent and of gem quality. The deposit is exposed by a small pit on the side of a cliff overlooking McFall Lake. Proceed west from Birds Creek to the first road leading north (a distance of ¼ mile). Follow this road across Birds Creek and beyond two farmhouses where the road ends. From here a trail leads north along the east side of McFall Lake. Follow this trail to the north end of the lake. At the point where fragments of calcite are noted in the bush, leave the trail and proceed up the hill to the main deposit. The total distance from Birds Creek on Highway No. 62 is 2 miles.

*References:*

Field, D. S. M.: J. Gemm., vol. 1, No. 8, 1949, p. 18.

Meen, V. B. and Gorman, D. H.: Guidebook, G.S.A. and G.A.C., No. 2, 1953, p. 20.

## McCormack Mine

Green amazonite, biotite, hornblende, magnetite, titanite, allanite, and ellsworthite occur in a pegmatite dyke consisting of graphic granite, pink and buff feldspar, and quartz. A pit exposes the deposit on the farm of R. McCormack. The property is east of the Canadian National railway, about 1 mile south of Hybla.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 63, pt. 6, 1954, p. 42.

## Plunkett Mine

Two pits, 400 yards apart have been sunk in a granite pegmatite dyke. In the south pit, the dyke contains hornblende crystals (up to 4 inches

in size), titanite, and small amounts of pyrite, molybdenite, biotite, magnetite and allanite. In the north pit,which lies in a field 700 feet south of the concession road, the dyke consists partly of amazonite and peristerite in association with titanite, garnet, fluorite (purple), hornblende, ellsworthite, and euxenite. The pits are on the Henry Plunkett farm. Proceed south from Hybla for a distance of ¾ mile; turn left (east) and continue for 1 mile to the farm on the south side of the road.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 63, pt. 6, 1954, p. 40.

## Macdonald Mine

This mine was the largest feldspar producer in the district and was worked from 1919 to 1928. It is also well known for a variety of radioactive minerals. Microcline perthite, plagioclase and quartz are the chief constituents of the pegmatite dyke. The quartz occurs as large clear to smoky or milky masses, and as doubly-terminated smoky crystals. Both amazonite and peristerite are reported to occur. Other minerals include pyroxene and allanite as large crystals, titanite crystals up to 3 inches in diameter, reddish-brown garnets, scapolite, magnetite, hornblende, cyrtolite (zircon), ellsworthite, fluorite, galena, ilmenite, uranothorite, and sulphide minerals. The cyrtolite occurs as individual crystals and as crystal aggregates associated with yellow or brown ellsworthite in pink calcite or feldspar. This mine lies northeast of the Plunkett farm, on the opposite side of the road from it. A branch road leads directly to the deposit which is roughly 250 yards north of the road.

*References:*

Ellsworth, H. V.: GSC, Econ. Geol. Ser., No. 11, 1932, pp. 200-209.
Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 63, pt. 6, 1954, pp. 43-47.
Sinkankas, J.: Gemstones of N. Amer., 1959, p. 139.

## Woodcox Mine

A large number of minerals have been reported from the pegmatite dyke at this mine. They include amazonite, peristerite, hornblende, magnetite, biotite, titanite, black tourmaline, pyrite, columbite, ellsworthite, allanite, muscovite, calcite, hematite, epidote, red garnets, purple fluorite and greyish cyrtolite. Several tons of beautiful green amazonite were removed from the western part of the dyke. The mine is in an open field in the old Woodcox farm, 500 feet south of the Hybla-Monteagle Valley road and west of the southern tip of Salmon Trout Lake. Hybla is approximately 2¼ miles to the west.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 63, pt. 6, 1954, pp. 50-51.

## Genesee No. 2 Mine

The pit, at the side of a hill, exposes pegmatite consisting of large crystals of quartz and feldspar, and small amounts of ellsworthite and pyrite. Quartz crystals line vuggy cavities, some of them quite large, in the pegmatite. The mine is 200 feet south of the Hybla-Monteagle Valley road at the foot of Salmon Trout Lake, 1 mile east of the Woodcox mine.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 63, pt. 6, 1954, pp. 48-49.

## Tonkin-Dupont and National Graphite Mines

Scapolite, diopside, epidote, tremolite, garnet, magnetite, pyrrhotite, titanite, apatite, graphite, phlogopite, and molybdenite occur in crystalline limestone. The deposit has been exposed in several pits on the farm of Fred Lebow ½ mile east of Graphite station. To reach the property, leave Highway No. 62 11 miles north of Bancroft and proceed east via Graphite station for a distance of 2¾ miles to a farm lane leading north to the Lebow farm. The mine is to the northeast of the buildings.

*Reference:*
Meen, V. B. and Gorman, D. H.: Guidebook, G.S.A. and G.A.C., No. 1, 1953, p. 20.

### Mica Pits

An old mica pit located ¼ mile northeast of Peter Freymond's farm exposes a scapolite-pyroxenite dyke carrying red and green apatite crystals (up to 4 inches across), phlogopite crystals (up to 1 foot across), feldspar, calcite and titanite. The farm lies 2¼ miles by road east of Monteagle Valley village.

A similar deposit has been exposed by four small pits in a field ⅓ mile south of the Monteagle Valley-New Carlow road at a point 2½ miles from New Carlow. Here, titanite crystals (up to 1 inch in size) occur with crystals of calcite, apatite, stilbite and chabazite in scapolite-pyroxenite rock.

*Reference:*
Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 63, pt. 6, 1954, pp. 58-59.

## 31. MADAWASKA AREA

*(31 F/12 W Round Lake)*

### Peristerite

Peristerite occurs in a pegmatite near the bottom of a pit from which feldspar and muscovite were recovered in a small mining operation by Mr. N. B. Davis. Red garnets up to 1 inch across occur in the feldspar which is associated with massive white to grey quartz, muscovite, and biotite. Monazite and euxenite are reported to occur in the property which lies northeast of Madawaska village in lot 27, concession 5, Dickens township. The deposit is 1¾ miles by trail and wagon road north of Highway No. 60 at a point 4¼ miles east of Madawaska.

### Quartz Crystal

Drusy quartz crystals up to 1 inch across line vugs in massive white glassy quartz at an old feldspar quarry on the Deady property (lot 117, range B, north of Opeongo Road, Jones township). The quarry is at the northwest end of a small lake about 250 feet east of Highway No. 60 at a point approximately 8½ miles east of Madawaska.

*Reference:*

Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 53, pt. 3, 1944, pp. 39, 122-23.

## 32. CRAIGMONT-LAKE CLEAR AREA

*(31 F/3 W Denbigh; 31 F/5 E Barrys Bay; 31 F/6 E, W Brudenell)*

This area has furnished mineral specimens highly prized by both collector and lapidary. Splendid crystals of zircon, titanite and apatite, remarkable for their immense size and perfection of form, have found a place in mineralogical museums in many parts of the world. Among the minerals favoured by the amateur gem-cutters are the delicately tinted rose quartz, green beryl, brilliant zircons, brown corundum, the beautiful green amazonite, and the peristerite which displays its characteristic blue sheen.

### Burgess Mine

Large bronze crystals of corundum occur in coarse micaceous red pegmatite syenite. The discovery of this corundum deposit in 1896 was the first in the district; the mine was in operation six years later. The main workings are on the west face of Burgess Mountain, about 2½ miles east of New Carlow. The mine is ½ mile by road north of Highway No. 517 at a point 2 miles east of New Carlow.

*Reference:*

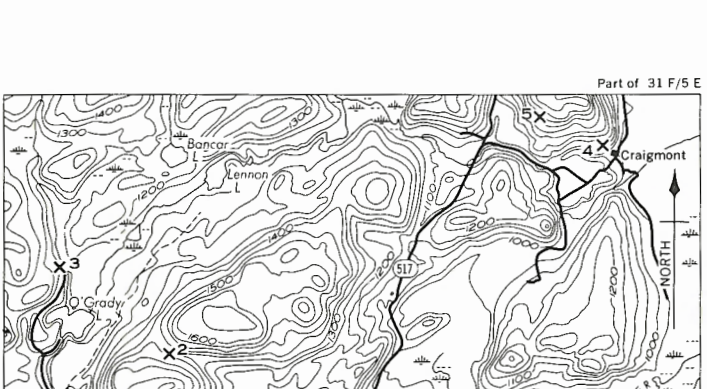
Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 63, pt. 6, 1954, p. 32.

## Logan Cuts

Three pits on the west side of a hill expose corundum-bearing syenite rocks. In the eastern cut bronze corundum crystals up to 6 inches in size occur with muscovite in nepheline rock. Pink hydronephelite is found as an alteration of the nepheline. In the pegmatite zone of the central cut, barrel-shaped bronze and green corundum crystals up to 5 inches long have been reported. The pits lie 1½ miles by trail northeast of the Burgess mine.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 63, pt. 6, 1954, pp. 33-34.




CRAIGMONT AREA: 1. Burgess mine; 2. Logan cuts; 3. O'Grady Lake pits; 4. Craigmont mine (Craigmont cuts); 5. Craigmont mine (Klondike cuts).

## O'Grady Lake

Corundum crystals up to 4 inches in diameter occur in white and pink syenite. Stripping on the crest of a low ridge north of O'Grady Lake has exposed the deposit, reached by a trail leading north from the Burgess mine to a cabin at the north end of O'Grady Lake, about 1½ miles. The occurrence is about 350 feet west of the cabin.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 63, pt. 6, 1954, p. 37.

## Craigmont Corundum Mine

The mine consists of two groups of open-cuts on the south and west faces of Robillard Mountain near the village of Craigmont. Corundum was mined from 1900 to 1913. The workings on the south side of the slope (Craigmont cuts) expose pegmatite carrying brown, barrel-shaped crystals (up to 4 inches across) of corundum, the crystals often being completely enclosed in muscovite. Red garnet, magnetite and deep green biotite flakes are associated with the corundum. Crystals of white or smoky quartz, hornblende, microcline and pyrite line vuggy cavities in the rock. Purple anhydrite has been reported from vugs in rock fractures just north of the pond. The Craigmont cuts lie just north of Craigmont which is about 6 miles south of Combermere.

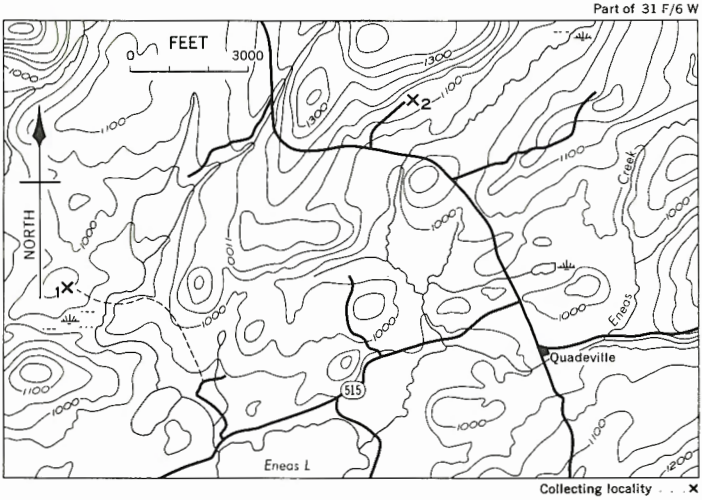
The Klondike cuts on the west side of the hill expose albite-nepheline-gneiss containing slender corundum crystals. This deposit is reached by proceeding west from Craigmont for 1 mile to an abandoned school house. From here a trail leads up the hill to the workings.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 62, pt. 5, 1953, pp. 56-60.

## Jewellville Corundum Pits

Corundum-bearing syenite gneiss is exposed by a series of pits at Palmer Rapids bridge, ¼ mile south of Jewellville. The corundum




QUADEVILLE AREA: 1. Rose quartz; 2. Beryl.

occurs as crystals and as small grains. The first series of pits lie 400 yards northeast of the bridge and are accessible by an overgrown wagon road leading from the old mill site on the flat. A trail from these pits leads northeast 700 feet to an open-cut 130 feet long. A large vug lined with crystals of calcite, apatite, pyroxene, feldspar, and quartz occurs in pegmatite near the northeast end of the cut. About 500 feet southeast of this locality, two pits expose pink and grey nepheline-albite gneiss containing euhedral crystals of corundum up to 3 inches in size. Several other pits expose similar deposits; they extend for about 1 mile northeast of the bridge.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 62, pt. 5, 1953, pp. 62-63.

## Gutz Farm Pits

Corundum crystals ranging in colour from bronze-brown to blue-grey occur in white syenite pegmatite. The crystals measure up to 5 inches in diameter. The deposit is exposed by a pit on a hillside south of the Gutz farmhouse 200 feet east of the Rosenthal-Rockingham road at a point 3¼ miles south of Rockingham. About 40 yards north of the pit, there is an outcrop of nepheline-albite-corundum pegmatite containing corundum as long slender tapered grey-brown crystals, together with sodalite and cancrinite.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 62, pt. 5, 1953, p. 50.

## Canadian Beryllium Mines and Alloys Limited, Rose Quartz and Beryl

Massive rose quartz occurs abundantly in a pegmatite which at one time was worked for feldspar and for beryl. The dyke is exposed for 600 feet in an east-west direction. It is composed of pink microcline-perthite, white to rose quartz, peristerite, green muscovite and biotite. The rose quartz occurs in the westernmost part of the cut. Accessory minerals include asparagus-green beryl crystals up to 2 inches in diameter (in the east workings), columbite in radiating plates, dark brown to black euxenite, fluorite, hornblende, magnetite, cyrtolite, molybdenite, specularite, pyrite, monazite, and calcite.

The rose quartz from this locality is pale, somewhat opalescent and translucent, pink. It is sufficiently free of fractures to be cut and polished. The finished stone is a delicate pink, but is almost colourless in smaller pieces.

The mine is on a low hill surrounded by a swamp. It is accessible by a dry-weather road 1¼ miles long leading north from Highway No. 515 at a point 2 miles west of Quadeville.

*References:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 62, pt. 5, 1953, pp. 42-45.

Rose, E. R.: GSC, Paper 59-10, 1960, p. 25.

Beryl as well-formed, euhedral, hexagonal blue-green crystals occurs in a pegmatite dyke on the south slope of Casey Hill. Some of the crystals are translucent but the majority are opaque. A fragment of a crystal found here was translucent and emerald green in colour. The crystals measure up to 4 inches in diameter and 8 inches in length. The dyke is composed of pink microcline feldspar, cleavelandite, white peristerite (with blue play of colour), and quartz (smoky and pink varieties). The very attractive green feldspar, amazonite was reported to occur in small amounts. Associated minerals are lyndochite (a variety of euxenite), zircon (small crystals), black vitreous platy crystals of allanite, black triangular crystals of tourmaline, reddish brown garnet, purple fluorite, green apatite, magnetite and mica. The country rock consists of hornblende-biotite gneiss and gneissic granite.

The property is reached by proceeding north from Quadeville on the Quadeville-Letterkenny road for a distance of 1¼ miles, then east for about ¼ mile along a branch road which leads directly to the pit.

*References:*

Ellsworth, H. V. E.: GSC, Econ. Geol. Ser., No. 11, 1932, pp. 228-230.
Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 62, pt. 5, 1953, pp. 36-41.
Rose, E. R.: GSC, Paper 59-10, 1960, p. 25.

## Kuehl Lake, Zircon

Zircon crystals, some of gem quality, have been obtained from this locality. Some of the crystals have been cut and polished for use as gemstones. Very little zircon is now visible in the deposit. Hyacinth crystals were found in yellow-brown syenite and in lenses of calcite, apatite, biotite, and hornblende in the syenite. Wedge-shaped crystals of titanite up to ½ inch in size are associated with the deposit. Individual crystals of hornblende up to 4 inches in size occur in the hornblende syenite gneiss.

The deposit is exposed by an open-cut measuring 40 by 10 by 5 feet deep. It is situated at the side of a hill about 50 feet from the northeastern shore of Kuehl Lake which is located on the east side of

the Quadeville-Foymount road about 9 miles north of Quadeville. A ⅓-mile road leads east from the highway to the J. Kuehl farm and the pit is ¼ mile east of the farm.

*References:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 62, pt. 5, 1953, pp. 85-86.
Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 53, pt. 3, 1944, pp. 118-119.

## Ruby Mine, Garnet

Deep red garnets measuring up to ½ inch across occur in hornblende-biotite-garnet paragneiss at a quarry known locally as the Ruby mine. The garnet makes up 30 per cent of the rock. The mine was active from 1922 to 1924. It is situated 4 miles by road southeast of Hardwood Lake post office. A wagon road 1 mile long leads south to the quarry from the Hardwood Lake-Denbigh road at a point 3 miles southeast of Hardwood Lake post office.

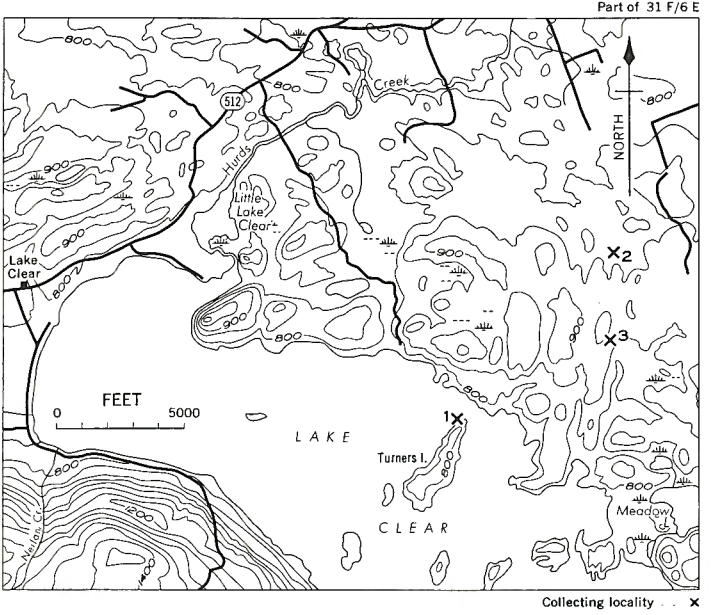
*Reference:*

Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 53, pt. 3, 1944, p. 126.

## Turner's Island (Island D), Lake Clear

Some outstanding crystal specimens have been obtained from an old apatite deposit near the northern point of Turner's Island. The crystals found include a 700 pound apatite prism, a zircon crystal measuring 1 foot across, and a titanite crystal over 1 foot in length now in the collection at Harvard University. Some of the finest twin crystals of zircon ever found are from this locality. Some of them are in the mineralogical collection at the British Museum. An enormous single crystal is in the cabinet of the Academy of Natural Sciences at Philadelphia.

These minerals are associated with white to yellow-green scapolite, dark green hornblende and dark green pyroxene in a vein of coarse salmon-orange calcite. Apatite occurs as rounded green to brown crystals and as large brown crystal aggregates. The deposit was worked for apatite from 1879 to 1882. The workings consist of several pits near




LAKE CLEAR AREA: 1. Turner's Island; 2. Meany mine; 3. Smart mine.

the north shore of the island. They are accessible by boat from R. H. Goulet's camp on the northwest shore of the lake, 3 miles from the deposit. The camp is on the south side of Highway No. 512, 6 miles northeast of Foymount.

*References:*

Kunz, G. F.: Gems and Precious Stones of N. Amer., 1890, pp. 259-260.

Meen, V. B. and Gorman, D. H.: Guidebook, G.S.A. and G.A.C., No. 2, 1953, pp. 12-13.

## Meany Mine

Large crystals of apatite (red) and orthoclase occur in a calcite-pyroxene-apatite vein which was worked for apatite in the 1880's. The mine is about 1½ miles north of Lake Clear. Continue east on Highway No. 512 for 4 miles from the turnoff to Goulet's camp. Then turn south on the road which leaves the highway on the east side of the bridge and continue for about 2 miles to a lumber clearing where the road ends. A trail of about ½ mile leads southeast along the base of a ridge to the mine.

*Reference:*

Meen, V. B. and Gorman, D. H.: Guidebook, G.S.A. and G.A.C., No. 2, 1953, p. 12.

## Smart Mine

Very fine crystals of zircon, titanite and apatite have been found in a band of limestone at the old Smart phosphate mine. The zircons are the brilliant hyacinth-red variety. The titanite crystals are also brilliant and often translucent. Amazonite is reported to occur in this lot but the exact locality is unknown. The mine is about ¾ mile south of the Meany mine to which it is connected by a trail.

*Reference:*

Meen, V. B. and Gorman, D. H.: Guidebook, G.S.A. and G.A.C., No. 2, 1953, p. 12.

## Eganville, Amazonite

Apple-green amazonite occurs on the farm of Mr. Albert Berger about 6 miles north of Eganville.

*Reference:*

Personal communication: E. Hedger.



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## 33. RENFREW AREA

*(31 F/2 E, W Clyde; 31 F/6 E Brudenell; 31 F/7 E Renfrew; 31 F/10 W Cobden)*

### Elliott's Mine

Apatite, scapolite, titanite, and black hornblende crystals occur abundantly in a limestone band into which several openings were made. Associated with the deposit are large masses of pyroxene, often studded with titanite crystals. Purple fluorite, black spinel, pyrite and molybdenite are reported from the deposit which was worked in 1883 for apatite. The mine lies 1¼ miles by road north of Foresters Falls village.

*Reference:*

Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 53, pt. 3, 1944, pp. 17, 88.

### Renprior Zinc Mines Limited

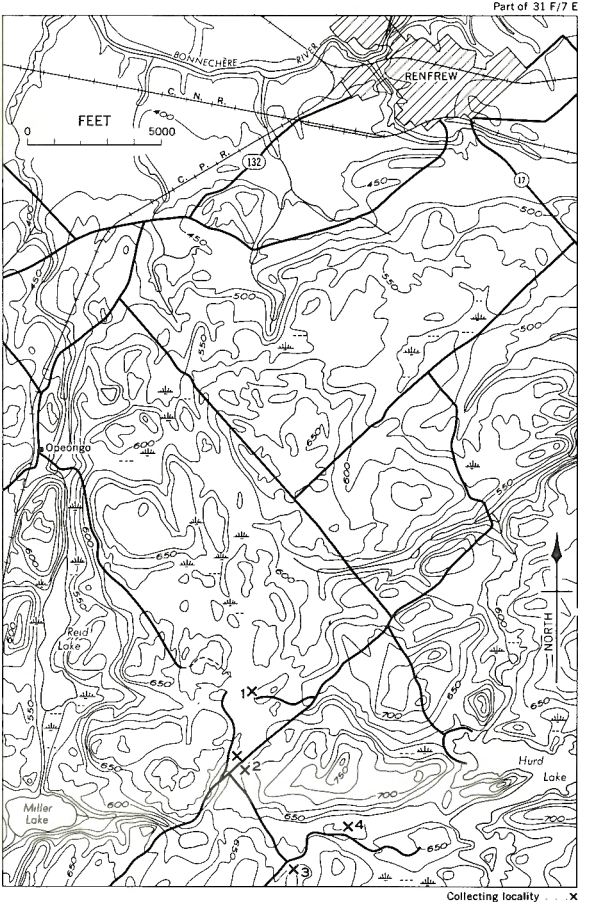
Resinous brown sphalerite occurs as disseminated grains with galena, pyrite and pyrrhotite in white to reddish pink crystalline limestone. In places, the sphalerite replaces radiating tremolite, assuming the radiating structure. Tremolite as rosettes is a common accessory. Diopside, apatite and phlogopite are associated with the limestone. The property has been exposed by several trenches, strippings, and an open-cut. It is about 7 miles southwest of Renfrew. Leave Highway No. 132 2 miles west of Renfrew, and go south along the road to Opeongo for 0.6 mile; turn left on to a concession road and follow it for 3 miles to a crossroad; turn right (west) continuing for ¾ mile. At this point, the mine road branches off to the right and leads directly to the mine, a distance of ½ mile.

*Reference:*

Quinn, H.A.: GSC, Paper 51-27, 1951, pp. 75-77.

### Actinolite

Radiating clusters of actinolite up to 4 inches long occur in crystalline limestone exposed by trenches on both sides of the road which con-




RENFREW AREA: 1. Renprior mine; 2. Actinolite; 3. Zenith mine; 4. Buckhorn mine.



74278—7½

tinues southwest from the turnoff to the Renprior mine. The openings are ¾ mile from the turnoff.

*Reference:*
Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 53, pt. 3, 1944, p. 76.

## Zenith Molybdenum Corporation Limited

Tourmaline, scapolite, anhydrite, hornblende, biotite, titanite, apatite, garnet, magnetite, pyroxene, chlorite, serpentine, calcite, quartz, feldspar, pyrite and pyrrhotite are found with molybdenite at this mine. The molybdenite-bearing zones occur close to or along the contacts of granite-pegmatite with limestone or sedimentary biotite gneiss. The molybdenite occurs as disseminated flakes up to 2 inches across, and as bunches, seams, or bands. Mining operations commenced at the time of World War I and ceased in 1940. The mine is south of the Renprior Zinc mine.

*References:*
Quinn, H. A.: GSC, Paper 51-27, 1951, pp. 58-59.
Satterly, J: Ont. Dept. Mines, Ann. Rept., vol. 53, pt. 3, 1944, pp. 73-75.

## Buckhorn Mines Limited

Drusy, smoky and amethystine quartz, rosettes of specularite, and garnet are associated with molybdenite ore in pyroxene and gneissic rocks which have been exposed by several pits and trenches. The quartz and specularite occur with carbonate as repeated bands lining vugs. The property is on the north side of the road leading east from the Zenith mine.

*Reference:*
Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 53, pt. 3, 1944, pp. 72-73.

## Tourmaline

Euhedral crystals of black tourmaline measuring up to 1½ inches by 4 inches occur abundantly in quartz veinlets and pegmatite dykelets cutting diorite. The veinlets and dykelets are usually less than 6 inches

wide. The occurrence is on the north side of a road leading west from Highway 508 at a point ¾ mile northeast of Springtown and ¼ mile from the highway.

*Reference:*
Quinn, H. A.: GSC, Paper 51-27, 1951, p. 71.

## Calabogie (Main) Property: Caldwell and Campbell Deposits

Magnetite was mined at this property from 1883 to 1901. The workings consist of several pits and trenches. The property is now controlled by Algoma Ore Properties Limited.

The magnetite zone consists of gneisses, schists, silicated crystalline limestone, metamorphic pyroxenite, amphibolite and skarn. The magnetite occurs in fine veinlets and as coarse crystals ½ inch in diameter. Pyrite, pyrrhotite, and chalcopyrite are closely associated with the ore. Pyroxenes, amphiboles, mica, chlorite, and serpentine occur in the crystalline limestone. Epidote and brown garnet are common in the skarn zone with quartz, feldspar, pyroxenes, and calcite. Reddish brown tourmaline (dravite) occurs with bright green pyroxene and with plagioclase feldspar in grey schist.

The mine is 1½ miles by road east of Calabogie Village. Proceed south from Calabogie across the bridge over the Madawaska River and continue for ¾ mile; follow the road which branches off eastward for ¾ mile. The mine is on the north side of the road.

*References:*
Quinn, H. A.: GSC, Paper 51-27, 1951, pp. 40-43.
Rose, E. R.: GSC, Bull 45, 1958, pp. 30-32.

## Virgin Lake, Celestite

This occurrence has provided almost all the celestite mined in Canada. It was first opened in 1918; some work was done at that time and again in 1941. The celestite is white and occurs as opaque radiating masses and as radiating clusters of euhedral crystals. It is found in brecciated

zones in pink to white crystalline limestone. In some places the celestite occurs as pure masses up to 4 inches wide. The property is near the south end of Virgin (Dempsey) Lake about 5 miles southeast of Calabogie. Proceed southeast from Calabogie along Highway No. 511 for 3¾ miles, turn on to a wagon-road leading southwest 1¼ miles directly to the mine.

*Reference:*
Quinn, H. A.: GSC, Paper 51-27, 1951, pp. 69-70.

## Caldwell Pyrite Mine

Red garnet and pyrite occur with apatite, titanite, calcite and zoisite in hornblende schist. Zoisite is most abundant in the rocks at the dump adjoining the shaft west of the abandoned railway. The property has not been worked since 1920 and only large dumps now remain. The property lies 6 miles south of Calabogie. Proceed south on Highway No. 511 2 miles from Calabogie; branch off on a road leading west and continue along it for 4 miles around the south side of Calabogie Lake to the point where the Canadian Pacific railway crosses the road. Walk 4 miles south on the track to Clyde Lake siding. From here an overgrown road parallel to an abandoned railway grade leads east 1¼ miles to the mine.

*References:*
Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 53, pt. 3, 1944, pp. 93-96.
Wilson, M. E.: GSC, Summ. Rept., 1919, pt. E, pp. 30-32.

## Spain Mine

Clear green scapolite and large molybdenite crystals, some up to 12 inches across, were found in the pyroxenite and pegmatite rocks at this old molybdenite mine. Some of the scapolite was of gem quality. One crystal from this locality was fashioned into a step-cut stone which is now in the collection of G. G. Waite of Toronto. Other associated minerals are pyrite, pyrrhotite, titanite, apatite and magnetite. The mine is on the south side of Highway No. 41 at a point 6 miles northeast of the bridge at Griffith.

*References:*

Field, D.S.M.: J. Gemm., vol. 1, No. 8, 1949, p. 17.
Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 53, pt. 3, 1944, p. 83.
Wilson, M. E.: GSC, Summ. Rept., 1919, pt. E, pp. 41-43.

### Black Donald Mine

This mine was the chief producer of graphite in Canada and was active from 1896 to 1954. Graphite occurs with diopside (white), tremolite, scapolite, quartz and muscovite (bright green) in crystalline limestone. Quartzite and garnet-bearing amphibolite are interbanded with the limestone. Mica, scapolite, tremolite, pyrite and pyrrhotite occur in the quartzite. The mine is in Black Donald Mine Village on the south shore of Black Donald (Whitefish) Lake. It is accessible by Highway No. 508.

*Reference:*

Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 53, pt. 3, 1944, pp. 43-46.

## 34. GALETTA

*(31 F/8 E, W Arnprior)*

### Kingdon Lead Mine

Splendid crystals of selenite have been obtained from the Kingdon lead mine. Well-formed, transparent, individual crystals up to 1 foot in length have been found here. The selenite also occurs in transparent masses. Fluorite, barite, barytocelestite, hematite and sphalerite occur with the selenite in calcite-galena veins cutting crystalline limestone. Galena occurs as grains, clusters of crystals, and thin sheets in calcite. Marcasite forms rosettes on barite, the rosettes being partly coated with barytocelestite needles arranged in tufts.

The mine was worked briefly from 1884 to 1885 but remained inactive until 1914 when production was resumed and continued until 1931. The deposit is on Morris Island on the south side of the Ottawa River, 1½ miles north of Galetta. From Arnprior it is reached by proceeding

east on Highway No. 17 for 4 miles, then northeast on a gravel road for 1¾ miles to Galetta. On the north side of the bridge follow the trail leading north to the mine.

*References:*

Alcock, F. J.: GSC, Econ. Geol. Ser., No. 8, 1930, pp. 136-138.
Bruce, E. L. and Light, Margaret: Am. Mineralogist, vol. 12, 1927, pp. 396-398.
Cole, L. H.: Mines Br., Pub. No. 714, 1930, p. 46.

### Celestite

Celestite is associated with calcite and minute quantities of sphalerite and chalcopyrite in a vein which was briefly worked in 1910 for celestite. The celestite occurs partly as dense, white, tabular, crystals, and partly as glassy, clear, lozenge-shaped crystals. The country rocks consist of crystalline limestone which includes masses of diorite, granite and pegmatite. The shaft and dump are on the west side of the Kingdon mine-Kinburn road at a point approximately 500 yards south of the bridge over the south branch of the Ottawa River.

*Reference:*

Wilson, M. E.: GSC, Mem. 136, 1924, pp. 115-116.

## 35. BLUE MOUNTAIN AREA

*(31 C/12 W Bannockburn; 31 D/19 E Burleigh Falls)*

### Cancrinite, Sodalite, Corundum

The nepheline syenite rocks in the Blue Mountain area carry a wide variety of accessory minerals including garnet, corundum, zircon, calcite, apatite, titanite, epidote, riebeckite, natrolite, prehnite, analcite, hydronephelite, cancrinite, sodalite, and tourmaline. The rocks have been exposed by several pits, trenches, strippings and quarries. At one time, about the turn of the century, exploration work for corundum and mica was carried on; at present, two mining companies are engaged in quarrying operations for nepheline. The American Nepheline Limited

properties are located on the southeast face of the Blue Mountains above Little Mountain Lake about 1½ miles northeast of Nephton village. The Cabin Ridge quarry is now being worked; several other quarries have previously been worked. International Minerals and Chemical Corporation (Canada) Limited, (Canadian Flint and Spar Department) operate quarries just west of Barrette Lake near Blue Mountain post office. The two mining areas are 4½ miles apart but are not connected by a direct road.

At the Cabin ridge quarries excellent crystals of prehnite and analcite have been collected from vugs. Cancrinite, sodalite and pink hydronephelite occur in the nepheline pegmatites. A bronze-coloured corundum occurs as crystals in the Mill Ridge quarry located opposite the mill, about 100 yards north of the road. Pink hydronephelite and zeolites are reported from the old quarries on the north side of the road ¼ to ½ mile northeast of Nephton. Bluish to greenish-grey rounded corundum crystals embedded in mica occur in the mica-corundum deposits near the northwestern end of Kasshabog Lake and along the Canadian Pacific railway. Pits have been opened up at the following properties: Croft property along the railway near the northwestern end of Kasshabog Lake (lots 14, 15, concession VIII, Methuen township, Peterborough County); Miller Property on the south side of Little Mountain Lake (lot 13, concession IX, Methuen township); Bennett's mine in the northwest corner of lot 14 near the boundary between concessions IX and X, Methuen township; Madill property in lot 15, concession IX, Methuen township.

The deposits at Nephton are reached by a paved road from Crowe's Landing on the south shore of Stony Lake. The quarries near Barrette Lake are accessible by a 9-mile road from Oak Lake village which lies to the south. The pits, quarries, etc. are shown in Map 1960e which accompanies the report by Hewitt (1960).

*References:*

Hewitt, D. F.: Ont. Dept. Mines, Ann. Rept., vol. 69, pt. 8, 1960, pp. 105, 123-135.

Satterly, J.: Ont. Dept. Mines, Ann. Rept., vol. 52, pt. 2, 1943, p. 23.

### Eels Creek, Peristerite

To the south of the Blue Mountains, on the north shore of Stony Lake near the mouth of Eels Creek, peristerite occurs in an albite-quartz vein.

*Reference:*
Johnston, R. A.: GSC Mem. 74, 1915, p. 175.

## 36. MADOC AREA

*(31 C/6 W Tweed; 31 C/11 W Kaladar; 31 C/12 E, W Bannockburn; 31 C/14 W Mazinaw Lake)*

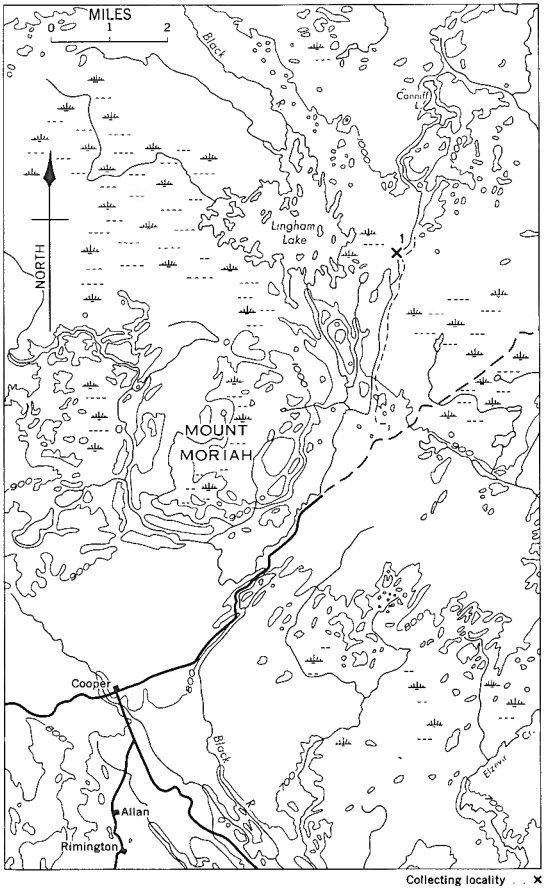
### Canniff Lake, Talc

Pale apple green coarsely foliated talc is associated with a coarsely crystalline dolomite in a serpentine band exposed by small surface pits about 2¾ miles south of the southern end of Canniff Lake. The talc is reported to be translucent and very pure; in places it makes up the entire width of the vein which measures 14 to 18 inches. Another pit, 300 feet northeast of this, exposes a zone of fibrous actinolite cutting pale green amphibolite. The width of the zone is 2 to 4 inches. The pits are situated between an abandoned log road (Canniff Lake road) and Canniff (Indian) Creek at a point 11 miles northeast of Cooper. From Cooper, access to the locality is via the road which follows Black River and Canniff Creek.

*References:*
Thomson, J. E.: Ont. Dept. Mines, Ann. Rept., vol. 52, pt. 3, 1943, p. 71.
Wilson, M. E.: GSC, Econ. Geol. Ser., No. 2, 1926, pp. 90-91.

### Specularite

Crystals of specularite are found in vugs at the Wallbridge and St. Charles mines, north of Madoc. At the Wallbridge mine red hematite in crystalline carbonate rock contains vugs lined or filled with crystals of specularite, magnetite, goethite, and calcite. Magnetite crystals are




MADOC AREA: Canniff Lake talc.



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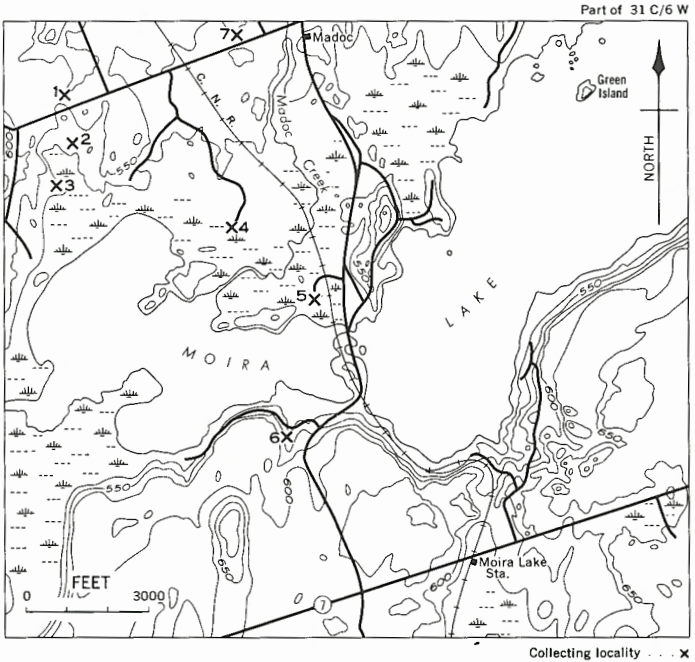
associated with the specularite in vugs in ferruginous carbonate rock at the St. Charles mine. The Wallbridge mine is on the west side of Highway No. 62, 4 miles north of Madoc. The St. Charles mine lies about 2 miles northeast of Madoc. Leave Highway No. 7 at a point ¾ mile east of its junction with Highway No. 62 and proceed north for 1 mile; walk west ¼ mile across a field to a wooded area where the mine is located.

*Reference:*
Rose, E. R.: GSC, Bull. 45, 1958, pp. 63-66.

## Moira Lake, Fluorite

A variety of minerals has been reported from the fluorite veins in the vicinity of Moira Lake. The most common minerals comprising the veins are fluorite, barite and calcite; those occurring less abundantly are celestite, quartz, marcasite, pyrite, chalcopyrite, tetrahedrite, malachite and chalcocite. The fluorite is found in massive form and as crystals (cubes or octahedrons) lining cavity walls, the colour ranging from white to grey, green, honey-yellow, blue, purple, rose or red. The barite is commonly in white massive and crystalline forms, but also in columnar, nodular, fibrous and ochreous masses. Both massive and crystalline calcite are present, the crystals measuring up to 6 inches in diameter. Celestite occurs as pale blue transparent crystals along cavity walls, and as grey radial fibrous aggregates up to several feet in diameter. Some of the more interesting properties are briefly described below. The mines are not operating at present.

*Bailey Mine*—Honey-yellow, pale green and red massive and crystalline fluorite is interbanded with white massive and crystalline barite. Some of the crystalline barite is in well-developed pale-blue tabular crystals. Unlike the other deposits in the area the fluorite octahedron is more common than the cube. Some of the fluorite crystals enclose small masses of tetrahedrite. Other minerals associated with the deposit include calcite, quartz, and chalcocite. When this property was being mined stalactites and stalagmites of barite and fluorite were found in a




**MADOC AREA: Moira Lake fluorite mines; 1. Bailey mine; 2. Keen mine; 3. North Reynolds; 4. Rogers mine; 5. Perry mine; 6. Blakeley mine; 7. Noyes mine.**

cavern underground. The mine is on the north side of the old gravel road leading from Madoc to Marmora, about 1½ miles southwest of Madoc.

*Keen Mine* is across the road from the Bailey mine and it is well known for the brilliant, clear crystals of fluorite (up to 5 inches in diameter)

which were found embedded in grey, fibrous celestite. The fluorite also occurs as white, pale green, honey-yellow or rose red transparent masses. Associated with the fluorite are calcite and barite, the latter as individual tabular crystals and in dome-like aggregates of concentrically arranged tabulae up to 1 inch in diameter.

In a pit ¼ mile south of the main deposit, veinlets consisting mainly of minute crystals of quartz overlain by pale green fluorite crystals are exposed. The veinlets are commonly 6 inches wide. This pit lies near the northwest shore of the west arm of Moira Lake.

*North Reynolds Property*—A pit exposes a fluorite-calcite-barite vein cutting grey limestone. Cavities in the vein are lined with honey-yellow fluorite crystals and tabular crystals of barite. This property is situated a short distance directly south of the shaft house on the Keen property.

*Rogers Mine* (north of the west arm of Moira Lake). A vein consisting mostly of green to honey-yellow fluorite cuts buff-coloured Precambrian dolomite. The deposit lies about ½ mile northwest of the Perry mine and is accessible by road from Madoc 1¾ miles away.

*Perry Mine* (north of Moira Lake). Honey-yellow, colourless, and pale green crystalline fluorite is interbanded with barite and calcite in a vein which also carries fibrous celestite and pyrite. Beautiful transparent pale green crystals of fluorite have been obtained from this deposit. The country rocks consist of dolomite, limestone, quartz syenite and granite. The mine is near the north shore of the narrows which divides Moira Lake, and to the west of the Canadian National railway. It is accessible by a short road leading west from the Madoc-Belleville road at a point 1¾ miles south of Madoc.

*Blakeley Mine* (south of Moira Lake)—A vein consisting of alternating bands of white barite and colourless to honey-yellow fluorite cuts Black River limestone. The mine is approximately 200 yards west of the Madoc-Belleville road at a point ¼ mile south of the Canadian National railway crossing.

*Noyes Mine* (south of Moira Lake)—The fluorite-barite vein cuts Precambrian granite and Palaeozoic limestone. The barite is in the form

of nodular or concretionary-like masses of resinous material with a concentric structure. Both red and yellow varieties have been found here. Pale blue transparent crystals of celestite line cavities in the vein. Pyrite was reported from this locality as a thin encrustation on the fluorite crystals. The mine is about 150 yards north of the road running through Moira station, approximately 1 mile east of its junction with the Madoc-Belleville road.

*Reference:*

Wilson, M. E.: GSC, Econ. Geol. Ser., No. 6, 1929, pp. 44-46, 50-67.

## Henderson and Conley Talc Mines

Several minerals have been reported from the Henderson and Conley talc mines (Canada Talc Industries Limited) near the north shore of Moira Lake, southeast of Madoc. The two mines are adjacent, the Henderson being the more westerly. Mining operations commenced in 1896 at the Henderson property. The talc occurs most commonly as white, cream, grey, or brown masses in association with tremolitic dolomite, crystalline limestone and quartzite. The flaky and stellate varieties occur in both mines, but massive steatite (pale apple green) was observed only in the Henderson property. Tremolite closely associated with the talc occurs as white to pale green individual crystals up to 3 inches long, and as crystal aggregates. Rutile crystals have been reported from a quartz vein in the west end of the Henderson pit. Other minerals include brown to black tourmaline crystals (some doubly terminated) and crystals of pyrite, arsenopyrite, zircon and titanite. Clear to smoky grey, pink, and red aggregates of calcite scalenohedrons (individual crystals up to 1 inch long) occupy vugs and fissures. The mines are reached by a $\frac{1}{2}$-mile road leading south from Highway No. 7 at a point $\frac{3}{4}$ mile east of the junction of Highways 7 and 62 in Madoc.

*References:*

Sandomirsky, Peter: Univ. West. Ont., M.A. Thesis, 1954.
Wilson, M. E.: GSC, Econ. Geol. Ser., No. 2, 1926, pp. 78-87.

### Black Marble

A beautiful black marble composed of alternating dark and lighter bands occurs in a quarry in the southeast end of the village of Madoc. To reach the quarry, leave Highway No. 7 at a point ¾ mile east of the junction with Highway No. 62 and proceed south 700 yards; turn right (west) and continue for 250 yards. The quarry is on the north side of the road.

*Reference:*
Osborne, F. F.: Ont. Dept. Mines, Ann. Rept., vol. 39, pt. 6, 1930, pp. 53-54.

### Belmont Iron Mine

Bottle green, vitreous vesuvianite in grains up to ½ inch across occurs with dark brown garnet along the contact between crystalline limestone and gabbro-diorite at the Belmont (Ledyard) deposit (personal communication: E. R. Rose). The garnet occurs as coarse crystals and in some places is quite massive. Both amphibole and epidote are associated with the garnet. The mine is on the west side of Belmont Lake, 8 miles northwest of Marmora. Proceed north from Marmora along a gravel road to Cordova Mines; from here a branch road leads southward for about ½ mile to the workings.

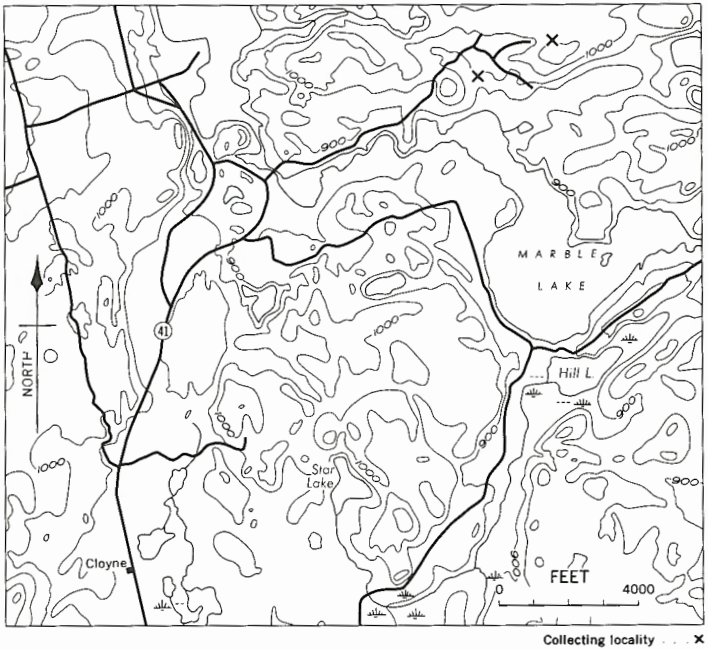
*Reference:*
Rose, E. R.: GSC, Bull. 45, 1958, pp. 18-19.

## 37. KALADAR AREA

*(31 C/11 E Kaladar; 31 C/14 E Mazinaw Lake)*

### Star Gold Mine

Deep green actinolite in radiating sheaves and rosettes is associated with white dolomite and quartz at the Star (Star of the East) mine. Tourmaline, scheelite, pyrite, and chalcopyrite are found with the




KALADAR AREA: Star gold mine.

actinolite in quartz veins which cut white to rose-pink crystalline dolomite. Gold is associated with pyrite.

The mine lies north of Marble Lake and about 4 miles by road northeast of Cloyne.

*Reference:*

Meen, V. B.: Ont. Dept. Mines, Ann. Rept., vol. 51, pt. 4, 1942, pp. 44-47.

## Golden Fleece Mine

Small masses of kyanite are associated with quartz stringers in mica-schist at the old Golden Fleece mine near Flinton. The mine was worked in the 1880's for gold which was recovered from the quartz veins. Tourmaline, pyrite, ankerite, calcite, chalcopyrite, pyrrhotite, arsenopyrite, and scheelite are reported from the vein and from material in the dump. The mine is reached by proceeding north on Highway No. 41 for a distance of 5 miles from Kaladar, then west along the Flinton road for approximately 1 mile. From here a road leads north directly to the mine, a distance of about 1 mile.

*References:*

Harding, W. D.: Ont. Dept. Mines, Ann. Rept., vol. 51, pt. 4, 1942, pp. 70-71.

Hewitt, D. F.: Ont. Dept. Mines, Ind. Min. Circ., No. 4, 1952, p. 6.

## Emerald Diopside

Emerald-green diopside crystals, radial aggregates of tremolite, and talc are associated with rose to buff-coloured dolomitic limestone in two adjacent quarries south of the town of Kaladar. The diopside crystals are commonly up to ½ inch across and are often transparent. The quarries are situated on the south side of the road leading west from Highway No. 41 immediately south of the Canadian Pacific Railway crossing just south of Kaladar. The distance from the highway to the quarries is about ¼ mile.

## Serpentine

Serpentine occurs in an anticline in dolomitic limestone exposed by a road-cut on the east side of Highway 41 between Highway No. 7 and the Canadian Pacific railway, south of Kaladar.

*Reference:*

Harding, W. D.: Ont. Dept. Mines, Ann. Rept., vol. 51, pt. 4, 1942, p. 65.

## 38. FERNLEIGH-CLARENDON AREA

*(31 C/15 E, W Sharbot Lake)*

### Fernleigh, Kyanite, Staurolite

A schist containing kyanite, staurolite and sillimanite is exposed in several places in the vicinity of Fernleigh. The kyanite occurs as long, slender, blue crystals which sometimes are up to 8 inches long. Outcrops are found on the power line a little over ½ mile northeast of the Fernleigh post office, and about 100 feet beyond the end of the road leading northwest from the Fernleigh-Ardoch road at a point about 2 miles northeast of Fernleigh. Rounded log-like crystals (up to 6 inches by 1 inch by ½ inch) and radiating blades of blue kyanite occur in a sericite-sillimanite-quartz schist exposed near the Ontario Hydro-electric power line on a road running north from the Fernleigh-Ardoch road at a point ½ mile east of Fernleigh post office. Well-formed brown staurolite crystals are associated with the schist.

*Reference:*

Hewitt, D. F.: Ont. Dept. Mines, Ind. Min. Circ., No. 4, 1952, p. 6.

### Marhill Calcite Quarry

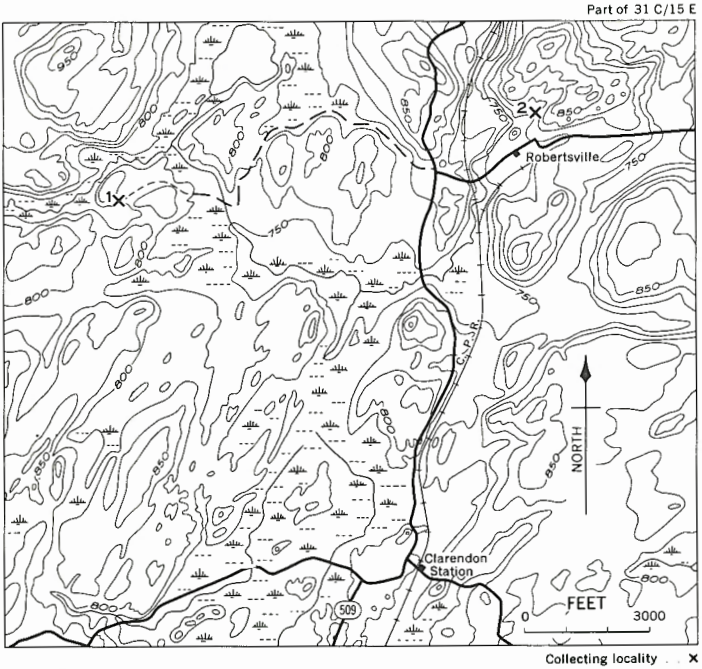
Large cream-coloured calcite crystals occur at the Marhill calcite quarry. The crystals are up to 8 inches in diameter. Some of them have a violet tinge. The calcite vein cuts pink granite gneiss. The quarry is located about 2 miles west of Robertsville to which it is connected by a direct road. Robertsville is 1¾ miles north of Clarendon, on the Clarendon-Donaldson road.

*Reference:*

Smith, B. L.: Ont. Dept. Mines, Ann. Rept., vol. 65, pt. 7, 1956, p. 42.

### Robertsville and Mary Mines

Well-developed crystals of green pyroxene up to 2 inches long occur at the Robertsville (Mississippi) and Mary iron mines east of Robertsville.




**FERNLEIGH–CLARENDON AREA: 1. Marhill quarry; 2. Roberstville and Mary mines.**

The crystals are altered to black hornblende along the margins, and are rimmed with magnetite. They occur with apatite, pyrite, magnetite, chalcopyrite, and titanite at the contact between crystalline limestone and gneiss. Green epidote veins cut the gneiss near the magnetite zone. This rock, consisting of a network of green epidote veinlets in pink feldspar makes a very attractive ornamental stone.

The mines are side by side about ½ mile east of Robertsville. A road which leaves the Clarendon-Donaldson road at the turn-off to the calcite mine leads to the properties.

*References:*
Rose, E. R.: GSC, Bull. 45, 1958, pp. 51-52.
Smith, B. L.: Ont. Dept. Mines, Ann. Rept., vol. 65, pt. 7, 1956, p. 42.

## 39. PERTH AREA

*(31 C/16 E, W Perth)*

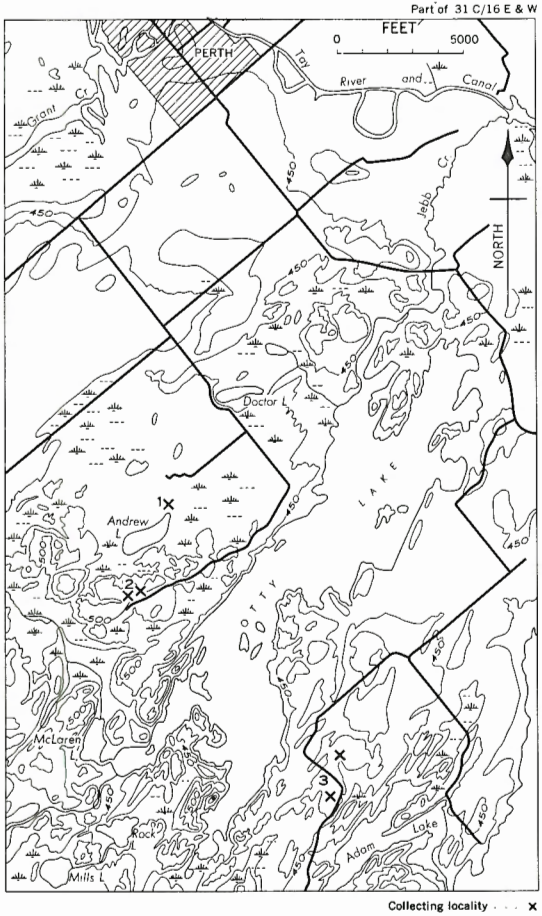
The mineral occurrences in the Perth area are associated mainly with the apatite, mica, and feldspar deposits. The mica-apatite deposits were first worked for apatite and later for mica. Associated with mica and apatite are pyroxene, calcite, hornblende, scapolite, pyrite and marcasite. Small drusy cavities (less than 6 inches across) lined with crystals of calcite, quartz, barite and pyroxene are found in nearly all the mica-apatite deposits. The phlogopite is often asteriated. Feldspar occurs in pegmatite with pyrite, tourmaline and hornblende.

*Reference:*
Dugas, J.: Ph. D. Thesis, Dept. Geol. Sc., McGill Univ., 1952, pp. 115, 119-120, 132.

For the gem-cutter, the most sought-after minerals in this area are perthite, wilsonite, and peristerite which when fashioned into cabochons make attractive and rather unique gemstones.
The deposits described below are no longer being worked.

### Wilsonite

Massive white to peach-bloom pink wilsonite occurs quite abundantly with scapolite in a pyroxenite dyke which was once worked for apatite and mica. Small amounts of calcite, apatite, and silvery mica are associated with the pyroxenite. Several pits expose the deposits; the largest (25 ft. deep, 60 ft. long, 25 ft. wide) is near the shore of the eastern




PERTH AREA: 1. Wilsonite; 2. McLaren mine; 3 Perthite.

end of Andrew Lake in the northwest end of the lot. From Perth, go south along the Westport (Scotch line) road for 1½ miles, then east for 2 miles along the road which leads via Doctor Lake to Otty Lake; and south again on a farm road for about ½ mile. At this point the road bends westward. A walk of about ¼ mile in a southwest direction leads to the deposit.

*Reference:*
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 117, 300.

## McLaren Mine

Anhydrite, gypsum, and crystals of zircon are associated with this apatite and mica deposit. A few pits have been sunk into crystalline limestone and pyroxenite rock. In one of the pits, light purple anhydrite in cleavable masses occurs with snowy white gypsum in crystalline limestone. Sometimes the gypsum forms alternate layers with the anhydrite producing an attractive banded pattern. Other specimens consist of white gypsum veins cutting the lilac-coloured anhydrite. Zircon crystals up to 1¼ inches long are found in a matrix of serpentinized pyroxene, granular calcite, and apatite in the pit known as the "Sand" pit and in an adjoining pit—Megantic pit. The crystals are unusually brilliant and deep reddish brown. They are sometimes transparent and would be of gem quality if they were not fractured. Many doubly terminated crystals were found here. The apatite is the green massive, compact, or sugary variety and contains light silver-amber asteriated phlogopite crystals, some measuring over 2 feet across. Pyrite crystals occur at this deposit. The property is to the west of Otty Lake, 5½ miles by road from Perth. Follow the Otty Lake road (see Wilsonite locality, above) to the end of the road. The pits are located on the west side of the road just north of the buildings.

*References:*
Cole, L. H.: Mines Br., Pub. No. 714, 1930, p. 46.
Palache, C. H. and Ellsworth, H. V.: Am. Mineralogist, vol. 13, 1928, pp. 384-391.
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 178-179.

## Silver Queen Mine

In the early 1900's this mine was worked for apatite and mica which occur along the contact of a pyroxenite dyke with gneiss and crystalline limestone. Apatite occurs in sugary, massive form and as crystals, some of which are quite transparent. The colour ranges from green to blue-green. The mica is in the form of large silver amber crystals, commonly asteriated. Other minerals associated with the deposit include white hornblende-asbestos ("mountain leather") as sheets occupying crevices in sugary, dark green long actinolite crystals in pink calcite, and scapolite. Another pit about 250 feet from the mica pits exposes crystalline limestone containing phlogopite, diopside, wollastonite, pyrite, garnet, tremolite, marcasite, pyrrhotite and graphite. The limestone is unusual on account of its blue colour and its property of releasing sulphuretted hydrogen when crushed. The mine is south of Perth, about 14 miles by road. Take the road to Crosby from Perth for a distance of 11½ miles to a school house on the west side of the road. From here, take the road leading east for 2½ miles to the junction of a road branching off to the north; follow the north fork for ¼ mile to the farm lane leading west to the Lally farmhouse (about ½ mile from the turn-off). The road continues from the farmhouse to the mine. Permission to enter the property should be sought at the farmhouse.

*Reference:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 167-168, 253-254.

## Baby Mine

Several pits expose pyroxenite rock containing fissures and pockets filled with green and red apatite and asteriated phlogopite crystals. White and yellow scapolite occur with dark mica flakes in pink calcite at this property which is located approximately ¼ mile west of the Silver Queen mine.

*Reference:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 168-169, 290.

## Pike Lake Mine

Brown tourmaline and light yellow zircon occur in drusy cavities in limestone. Serpentine, quartz, hematite, and pyrite are associated with this mica deposit. This mine, opened in 1860, is one of the oldest mica mines in the province; some of the large mica sheets mined in the early days were exported to Paris for use as windows in French battle ships. The mine is located on the northeast slope of a small ridge on the west side of the creek which enters the north end of Pike Lake. The occurrence is just east of the Westport road at a point 7½ miles south of Perth.

*References:*

Dugas, J.: Dept. Geol. Sci., McGill Univ., Ph. D. Thesis, 1952, p. 32.
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, p. 181.

## Peristerite

Specimens of peristerite have been collected from a feldspar mine formerly worked by the Perth Feldspar and Mining Company. The mine is about 9 miles northwest of Perth. Proceed west along Highway No. 7 for 3 miles, then north along a concession road (through Harper) for approximately 5½ miles, a branch road leads west to the pits, a distance of about ¼ mile.

*Reference:*

Dugas, J.: Dept. Geol. Sci., McGill Univ., Ph.D. Thesis, 1952, pp. 134-135.

## Tourmaline

Tourmaline occurs in quartz at a small quarry recently worked for feldspar. The crystals are mostly ½ inch in diameter and can easily be detached from the quartz. The quarry is situated 300 feet south of Highway No. 7 at a point 11 miles west of the junction of Highways No. 7 and No. 15 north of Perth.

*Reference:*

Dugas, J.: Dept. Geol. Sci., McGill Univ., Ph.D. Thesis, 1952, p. 135.

### Perthite

Flesh red to brownish red perthite containing copper-red reflections was first reported from the Perth district and derives its name from the town. One of the first occurrences from which the mineral was obtained is the Dobey farm near the west side of Adam Lake, about 8 miles southeast of Perth. The exact locality is not known.

*Reference:*
Parks, W. A.: Mines Br., Pub. No. 100, 1912, p. 34.

A pegmatite dyke of perthite and quartz outcrops in two places in lot 4, concession 6, North Burgess township, between Otty and Adam lakes. Dugas (1952) mentions that the name "perthite" was first applied to the feldspars from this dyke. The dyke strikes north. It is exposed adjacent to the road and at another place about 1,200 feet to the north. The position of these outcrops is indicaed on the map.

*Reference:*
Dugas, J.: Dept. Geol. Sci., McGill Univ., Ph.D. Thesis, 1952, p. 78.

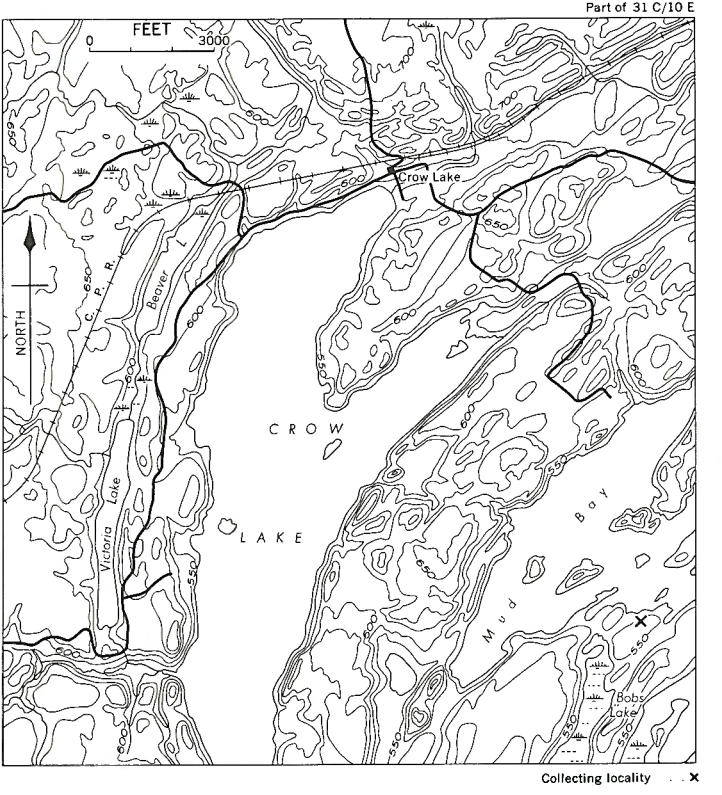
## 40. SHARBOT LAKE-KINGSTON AREA

*(31 C/7 E Sydenham; 31 C/8 E, W Gananoque; 31 C/9 W Westport; 31 C/10 E Tichborne)*

This area was once the scene of considerable mining activity. Mining for mica and apatite commenced in the late 1800's and was carried on into this century. The first feldspar mines were opened in about 1900. The Richardson and Lacey mines were at one time the largest producers of feldspar and mica respectively in Canada. Other deposits include iron, lead, zinc and quartz crystals. Descriptions are given for those occurrences which may provide interesting specimens.

### Bobs Lake (Taggart) Mine

Well-formed pyroxene crystals are associated with crystal aggregates of scapolite in vugs along the walls of mica-apatite-calcite veins which cut




SHARBOT LAKE–KINGSTON AREA: Bobs Lake mine.

pyroxenite rock. The scapolite crystals are well-developed and large-sized. Masses of white datolite in powdery and massive form are found with the scapolite in mica veins. Green apatite occurs in small amounts. The property was worked for mica, beginning in 1897. Some very large mica crystals were removed from the deposit, including one which weighed 2,250 pounds. The mine is on the south shore of the Mud Bay arm of Bobs Lake (west central part of the lake). Take the motor road south from Crow Lake Village to the north shore of Mud Bay (about 3 miles) where the road ends. A boat is needed to reach the south shore, ½ mile from the road's end.

*References:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 159-160, 258.
Harding, W. D.: Ont. Dept. Mines, Ann. Rept., vol. 56, pt. 6, 1947, pp. 86-87.

## Glendower Iron Mine

Apatite, scapolite, diopside, amphibole, phlogopite, graphite, and brown garnet are associated with the magnetite ore along the contact between crystalline limestone and metamorphic pyroxenite. Both apatite and scapolite occur abundantly as coarse crystals in the crystalline limestone. The mine is on the west shore of Thirty Island Lake about 1 mile east of Glendower. Access is by foot along the abandoned railway that crosses the gravel road just north of the town.

*Reference:*

Rose, E. R.: GSC, Bull. 45, 1958, pp. 38-39.

## Bedford Mining Company Mica Mine

White crystalline limestone contains dark brown vesuvianite, brown tourmaline, fibrous and columnar aggregates of tremolite, crystallized and massive quartz, and pyrite. The mica is associated with a quartz-feldspar dyke cutting the limestone. The deposit is situated near the south end of Thirty Island Lake about ½ mile south of Glendower.

*Reference:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 156-157.


SHARBOT LAKE–KINGSTON AREA: 1. Glendower mine; 2. Bedford mine; 3. Richardson mine.

## Richardson Feldspar Mine

The main constituents of the deposit are quartz and feldspar; accessory minerals include tremolite, hornblende (black crystals), pyroxene (light green), titanite, magnetite, pyrite, calcite, apatite and tourmaline. The tremolite is brown, and is reported to produce attractive cat's eyes. Some of the feldspar is flesh-red in colour and can be obtained in large pieces, suitable for cutting. An attractive graphic granite is associated with the deposit.

The quarry is between Thirteen Island Lake and Desert Lake, about 3 miles south of Glendower.

*References:*

Harding, W. D.: Ont. Dept. Mines, Ann. Rept., vol. 56, pt. 6, 1947, pp. 50-51.

Sinkankas, J.: Gemstones of N. Amer., 1959, p. 464.

Spence, H. S.: Mines Br., Pub. No. 731, 1932, p. 38.

## Stoness Mine

Well-formed, large green apatite crystals are associated with pink coarse-grained calcite at this former mica mine. The deposit is situated near the north shore of Buck Lake and west of Mississagua Creek. It is reached by a trail, 1½ miles long, which leads in an easterly then southerly direction from the Bedford Mills-Perth Road at a point 2¾ miles south of Bedford Mills.

*Reference:*

Personal communication: R. F. J. Scoates.

## Calcite, Amethyst

Road-cut on east side of Highway No. 38, 1 mile south of Verona exposes calcite crystals, vugs lined with small amethyst crystals, and banded calcite with hematite. The banded calcite-hematite specimens are reported to fluoresce.

*Reference:*

Woods, B. B. and Woods, L. B.: Mineral Collecting E. Ont., pp. 5-6.

## Burnham Mine

Peristerite exhibiting the characteristic blue play of colour occurs with calcite in a pink feldspar dyke cutting crystalline limestone. A single pit exposes the deposit which lies near Harrow Lake, west of Holleford. The pit is about 700 yards northwest of the end of the road which leads west for ¾ mile from Holleford.

*Reference:*
Spence, H. S.: Mines Br., Pub. No. 731, 1932, p. 39.

## Peristerite

Pink to grey peristerite occurs in a dyke exposed by a pit situated at the junction of the Holleford-Glendower road and a road leading eastward, about 1 mile north of Holleford.

*Reference:*
Woods, B. B. and Woods, L. B.: Mineral Collecting E. Ont., p. 5.

## Baby Mine

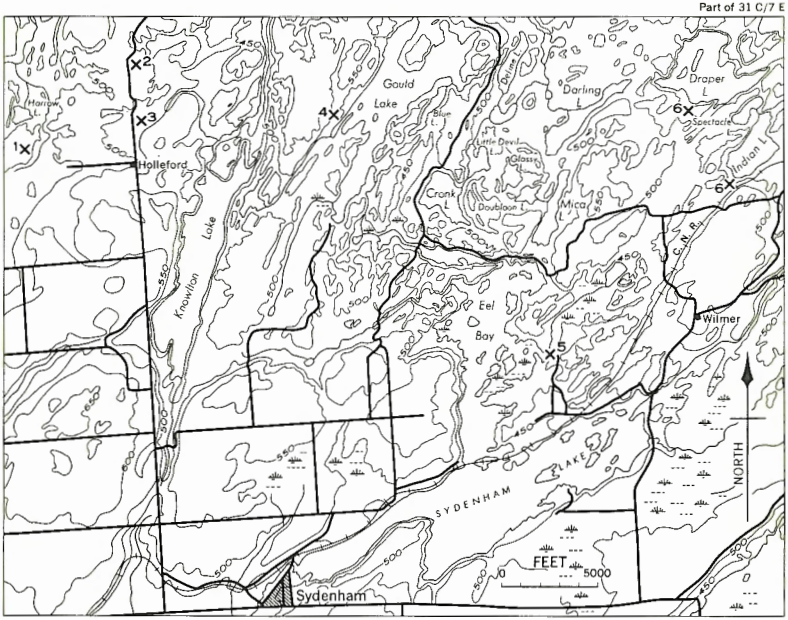
Quartz, actinolite, tremolite, chlorite, brown tourmaline, and pyrite occur as accessories at this mica deposit. The mica-bearing pyroxenite contains some large (up to a foot long) pyroxene crystals. The workings consist of a series of pits to the west of the Holleford-Glendower road, approximately ½ mile north of Holleford.

*Reference:*
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, p. 150.

## Gould Lake Mine

This property was formerly worked for both mica and apatite. Fair-sized apatite crystals occur with golden-amber mica crystals and pyrite in a calcite vein. The mine lies near the northwest shore of the south arm of Gould Lake, approximately 7 miles by road from Sydenham.

*Reference:*
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, p. 152.




SHARBOT LAKE–KINGSTON AREA: 1. Burnham mine; 2. Peristerite; 3. Baby mine; 4. Gould Lake mine; 5. Lacey mine; 6. Draper Lake–Frontenac mine.

## Lacey (General Electric) Mine

This mine was first worked for apatite and later for mica. Some very large mica crystals were taken from the deposit including one over 9 feet in diameter. Pyroxene as light to dark green crystals up to 10 inches across and apatite in massive sugary form and as individual crys-

tals up to 10 inches across occur in calcite veins cutting pyroxenite. Other minerals associated with the deposit include crystals of titanite up to 4 inches across, zircon crystals up to 1½ inches long, fibrous masses of dark green actinolite, graphite and molybdenite flakes, green and grey talc, datolite crystals, and scapolite. This deposit is reported to have furnished some of the finest specimens of datolite found anywhere in the continent. The crystals are transparent with a yellowish-green tinge, the only impurity being small amounts of chalcopyrite. The largest crystals measured 3 by 3½ by 2 cms.

The mine is near the east shore of Eel Bay and north of Sydenham Lake. The distance by road from Sydenham is about 7 miles.

*References:*

Allen, J. M. and Mott, D.P.F.: Dept. Geol., Queen's Univ., B.Sc. Thesis, 1948.

Baker, M. B.: Ont. Dept. Mines, Ann. Rept., vol. 25, pt. 3, 1916, p. 30.

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 141-143.

Miller, W. G.: Ont. Bur. Mines, Ann. Rept., vol. 9, 1900, p. 197.

## Draper Lake-Frontenac Lead-Zinc Mines, Limited

Sky-blue celestite as well-formed crystals up to 2 inches long occurs with marcasite in vuggy openings in the calcite-galena veins. The galena occurs as clusters and as disseminated grains in calcite. Accessory minerals include yellowish-brown sphalerite and pyrite. The mine is south and west of Indian Lake; it consists of three shafts connected by road. One shaft is located on the south side of the Canadian National railway about 500 feet from the south shore of Indian Lake. The other two are about 1,000 yards to the northwest. The deposit is 1 mile by road west of Perth Road Village.

*References:*

Alcock, F. J.: GSC, Econ. Geol. Ser., No. 8, 1930, pp. 142-144.

Bruce, E. L. and Light, Margaret: Am. Mineralogist, vol. 12, 1927, pp. 396-398.



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## Calcite Geodes

A road-cut on Highway No. 401, north of Kingston, exposes limestone containing geodes lined with crystals of calcite. Proceed along Highway No. 401 from the junction of Highway No. 38 to the first road-cut beyond the large oil tanks on the south side of the road.

*Reference:*
Woods, B. B. and Woods, L. B.: Mineral Collecting E. Ont., p. 4.

## Joyceville Jasper

Bright red to brownish-red jasper is found as fragments up to several inches across in sand pits north of Joyceville. Proceed north from Joyceville on Highway No. 15, for 1¼ miles, then east on a gravel road for about ¾ mile. The sand pits are on the south side of the road, opposite a church.

*Reference:*
Personal communication: Gord Cline

## Marble Rock Quartz Crystal Quarry

Quartz crystals, clear and milky, occur in vugs in brecciated gneisses, quartzites, diabase and pegmatite. Although larger crystals have been found, most of them are less than 2 inches long. The smaller crystals are usually clearer than the large ones. The mine is situated on the east side of the Gananoque River just south of the bridge at Marble Rock. It is accessible by walking over the hill from the east end of the bridge, or by driving south from the bridge to the first farm road leading east; follow this road until a clearing is reached (about ¼ mile). A trail from here leads to the quarry.

*Reference:*
Harrison, J. M. and Fortier, Y. O.: GSC, Paper 44-8, 1944, pp. 4, 8-9.

## 41. LYNDHURST-MORTON AREA

*(31 C/9 E Westport)*

### Black Rapids, Quartz Crystal

Clear and milky quartz crystals are found in vugs in quartz veins at the Black Rapids quartz crystals deposit. The quartz veins occur in brecciated Grenville rocks. The crystals occur as clusters and as individual doubly-terminated crystals up to 5 inches in length. Most of the crystals are slender and up to 2 inches in length. The large crystals are usually milky often becoming clear toward the terminated end; the smaller crystals are generally clearer and of a better quality. Reddish-brown hematite coats some of the crystals, and often, a fine micaceous specularite occupies spaces between crystals. Phantom crystals having a thin film of red hematite or green chlorite between the original and the regenerated crystal are fairly common. The deposit has been explored by several pits one of which is being worked. The mine operated by J. B. Steele is situated about 1½ miles northeast of Black Rapids. There is no collecting at the mine but specimens may be purchased from Mr. Steele. The property is on the north side of the road leading to La Rose Bay (on Charleston Lake) about 1½ miles northeast of the bridge at Black Rapids. The turn-off to this road is from the east side of the bridge on the Lyndhurst-Lansdowne road at a point 5¼ miles south of Lyndhurst.

Near the west side of Higley Lake there are several prospect pits from which quartz crystals may be collected. To reach these pits proceed east on the road which branches off from the Lyndhurst-Lansdowne road approximately 1 mile south of the Black Rapids bridge. On the north side of this road about 1½ miles from the turn-off there is a small clearing from which an old lumber road leads north over a ridge to the west side of Higley Lake. These and other prospects are indicated on the map.

*Reference:*

Harrison, J. M. and Fortier, Y.: GSC, Paper 44-8, 1944, pp. 4, 5-8.



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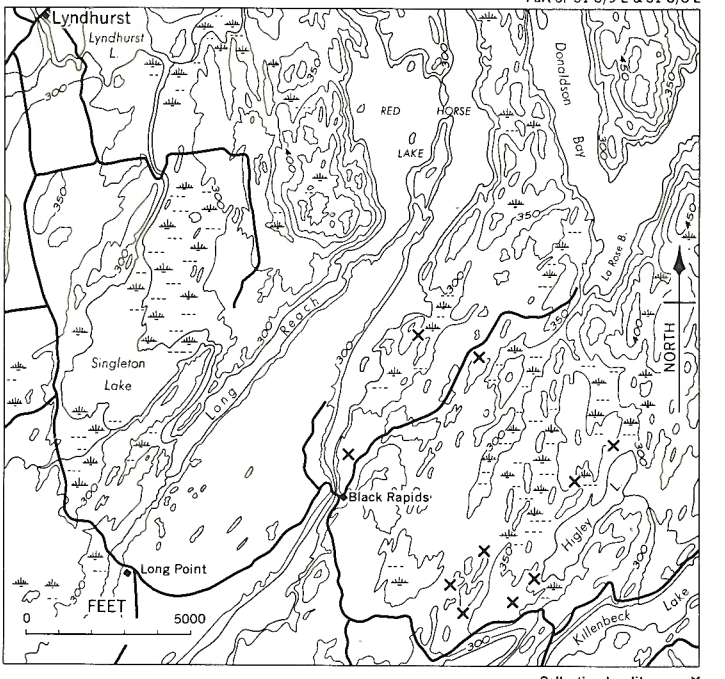



LYNDHURST–MORTON AREA: Black Rapids quartz crystal deposit (9 pits, 1 mine).

## Miscellaneous Mineral Occurrences

Crystals of calcite and of quartz are found in road-cuts on the Lyndhurst-Lansdowne road in the vicinity of Black Rapids.

On Highway No. 15, 1 mile north of Morton, a road-cut exposes gneissic rock and white crystalline limestone. The gneiss contains

small deep-blue pods of cordierite. Patches of green massive talc and serpentine occur in the limestone. At Morton Park a rock-cut exposes crystalline limestone carrying euhedral crystals of pyroxene and yellow-pink apatite crystals up to 3 inches in size. Yellow to brown serpentine outcrops in a stream bed at Morton, just west of Highway No. 15.
Yellow, green, and black masses of serpentine occur in crystalline limestone exposed along the wall of a cliff which rises from the water on the east side of the point of La Rose Bay.
Along the shores of Sand and Whitefish lakes, a cordierite-bearing gneiss outcrops. The cordierite occurs as dark blue pods up to 1 inch in length.

*Reference:*

Wynne-Edwards, H. R.: Dept. Geol., Queen's Univ., Ph.D. Thesis, 1959.

## 42. BROCKVILLE

*(31 B/12 E Brockville)*

### Billings Pyrite Mine, Cacoxenite, Pyrrhotite

The property located 2 miles west of Brockville was first opened for pyrite in 1863 and was active until 1879. The pyrite was used for the production of sulphuric acid. Pyrite occurs interbanded with calcite in lenses in pink granite gneiss. The pyrite is commonly in massive form, but has also been found as single cubes, as clusters of cubes, and as octahedrons up to 2 inches long. Calcite occurs in both massive form and as rhombohedral crystals along the walls of cavities. It ranges in colour from white to grey, light brown to red, and may be transparent or opaque.
The most interesting minerals from a collector's point of view are cacoxenite and pyrrhotite. The cacoxenite occurs as beautiful little

yellow tufts along cavity walls in calcite, usually associated with pyrite. This is the only known occurrence of this mineral in Canada. Pyrrhotite occurs as steep pyramidal horizontally-striated crystals up to several inches in length. Both the crystalline and massive pyrrhotite are found in calcite and steatite. The steatite is in honey-comb masses. Other minerals reported from the deposit include quartz, mica, siderite, apatite, hisingerite, and a variety of feldspar displaying play of colour. Proceed northwest along Highway No. 29 for a distance of 1¼ miles from its intersection with Highway No. 2, at Brockville; branch off onto a concession road leading southwest and continue for about 1¼ miles. Just before the second bend on the road is reached, an old road branches off to the south and leads directly to the pit, about 250 yards from the concession road.

*References:*

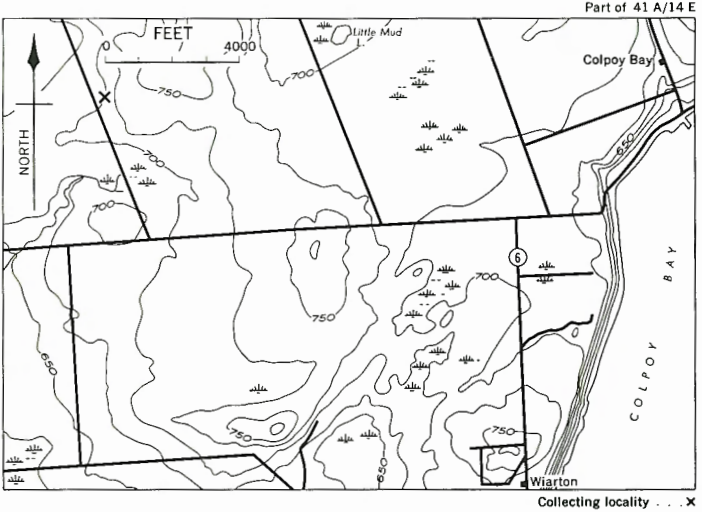
Dana, E. S.: The System of Mineralogy, 6th ed., 1904, p. 73.
Harrington, B. J.: GSC, Rept. Prog., 1874-75, pp. 304-306.
Wright, J. F.: GSC, Mem. 134, 1923, pp. 50-52.

## 43. WIARTON AREA

*(41 A/14 E Cape Croker)*

### Sphalerite

Golden-brown to dark-brown resinous sphalerite occurs in pore spaces and cavities and partly replaces fossils in Amable dolomite exposed by a series of pits throughout the Bruce Peninsula, from Wiarton to Cabot Head. A twinned crystal of sphalerite from this area has been fashioned into a 6-carat brilliant cut stone. The sphalerite-bearing dolomite rock takes a good polish and is well suited for larger ornamental objects, such as book-ends, paper-weights, etc.




WIARTON AREA: Sphalerite.

To reach one of the more accessible pits, proceed north from Wiarton along Highway No. 6 for 4½ miles and stop just after passing over the crest of a ridge. At the base of the hill on the east side of the highway there is a clearing in the wooded area. A trail leads from the clearing in an easterly direction along the north flank of the ridge. Follow this trail and, where it branches off in two directions, take the south fork which leads to a pile of broken-up rock. The pits are in the woods just beyond the rock pile. The total walking distance from the highway is ¼ to ½ mile.

*References:*

Personal communication: B. A. Liberty.
Alcock, F. J.: GSC, Econ. Geol. Ser., No. 8, 1930, p. 164.
Field, D. S. M.: J. Gemm., vol. 1, No. 8, 1947, p. 26.

## 44. CREDIT RIVER AREA

*(30 M/12 W Brampton; 30 M/13 W Bolton; 40 P/16 E Orangeville)*

### Celestite

Celestite and gypsum occur in the contact between the Lockport dolomites and Whirlpool sandstones which are exposed along the Credit River between Cataract and Terra Cotta (north of Georgetown). The celestite occurs as blue and orange-red coarse blades; sometimes the two colours occur together producing unusually attractive specimens. The orange variety is found in the vicinity of Cataract and Credit Forks, while the blue occurs near Terra Cotta and farther south. Gypsum occurs as nodules throughout the area.

One of the best collecting spots for the celestite is along the slope of the hill situated to the west of Credit Forks station and on the north side of the Canadian Pacific railway. Specimens can be readily removed from the talus along the side of the hill.

*Reference:*

Personal communication: D. D. Hogarth.

## 45. TORONTO

*(30 M/11 W Toronto)*

### Don Valley, Vivianite

Vivianite crystals and brown siderite nodules are associated with the clay formation at the Don Valley brickyards in the eastern part of Toronto. Both minerals are quite rare at this locality. The brickyards are situated on the west side of the Canadian Pacific railway. To reach the locality, proceed north on Glen Road from the Glen Road-Bloor Street intersection. Turn right on South Drive bearing left down to the valley. At the bottom of the valley turn right, then left just

before crossing the railway tracks. The brickyards are about ½ mile beyond this turn.

*Reference:*
Personal communication: D. D. Hogarth.

## 46. DUNDAS

*(30 M/5 W Hamilton)*

### Dundas Limestone Quarry

Blue celestite occurs in the limestone quarries located north of Dundas. Other minerals associated with the deposit are sphalerite, calcite (fluorescent), fluorite and galena.

Proceed north along the Sydenham road for ¾ mile beyond the Canadian National railway crossing; turn left (west) and continue for ½ mile; turn left (south) and proceed ¼ mile to the quarry.

## 47. GRAND RIVER VALLEY

*(30 L/13 E, W Dunnville; 30 M/4 W Grimsby; 40 I/16 E Simcoe)*

### Gypsum

Extensive gypsum deposits lie along the valley of the Grand River between the towns of Cayuga and Paris. The pure white and mottled grey are the most common varieties; pink gypsum has been reported from one exposure, on the south side of the Grand River opposite Caledonia. The gypsum is interbedded with shale and limestone. Two mines are active in the area, one at Hagersville (Canadian Gypsum Company Limited) and the other at Caledonia (Gypsum, Lime and Albastine, Canada Limited). Other mines which at one time were in operation include the Lythmore (Martindale) mine situated on the south side of the Grand River about 1½ miles southeast of the village of York; the Carson mine near Willow Grove (lot 13, concessions V



74278—10

and VI, Oneida township, Haldimand County); the Merritt mine near Gypsum Mines; and a few other mines on the south side of the river opposite Gypsum Mines, south of Cayuga.

*References:*

Dyer, W. S.: Ont. Dept. Mines, Ann. Rept., vol. 34, pt. 2, 1925, pp. 46-47.

Cole, Geo. E.: Ont. Dept. Mines, Ann. Rept. vol. 34, pt. 2, 1925, pp. 9, 12.

## 48. ST. CATHARINES-NIAGARA FALLS AREA

*(30 M/3 E, W Niagara)*

### Niagara, Selenite, Celestite, Sphalerite

Fine crystal specimens of various minerals are found in the Lockport dolomites in the vicinity of Niagara Falls. Crystals of selenite, calcite, dolomite, sphalerite, and celestite, occur in geodal cavities in the rock. One of the popular collecting sites in the area is the dump of the Niagara area canal system. Crystals of selenite, calcite, colourless fluorite, pink to white dolomite, and orange sphalerite may be found. The sphalerite is somewhat transparent and has been cut into attractive cabochons by some of the local lapidarists.

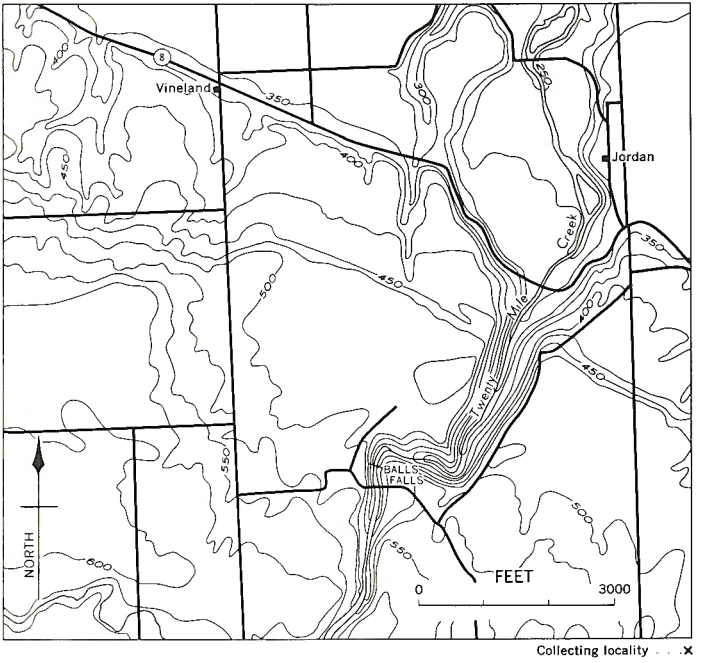
Massive white gypsum and anhydrite are also associated with these rocks. The locality is 4 to 5 miles by road from Niagara Falls. It is reached by proceeding west on Lundy's Lane beyond Greens Corners to the Kalar road, then south on the Kalar road to the first road which crosses it at right angles (about 2 miles). The dumps are on the southeast corner of the cross roads.

*Reference:*

Personal communication: Gord Cline.

### St. Catharines, Selenite

Selenite, anhydrite, and gypsum are found in two quarries to the south of St. Catharines. The quarries are on opposite sides of the St. Cathar-




ST. CATHARINES–NIAGARA FALLS AREA: Balls Falls celestite.

ines-Welland (Merrittville) road on the Niagara escarpment, below the sanitorium. The distance from St. Catharines is approximately 3½ miles. The quarry on the east side of the road is known locally as Savagny's quarry.

*Reference:*

Personal communication: Gord Cline.



74278—10½

### Balls Falls, Celestite

In a gorge near Balls Falls on Twenty Mile Creek, crystals of celestite are found occupying vugs in red clay. Reddish celestite crystals occur in the clay beneath overhanging rock on the west bank of the creek about ¼ mile downstream from the falls. The best collecting is along the lower part of the gorge near the bed of the creek. Orange celestite crystals occur in the walls of the gorge and in broken rock fragments along the creek.

Balls Falls is accessible by road from Jordan or from Vineland. A trail leads north from the west side of the bridge to the occurrence.

*Reference:*

Personal communication: Gord Cline.

### Welland Canal, Selenite, Sphalerite

Crystals of selenite, sphalerite (orange) and sulphur occur in Lockport dolomite at the old canal dumps situated on the north side of the Queen Elizabeth Way just east of the Welland Canal. Selenite is plentiful but sulphur is rare.

*Reference:*

Personal communication: D. D. Hogarth.

## 49. KETTLE POINT

*(40 O/1 E Perch)*

### Kettle Point Concretions

Calcite and marcasite concretions occur in the black shales of the Kettle Point formation along the shore of Lake Huron between Kettle Point and Cape Ipperwash. The marcasite concretions are ellipsoidal and up to 3 inches long. The calcite concretions measure up to 3 feet across and are filled with calcite crystals. Collecting in this area is best when the water is low. A road which connects to Ravenswood runs along the shoreline between both these points.

*Reference:*
Personal communication: F. R. Harris.

## 50. CROTON

*(40 J/9 E Wallaceburg)*

### Marcasite Concretions

Marcasite concretions up to 3 inches in diameter occur in the black bituminous shale of the Kettle Point formation. Exposures are found along the banks of the Sydenham River near Croton, about 8 miles east of the town of Dresden.

*Reference:*
MacDonald, Wm. D.: Dept. Geol., Univ. West. Ont., B.Sc. Thesis, 1959.

## 51. AMHERSTBURG

*(40 J/3 E Amherstburg)*

### Celestite, Fluorite, Calcite

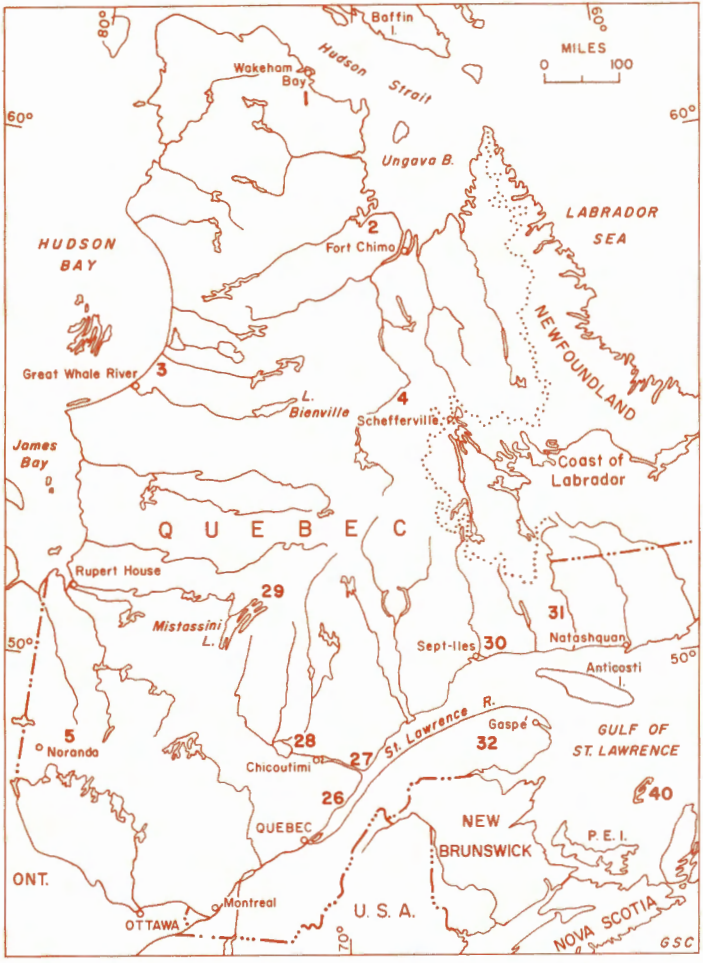
Celestite, fluorite and dog-tooth spar have been reported from the Amherstburg area. The rocks in the bed of the Detroit River at Amherstburg have furnished specimens of celestite and dog-tooth spar. The celestite from here occurs as bluish tabular crystals and as crystal aggregates. Fluorite was found in cavities in Devonian dolomite at the stone quarry just outside of the town.

*References:*
Hoffmann, G. C.: GSC, Ann. Rept. (New Ser.), vol. 16, 1904, pp. 347-348A.
Wilson, M. E.: GSC, Econ. Geol. Ser., No. 6, 1929, p. 37

# QUEBEC

## ROCK AND MINERAL COLLECTING AREAS, QUEBEC

1. Cape Prince of Wales
2. Leaf Lake
3. East coast of Hudson Bay
4. Kaniapiskau River
5. Preissac–Lacorne
6. Kipawa
7. Snake Creek
8. Calumet Island–Otter Lake
9. Bristol–Quyon
10. Hull–Wakefield
11. Kazabazua–Gracefield
12. Maniwaki
13. Wakefield Lake–McGregor Lake
14. Buckingham–Notre Dame de la Salette
15. Notre Dame du Laus
16. Mount Laurier
17. Calumet-Kilmar
18. St. Rémi d'Amherst
19. Montreal
20. St. Lin
21. St. Ambroise
22. Ste. Agathe des Monts
23. L'Annonciation–Labelle
24. Lac Taureau
25. Montauban
26. La Malbaie–St. Urbain
27. Les Escoumins
28. Lac St. Jean
29. Lac Mistassini
30. Sheldrake
31. Romaine River
32. Gaspé
33. Mount St. Hilaire and Johnson Mountain
34. Phillipsburg
35. Sherbrooke
36. Asbestos
37. Thetford Mines
38. St. Georges
39. Megantic
40. Magdalen Islands


Baffin I.
MILES
0 100
Hudson Strait
Wakeham Bay
1
60°
80°
Ungava B.
LABRADOR SEA
HUDSON BAY
2
Fort Chimo
NEWFOUNDLAND
Great Whale River
3
L. Bienville
4
Schefferville
James Bay
Coast of Labrador
QUEBEC
Rupert House
29
Mistassini L.
31
Natashquan
Sept-Iles
30
50°
Anticosti I.
5
Noranda
28
27
St. Lawrence R.
Gaspé
32
GULF OF ST. LAWRENCE
Chicoutimi
26
40
QUEBEC
NEW BRUNSWICK
P.E.I.
ONT.
Montreal
OTTAWA
U.S.A.
70°
NOVA SCOTIA
GSC

## 1. CAPE PRINCE OF WALES AREA

*(25 SW Wakeham Bay)*

### Garnet

Deep orange-red garnet crystals measuring up to 2 inches across occur in dark hornblende-mica schist at the end of a small point 4 miles above Whitley Bay. Similar schists containing large garnet crystals are exposed at the west point of Bourgoyne Bay.
Both localities are on the south side of Hudson Strait, south of Cape Prince of Wales.

*Reference:*
Low, A. P.: GSC, Ann. Rept. (New Ser.), vol. 11, 1898, p. 39L.

## 2. LEAF LAKE AREA

*(24 NW Fort Chimo)*

Iron formation composed of banded jasper with magnetite outcrops over a length of 9,000 feet and maximum width of 2,000 feet along the south shore of Leaf Lake (58°45'N, 70°3'W). The area is held by Consolidated Fenimore Iron Mines, Limited. A similar iron formation extends 15 miles north of Leaf Bay, and 40 miles south of it.

*Reference:*
Waddington, G. W.: Que. Dept. Mines, Prel. Rept., No. 409, 1960, pp. 86-87.

## 3. EAST COAST OF HUDSON BAY

*(33 NW Great Whale; 34 SW Belcher)*

### Chalcedony, Epidosite

A number of rocks and minerals suitable for ornamental purposes occur in the vicinity of Richmond Gulf. Large and beautifully coloured agates, carnelian, and porphyries occur in amygdaloidal basalts exposed

along the coast from Nastapoka Sound to Manitounuck Sound. Some of the amygdules are filled with vesicular pyrite, or with epidosite. The latter is an epidote rock which forms concretionary masses from 2 to 20 feet in diameter. The proportion of epidote increases toward the centre of the mass which is pistachio-green in colour.

### Axinite

Purple axinite crystals are associated with quartz, calcite, epidote, chlorite and asbestos in small veins in basalt along the coast 1½ miles south of the mouth of Little Whale River. Granular axinite, also purple, occurs in veins at the same locality; this variety takes a high polish and is suitable for jewelry and small ornamental pieces.

### Quartz

Transparent quartz crystals are abundant in druses of the galena-bearing band which is exposed at frequent intervals in the escarpments from Manitounuck Sound to Richmond Gulf, and along the west side of the gulf. Galena occurs as masses of crystals in cavities. The galena band cuts magnesian limestone. In 1858-59, the Hudson's Bay Company removed 9 tons of this ore from a place about 3 miles northeast of the Hudson's Bay post at Little Whale River.

### Soapstone

Grey soapstone used by the Eskimos for making kettles and lamps is supposed to have been obtained from the vicinity of Mosquito Bay (60°45'N).

### Argillite

A greyish green argillite streaked with black, similar to material used by Indians for ceremonial and other implements, occurs in a cliff on the north side of Little Whale River.

### Chalcedony, Jasper

Red chalcedony occurs in a band, 7 feet wide, in a slate-sandstone formation exposed along the shore of Davieau Island (Nastapoka group

of islands), about 60 miles north of the inlet of Richmond Gulf. This island is 2½ miles from the main shore. Similar material is reported from other islands in the Nastapoka chain, near Little Whale River. Olive-green chalcedony resembling jade occurs in small veins in trap rocks on Belanger Island, and red jasper containing "floating particles" is found on Long Island.

*References:*

Bell, R.: GSC, Rept. Prog. 1877-78, pt. C, pp. 15, 17-18, 20, 22-23.
Low, A. P.: GSC, Ann. Rept. (New Ser.), vol. 8, 1895, p. 289L.

## 4. KANIAPISKAU RIVER AREA

*(24 C Cambrian Lake)*

### Jasper

Jasper, in shades from crimson to vermilion, is interbanded with magnetite in an iron formation which outcrops at intervals along the shores of the Kaniapiskau branch of the Koksoak River. The outcrop area extends for a distance of about 10 miles, from 2 miles below Shale Chute to 2 miles above Swampy-bay River. An attractive olive-green jasper containing angular fragments of red jasper is exposed along the Kaniapiskau at a heavy rapid, 2 miles above Swampy-bay River (56° 45'–55'N, 69° 00' W).

*Reference:*

Low, A. P.: GSC, Ann. Rept. (New Ser.), vol. 8, 1895, pp. 270-271.

## 5. PREISSAC-LACORNE AREA

*(32 C/5 Barraute; 32 D/8 La Motte)*

### Height of Land Molybdenite Mine

Beryl, phenacite (rare), cleavelandite, muscovite, molybdenite and quartz occur in granite and pegmatite dykes. The beryl occurs in crystalline aggregates in cleavelandite-muscovite masses or in quartz. It is

partly fresh, translucent, bright green in colour, and partly yellowish or bluish altered-looking material. Individual crystals within the crystalline aggregates measure several inches across. Phenacite in small transparent crystals is associated with beryl. This is the only known occurrence of phenacite in Canada.

The mine is on the west bank of the Kinojevis River, about a mile north of Preissac village (lot 22, range 9, Preissac township). To reach the deposit proceed north from Preissac for approximately 1¼ miles from the bridge on the north side of the town, then walk about 700 yards eastward across the field to the river bank.

*Reference:*

Mulligan, R.: GSC, Paper 60-21, 1960, pp. 27-28.

## Massberyl Property

Pale blue and blue-green to green beryl crystals up to 6 inches across occur with quartz, molybdenite, garnet and columbite-tantalite in granitic pegmatite which outcrops on the side of a granite ridge, southeast of Lac Chaptes. The deposit is exposed by several trenches.

The property lies about 5 miles northeast of Lacorne (St. Benoit de Lacorne). To reach the deposit, proceed east from Lacorne for 1 mile; turn left (north) and continue for 2 miles to the junction of a road leading east; turn right (east) and follow this road for 1¼ miles. The property is on the south side of the road.

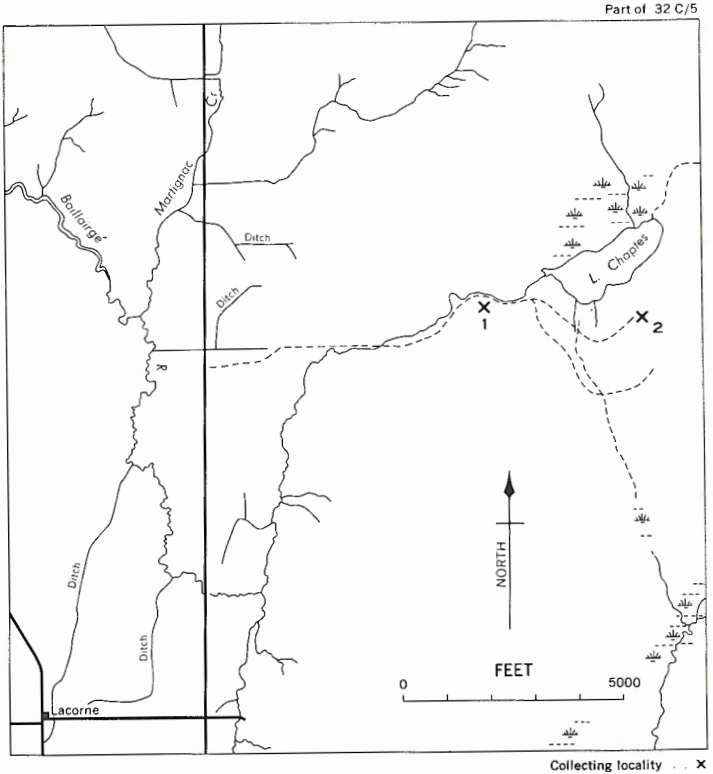
*References:*

Mulligan, R.: GSC, Paper 60-21, 1960, p. 29.

Rowe, R. B.: GSC, Paper 53-3, 1953, pp. 15-16.

## Valor Lithium Mines Limited Property

Spodumene crystals up to 4 feet long are embedded in cleavelandite-quartz-lepidolite-aggregates associated with aplite and pegmatite masses and stringers in granitic country rock. The spodumene is mostly pale-green to white, but some of it grades to pink. Pale green beryl crystals, commonly several inches across, occur with masses of muscovite and fine-grained tourmaline, at the contacts of the aggregates with aplite.




PREISSAC–LACORNE AREA: 1. Massberyl; **2. Valor lithium.**

The aplite contains scattered garnets. Pollucite in masses up to 5 feet across is associated with quartz, cleavelandite, spodumene, beryl and lepidolite. The pollucite is massive, white to greyish in colour and contains numerous veinlets of white material some of which is spodumene.

Fine-grained purplish lepidolite forms veins and patches in the pollucite. The contrast between the pollucite and lepidolite produces rather attractive specimens which could possibly be used for ornamental objects. Pollucite is recognized in the field by its dull greyish white weathered surface with a rough texture resembling limestone.
The property lies south of Lac Chaptes about a mile east of the Massberyl property. To reach it follow the road leading east from the Massberyl property for about ¼ mile. The road ends here but a trail continues eastward ending at the Valor property.

*References:*
Mulligan, R.: GSC, Paper 57-3, 1957, p. 12.
GSC, Paper 60-21, 1960, p. 29.
GSC, paper 61-4, 1961, p. 4.

## Quebec Lithium Corporation Mine

Spodumene, beryl, fluorite, columbite-tantalite, molybdenite and bismuth occur in pegmatite dykes which cut greenstone and granodiorite. The spodumene is white to pale green, but becomes dark green when weathered.
The mine is about ¼ mile south of Lac Lortie. It is accessible by a 6-mile road which leads south from Highway No. 45 at a point 17 miles east of Amos.

*Reference:*
Mulligan, R.: GSC, Paper 57-3, 1957, pp. 10-11.

## Lacorne Molybdenite Mine

Deep blue-green beryl occurs with cleavelandite, muscovite, quartz, molybdenite and bismuthinite in veins cutting granodiorite and biotite schist. The beryl is found as compound crystal masses up to a foot across. Small quantities of pyrite, chalcopyrite, native bismuth, tourmaline, fluorite (purple, white and pink), apatite and scheelite are associated with the deposit. Molybdenite was discovered at this property in 1915; the property is now operated by Molybdenite Corporation of

Canada Ltd. The mine lies on the east side of Highway No. 60, 4¾ miles south of Lacorne Village.

*References:*
Mulligan, R.: GSC, Paper 60-21, 1960, p. 28.
Tremblay, L. P.: GSC, Mem. 253, 1950, pp. 78-87.

## 6. KIPAWA AREA

*(31 NW Upper Ottawa River)*

### Amazonite

Beautiful apple-green to emerald-green amazonite occurs in a pegmatite dyke on an island at the north end of Lac Sairs. The locality provides some of the best amazonite to be found anywhere in Canada and, as a result, is highly prized by lapidarists for jewelry purposes. A small amount of stripping has exposed the dyke on the south side of the island near the top of the hill which makes up most of the island. The property belongs to Messrs. A. G. Cunningham and L. Tindall of North Bay.

The occurrence is about 25 miles by air or 50 miles by water to the east of Kipawa village. The canoe route is via Kipawa, Hunter, and Grindstone lakes to Lac Sairs. The island is situated just south of the mouth of the Kipawa River. It is the largest island in the lake.

*Reference:*
Personal communication: C. H. R. Gauthier.

## 7. SNAKE CREEK

*(31 NW Upper Ottawa River)*

### Kyanite, Garnet

Red garnet and long, thin-bladed, blue to green kyanite crystals occur in biotite gneiss in the vicinity of Erables Rapids and Snake Creek, upper Ottawa River about 9 miles northwest of Mattawa (Ontario).

The kyanite is reported to be abundant in places. The kyanite- and garnet-bearing rock is also exposed in the Canadian Pacific railway-cut near Snake Creek station.

*Reference:*
Eardley-Wilmot, V. L.: Mines Br., Pub. No. 677, 1927, p. 25.

## 8. CALUMET ISLAND-OTTER LAKE AREA

*(31 F/10 E Cobden; 31 F/15 E, W Fort Coulonge; 31 K/2 E Usborne Lake)*

### Calumet Uranium Mines Limited Property

A skarn zone containing purple fluorite, brown uranothorite, dark green pyroxene, apatite, calcite, large scapolite crystals, chondrodite, and black uranoan-thorianite cubes has been exposed by strippings and trenches. The uranothorite is in long slender prismatic crystals, often embedded in fluorite. Beautiful, large hornblende crystals and platy allanite crystals up to 6 inches across have been found at this deposit.

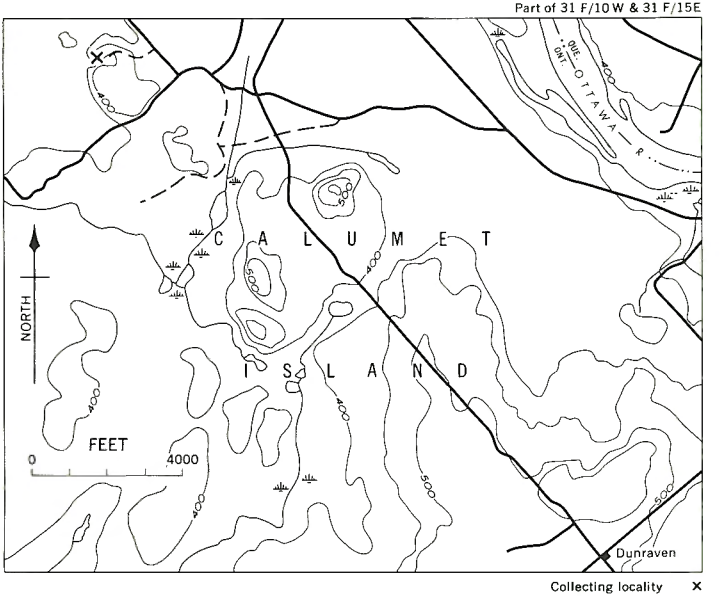
*Reference:*
Personal communication: D. D. Hogarth.

The property is in the central part of Calumet Island, northwest of Dunraven. It is reached by a road which branches off from the Dunraven-Barry River road.

*Reference:*
Shaw, D. M.: Que. Dept. Mines, Geol. Rept. No. 80, 1958, pp. 30-32.

### New Calumet Mines Limited Property

This mine has been worked for silver, lead, zinc and gold intermittently since 1893; it is operating at present. The ore is a medium-grained aggregate of galena, sphalerite, pyrrhotite, pyrite, marcasite, chalcopyrite, arsenopyrite and tetrahedrite or tennantite. Native gold has been reported. The rocks associated with the ore are biotite gneiss,




CALUMET URANIUM MINES PROPERTY.

amphibolite and crystalline limestone. Good crystal specimens of galena and chalcopyrite have been obtained from this deposit. Mauve-coloured coarsely crystalline anhydrite occurs with gypsum in the limestones. Adularia, the translucent feldspar with a delicate opalescent schiller, is reported to occur here (personal communication: D. D. Hogarth). Other minerals associated with the deposit include scapolite, wilsonite, garnet, cordierite (rare), talc, chlorite, barite, sillimanite, apatite, spinel, clinozoisite, graphite, tremolite, diopside, and phlogopite. The mine is near the western shore of the south half of Calumet Island.

It is reached by proceeding west for 2¾ miles from the bridge at Bryson, then north for ¾ mile.

*References:*
Goranson, R. W.: GSC, Sum. Rept., 1925, pt. C, pp. 116-122.
Osborne, F. F.: Que. Dept. Mines, Geol. Rept. 18; 1944, pp. 12-23.

## Tourmaline

Large honey-brown tourmaline crystals occur in a pegmatite dyke exposed along the shore of the river on the west side of Calumet Island, about 1½ miles south of the pump house at New Calumet Mines.

The occurrence is on the property of Mr. J. Meilleur. To reach it, proceed west from the bridge at Bryson for a distance of 2¾ miles; turn left (south) and continue for ¾ mile to the Meilleur property on the west side of the road. The tourmaline-bearing pegmatite outcrops about ¾ mile west of the road.

*Reference:*
Shaw, D. M.: Que. Dept. Mines, Geol. Rept. 80, 1958, p. 33.

## Brucite

Brucite occurs as semi-translucent, colourless to dark grey and brown nodules up to ½ inch in diameter; serpentine (yellow) is associated with brucite in white limestone consisting of calcite and dolomite. Exposures of the brucitic limestone are along the side of a small cliff on the east side of the main road opposite the power dam, and in an outcrop on the west side of the branch road leading southeast to the power house. The dam is situated at the southeastern end of Calumet Island and about 2 miles south of the bridge at Bryson.

*Reference:*
Goudge, M. F.: Mines Br., Mem. Ser., No. 75, 1939, pp. 19, 23.

Brucite also occurs as very coarse spherical aggregates in a coarsely crystalline limestone in a road-cut on the south side of the road leading northeast from the bridge at Bryson to Campbells Bay; the cut is

about 200 yards east of the bridge. Some of the brucite aggregates are ¾ inch in diameter and are associated with serpentine nodules of the same size. At this occurrence some of the brucite has been replaced by magnetite.

*References:*

Goudge, M. F.: Mines Br., Mem. Ser., No. 75, 1939, p. 23.
Osborne, F. F.: Que. Dept. Mines, Prel. Rept., No. 139, 1939, pp. 13-14.

## Diopside, apatite

Diopside in long green crystals, and apatite crystals occur in the rocks at the canal dumps near the power house (personal communication: D. D. Hogarth). Light green chondrodite is reported to be sprinkled abundantly through calcite in the limestone outcrops in the vicinity of Calumet Falls.

*Reference:*

Goranson, R. W.: GSC, Sum. Rept., 1925, pt. C, p. 109.

## Serpentine

On the west side of the road, about midway between the power dam and the bridge at Bryson, there are some very old marble quarries. Attractive serpentine, in various shades of green ranging from deep green to yellow-green, is found at the quarries (personal communication: D. D. Hogarth).

## Carswell Limestone Quarry

The property consists of two quarries on the east side of Highway No. 8 at the southern outskirts of Bryson village. The limestone is coarse-grained and snow white. The limestone contains brucite in the form of semi-translucent white granules (up to ½ inch across) having a whorled structure, and as colourless plates and fibres. Small angular crystal aggregates of colourless serpentine are disseminated through the rock. The serpentine turns yellow after a few days exposure to the air and fluoresces strongly under ultraviolet light. Well-formed olivine

crystals have been found in this deposit (personal communication: D. D. Hogarth). Several large crystals of corundum are also reported to have been found. At the eastern entrance to the quarry is a large mass of rock, 15 feet in diameter, composed mainly of diopside; it contains large crystals of green tremolite and small flakes of muscovite.

*References:*

Goudge, M. F.: Mines Br., Mem. Ser., No. 75, 1939, pp. 20-33.
Geol. Can. Indust. Min. Dept., 1957, p. 65.

## Otter Lake, Cordierite

Blue cordierite in pods up to 2 inches across is found in gneiss at the farm of Mr. Albert Richard. The cordierite ranges in colour from cornflower- to deep-blue. It is suitable for cut stones. Associated with the cordierite are pyroxene crystals, scapolite, allanite, titanite, garnet, andalusite and sulphides.

The Richard farm is west of Otter Lake (lot 49, range 4, Leslie township). Permission and precise location may be obtained from Mr. Albert Richard of Otter Lake Village, Pontiac County.

*Reference:*

Personal communication: D. D. Hogarth.

## Yates Uranium Mine

Well-formed crystals of apatite and diopside occur with purple fluorite and salmon-pink calcite in a skarn zone at the property of Yates Uranium Mines Limited, north of Otter Lake. The apatite crystals are bright green or red (rare), doubly-terminated and often transparent. They average about 3 inches in length but may measure up to 3 inches across and 10 inches long. The diopside occurs as square black prisms up to 2 inches long. Black platy crystals of allanite about 1 inch in size, and euhedral cream-white crystals of microcline up to 2 inches long are also found in this zone. Uranothorite in long, thin, grey-black prisms and irregular masses occurs embedded in fluorite. Yellow-orange resinous uranothorite and uranophane

are present. The deposit has been exposed by stripping on a ridge to the northeast of the camp buildings.

About ¾ mile by road west of the camp, a pit exposes a skarn zone containing large diopside and scapolite crystals, tremolite, pink calcite, large books of amber mica, and titanite. Stilbite, as white radiating sheaves, and tiny crystals of heulandite have been found in pink calcite. Radioactive minerals are black thorianite, red uranothorite, yellow uranophane and allanite.

The property has been intermittently worked for mica for the past 50 years. In 1953, exploration was resumed when radioactive minerals were discovered. The mine is now inactive.

The property is situated in lots 19 and 20, range 4, and lots 16 and 17, range 5, Huddersfield township. To reach the mine, proceed north from Otter Lake village for a distance of about 5 miles to the junction of a road leading west. Follow the west-leading road for 2½ miles to the mine camp.

*Reference:*

Shaw, D. M.: Que. Dept. Mines, Geol. Rept. No. 80, 1958, pp. 39-41.

## Squaw Lake Molybdenite Mine

Green diopside, scapolite, phlogopite, hornblende, pyrite, pyrrhotite, titanite and graphite occur in irregular masses and bands of white to pink coarsely crystalline calcite in gneiss at former molybdenite workings at the east end of Squaw Lake. The molybdenite occurs as scattered flakes, crystals and aggregates in pyroxenite. Fluorite and apatite are associated with the deposit.

The pits lie near the north shore of the east arm of Squaw Lake in lots 23 and 24, range 8, Huddersfield township. To reach the property proceed north from Otter Lake village for a distance of approximately 14 miles, then turn west and continue for about 1½ miles. The deposit is at the end of the road.

*Reference:*

Wilson, M. E.: GSC, Mem. 136, 1924, pp. 86-90.

Apatite crystals with massive fluorite in calcite from the Yates Uranium mine, Otter Lake, locality 8, Quebec.

## 9. BRISTOL-QUYON AREA

*(31 F/9 E, W Quyon)*

### Hilton Iron Mine

Epidote, scapolite, serpentine, talc, chlorite, amphibole, mica, carbonates, pyrite, chalcopyrite, and red hematite are associated with the magnetite deposit at the Hilton mine in lots 21 and 22, range 2, Bristol township, about 6½ miles by road east of Bristol village. Magnetite occurs in foliated amphibolitic rocks and near their contacts with dolomitic limestone. An interesting rock found at this deposit is composed of epidote veinlets traversing pink granite; it takes a good polish and could be used as an ornamental stone.

The property was first worked from 1872 to 1894. It remained inactive until 1951. It is being worked by Hilton Mines Limited.

*Reference:*

Rose, E. R.: GSC, Bull. 45, 1958, pp. 27-29.

### Mica Mine

Well-formed pyroxene crystals occur at an old mica pit in lot 17, range 7, north Onslow township. The pit measures 85 feet long, 60 feet wide, and 30 feet deep; it exposes the contact between pyroxenite and granite-gneiss. Pink or yellowish calcite containing dark mica occurs along the contact.

The pit lies about 7 miles northeast of Quyon. To reach it, leave Highway No. 8 at a point 2½ miles east of Quyon and proceed north for 3 miles; turn right (east) and continue for about ¼ mile to the junction of a trail leading north. Follow this trail for about ¾ mile to the mine on the west side of the road.

*Reference:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 135-136.

## 10. HULL-WAKEFIELD AREA

*(31 F/9 E Quyon; 31 G/5 W Ottawa; 31 G/12 E, W Wakefield)*

### Forsyth Iron Mine

Amphibole, garnet, calcite, chlorite, talc, graphite, pyrite and fluorite are associated with magnetite at the Forsyth deposit. The orebody is in crystalline limestone and amphibolite. Hisingerite is associated with the ore (personal communication: D. D. Hogarth). The chlorite occurs as large green and purple flakes. Large crystals of green scapolite may be found in pyroxenite on the dumps.

The property belongs to Quebec South Shore Steel Corporation. To reach it proceed west from Ironside (on Highway No. 11) to the junction of the Mine road (about 2 miles). Turn right and continue for 300 yards along the Mine road; the mine is on the west side of the Mine road.

*References:*

Hogarth, D. D.: Can. Field Naturalist, vol. 76, No. 1, 1962, pp. 23-24.
Rose, E. R.: GSC, Bull. 45, 1958, pp. 37-38.

### Headley Mine

Mauve-coloured wilsonite, scapolite, calcite, apatite, diopside, actinolite, garnet, tourmaline, pyrite, pyrrhotite, sphalerite, albite, vesuvianite, quartz and titanite occur with silver-amber mica in the main pit at the Headley mica mine. The mica is found in large, well-formed books in crystalline limestone, or in diopside-actinolite rock. The deposit furnishes good specimens of mica showing double asterism. Both mica and apatite were formerly worked at this mine.

The mine lies about 2½ miles west of the Forsyth mine. To reach it continue west along the Mine road from the Forsyth mine to the intersection of the Notch road (about 1¾ miles). From the junction walk west along the trail for about ¼ mile to a fork; take the right fork and continue 400 yards to the main pit.

*Reference:*
Hogarth, D.D.: Can. Field Naturalist, vol. 76, No. 1, 1962, pp. 25-26.

## Scott Mine

Jasper occurs in veins at the contact between gneiss and crystalline limestone at the Scott mine. The deposit was worked for phosphate in the 1890's, and later, for mica. Most of the jasper is dark red to brownish red; mauve and yellow varieties have also been reported. It is traversed by veinlets of quartz, hematite, calcite or barite, and contains small vugs lined with quartz or calcite. Some of the jasper contains yellow material up to an inch across. Much of the jasper is suitable for cutting, although some is splintery and friable. Associated with jasper are nodules of specular hematite containing small amounts of calcite, fluorite and barite. Silvery amber mica and dark red apatite occur in pyroxenite dykes. Soapstone has been reported from the property.

Two main pits and a few small pits expose the deposit which lies north of Old Chelsea (lots 14 and 15, range 9, Hull township). To reach the deposit, proceed west from Highway No. 11 at Chelsea to Old Chelsea, 1½ miles away. On the east side of the bridge turn right, and proceed north along the Tenaga road for about ¾ mile to a farmhouse on the west side of the road. The pits are near the edge of a wooded area, about 600 yards north of the farmhouse.

*References:*
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, p. 110.
Hogarth, D. D.: Can. Field Naturalist, vol. 76, No. 1, 1962, pp. 26-28.
Tanton, T. L.: Proc. Geol. Assoc. Can., vol. 6, pt. 1, 1953, pp. 75-79.

## Foley Mine

White barite occurs in pits formerly worked by the Montreal Paint Company. The barite vein cuts pink biotitic limestone and, in places, pegmatite. In the pits on the north side of the road, small grains of galena, sphalerite, pyrite and chalcopyrite are embedded in the barite; those on the south side of the road expose barite interbanded with fluorite, and occasionally calcite and dolomite.



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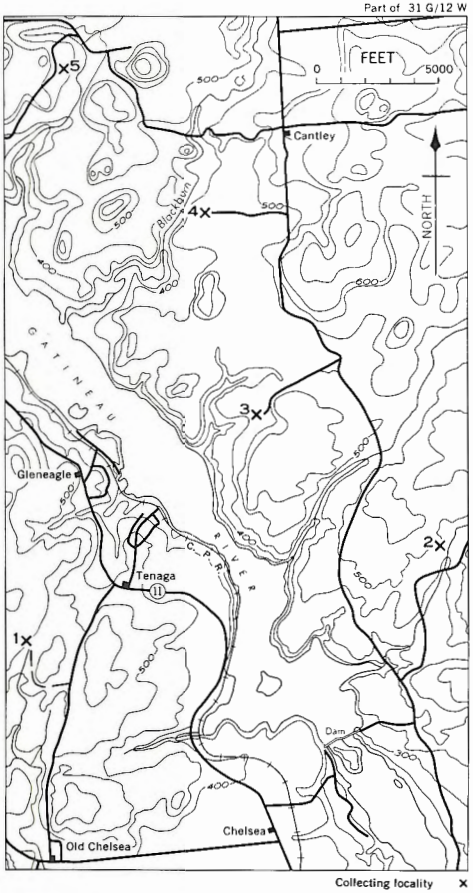


HULL–WAKEFIELD AREA: 1. Scott mine; 2. Foley mine; 3. Nellie and Blanche mine; 4. Nellis mine; 5. Titanite.

The mine lies on the east side of the Gatineau River, south of Cantley. To reach it, leave the Cantley road at a point 2.6 miles above the Limbour bridge and turn right (east). Proceed 0.8 mile on a gravel road to the mine. The road is bridged across the open pit at the property of G. Clermont.

*Reference:*

Hogarth, D. D.: Can. Field Naturalist, vol. 76, No. 1, 1962, pp. 47-48.

## Nellie and Blanche Mine

Scapolite, dark green diopside and actinolite, salmon-coloured calcite and apatite occur in a pyroxenite dyke at this former mica mine. The scapolite is abundant; it is light yellow green, but alters to woody white or pale mauve. White scapolite is associated with black tourmaline in calcite. Specimens can be obtained from the dumps; the pits are now either overgrown or flooded.

To reach the mine leave the Cantley road at a point 4 miles north of the Limbour bridge and follow the road leading east for 0.6 mile to a clearing. The turn-off is marked by a sign "Kunnamor Cottages". Continue beyond the gravel pit to a field where the mine workings are situated.

*Reference:*

Hogarth, D. D.: Can. Field Naturalist, vol. 76, No. 1, 1962, p. 31.

## Nellis (Vavasour) Mine

This mine, operated by Blackburn Brothers Limited, is at present one of two active mica mines in the district, the other being the Dacey mine. Large, well-formed crystals of mica, apatite and pyroxene have been recovered from the deposit. The mica and apatite occur in pink calcite which fills fissures in greyish green pyroxenite. Red apatite, fluorite and actinolite have been reported from the property.

The mine lies southwest of Cantley. It is accessible by a direct road, ½ mile long, which leads west from the Cantley road at a point 5 miles north of the Limbour bridge.



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*References:*
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 97-99.
Spence, H. S.: Mines Br., Pub. No. 396, 1920, pp. 85-86.
Stansfield, J.: GSC, Sum. Rept., 1911, pp. 282-283.

## Cantley Titanite

Brown titanite crystals occur in considerable quantity in a quartz-feldspar rock which intrudes pyroxenite at a former mica-apatite mine. Some very large crystals of mica were obtained from this deposit. Brown apatite was associated with it. Fibrous greenish-blue actinolite occurs along the contact of the felsite and pyroxenite, and sharp, well-defined monoclinic prisms of actinolite line small cavities. Small masses of molybdenite were found in the felsite.

The mine is on the crest of a low ridge west of Cantley. Proceed west from Cantley for approximately 1½ miles to where a trail branches off southward; follow the trail for about 500 yards to the pits on the east side of the trail.

*Reference:*
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 100-101.

## Dacey Mine

This mine is worked by Suncrest Mines. It was first worked for apatite (1890's), then mica (1900-1904), recently (1958-59) for apatite and calcite as stucco material, and for mica (since 1960).

Apatite and phlogopite are associated with calcite in pyroxenite. The apatite occurs as green crystals and in sugary form. Good mica crystals can be found on the dumps. Other minerals occurring less commonly as crystals on the dumps are green apatite, light green pyroxene, dark green amphibole, white translucent scapolite and jet black tourmaline. Proceed north on the Cantley road for a distance of about 3¼ miles from Cantley; turn left (west) to John Holmes' farm continuing past the farm to the mine.

*Reference:*
Hogarth, D. D.: Can. Field Naturalist, vol. 76, No. 1, 1962, p. 32.

## Horseshoe Mine

Large masses of fresh scapolite with a high vitreous lustre occur at this mine. It is white with a faint bluish tint. Apatite crystals are commonly embedded in the massive scapolite. The mine was worked in the 1890's for apatite, and in 1909 for mica. The apatite and mica occur in pink calcite along the contact of pyroxenite and gneiss; pyrite is common.

The mine is about 2 miles west of Wilson's Corners. Take the road leading west from Wilson's Corners to where a road branches off southward (about 2 miles from Wilson's Corners); follow this branch road for about ½ mile to the mine.

*Reference:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 103-104, 275, 296.

## Kodak Mine

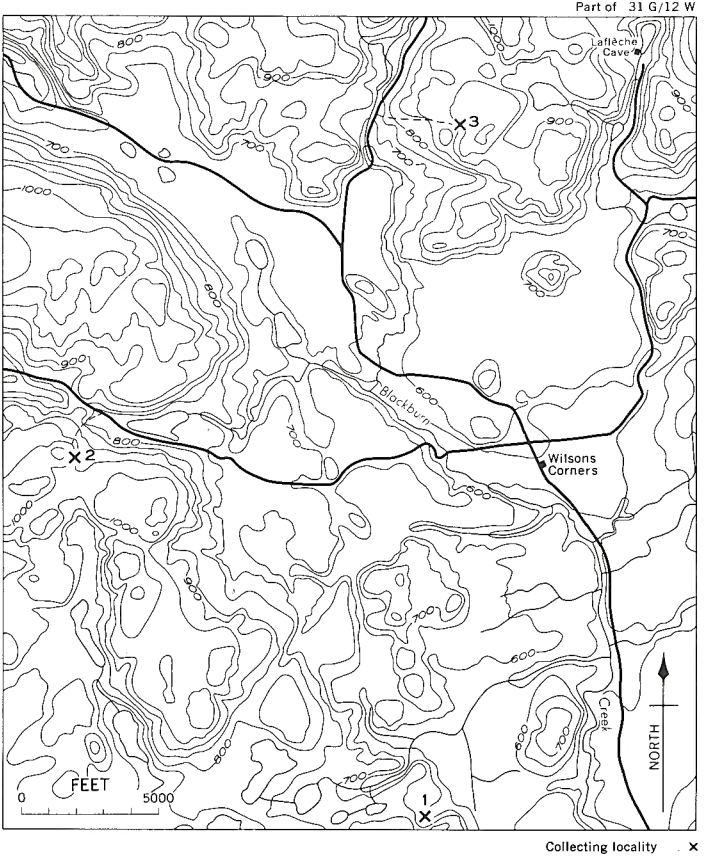
Good, fresh-looking apatite crystals occur in a vein composed of mica, calcite and pyroxene at this former apatite-mica mine. In its day, the deposit was known for the excellent quality of the silver amber mica. The mine is north of Wilson's Corners. Proceed north along the Wilson's Corners-Wakefield road for a distance of 1½ miles to a fork in the road; take the right (north) fork for about ½ mile to where a trail branches off eastward. Follow this trail for 500 yards up the ridge to the pits.

*Reference:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 88-89.

## Maxwell Quarry

This property has been worked by the Aluminum Company of Canada for brucite since 1942. The quarry exposes white to dark grey brucitic limestone containing lenses of serpentine and diopside. The limestone contains granules of white translucent to very dark blue brucite exhibiting concentric onion-like structure. The granules are mostly 1-4 mm across, and average 2 mm. Colourless foliated brucite and




HULL–WAKEFIELD AREA: 1. Dacey mine; 2. Horseshoe mine; 3. Kodak mine.

fibrous brucite occur sparingly. The serpentine is in various shades of green, yellow, red and black. Granular diopside in shades of mauve, green, white and sky-blue is associated with the serpentine. Pink radiating diopside is common (personal communication: D. D. Hogarth). A pyroxenite zone between the limestone and syenite country rock contains phlogopite, green apatite crystals and salmon-pink coarsely crystalline calcite. Black forsterite crystals, almost completely replaced by serpentine, occur in grey and mauve calcite near the bottom of the ramp leading to the quarry. Other minerals reported from the deposit include white pulverulent hydromagnesite, white pulverulent and fibrous pyroaurite, hydrotalcite nodules (in serpentine), stalactitic aragonite, graphite, talc, specularite, sphalerite, galena, celestite, rutile, chondrodite, spinel, periclase, pyrite, vesuvianite, pyrrhotite, magnetite, honey-yellow chrysotile asbestos and honey-coloured garnet. Many of these minerals occur only sparingly. Of particular interest to the lapidary are the varieties of serpentine and marble which provide some unusual cutting material.

The quarry lies on the west side of the Gatineau River about 2½ miles south of Wakefield. Take the road on the west bank of the Gatineau River (Riverside Drive); the quarry is on the west side of the road.

*References:*

Ambrose, J. W.: Trans. Roy. Soc. Can., 3rd Ser., sec. 4, vol. 37, 1943, pp. 9-22.

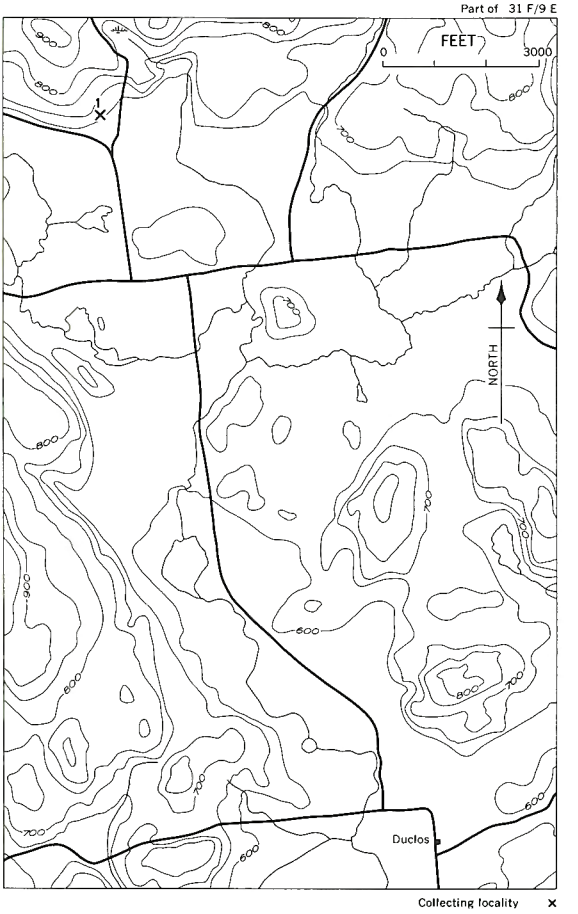
Goudge, M. F.; Geol. Can. Indust. Min. Dep., 1957, pp. 67-69.

Hogarth, D. D.: Can. Field Naturalist, vol. 76, No. 1, 1962, pp. 38-39.

Jomini, H.: Trans. C.I.M.M., vol. 53, 1950, p. 86.

## Ross Mine

"Perfect and very handsome crystals" (Hoffmann) of molybdenite, some of considerable size, have been recovered from the Ross molybdenum property. About 100 pounds of molybdenite specimens were obtained from this locality in 1894 by the Foote Mineral Company of Philadelphia for exhibition in museums. At about the time of World




HULL–WAKEFIELD AREA: Ross mine.

War I further development was briefly undertaken by two other companies, Oldfield Mineral Syndicate, and Mining Corporation of Canada.

The molybdenite occurs as scattered flakes, crystals, or aggregates (up to 2 inches across) in pyroxenite. In the main cut, molybdenite flakes occur embedded in wall-rock of radiating tremolite. Other minerals include scapolite, titanite, calcite, pyrrhotite, pyrite, phlogopite and molybdite.

The mine is on the south slope of a hill, about 11½ miles by road northwest of Wakefield. Proceed west from Wakefield to Ste. Cecile de Masham continuing through Duclos toward East Aldfield. At a point 3 miles north of Duclos, there is a fork in the road. Continue west (left fork) along the road to East Aldfield for a distance of 100 yards from the fork; walk north up the hill. The largest pit is 150 yards from the road; another is 50 yards to the west of this pit, and several small ones surround them.

*References:*

Eardley-Wilmot, V. L.: Mines Br., Pub. No. 592, 1925, pp. 140-141.
Hoffmann, G. C.: GSC, Ann. Rept., vol. 4, 1888-89, p. 47T.
Wilson, M. E.: GSC, Mem. 136, 1924, pp. 85-86.

## 11. KAZABAZUA-GRACEFIELD AREA

*(31 F/16 E Kazabazua; 31 G/13 W Low; 31 J/4 W Bouchette; 31 K/1 E Blue Sea Lake)*

### Kornerupine

Green and yellow crystals of this rare mineral occur in biotite paragneiss which outcrops along the Kazabazua-Lac Ste. Marie road, on the southwest bank of the Gatineau River near the bridge. The outcrop extends over an area of 500 feet by 100 feet and is about 3 miles east of Kazabazua.



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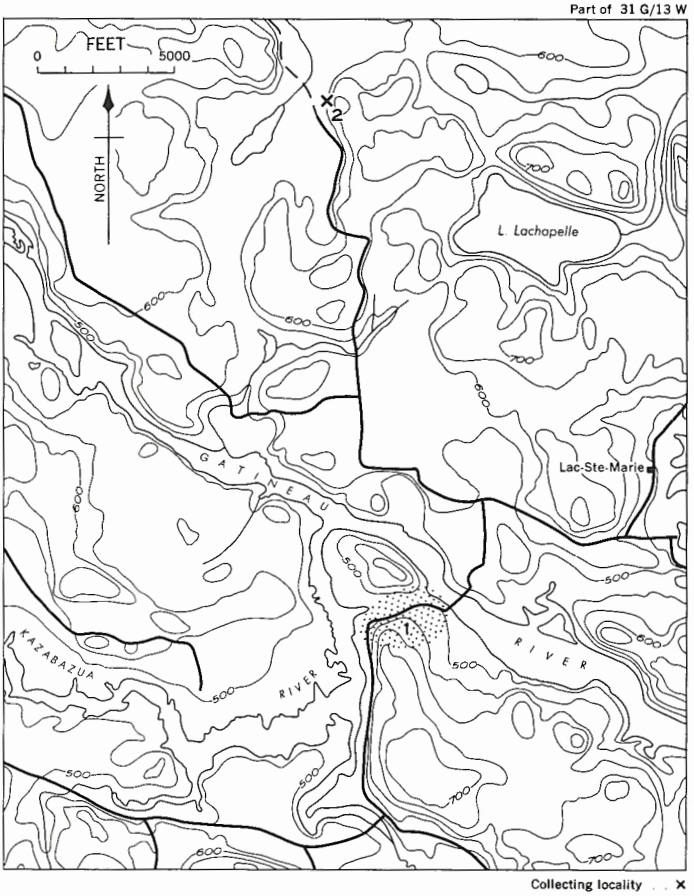


KAZABAZUA–GRACEFIELD AREA: 1. Kornerupine-bearing rocks; 2. Hastey mine.

Two varieties of kornerupine are present; the green variety in well-defined dark green or black orthorhombic crystals up to 2 inches long and ½ inch in diameter; the yellow variety is in well-defined greenish-yellow crystals having the same form as the green, but usually smaller and not as shiny. In places the yellow variety forms as much as 40% of the rock.

*Reference:*
Girault, J. P.: Am. Mineralogist, No. 37, 1952, pp. 531-541.

## Hastey Mine

Emerald-green diopside is associated with dark amber mica at this mica mine. The deposit was first worked in 1899 and reopened for a short time in 1937. When the mine was reopened diopside was found in the most northern pit in the property. It is massive and bright emerald-green. Large sheets of mica up to 4 feet across were obtained from the property.

The mine is on the east side of the Gatineau River northwest of Lac Ste. Marie (lot 22, range 2, Hincks township). It is reached by a road which branches off from the Kazabazua-Lac Ste. Marie road at a point ½ mile east of the bridge over the Gatineau River.

*Reference:*
Personal communication: H. S. Spence.

## Aquamarine, Apatite

Aquamarine-blue sugary apatite occurs in pyroxenite exposed along a road-cut on Highway No. 11, about a mile south of Kazabazua.

*Reference:*
Personal communication: D. D. Hogarth.

## Moore and Marks Mine

This deposit was worked for a short time, beginning in 1898, for mica. It is known for the large sheets of mica recovered from it; one crystal measured 34 inches by 48 inches and weighed 3000 pounds. The mica



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is a dark amber and has good cleavage. A small amount of apatite is associated with it in a pyroxenite dyke cutting biotite gneiss. Greyish-white, fibrous tremolite forms large masses in the pyroxenite.
The deposit is extensively exposed by a series of surface pits and one large excavation near the western end of the property (lot 4, range 2, Alleyn township). The mine lies about 500 yards west of the Danford Lake—Cawood road, at a point ½ mile south of Danford Lake Village.

*Reference:*
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 130, 299.

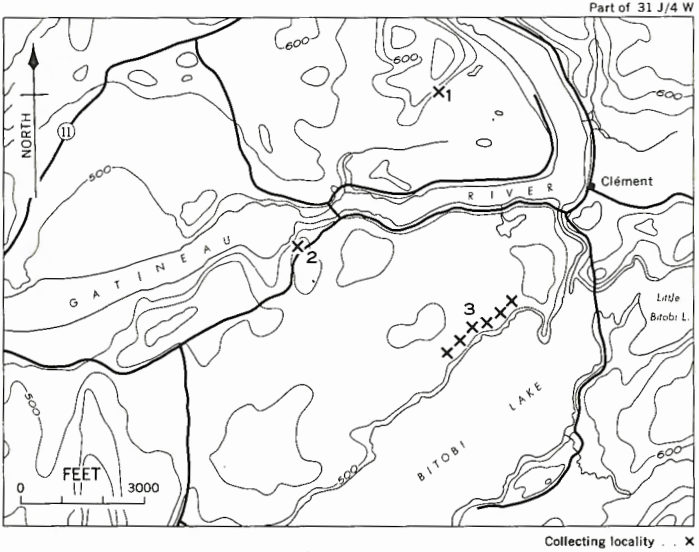
## Chaibee Mine

Apatite, dark amber mica and pink calcite occur at the contact of pyroxenite and gneiss at this old mica mine. Good pyroxene crystals line vugs in the calcite. Altered scapolite is abundant.
The mine is on the west side of the Gatineau River about 6 miles south of Gracefield (lot 6, range A, Wright township). Take the road leading east from Highway No. 11 at a point 3½ miles south of Gracefield and 9½ miles north of Kazabazua. Follow this road for 2¼ miles to a farm on the west side of the road; the mine is across a field, about 600 yards west of the farm buildings.

*Reference:*
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 123-124, 296.

## Father Guay Mine

This mine was first opened for mica in 1896 by Father Guay and was worked during two short periods in the next 12 years. The mica occurs in a pyroxenite dyke which cuts grey biotite gneiss and crystalline limestone. Blue apatite, in good crystals, and pale salmon-pink calcite are associated with the mica. Black lustrous hornblende forms compact masses at the contact of pyroxenite with crystalline limestone; individual crystals in the masses measure up to ½ inch in diameter. Large bottle-green diopside crystals are associated with the deposit, and pyrite veins up to 4 inches wide traverses the hornblende.




KAZABAZUA AREA: 1. Father Guay mine; 2. Sphalerite; 3. Lac Bitobi marble.

The mine is situated on the west side of the Gatineau River, 6 miles northeast of Gracefield. To reach the deposit, take the road which leads south from Highway No. 11 at a point 5½ miles northeast of Gracefield; follow this road for 5½ miles to a farmhouse. Walk west from the farmhouse for a distance of about 700 yards to the southeast face of a ridge. One large pit and several smaller pits and trenches expose the deposit.

*References:*

Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 67, 1956, p. 23.
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 124-125, 287.

### Sphalerite

Bluish brown sphalerite occurs with galena, pyrrhotite and pale green diopside in a vein cutting crystalline limestone. Lemon-yellow greenockite forms powdery coatings in cracks in the sphalerite. The vein is exposed by a trench over a length of about 20 feet. In addition to the minerals already mentioned, the following occur in the limestone near the vein: graphite, limonite, melanterite, diopside, serpentine, apatite and tremolite.

The occurrence is on the east side of the Gatineau River (lot 36, range 2, Northfield township), on the property of Mr. Ludger Fontaine. It is approximately 1¾ miles by road from the Father Guay mine.

*Reference:*

Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 67, 1956, pp. 21-22.

### Bitobi Lake, Marble

An attractive marble composed of white marmorized limestone speckled with small grains of yellowish-green serpentine is exposed along the northwest shore of Bitobi Lake. The marble could be used as an ornamental stone. The occurrence is about ¾ mile south of Clément post office, and on the east side of the Gatineau River.

*Reference:*

Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 67, 1956, p. 24.

## 12. MANIWAKI AREA

*(31 J/5 W Maniwaki; 31 J/12 W Grand-Remous; 31 K/9 E Montcerf)*

### Mica Mine

Crystals of titanite, amphibole, quartz, heulandite and stilbite occur along fracture planes in pyroxenite at an old mica mine north of Maniwaki. Some of the pyroxenite exhibits a peculiar structure consisting of nodules of fine, pale green granular diopside up to an inch

or more in diameter, enclosed in a matrix of fine-grained dark phlogopite. The rocks in the dumps include a feldspar-scapolite rock and leopard rock; the latter is an unusual looking granite which is traversed by connected curving lines composed of fine-grained dark ferromagnesian minerals.
The mine lies on the west side of Highway No. 11 and within a few hundred feet from it, at a point 5¾ miles north of the bridge (over the Desert River) in Maniwaki.

*Reference:*
Wilson, M. E.: GSC, Mem. 136, 1924, p. 133.

## Molybdenite Mine

Well-formed crystals of microcline line cavities in a pink feldspar dyke; some very large and excellent crystal specimens have been found in this mine. Molybdenite occurs as small isolated lamellae and as clots and flaky aggregates in pegmatite. When the property was being worked, flaky crystals as much as 10 inches in diameter were recovered. Magnetite, biotite, titanite, and calcite are associated with the deposit.
The mine lies on the northwest side of a hill a few hundred feet east of the Maniwaki-Ferme Joseph road, at a point 6¼ miles from the bridge (over the Gatineau River) in Maniwaki.

*Reference:*
Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 50, 1953, p. 28.

## Quartz Crystals

Quartz crystals line fissures and cavities in a massive milky quartz vein which is exposed by a series of pits on the farm of Mr. Britt, north of Lac Ecarté. The crystals are mostly slender, the largest being about one inch in diameter. They are enveloped in a soft, whitish mass of fibrous tremolite. Loose crystals can be found in the soil in the vicinity of the quartz vein. Many of the crystals are clear.
To reach the Britt farm, take the east branch of Highway No. 11 from Maniwaki and proceed to the east side of the Gatineau River; just

beyond the bridge, turn left (north) and continue for 4½ miles to a fork in the road. Follow the right (northeast) fork for a distance of about ½ mile to the farmhouse on the east side of the road.

*Reference:*
Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 50, 1953, p. 31.

## Spinel

Small octahedra of spinel occur with chondrodite in crystalline limestone exposed in front of the church at Ste. Famille d'Aumond, northeast of Maniwaki.

*Reference:*
Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 50, 1953, p. 10.

## Lac Castor-Blanc Titanite

Light brown crystals of titanite, up to an inch or more in length, occur abundantly in an amphibolite outcrop along the Maniwaki-Mont Laurier highway on the north side of Lac Castor-Blanc. Calcite, quartz, feldspar, scapolite, diopside, biotite and epidote are also present in the rock.

*Reference:*
Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 23, 1948, p. 19.

## Talc

Greyish white to pale green translucent talc occurs in greyish white limestone near the east bank of the Gatineau River, north of Maniwaki. The talc is in compact or lamellar form, and is reported to be very pure. Graphite flakes, grains of pyrite and diopside, and mica nodules are associated with the deposit.

A trench exposes the deposit on the east slope of a small ridge which parallels the river (lot 38, range 1, Aumond township). Leave Highway No. 11 at Ste. Famille-d'Aumond and proceed north past Lac St. Joseph, and continuing along the east bank of the Gatineau River to a fork in the road (this is about 4¼ miles from the highway);

turn left and follow the road which leads west toward the river and ends at some buildings. The trench is on the ridge to the east of the buildings.

*Reference:*
Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 23, 1948, pp. 55-56.

### Titanite

Well-formed brown crystals of titanite, more than an inch in length, occur in very impure limestone north of the Mont Laurier-Senneterre highway (No. 58). The occurrence is approximately 1¼ miles northwest of the junction of Highway No. 58 and the gravel road leading south via Lytton and Montcerf to Maniwaki.

*Reference:*
Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 23, 1948, p. 56.

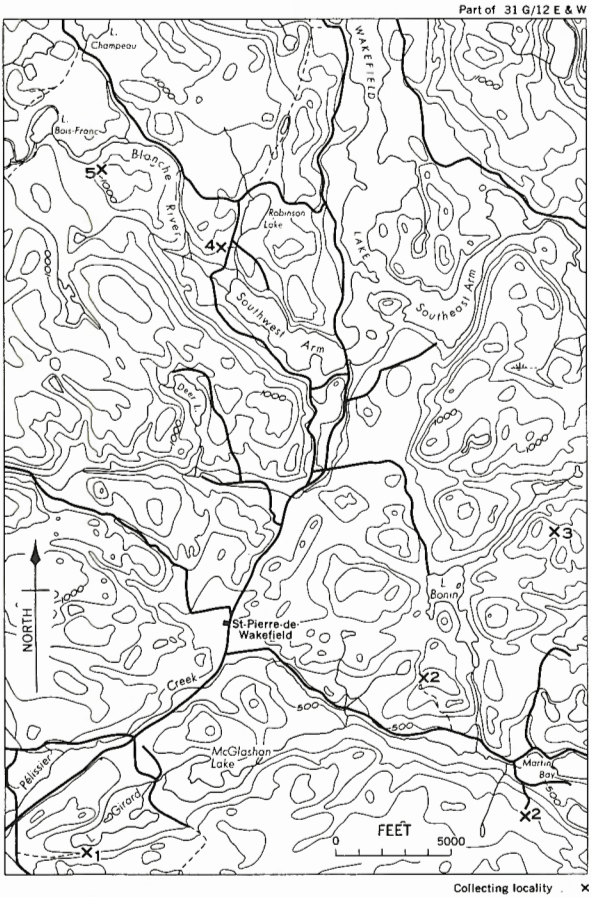
## 13. WAKEFIELD LAKE-McGREGOR LAKE AREA

*(31 G/12 E, W Wakefield)*

### Lac Girard Mine

This former mica producer was, in the 1890's, one of the most important mica mines in the district. At that time, many large mica crystals were recovered including one measuring 2 feet by 10 feet by 1½ feet, said to be the largest crystal of good quality found in the Ottawa district.

The mica occurs with pink calcite and large pyroxene crystals in a pyroxenite dyke. The pyroxene crystals are altered internally to a soft powdery mineral and have an outer coating of lustrous blue actinolite fibres. Light green, fibrous, brick-shaped actinolite crystals measuring up to 2¼ by 3 by 4 inches are coated with fine quartz crystals and a little marcasite (personal communication: D. D. Hogarth). Black tourmaline occurs in white calcite.




WAKEFIELD LAKE–McGREGOR LAKE AREA: 1. Lac Girard mine; 2. Breckin mine; 3. Briggs mine; 4. McGlashan mine; 5. Leduc mine.

The mine lies near the south shore of Lac Girard (lot 24, range 2, Wakefield township). It is reached by a road which branches off southward from the Wilson's Corners-Wakefield Lake road at a point 2½ miles from Wilson's Corners.

*References:*

Cirkel, F.: Can. Mining Rev., vol. 12, 1893, p. 177.
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 91-94, 273.

## Breckin Mine

Large brown titanite crystals, scapolite and fine crystals of zircon occur with massive green apatite in a pyroxenite vein which was worked for apatite in the 1880's. The deposit is exposed by pits on both sides of the road leading from St. Pierre de Wakefield to McGregor Lake. In the pit on the south side of the road, white scapolite possibly suitable for cat's eyes, is plentiful. Prehnite, fluorite and vesuvianite are reported from the deposit.

The north pits are situated on the crest and upper slopes of a ridge; they are reached by a trail, ½ mile long, which leads north from the St. Pierre de Wakefield-McGregor Lake road at a point 2 miles east of St. Pierre de Wakefield. The south pits are on the north slope of a ridge overlooking the western end of McGregor Lake; they are reached by a trail, about ½ mile long, which leads south from the same road about ½ mile east of the turn-off to the north pits.

*References:*

Spence, H. S.: Mines Br. Pub. No. 396, 1920, pp. 98-99.
Willimott, C. W.: GSC, Rept. Prog. 1883, p. 12GG.

## Briggs Mine

Large quantities of mauve-coloured wilsonite occur in irregular masses embedded in granular apatite. The minerals are associated with dark mica in pyroxenite rock. The deposit was worked for apatite in the 1880's, and briefly in 1907 for mica.

The pits are on the brow of a ridge overlooking Grand Lake (lot 39, Gore of Templeton). As beaver dams block the old mine road, a

round-about walk of about a mile must be taken. Leave the Wilson's Corners-Wakefield Lake road at a point 1¾ miles north of St. Pierre de Wakefield and proceed east, continuing to the end of the road at the north end of Lac Bonin (about 1½ miles). Walk north along the east side of the creek for a distance of about ¾ mile, then walk east up the ridge. The pits are on the east side of the ridge near the crest.

*Reference:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 86, 300.

## McGlashan Mine

Some of the pits in this former apatite-mica mine contain good specimens of blue scapolite. The mineral occurs in a grey-green rock composed of pyroxene, scapolite, feldspar and dark quartz. Dark amber mica and green compact and sugar apatite are associated with calcite; large-sized crystals of both apatite and mica were recovered from the deposit during mining operations. Brown titanite crystals measuring 1 inch in length, and well-developed crystals of pyroxene are associated with the deposit.

The pits lie on the southeast side of a hill just north of the Southwest Arm of Wakefield Lake, and on the west side of the road.

*References:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 94-95.

Spence, H. S.: Mines Br., Pub. No. 396, 1920, p. 103.

## Leduc Mine

This mine was worked briefly in 1885 for mica and was reopened in 1908 for gem tourmaline, but operations were discontinued when it was found that commercial quantities of gem material could not be obtained. This is one of the few mines in Canada that have been exploited specifically for gem-stone material.

Tourmaline occurs in a pegmatite dyke composed of green amazonite, flesh-red peristerite, greyish to brownish mica and white or smoky quartz. A few garnets occur in the dyke and small quantities of uraninite, gummite and fluorite have been reported. Green, bluish, and pink

tourmaline crystals measuring up to 2 inches in diameter were at one time abundant. Although the crystals were of a good colour and sufficiently transparent for gem purposes they were too fractured to be of use. Good crystals, some terminated, can still be found. Some range in colour from pink to bluish green to deep green, all in the same crystal. The mine is on the west slope of a ridge, about 2½ miles west of Wakefield Lake (lot 25, range 7, Wakefield township). To reach it, leave the Wilson's Corners-Wakefield Lake road at a point 1¼ miles north of the bridge over the southwest arm of Wakefield Lake and proceed west for approximately 2 miles stopping at a small clearing. Turn left and walk west along an old trail which crosses a small creek and continues to the top of the ridge (walking distance is about ¾ mile). The mine is on the slope of the ridge, near the top.

*References:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 199-299.
Ellsworth, H. V.: GSC, Econ. Geol. Ser., No. 11, 1932, pp. 239-240.

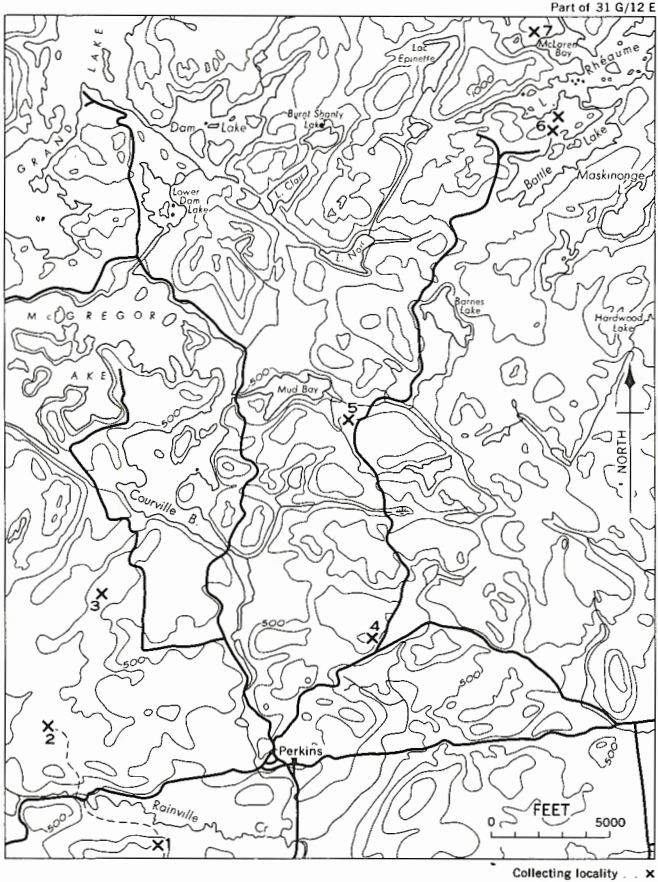
## Wallingford Mica Mine

Good crystals of light amber mica occur with green apatite in pink calcite. Specimens of excellent grade were widely exhibited in the past and took first prize at exhibitions in Paris, St. Louis and Liège. Some very large crystals of mica have been found here including one which produced $33,000 worth of mica. Lilac scapolite is associated with the deposit. Like most of the other mica-apatite deposits in the Gatineau-Lièvre district, this deposit was initially worked for apatite (in 1882) and subsequently for mica (about 1900). It has not been worked recently.

The workings consist of one large pit and several small pits on the north slope of a ridge (lot 16, range 8, Templeton township), southwest of Perkins. Take the road leading west from Perkins for 1½ miles to an old road branching off southward. Follow this old road directly to the mine, a distance of about ½ mile.

*References:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 70-71.
Sinkankas, J.: Gemstones of N. Amer., 1959, p. 467.




WAKEFIELD LAKE–McGREGOR LAKE AREA: 1. Wallingford mine; 2. Goldring mine; 3. Victoria mine; 4. Jackson Rae mine; 5. Blackburn mine; 6. Battle Lake mine; 7. King Edward mine.

## Goldring Mine

Crystals of smoky quartz up to 1 inch long, calcite, and small crystals of pyrite and sphalerite line vugs in massive apatite and pink calcite at this mica-apatite deposit. Chalcedony is reported to occur here. Mica occurs with the apatite and calcite in fissures in pyroxenite.

The mine, now idle, lies on the south side of a high ridge, about 2½ miles west of Perkins (lot 17, range 9, Templeton township). Take the road leading west from Perkins for 1¾ miles, turn right (north) and follow this trail for ½ to ¾ mile.

*Reference:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, p. 73, 276, 295.

## Victoria Mine

Large, well-developed crystals of pyroxene and of dark, almost black, apatite are associated with the mica-apatite deposit at this mine. Pink calcite occurs with the mica and apatite at the contact of pyroxenite and gneiss. The mine is now inactive.

The property lies about 2½ miles northwest of Perkins. To reach it, proceed north from Perkins along the road to McGregor Lake for 1 mile to a fork in the road; take the west (left) fork and continue for 1¼ miles to a building on the west side; walk 500 yards west to the mine on the slope of a ridge.

*Reference:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, p. 78.

## Jackson Rae Mine

This mine was worked for apatite prior to 1890 and was later reworked for mica. The mica is light silver-amber and occurs with massive and sugar apatite in grey pyroxenite. Brown titanite crystals up to 2 and 3 inches long have been reported from the dumps at the old phosphate workings. Radiating crystals of black tourmaline are associated with actinolite, titanite, calcite and mica. Yellowish green epidote occurs with dark pyroxene and pyrite in pyroxenite.

The mine is about 1½ miles northeast of Perkins (lot 9, range 10, Templeton township). The mine workings are visible from the Blackburn mine road.

*Reference:*
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 75-76, 285.

## Blackburn Mine

At the time when apatite and mica mining was at its peak, this was the largest mica and phosphate mine in Templeton township. Light amber mica occurs as crystals or aggregates embedded in apatite in pyroxenite rock. Unlike many of the mica-apatite deposits in the district, this deposit carries relatively no calcite.
The mine is north of Perkins on the east side of McGregor Lake (lots 9, 10, range 11, Templeton township). It is reached by continuing north from the Jackson Rae mine for about 1¾ miles; the mine is on the west side of the road. It is now inactive.

*References:*
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 78-82.
Spence, H. S.: Mines Br., Pub. No. 396, 1920, pp. 95-97.

## Battle Lake Mine

Light silver-amber mica and massive green apatite were mined from this deposit. The host rock is pyroxenite. A very small amount of calcite is associated with the deposit. Some large mica crystals including one which weighed 200 pounds were obtained from the deposit. The main mica pits are on the north shore of Battle Lake, and the apatite pits are nearer the south shore of Lac Rhéaume. Battle Lake is directly south of Lac Rhéaume. The distance between these lakes, at this point, is about ¼ mile. Considerable quantities of mauve and purple wilsonite occur in the mica pits on the steep slope forming the north shore of Lac Rhéaume.
The mine is about 3 miles by road north of the Blackburn mine and has been idle for some years.

*References:*
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 83-84.
Spence, H. S.: Mines Br., Pub. No. 396, 1920, p. 98.

## King Edward Mine

Green apatite and titanite crystals occur with mica and pink calcite in pyroxenite. The apatite crystals exhibit a glazed appearance on their faces. Of interest to the gem-cutter is the occurrence of vitreous blue scapolite reported to be of cutting quality. The deposit was formerly worked for apatite and mica.

The mines lies 300 yards north of the northwestern shore of McLaren Bay which projects from the north shore of Lac Rhéaume. There are no roads leading to the mine and access is by water.

*References:*
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, p. 85.
Sinkankas, J.: Gemstones of N. Amer., 1959, p. 467.
Spence, H. S.: Mines Br., Pub. No. 396, 1920, p. 99.

## Graphite Mine

Reddish brown zircon occurs as slender crystals in a greyish quartzite at a mine formerly (in the 1870's) worked for graphite. The crystals are sharp and average about 1 inch in length. An interesting occurrence is that of purple diopside. It is coarse-grained and massive; small amounts of pyrite, mica and apatite are associated with it. The graphite is in flakes disseminated in gneiss.

The pits and dumps are on the east slope of a ridge north of Donaldson Lake. They are now mostly overgrown. Leave the Perkins-Buckingham road at a point 300 yards west of the eastern end of Donaldson Lake, and proceed in a northwesterly direction for 0.6 mile. Walk up the slope on the west side of the road and look for the workings near the top.

*Reference:*
Spence, H. S.: Mine Br., Pub. No. 511, 1920, p. 53.

## 14. BUCKINGHAM-NOTRE DAME DE LA SALETTE AREA

*(31 G/11 W Thurso; 31 G/13 E Low)*

### Galena-barite Mine

Barite-galena veins cutting crystalline limestone have been exposed by trenches on the farm of Mr. Dan Gorman, west of Buckingham. The veins are mostly calcite and barite with lesser amounts of galena, sphalerite, pyrite and pyrrhotite. The galena is brilliant and shows coarse cleavage faces; some is coated with cerussite.

To reach the Gorman farm, leave Highway No. 8 at the Esso station on the west side of the bridge over the Lièvre River at Masson, and proceed north for 2½ miles; turn left and continue west for 3 miles; turn right and proceed north for ½ mile to the farm on the west side of the road. The occurrence is north of the farm buildings.

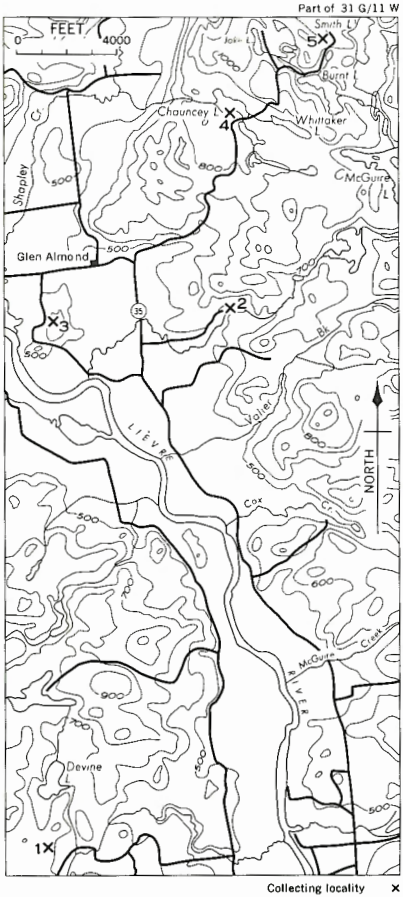
*Reference:*

Hogarth, D. D.: Can. Field Naturalist, vol. 76, No. 1, 1962, p. 48.

### Walker Mine

Excellent specimens of columnar graphite have been obtained from this mine which commenced operations in the 1870's. Both columnar and flake graphite occur in decomposed limestone, and less commonly in biotite gneiss. Scapolite, pyroxene, titanite and feldspar occur in the limestone near the ore body. The dumps furnish apatite, titanite (about the size of a hazel nut), scapolite, pyroxene, pyrite and graphite. The rocks in the dumps are very rusty and decomposed; much digging is required to obtain good specimens.

The main pit is at the foot of a cliff, south of Devine Lake (lots 20 and 21, range 8, Buckingham township). To reach the mine, leave the Buckingham-Perkins road at a point 1¼ miles from the bridge at Buckingham and proceed north for 3¼ miles to where a road branches off to the west. Turn west and continue for 1½ miles to a small lake on the south side of the road. From here, a trail about 400 yards long leads west to the mine.




BUCKINGHAM–NOTRE DAME DE LA SALETTE AREA: 1. Walker mine; 2. Pedneaud mine; 3. Emerald mine; 4. Back mine; 5. Daisy mine.

*Reference:*
Stansfield, J.: GSC, Internat. Geol. Congr. Guide Books, No. 3, 1913, pp. 101-105.

## Pedneaud Mine

A pegmatite dyke of buff to pink microcline, greenish white albite, quartz and muscovite is currently being worked for feldspar by Mr. F. Charette of Glen Almond. Black tourmaline, muscovite, and patches of clay-like chamosite occur with microcline. Other associated minerals are pyrite, garnet, hornblende, epidote, chlorite and hematite; calcite, chabazite, monazite, uraninite, uranothorite, apatite and barite are very rare.

The deposit is exposed by two large pits. It is reached by a road, 1 mile long, which leads east from Highway No. 35 at a point 1 mile south of Glen Almond. The turn-off is marked by a sign "Chalet des Monts Ski Tow".

*References:*
Hogarth, D. D.: Can. Field Naturalist, vol. 76, No. 1, 1962, pp. 44-45.
Papezik, V. S.: Que. Dept. Mines, Prel. Rept. 444, 1961, pp. 9-10.

## Emerald Mine

This was one of the largest and most important phosphate mines in the district; active mining commenced in 1875 and continued until 1892. The apatite occurs as crystals, and in massive and sugar forms. Most of the apatite is green, but some of the rounded crystals have a dark glossy appearance. Chalcopyrite, pyrite, sphalerite and galena occur with the apatite. Some very large crystals of apatite have been obtained from the deposit, including one 32 by 22 by 17 inches. Actinolite occurs in the dumps.

The mine is on a hill on the east side of the Lièvre River. The largest pit is on the north side of the hill. Follow the road which leads west from Highway No. 35 at a point ¼ mile south of the turnoff to the Pedneaud mine. Stop at the farm yard which is 1 mile from the highway and walk up the hill to the north side where the workings are located.

*References:*
Hutchinson, W. H.: Can. Mining J., vol. 9, No. 11, 1890, p. 159.
Spence, H. S.: Mines Br., Pub. No. 396, 1920, pp. 64-65.
Stansfield, J.: GSC, Internat. Geol. Congr. Guide Books, No. 3, 1913, p. 90.
Torrance, J. F.: GSC, Rept. Prog., 1882-84, pp. 11-13J.

## Back Mine

This property is being worked for feldspar by International Minerals and Chemical Corporation (Canada) Limited. Pale white microcline and soda spar occur with smoky and pale rose quartz, black tourmaline, muscovite, biotite and reddish brown garnet. Accessories include pyrite, pyrrhotite, galena, allanite, thucholite, uraninite, and radioactive zircon. Some of the feldspar has a faint bluish schiller.

The quarry has been opened into the side of a hill overlooking a small lake. The quarry itself is quite impressive looking; it resembles a cavern, having its roof supported by arches and pillars of the rock. It lies about 2 miles northeast of Glen Almond. It is reached by a 3-mile road which leads north from Highway No. 35 a short distance east of Glen Almond.

*Reference:*
Rose, E. R.: GSC, Paper 59-10, 1959, pp. 30-31.

## Daisy Mine

Datolite, crystals of quartz and pyroxene, pink and green fluorite, faujasite, apatite and white calcite are reported to occur with mica in pyroxenite. Well-formed crystals of quartz and pyroxene line cavities in the rock. The datolite (botryolite) is white, compact and massive; it shows the characteristic porcelaneous fracture. The mine was worked about 60 years ago for mica.

The pits, now mostly overgrown, lie along a ridge near the south shore of Chauncey Lake (lot 9, range 1, Derry township).

*Reference:*
de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 62-63, 285.

## High Rock Mine

When opened in 1879 this was the most extensively developed phosphate property in Canada. Very large crystals of apatite were found here. The deposit consists of green massive apatite associated with mica in pyroxenite veins cutting gneiss. Blue translucent quartz occurs in granitic rocks; this quartz contains dark mica flakes which make it difficult to obtain large enough areas of quartz for cutting. But for the mica inclusions, this quartz would make attractive cut stones. Other minerals reported to occur are massive epidote, ilmenite in crystal aggregates, wilsonite and scapolite (abundant). A pale red zircon crystal about 1¼ inches long was found here. An interesting occurrence is that of leopard rock, a granite of unusual structure with fine-grained ferromagnesian minerals forming a network of curved, connecting lines.

The mine is on the west side of the Lièvre River, north of Notre Dame de la Salette village. Proceed west from the bridge at Notre Dame de la Salette for ¼ mile; turn right (north) and continue 1½ miles to the mine. The last 300 yards of the road is very rough.

*References:*

Spence, H. S.: Mines Br., Pub. No. 396, 1920, pp. 78-80.
Torrance, J. F.: GSC, Rept. Prog., 1882-84, pp. 5J-10J.

## Villeneuve Mine

A pegmatite dyke composed of microcline, peristerite, quartz, green amazonite and greenish muscovite was worked for mica and feldspar between 1884 and 1909. Excellent quality muscovite often in large crystals (one measured 30 by 22 inches and weighed 281 pounds) has been recovered from the deposit. Black, radiating tourmaline is abundant, with crystals up to 2 inches in diameter and 2 to 3 feet in length. Good examples of muscovite pseudomorphs after tourmaline occur. Other minerals include red garnets, massive green apatite, zircon, purple fluorite, beryl, monazite, uraninite and cerite. Small flattened red garnet crystals often are embedded in sheets of muscovite. Interesting specimens collected from this locality include: rose-coloured mus-

covite; a large mass of monazite; a mass of uraninite over 1 pound in weight and partly altered to gummite.

The peristerite is pure white and exhibits a blue play of colour; some of this material has been cut into attractive cabochons. Some of the massive quartz is clear and free of flaws; when cut into cabochons it displays a well-defined six-rayed star and is referred to as "quartz asteria" or "star-quartz".

The dyke has been opened on the southeast side of a hill, north of Mine de Mica (lot 31, range 1, Villeneuve township) about 5½ miles from the bridge at Notre Dame de la Salette. Proceed north from Notre Dame de la Salette along Highway No. 35, stopping just beyond Mine de Mica where the road bends sharply north. From the bend walk northwest across a field to the southeast side of the hill (about 300 yards from the road). The mine is in a wooded area, on the slope facing the highway.

*References:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 196-199, 234, 299.
Ellsworth, H V.: GSC, Econ. Geol. Ser., No. 11, 1932, pp. 240-241.

## 15. NOTRE DAME DU LAUS AREA

*(31 J/4 E Bouchette)*

### Chondrodite

Chondrodite occurs in crystalline limestone exposed on a rounded hillock on the west side of the Lièvre River, 6½ miles south of Notre Dame du Laus (lot 17, range 2, Bigelow township). The chondrodite comprises up to 30% of the rock.

Proceed south from Notre Dame du Laus along the road on the west side of the Lièvre River. Look for the small hill on the east side of the road about 3 miles south of the bridge over Lac des Pins. The chondrodite-bearing limestone is exposed on this hill.

*Reference:*

Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 68, 1956, p. 7.

## Spinel

Purplish octahedrons of spinel occur in white crystalline limestone exposed on the south bank of the Lièvre River, immediately downstream from the des Cedres dam. Some of the octahedra measure nearly ½ inch in diameter. The occurrence is 1½ miles from the bridge at Notre Dame du Laus. The road leading northwest along the west bank of the Lièvre River leads to within 300 yards of the occurrence.

*Reference:*

Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 68, 1956, p. 7.

## Parker Mine

Crystals of olivine and spinel occur in pyroxenite at this property formerly worked for mica. The olivine crystals are greyish green, usually tabular in form and having a vitreous lustre; the largest crystals found here measure 4 inches in length. When weathered they are brown or yellow, friable, and have iridescent faces. White calcite and mica are associated with the crystals. The spinel crystals are also found in the calcite-mica rock. They occur as well-developed black octahedra measuring up to ¾ inch across. Black hornblende occurs in the contact of crystalline limestone and pyroxenite. The mica is in medium-sized dark amber crystals and is associated with calcite in the pyroxenite. The mine is on a ridge near the east shore of Lac Poisson Blanc (lot 52, range 5, Bigelow township). Take the gravel road leading northwest from Notre Dame du Laus along the west bank of the Lièvre River for a distance of 2½ miles from the bridge at Notre Dame du Laus to where a trail branches off to the south. Follow this trail for ½ mile to the pits.

*Reference:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, pp. 66-67, 288, 298.

## Zircon

Large zircon crystals occur in hornblende syenite exposed along the west shore of the southern tip of Lac du Cerf. The area of outcrops extends for about ½ mile. This part of the lake is immediately north

of Lac (Baie) St. Germain. There are no roads leading to the southern part of Lac du Cerf; access is by boat from Lac du Cerf village which is connected by a 5-mile road to Highway No. 35 at a point 16½ miles north of Notre Dame du Laus.

*Reference:*
Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 68, 1956, p. 12.

## 16. MONT LAURIER AREA

*(31 J/5 E Maniwaki; 31 J/11 E, W Ferme-Neuve; 31 J/12 E Grand Remous)*

### Diopside

Diopside and other calcium silicates occur with phlogopite, quartz and graphite in crystalline limestone which outcrops in several places along Highway No. 35, 1 mile south of Lac des Iles. The outcrop area extends for about ¾ mile.

*Reference:*
Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 50, 1953, p. 10.

### Quartz Crystals

Clear crystals of quartz line cavities in massive white quartz bands which cut crystalline limestone. Outcrops are found along the "Valley Range" road, west of Lac des Iles (lot 8, range 7, Bouthillier township). The outcrop area extends for a distance of about ½ mile along the road where it parallels the east side of a small lake (near its south end). Most of the outcrops are on the west side of the road.

*Reference:*
Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 50, 1953, p. 31.

### Mica Pit

Muscovite and tourmaline occur in a pegmatite dyke which was opened for mica. The muscovite is in sheets 2 to 4 inches in diameter. In



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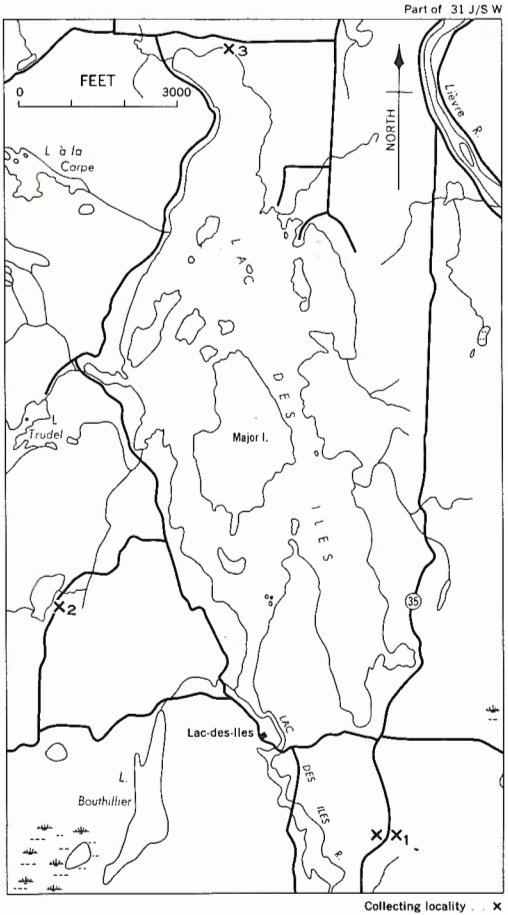


MONT LAURIER AREA: 1. Diopside occurrence; 2. Quartz crystals; 3. Mica pit.

1940 the property was reopened for beryl. Geologists who visited the deposit since that time did not find beryl.

The pits are near the north shore of Lac des Iles (lot 25, range 4, Robertson township). Leave Highway No. 35 at a point 3¾ miles south of the bridge (over the Lièvre River) at Mont Laurier and proceed west for 2¼ miles to the north shore of the lake. The pits are on the south side of the road near the shore of the lake.

*Reference:*

Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 50, 1953, p. 29.

## Rose Quartz

Translucent and slightly opalescent rose quartz occurs in veins and in boulders in the vicinity of Mont Laurier. The veins are a few inches wide and cut gneissic rocks between Pope and Howard Lakes, about 8 miles west of Mont Laurier. These lakes are on the north side of Highway No. 11.

The boulders, up to 2 feet across, were found in the northeastern part of Pope township and in the northern part of Robertson township. In Robertson township, they are reported to occur in ranges 9, 10 and 11, which is the area south of the Howard Lake-Pope Lake area.

*Reference:*

Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 50, 1953, p. 55.

## Scapolite

Yellow scapolite, partly altered to wilsonite, occurs in crystalline limestone near Clement station on the Canadian Pacific Railway (lot 19, range 1, Campbell township).

*Reference:*

Aubert de la Rüe, E.: Que. Dept. Mines, Geol. Rept. 23, 1948, p. 56.

## Granite Quarry

Pink fine-grained granite (microcline, quartz, albite, biotite and muscovite) is quarried by Brodie's Limited east of Mont Laurier. It



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is known commercially by the name "Imperial Pink". Titanite, magnetite, apatite, allanite, tourmaline and fluorite occur in the granite. Well-developed, small transparent, prismatic crystals of green apatite occur in amphibolite which intrudes the granite.

The quarry is 1 mile north of Highway No. 11, 14½ miles east of Mont Laurier.

*Reference:*

Aubert de la Rüe: Que. Dept. Mines, Rept. 23, 1948, pp. 30, 46, 57.

## 17. CALUMET-KILMAR AREA

*(31 G/10 E Hawkesbury; 31 G/15 E Arundel; 31 G/16 W Shawbridge)*

### Diopside, Scapolite

Good quality lilac diopside crystals and lemon yellow scapolite (fluorescent) occur at the McGill mine in lot 3, range 3, Township of Grenville. Diopside crystals are large and clear, and less fractured than those at Laurel.

The mine is on the farm of Lawrence McGill, north of Pointe au Chêne. Leave Highway No. 8 at Pointe au Chêne and proceed north for 3 miles to a farm lane leading west to the McGill farmhouse.

*References:*

Bourret, P. E.: Mining Ind. Que., 1944, p. 33.

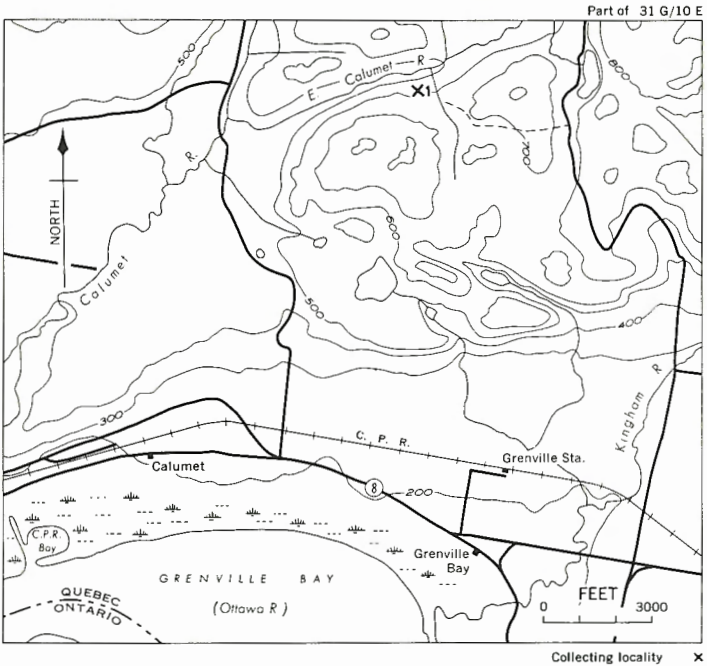
Osborne, F. F.: Que. Dept. Mines, Ann. Rept., 1936, pt. C, p. 25.

### Labradorite

Iridescent labradorite has been found in anorthosite boulders along the shores of the Ottawa River in the vicinity of Grenville.

*Reference:*

Parks, W. A.: Mines Br., Pub. No. 279, 1914, pt. C, p. 25.




CALUMET–KILMAR AREA: 1. Miller mine.

## Miller (Keystone) Mine

Wollastonite, vesuvianite, garnet, titanite, pyroxene and calcite occur with graphite at the contact of crystalline limestone and intrusive rock at the old Miller graphite mine. The minerals are coarsely crystallized and occur in aggregates. The graphite occurs in compact form (plumbago variety) and as large flakes.

The deposit was worked intermittently from 1845 to 1900 and was one of the first graphite mines worked in Canada. It is on the south side of the Calumet Est river, just west of the mouth of a small creek (lot 10, range 5, Grenville township) about 3½ miles from the village of Grenville. Access by a road, about 4 miles long, which leaves Highway No. 8 at the Grenville turn-off.

*Reference:*

Spence, H. S.: Mines Br., Pub. No. 511, 1920, p. 45.

## Kilmar, Serpentine

Serpentine in a variety of colours, is associated with the magnesitic dolomite deposit at the mine being worked by Canadian Refractories Limited in Kilmar. The serpentine ranges from yellow, yellow-green, olive-green, amber, blue, black to dark green. Banded and mottled varieties are present. A very attractive variety of marble composed of a white dolomitic limestone matrix with specks and blotches of yellow or green serpentine occurs here. The serpentine and marble from this deposit are prized by lapidarists for ornamental uses. The magnesite ore is fine-grained, white or grey, and is intimately associated with the dolomite. Bronze mica books up to 4 inches across are common. Other minerals associated with the deposit include asbestos (chrysotile), brucite in veinlets and small masses, and small amounts of pyrite, sphalerite, graphite and titanite.

A similar deposit occurs at the old Dobbie mine (lot 13, range 1, Harrington township). Permission to visit these two properties may be obtained at the mine office in Kilmar.

*References:*

Bray, Wm. T. and Hilchey, G. R.: Geol. Can. Indust. Min. Dept., 1957, pp. 164-166.

Osborne, F. F.: Que. Dept. Mines, Ann. Rept., 1936, pt. C, pp. 65-66, 75-79, 80-81.

### Diopside, Vesuvianite

Lilac-coloured diopside and honey-yellow vesuvianite, partly of gem quality, occur at the property worked by J. J. Charbonneau. Although much of the material is fractured, sufficiently large fragments of both minerals have been obtained for producing faceted stones. The diopside occurs in large, clear crystals. Titanite, apatite, calcite and phlogopite are associated with the diopside and vesuvianite in metamorphic pyroxenite. The property is on the south side of the Laurel-Lost River road, about 1½ miles west of the village of Laurel (lot 24, range 7, Wentworth township).

*References:*

Osborne, F. F.: Que. Dept. Mines, Ann. Rept., 1936, pt. C, pp. 24-25.
Parsons, A. L.: Univ. Toronto, Geol. Ser., No. 41, 1938, pp. 47-48.

### Mica Mine

Euhedral crystals of diopside and scapolite occur with phlogopite in veins cutting metamorphic pyroxenite. The deposit was worked briefly for mica in the 1920's. An open cut (100 by 40 by 40 feet) exposes the deposit on the east side of the Laurel-Montfort road, 3 miles north of Laurel where the road bends eastward (lot 20, range 10, Wentworth township).

*References:*

Osborne, F. F.: Que. Dept. Mines, Ann. Rept., 1936, pt. C, p. 34.
Spence, H. S.: Mines Br., Pub. No. 701, 1929, p. 67.

## 18. ST. RÉMI D'AMHERST AREA

*(31 G/15 E, W Arundel; 31 J/2 E St. Jovite)*

### Graphite Mine

Wollastonite, diopside, titanite, hornblende, garnet, vesuvianite, scapolite, fluorite and molybdenite occur with graphite in crystalline limestone at its contact with pegmatite. Graphite is mostly the foliated

variety, but also occurs as flakes disseminated in the limestone. Wollastonite occurs as pale greenish white fibrous crystals up to 10 inches long, diopside as green stubby crystals up to 2 inches in diameter. Titanite, as flat wedge-shaped crystals up to 3 inches in diameter, is embedded in the calcite which fills interspaces between the wollastonite crystals. Tabular orthoclase also occupies interspaces in the wollastonite crystals. Scapolite, as crystals up to 1 inch in diameter, is often completely enclosed by wollastonite.

The mine is about 3 miles northeast of the village of St. Rémi d'Amherst (lots 15, 16, range 6, Amherst township). It is reached by a 1 mile road which branches eastward from Highway No. 57, about 2 miles north of St. Rémi d'Amherst.

*Reference:*

Osborne, F. F.: Que. Dept. Mines, Ann. Rept., 1935, pt. C, pp. 70-72.

## Kaolin Mine

Quartz crystals occur with kaolin in quartzite at the quarries of Canadian Kaolin Silica Products. The crystals range from very small to an inch across. Many of the smaller crystals are clear but coated with a mixture of kaolin and quartz. Larger crystals are often clear inside and could be used for faceted stones. Tourmaline and magnetite are associated with the deposit which has been worked for both silica and china clay. Kaolinite was obtained mainly from the quarry north of China Clay Lake. This quarry lies on the east side of the St. Rémi d'Amherst-Arundel road 1½ miles south of St. Rémi d'Amherst. The other quarry is reached by a ½-mile road leading south from the same road at a point 2¼ miles south of St. Rémi d'Amherst.

*References:*

Osborne, F. F.: Que. Dept. Mines, Ann. Rept., 1935, pt. C, pp. 68-69.
Que. Dept. Mines, Ann. Rept., 1936, pt. C, pp. 28-31.
Parsons, A. L.: Univ. Toronto Studies, Geol. Ser., No. 41, 1938, pp. 45-46.


Columnar graphite from the Walker mine, Buckingham, locality 14, Quebec.

Chrome garnet with columnar diopside from the Orford Nickel mine, locality 35, Orford, Quebec.

### Serpentine

Dark green serpentine in dolomite occurs at a small quarry about 50 yards north of Rockway station (Canadian National Railways). Scapolite, diopside and phlogopite are associated with the deposit.
Rockway station is about ¼ mile by road south of Rockway Valley village (on the St. Rémi d'Amherst-Arundel road).

*Reference:*
Osborne, F. F.: Que. Dept. Mines, Ann. Rept., 1936, pt. C, p. 32.

## 19. MONTREAL

*(31 H/12a Outremont)*

### Corporation Quarry

The Corporation (Forsyth) quarry exposes coarsely crystalline nepheline syenite in contact with limestone and has been a rich hunting ground for a variety of minerals. The syenite consists mainly of greenish nepheline, black aegirine and white feldspar. Other minerals associated with the syenite are blue sodalite, violet fluorite, analcite, natrolite, noselite, apatite, dark reddish brown garnet, cancrinite, hydronephelite and astrophyllite. Small well-developed wedge-shaped crystals of titanite were found in the syenite. A vein composed of native arsenic and calcite, with very small amounts of realgar and pyrite, was found cutting syenite. The occurrence of thaumasite was the first known in Canada. White with a dull silky lustre, it forms crusts composed of fibres with a feathery or radial arrangement on the limestone near its contact with the nepheline syenite. It was found in fissures up to 3 inches wide.
The Corporation quarry is below the northwest shoulder of Mount Royal, near the University of Montreal. Proceed toward the mountain up Bellingham Street; at the end of the street turn left and walk to the quarry on the face of the mountain.



74278—14

Nepheline syenite with a similar mineral assemblage occurs in the grounds of the University of Montreal and in road-cuts along the new scenic parkway in Mount Royal.

*References:*

Adams, F. D.: GSC, Internat. Geol. Congr. Guide Books, No. 3, 1913, pp. 39-42.
Clark, T. H.: Que. Dept. Mines, Geol. Rept. 46, 1952, p. 93.
Evans, N. N.: Am. J. Sci., ser. 4, vol. 15, 1903, pp. 92-93.
Graham, R. P. D.: Trans. Roy. Soc. Can., ser. 3, sec. 4, vol. 12, 1918, pp. 197-199.

## 20. ST. LIN AREA

*(31 H/13 W Laurentides)*

### Garnet

Red garnet in perfectly-formed crystals up to ½ inch in diameter is abundant in Grenville rocks which are included in light-coloured anorthosite. The garnet-bearing rock outcrops about 3 miles south of Ste. Calixte. Take the side road west from the Ste. Calixte-St. Lin road about 3 miles south of Ste. Calixte; follow this road for ½ mile. Walk ⅛ mile north across a field to the outcrop.

*Reference:*

Osborne, F. F. and Clark, F. H.: Que. Dept. Mines, Geol. Rept. 91, 1960, pp. 15, 36.

### Anorthosite Quarry

Fine-grained dark greyish-green anorthosite occurs at the quarry of Scotstown Granite Company at New Glasgow village. The rock takes a good polish and exhibits a bluish schiller due to small specks of iridescent feldspar. It would make an attractive ornamental stone.

*Reference:*

Hogg, Wm. A.: Ph.D. Thesis, Dept. Geol. Sci., McGill Univ., 1959, pp. 57-58.

## 21. ST. AMBROISE

*(31 I/4 E Rawdon)*

### Sillimanite

Sheafs of sillimanite crystals occur in a garnet-sillimanite gneiss exposed by a road-cut on Highway No. 42 where it parallels the south shore of Lac des Français, about 6 miles northwest of St. Ambroise (Kildare) post office. The crystals are 4 to 5 inches long and ¼ inch in diameter.

*Reference:*

Beland, R.: Que. Dept. Mines, Prel. Rept. 226, 1949, p. 4.

## 22. STE. AGATHE DES MONTS

*(31 J/1 W Ste. Agathe des Monts)*

Labradorite occurs in anorthosite rock in a road-cut on the north side of Highway No. 30 about ½ mile north of its junction with Highway No. 11. This labradorite shows its characteristic schiller.

*Reference:*

Personal communication: E. R. Rose.

## 23. L'ANNONCIATION-LABELLE AREA

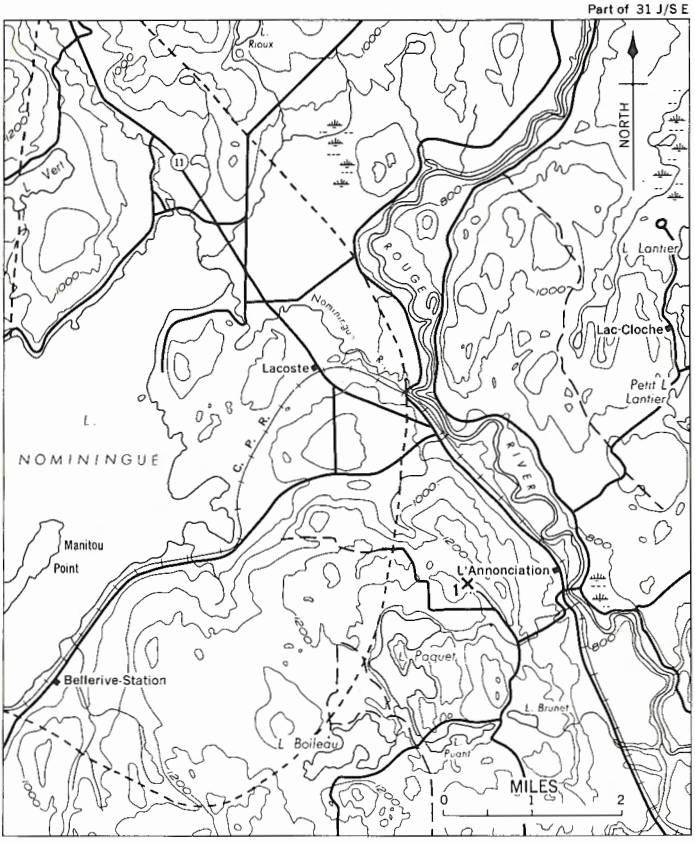
*(31 J/2 E St. Jovite; 31 J/7 E, W L'Annonciation; 31 J/10 W L'Ascension)*

### Canada Marble and Lime Quarry

Serpentine, diopside, tremolite, scapolite (wilsonite), and chondrodite occur in dolomitic limestone at the Canada Marble and Lime (Registered) quarry, west of L'Annonciation village. Two types of serpentine



74278—14½




L'ANNONCIATION–LABELLE AREA: 1. Canada Marble and Lime quarry; 2. Lac Nomininguе-area bounded by dashed line indicates extent of pulaskite boulders.

are present: a green variety and an amber variety, the latter known locally as "onyx". The amber serpentine forms rings around a diopside rock which is very tough, medium-grained, and pure white or slightly blue in colour. Both the amber serpentine and the diopside have been suggested as potential ornamental material. The tremolite occurs in bladed aggregates, the wilsonite in blue or lilac aggregates, and the chondrodite in cinnamon-brown coloured grains.

Proceed southwest for ¾ mile on the road which leaves Highway No. 11 at the south end of L'Annonciation village; at the point where the road branches off in two directions, follow the right fork leading northwest directly to the quarry, a distance of ¾ mile.

*Reference:*

Osborne, F. F.: Que. Dept. Mines, Ann. Rept., 1934, pt. E, pp. 40-42.

## Nepheline, Pulaskite

Pink nepheline in coarse angular grains, occurs in pulaskite rock which is found in boulders in the vicinity of Lac Nominingue, and in the rock which surrounds Lac Gingras. The rock is related to the Norwegian laurvikite ('Pearly granite') which is used extensively for high-grade monument and ornamental stone. A coarse-grained reddish to purplish syenite is associated with the pulaskite. Some of the rock contains sufficiently numerous patches of nepheline to be a nepheline syenite. The pulaskite is a coarse-grained pearly-grey rock containing tabular feldspars in parallel arrangement and small patches of nepheline.

The boulders occur in glacial drift in an area extending eastward from Lac Nominingue and north of the lake to Lac Tibériade. Outcrops of pulaskite rock are found north of Lac Gingras (Truite) which lies approximately 5 miles north of Lac Nominingue.

The area surrounding Lac Nominingue in which the pulaskite boulders occur, is indicated on the map.

*Reference:*

Osborne, F. F.: Que. Dept. Mines, Ann. Rept., 1934, pt. E, pp. 11-13, 28-31.

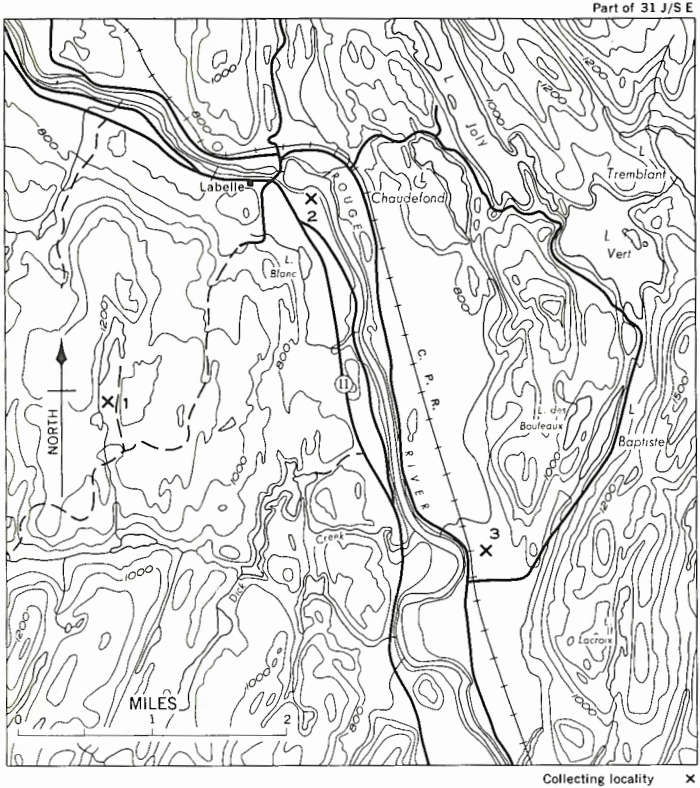
## Garnet Quarries

Garnet occurs in three quarries in the vicinity of Labelle. The crystals occur most commonly in biotite gneiss, in quartz veins or in pegmatite dykes. Those in the gneiss are deep red and small in size, rarely reaching a diameter of ½ inch; in places they comprise 40% of the rock. The largest and most abundant garnets occur in the pegmatite dykes. Some of these crystals are clear and of a deep, rich shade of red. In one quarry, that of Labelle Mining Incorporated, another type of deposit is found along with the gneisses and pegmatites. It is a contact metamorphic deposit in which the garnets are associated with an aggregate of pyrrhotite, titanite, magnetite and quartz. These garnets are also a very deep red colour.

The quarries are located as follows: (1) Labelle Mining Incorporated—on a hillside overlooking a small lake, south of Labelle (lots 16 and 17, range J, Joly township). It is reached by a 3 mile road south from Highway No. 11 at Labelle. (2) McLean and McNicholl Limited—along a steep face rising from the west side of the Rouge River, just south of Labelle (lot 25, range B, Joly township). A short road to the quarry leads east from Highway No. 11 about ¼ mile south of the bridge at Labelle. (3) Garnet Products Limited—on the east side of the Rouge River (lot 10, range A, Joly township). Proceed south from Labelle for 3¾ miles along the road on the east side of the Rouge River; turn east and continue for about 200 yards beyond the railway crossing to the building on the north side of the road. Walk north about 350 yards to the quarry on the face of the small hill. None of these quarries is in operation.

*References:*

Osborne, F. F.: Que. Dept. Mines, Ann. Rept., 1934, pt. E, pp. 31-37.
Que. Dept. Mines, Ann. Rept., 1935, pt. C, p. 70.




L'ANNONCIATION–LABELLE AREA: Labelle Garnet quarries; 1. Labelle Mining Inc.; 2. McLean and McNicholl Ltd.; 3. Garnet Products Ltd.

## 24. LAC TAUREAU AREA

*(31 I/12 W St. Michel des Saints; 31 I/13 W Lac Taureau; 31 J/16 E Lac Charland; 31 P/4 W Clear Lake)*

### Chrysoberyl

Chrysoberyl, in well-developed crystals, occurs in a pegmatite dyke composed of quartz, orthoclase, mica and black tourmaline. One crystal from this locality measured 1½ inches by 1¼ inches. The dyke is in gneissic rocks. It is cut across by the Rivière du Poste at a point "about one mile below the forks of the Rivière du Poste, where the streams from Lac Long and Lac Clair run together", and 13 miles (as the crow flies) "north of the point where the Rivière du Poste joins the Mattawin River". In this area, the Mattawin River has broadened to become Lac Taureau (Toro). Access is by water from the village of St. Michel des Saints which is at the southwest end of Lac Taureau and at the terminal point of Highway No. 43.

*Reference:*

Evans, N. N.: Am. J. Sci., vol. 19, ser. 4, 1905, pp. 316-318.

### Maisonneuve Mine

Peristerite, garnet, black tourmaline, smoky quartz, beryl and radioactive minerals—samarskite, euxenite and fergusonite—are associated with a muscovite-bearing pegmatite at the Maisonneuve mine (lots 1 and 2, range 2, Maisonneuve township). The mine was formerly worked for muscovite (ruby mica variety) which occurs in books up to 3 or 4 inches across.

The mine lies about 100 feet south of the outlet of Mica Lake and near the road from St. Michel des Saints, at a point 10.1 miles from this village. The road to the mine leads in a northwesterly direction from St. Michel des Saints.

*References:*

Ellsworth, H. V.: GSC, Econ. Geol. Ser., No. 11, 1932, pp. 248-249.
Rose, E. R.: GSC, Paper 59-10, 1959, pp. 32-33.

## 25. MONTAUBAN

*(31 I/16 E, W Montauban)*

### Tetrault Mine

White fibrous bunches and radiating masses of tremolite, large green pyroxene crystals, red garnets up to ¾ inch in diameter, purplish wilsonite, titanite crystals, anthophyllite, cordierite, sillimanite, talc, apatite, feldspar, scapolite, quartz, phlogopite, and black tourmaline are associated with the ore body at the Tetrault mine (Anacon Lead Mines Limited). One titanite crystal recovered from this deposit measured 6 inches in length. The principal ore minerals are sphalerite and galena. Other metallic minerals associated with the deposit are pyrrhotite, chalcopyrite, molybdenite, marcasite, arsenopyrite, native gold and silver, graphite and tetrahedrite. The host rocks include a limestone-tremolite band which carries the ore, pegmatite dykes and bands of amphibolite. The country rock is gneiss. The mine is in the village of Montauban les Mines, about 4 miles south of Notre Dame des Anges.

*References:*

Alcock, F. J.: GSC, Econ. Geol. Ser., No. 8, 1930, pp. 79-85.
Smith, J. R.: Que. Dept. Mines, Geol. Rept. 65, 1956, pp. 26-31.

### Laurentide Zinc Mine

A similar deposit occurs at the Laurentide zinc mine (Nocana Mines Limited) about 3 miles east of the Tetrault mine. A branch road connects the mine to the Notre Dame des Anges-Montauban road a short distance north of Montauban les Mines.

*References:*

Alcock, F. J.: GSC, Econ. Geol. Ser., No. 8, 1930, pp. 89-90.
Smith, J. R.: Que. Dept. Mines, Geol. Rept. 65, 1956, pp. 31-33.

## 26. LA MALBAIE-ST. URBAIN AREA

*(21 M/10 E St. Urbain; 21 M/16 W Lac au Plongeon)*

### Lac Pieds des Monts Mine

Garnet, zircon, monazite and uraninite occur in a pegmatite dyke composed of pink microcline, white albite, quartz and mica at an old mica mine near Lac Pieds des Monts. The garnets are plentiful, red in colour and are reported to be of gem quality. The zircon crystals are dark-coloured and bright, but small in size, being about ¼ inch long. Large crystals of uraninite (cleveite variety) and mica were recovered from the deposit in the 1890's. Beryl, in small crystals, occurs sparingly. The mine is about half-way up a high hill on the north side of Lac Pieds des Monts, about 18 miles northwest of La Malbaie. Proceed west from Clermont along Highway No. 15A for 2¼ miles. Branch off onto a road leading west via St. Aimé des Lacs village to De Salles post office and follow this road for 6½ miles to a fork; take the left (west) fork and continue for 2½ miles to another fork; follow the right (east) fork for 1¼ miles to Lac Pieds des Monts (south side). Proceed by boat from the Boily farm at the end of the road to the north side of the lake, about ½ mile away. The mine workings can be seen from Mr. Boily's farmhouse.

*References:*

de Schmid, H. S.: Mines Br., Pub. No. 118, 1912, p. 201.
Ellsworth, H. V.: GSC, Econ. Geol. Ser., No. 11, 1932, pp. 250-251.
Mulligan, R.: GSC, Paper 60-21, 1960, p. 34.

### St. Urbain, Ilmenite

Zeolites, chlorite and calcite crystals occur in small vugs and veins in ilmenite-hematite ore in the deposits at St. Urbain. The zeolites (laumontite and phillipsite) are pinkish-white and the calcite crystals are either colourless and clear, or white. Rutile and pyrite are commonly associated with the ore. The ilmenite mines are clustered on a hillside

west of St. Urbain village. The best zeolite-calcite specimens are found at the Furnace Mine on the northeast side of the hill.

The St. Urbain ilmenite properties are held by Continental Iron and Titanium Mining Limited. A road from St. Urbain leads to the mines.

*Reference:*

Rose, E. R.: GSC, Paper 61-7, 1961, pp. 15, 16-18.

## 27. LES ESCOUMINS AREA

*(22 C/5 E Lac des Pons; 22 C/6 W Les Escoumins)*

### McGie Mine

Garnet, tourmaline, apatite and beryl are associated with muscovite in a pegmatite dyke formerly worked (in the 1890's and in 1941) for mica. Beryl crystals up to 3 inches in diameter have been reported here. The muscovite commonly occurs in plates 3 to 4 inches across, and in clear sheets up to 8 inches in diameter. Both the ruby and green varieties are present, the latter only in the western workings. Unusual specimens of muscovite sheets containing inclusions of apatite and garnet can be obtained from the deposit. Anthraxolite, a hydrocarbon, is associated with the deposit.

The property lies near the north shore of the eastern end of Lac Charlotte, directly north of the large island in the eastern end of the lake. The eastern workings extend to the shore of the lake, the western workings are about 600 feet north of the shoreline. Proceed west from Les Escoumins village for a distance of 7½ miles along the road which follows the Rivière des Escoumins to where a road branches off to the left (west). Follow this road west to the east end of Lac Charlotte (terminal point of the road), a distance of about 2 miles. The mine is about 200 yards northwest of the end of the road.

*References:*

Greig, E. W.: Que. Dept. Mines, Geol. Rept. 32, 1952, pp. 12-14.
Mulligan, R: GSC, Paper 60-21, 1960, p. 34.

## Simard Mine

Worked intermittently for mica since 1940. This deposit is similar to the muscovite deposit at the McGie mine. Ruby mica occurs in books up to 2 feet in diameter. Other minerals found are tourmaline, beryl, apatite, and large crystals of soda feldspar measuring 2 to 3 feet in length.

The property is held under claim Q-29658 by Mr. Eugène Simard of Grandes Bergeronnes, Saguenay County. It lies 500 yards south of the eastern end of Lac Charlotte and is accessible by a road which branches off from the McGie mine road at a point ¼ mile east of the eastern end of Lac Charlotte.

*Reference:*

Greig, E. W.: Que. Dept. Mines, Geol. Rept. 32, 1952, pp. 11-12.

## Beaver Lake Mine

Rose quartz, garnet, tourmaline and apatite are associated with mica in pegmatite at this mine. Ruby mica occurs in books up to 4 inches in diameter, with some sheets measuring up to 6 inches across. The deposit was first worked in 1892 and has been worked intermittently since that date. It is currently held by claim Q-29050.

The pits are on the steep northeast side of a ridge which rises abruptly 50 feet above a swamp to the north. The ridge overlooks Lac Denis. Take the road which leads north from Highway No. 15 at a point 4¼ miles west of the village of Grandes Bergeronnes. This road leads to a dam on the south end of Lac des Sables, a distance of 3 miles. Cross the lake to the northeastern end where Fidèle Creek joins the lake. This is about 2 miles by boat. A trail leads north along the east side of Fidèle Creek and continues for 2½ miles to the mine.

*Reference:*

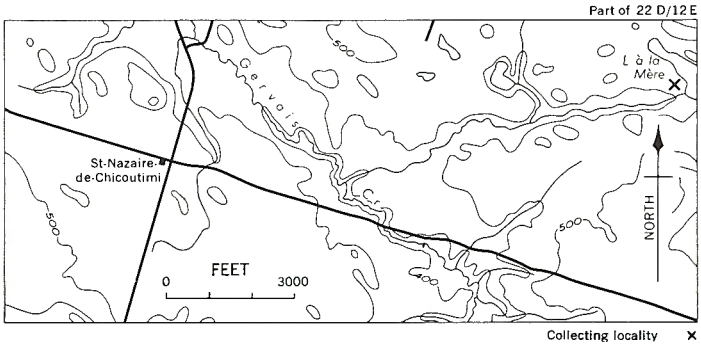
Greig, E. W.: Que. Dept. Mines, Geol. Rept. 32, 1952, p. 20.

## 28. LAC ST. JEAN AREA

*(22 D/5 E Hébertville; 22 D/11 W St. Ambroise; 22 D/12 E Isle-Maligne; 22 SW Chicoutimi-Rimouski; 32 A/8 E Chambord; 32 SE Chibougamau-Roberval)*

### Lac à la Mère Mica Mine

Topaz and beryl occur in crystals and in masses 2 to 3 inches in diameter in a cleavelandite-quartz-muscovite pegmatite at an old mica mine on the west shore of Lac à la Mère. Both minerals are of a greenish colour; topaz usually is deeper. Green amazonite, a black hydrocarbon and a brown radioactive mineral have also been reported from the deposit.




LAC ST. JEAN AREA: Lac à la Mère mica mine.

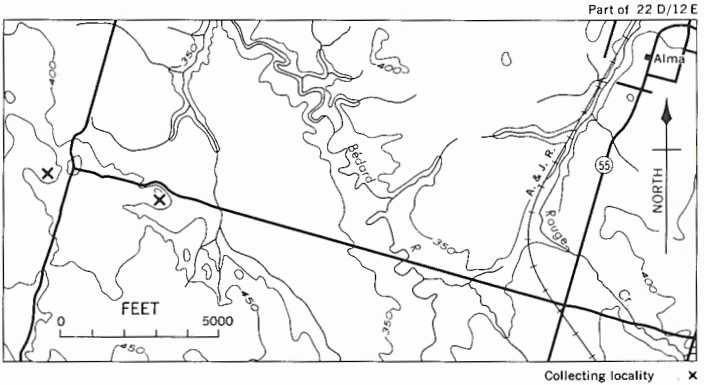
The mine is on the shore of the lake about ¼ mile north of the island near the south end of the lake. It is reached by a path (about 1 mile long) which leads north from the main road running eastward from St. Nazaire de Chicoutimi at a point 2 miles east of the village church.

*Reference:*
Ellsworth, H. V.: GSC, Econ. Geol. Ser., No. 11, 1932, pp. 252-253.

## Anorthosite Quarries

Anorthosite for use as a building stone is quarried in several places on the east side of Lac St. Jean. The colour is deep brown or purple to grey or black. Grain size varies from place to place; crystals up to a foot in length are not uncommon. When polished the stone often has a mottled appearance due to ilmenite or magnetite filling interstices between the plagioclase crystals. The grey anorthosite used in the construction of the earth dams at Isle Maligne contains coarse crystals of labradorite showing a very beautiful play of colour (personal communication: K. R. Dawson). It is believed that the rock was obtained from one of the quarries in the district.

The location of two quarries is shown on the map; another quarry is situated on the east side of the Hébertville Station—Notre Dame




LAC ST. JEAN AREA: Anorthosite quarries.

d'Hébertville road, about a mile south of Hébertville Station. Other quarries are located at Alma and on Ile d'Alma.

*Reference:*

Osborne, F. F.: Que. Dept. Mines, Ann. Rept., 1933, pt. E, pp. 37-44.

## Quartz Crystal

Small quartz crystals line vugs in a massive milky quartz vein, at a locality south of Lac St. Jean. Most of the crystals are colourless; some have a pink tinge. The vein cuts granite gneiss and extends N30°E for 650 feet. Maximum width of the outcrop is 142 feet. The outcrop forms the top and east flank of a small hill on the boundary between lots 2 and 3, range 3, Dequen township, and 1700 feet southeast of the boundary-post between the parishes of Lac Bouchette and St. Francois de Sales, on the road connecting the two villages. The occurrence is about 3 miles from each village.

Translucent quartz crystals occur in vugs in a milky massive quartz vein exposed by surface blasting near Lac Noir. The vein cuts Grenville limestone and quartzite. The property, near the north shore of the lake, is held by Quebec Silica Mine Limited (claim 2, Certificate No. 134215).

The deposit lies about 9 miles northeast of the town of Mistassini. Take the road leading northeast from Mistassini to Manigouche (Ste. Elisabeth) village, a distance of about 8½ miles; continue in for ½ mile beyond the village to the junction of a road leading northwest; turn left for ¾ mile to another junction, turn right for 3¼ miles to a cross road; continue on the road leading north for ¾ mile to a fork in the road; follow the right fork which leads to the north end of Lac Noir and then to another fork 2¼ miles from the first fork. The silica claim lies about ½ mile due west of this (second) fork and just north of the north end of the small lake which is situated immediately north of Lac Noir.

*References:*

Berrangé, J. P.: Que. Dept. Mines, Prel. Rept. 404, 1959, p. 12.
Denis, B. T.: Que. Dept. Mines, Ann. Rept., 1933, pt. D, pp. 85-88.

### Delisle Mine

This mine was worked for mica in 1943. Large books of phlogopite occur in pegmatite and pyroxenite. Accessory minerals include titanite, calcite, muscovite, chlorite, amphibole, orthoclase, quartz, pyrite and pyrrhotite.

The property is covered by claim 1, Certificate No. 71016. It is situated 1½ miles north of Lac Noir. To reach it, follow the directions given for the quartz-crystals occurrence as far as the second fork; turn left onto the west branch which leads directly to the mica mine.

*Reference:*

Berrangé, J. P.: Que. Dept. Mines, Prel. Rept. 404, 1959, pp. 5, 11-12.

### Ornamental Rock

Biotite gneiss exhibiting an opalescent appearance due to the presence of oligoclase (moonstone variety) outcrops along the Passe Dangereuse-St. Ludger de Milot road near No. 4 bridge, 18 miles south of Passe Dangereuse (about 70 miles north of St. Ludger de Milot). The outcrop is on the west side of the road. This rock when polished would make a handsome ornamental stone.

*Reference:*

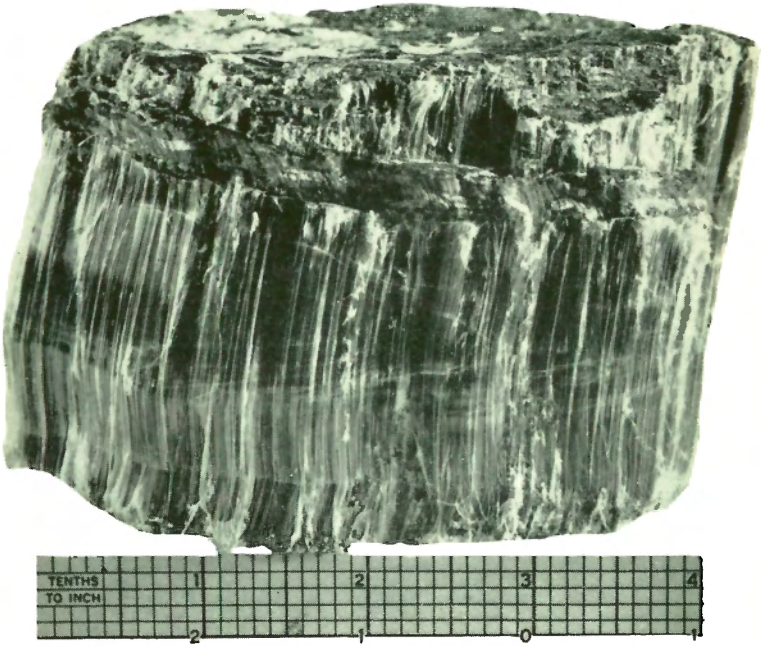
Ross, S. H.: Que. Dept. Mines, Geol. Rept. 39, 1949, p. 18.

## 29. LAC MISTASSINI AREA

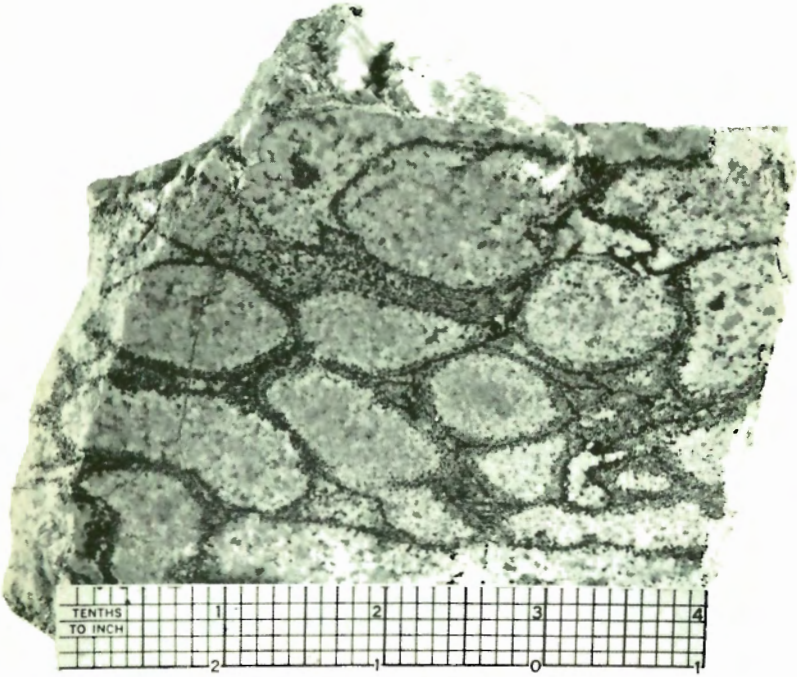
*(32 NE Mistassini)*

### Lazulite

Lazulite in bright blue aggregates up to 1 inch in diameter occurs in a quartz sandstone matrix, and in quartz veins cutting Papaskwasati sandstone. The lazulite-bearing sandstone is well exposed in the bed of the Holton River; in the area between the Cheno and Papachouesati (Papaskwasati) rivers; and along the Papachouesati River, mostly above the forks of the Holton River.




Asbestos from Thetford Mines, locality 37, Quebec.




Leopard rock with massive apatite from the High Rock mine, Notre Dame de la Salette, locality 14, Quebec. The surface has been polished.

The Papachouesati and Cheno rivers flow into the north end of Lac Mistassini, the Papachouesati being the more westerly of the two. The Holton River joins the Papachouesati from the west, about 20 miles north of Lac Mistassini. The area is about 145 miles northeast of Chibougamau. Access is by air or by a well-travelled canoe route connecting Lac Mistassini with the Chibougamau area.

*Reference:*

Chown, E. H.: Que. Dept. Mines, Prel. Rept., 415, 1960, pp. 6-7.

## 30. SHELDRAKE

*(22 I/7 W Sheldrake)*

### Labradorite

Labradorite showing the characteristic beautiful play of colour occurs in the anorthosite rock exposed along the north shore of the St. Lawrence River. Good exposures are reported from both sides of the village of Sheldrake.

*Reference:*

Selwyn, A. R. C.: GSC, Ann. Rept. (New Ser.), vol. 4, 1888-89, p. 4A.

## 31. ROMAINE RIVER AREA

*(12 NW Mingan-Cape Whittle)*

### Labradorite

Iridescent labradorite in white to grey anorthosite rocks is found in the Romaine River area. The labradorite exhibits a beautiful play of colour including azure-blue, greenish blue, green, and more rarely, reddish and pink tones. It is reported to be fresh with little alteration. Good exposures are found around the shores of Lac Garnier (51°21′–71′N, 63°41′–44′W); in the area between Lac Garnier and Lac Rougemont immediately to the north; along the Romaine River from 2 miles below the Baubert River south to the Glapion River, the next major tributary from the west.

Large crystals of labradorite displaying a bluish play of colour occur in outcrops along the shores of the long narrow lake which lies about 5 miles northeast of Lac Garnier (51°30'–33'N, 63°36'W). This rock is rather unusual in that it has a porphyritic appearance.

Access to the area is by air from Sept Iles to Lac Garnier, a distance of 145 miles. River travel in the area is difficult; the Romaine River above the Baubert River can be travelled by canoe, but the portion below the Glapion River is not accessible because of large falls.

*Reference:*

Claveau, J.: Que. Dept. Mines, Geol. Rept. 38, 1949, pp. 1-5, 19-20.

## 32. GASPÉ AREA

*(22 A Gaspé; 22 B/16 E Mont Albert)*

### Agates, Jasper

Beautifully coloured pebbles of agates, jasper, carnelian and chalcedony are found along the beaches of Gaspé and the Bay des Chaleurs.

*Reference:*

Ells, R. W.: GSC, Ann. Rept. (New Ser.), vol. 4, 1888-89, p. 157K.

### Federal Mine

Amethystine quartz occurs in veinlets and in cavities in white quartz which is associated with the lead-zinc ore at the Federal mine (Lemieux township). The ore veins consisting of quartz (including crystals), carbonates, sphalerite, galena, pyrite, marcasite and chalcopyrite cut sedimentary and, less commonly, intrusive rocks. The amethyst in successive bands has well-developed comb structure along the walls of vugs and fractures. It is interbanded with carbonates or with quartz of another shade.

The mine is south of Gaspé National Park, on the east side of a ridge overlooking North Berry Mountain Brook. Proceed south on the Ste. Anne des Monts—New Richmond road for a distance of 4½

miles from the south gate of the park; turn west for about 200 yards to a trail leading north for a distance of ¾ mile to the mine.

*Reference:*
Auger, P. E.: Que. Dept. Mines, Geol. Rept. 63, 1954, pp. 7-15.

## 33. MOUNT ST. HILAIRE AND JOHNSON MOUNTAIN

*(31 H/11 E Beloeil; 31 H/6 E St. John)*

### Beloeilite (Ornamental Rock)

A striking rock composed mostly of blue sodalite in a white matrix occurs on the northeast slope of Mount St. Hilaire. The rock is known as beloeilite and has up to 80% sodalite with minor albite and nepheline. When polished it makes a very handsome ornamental stone. The area in which the rock occurs is indicated on the map. Outcrops are not numerous, but loose blocks have been reported from the area.

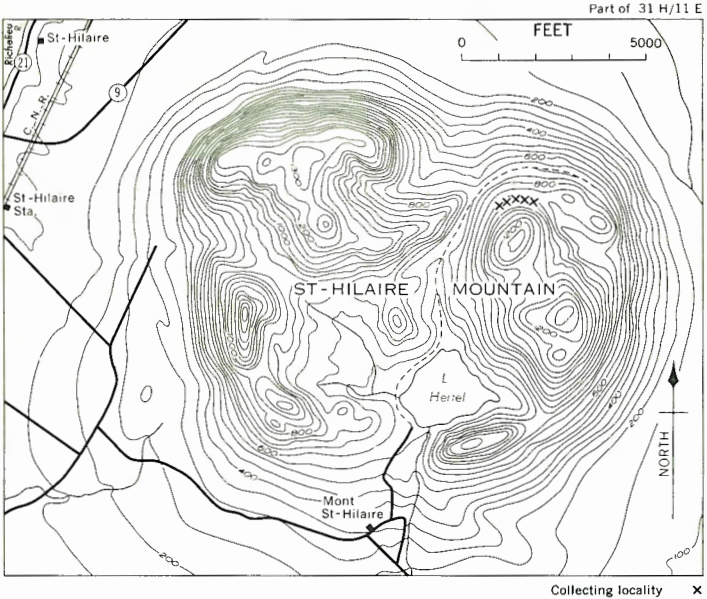
*Reference:*
Personal communication: G. Pouliot.

### 'Black Granite' Quarry

Essexite, a dark medium-grained ornamental stone, is quarried by Brodie's Limited on the south side of Johnson Mountain, near the village of St. Grégoire. When polished, the rock shows a good contrast between the dark minerals, hornblende and augite, and the bluish white feldspar. Small specks of magnetite produce silvery glints on the polished surface. "Ebony Black Granite" is the commercial name for this rock.

The quarries are on both sides of the road leading north from the village of Mont St. Grégoire to Johnson Mountain, about 1¼ miles from the former.

*Reference:*
Hogg, Wm. A.: Ph.D. Thesis, Dept. Geol. Sci., McGill Univ., 1959, pp. 95-96.




MOUNT ST. HILAIRE–JOHNSON MOUNTAIN AREA: Beloeilite.

## 34. PHILLIPSBURG

*(31 H/3 E Lacolle)*

### Marble Quarry

Grey, pink and green marbles occur at the quarry of Missisquoi-Lautz Corporation Limited near the village of Phillipsburg. The grey marble is mottled and traversed by dark green irregular lines and blotched with yellow-green. The "Emeraldo" variety is a grey marble containing a high proportion of yellowish green to deep sea-green patches.

The most attractive marble at this deposit is the "Vert Rose" variety. It is composed of a white and green matrix containing mottled white and rose-coloured clouds up to 2 inches in diameter. This marble takes a brilliant polish and would make a beautiful ornamental stone. The quarry is ¾ mile by road north of Phillipsburg. The road to the quarry runs parallel to and to the east of Highway No. 7.

*Reference:*

Parks, W. A.: Mines Br., Pub. No. 279, 1914, pp. 212-215.

## 35. SHERBROOKE AREA

*(21 E/5 W Sherbrooke; 31 H/1 W Memphremagog; 31 H/8 E, W Orford)*

### Jasper

Deep red to reddish brown jasper occurs in jasper-hematite-magnetite rock in old pits in the city of Sherbrooke. The jasper contains magnetite veins. Some of the material is suitable for cutting. The pits are small and now mostly overgrown, but large boulders of the jasper rock lie near by.

The occurrence is in the northeastern part of the city, east of the exhibition grounds. Proceed north along St. Michael Street from the road leading to East Angus; turn east (right) at the school and continue as far as the illuminated cross on the south side of the road. Walk about 100 yards south to the pits.

### Placer Gold

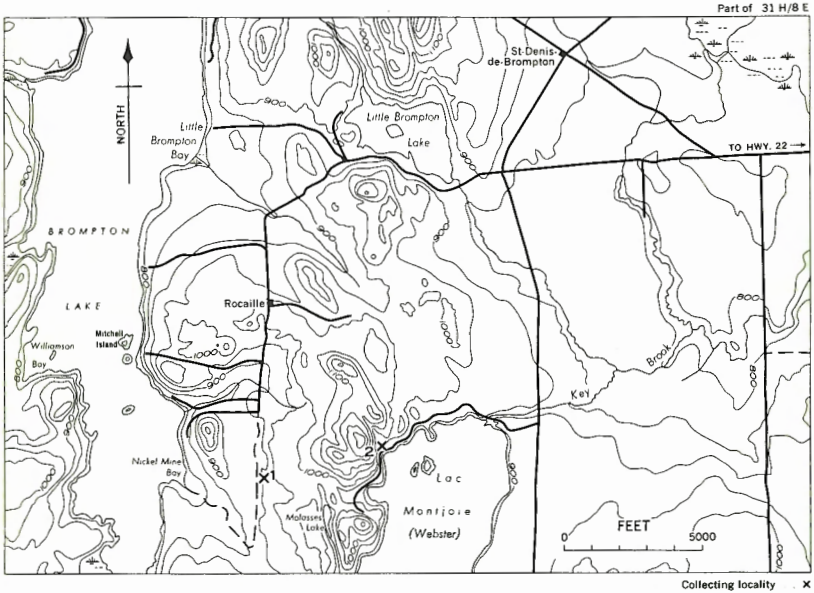
Placer gold was at one time recovered from the Moe River in an area extending south from Milby for about 14 miles to Moe River village. The Moe River is a tributary of the Ascot River.

*Reference:*

Cooke, H. C.: Que. Dept. Mines, Geol. Rept. 69, 1957, p. 33.

## Orford Nickel Mine

Green chromiferous garnet, cream diopside, and millerite occur in a calcite vein at an old nickel mine near Brompton Lake. The garnet is emerald green in colour and is found in aggregates of tiny crystals. Unfortunately, none of the crystals is large enough for cutting material. The diopside is in cream to pale green columnar crystals or in radiating crystal aggregates. Millerite, in slender crystals or in small, fine-grained masses is not too common. It is usually associated with garnet or




SHERBROOKE AREA: 1. Orford nickel mine; 2. Webster Lake serpentine.

white calcite. The calcite vein occurs at the contact between serpentinized peridotite and acid volcanic rock.
The pits and dumps are in a wooded area on the slope of a small ridge east of Brompton Lake (lot 7, range 12, Orford township). To reach the deposit leave Highway No. 22/5 at a point 4 miles north of the junction with Highway No. 1 at Sherbrooke, and proceed west to Brompton Lake (about 10 miles). At the end of the road a trail leads to the mine.

*References:*
Fortier, Y. O.: GSC, Paper 45-8, 1945, p. 4.
St. Julien, P.: Que. Dept. Mines, Prel. Rept. 464, 1961, p. 13.

## Webster Lake Serpentine

Serpentine in various shades of green occurs in old chromite pits near the northwest shore of Webster (Montjoie) Lake. Several varieties occur, including mottled blue and green, massive green, and white and green varieties. Another variety consists of serpentine in three shades of green producing a mottled effect. In this type the matrix is olive green and it contains blotches of lighter green traversed by dark green stringers. This serpentine has been regarded as being one of the most beautiful serpentines occurring in the Eastern Townships.
The pit from which the best serpentine has been collected is situated near the shore of Webster Lake at an elevation of 100 feet. Access is by a road which branches off southward from the Brompton Lake road.

*Reference:*
Parks, W. A.: Mines Br., pub. No. 279, 1914, pp. 231-232.

## Orford Marble Company Quarry

Two types of ornamental rock occur at the Orford Marble Company quarry on the east side of Bowker Lake. The red variety is a fine-grained marble traversed by white calcite veinlets. The deep rich colour of the marble makes it a very attractive stone for decorative purposes; it was used to decorate the post office at Sherbrooke. The green rock

is a serpentine cut by white calcite veins. Green needle-like actinolite masses and crystals of green calcite occur in the crystalline limestone. The quarry is on the side of a small bluff near a creek. Proceed north for 2¼ miles on the road which leaves the Bonsecours—St. Elie d'Orford road at a point ¾ mile east of the south end of Bowker Lake (4½ miles east of Bonsecours). The quarry is on the east side of the road.

*References:*

Fortier, Y. O.: GSC, Paper 45-8, 1945, p. 5.
Parks, Wm. A.: Mines Br., Pub. No. 279, 1914, pp. 210-211.

## Adams Quartz Crystal

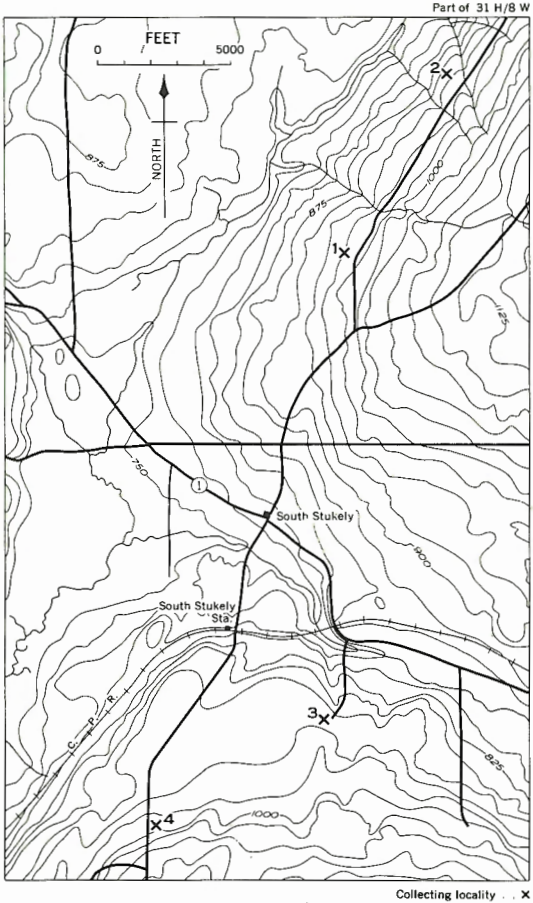
Vugs lined with quartz crystals occur in a vein on the farm of Mr. G. Adams in Bonsecours Parish. The crystals range up to 3 or 4 inches in diameter. Some of them are clear, especially the smaller ones. The Adams farm lies on the south side of the road leading east from the village of Lawrenceville, about 1 mile from the village.

*Reference:*

Personal communication: C. H. R. Gauthier.

## South Stukely Marble Quarries

Several varieties of marble occur at the quarry of Dominion Marble Company, north of the village of South Stukely. The following varieties have been mined: (1) dark "Jaune royal" a fine-grained marble delicately veined and spotted with shades of yellow and traversed by darker yellow or greenish-coloured veinlets producing a mottled effect; (2) light "Jaune royal"—lighter in colour than (1) and with a more banded effect; (3) dark "Rose royale"—fine-grained light rose to pinkish-chocolate matrix clouded with white and containing chocolate-brown veins and spots, the whole being traversed by white calcite veins; (4) light "Rose royale"—white fine-grained matrix with yellow and rose coloured patches producing a mottled effect; (5) "Vert royal"—green patches in a white matrix; (6) "Violetta"—white matrix clouded with pink, green, and chocolate, and cut by irregular yellow veins; (7) "Royal veined white"—fine- to medium-grained light




SHERBROOKE AREA: 1. Marble quarry; 2. Marble quarry; 3. Pyrite; 4. Pyrite.



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blue clouded marble; (8) "Royal Dominion blue"—dark blue clouded marble. The polished surface of the dark blue marble (8) is very brilliant. These marbles have been used to decorate the interior of many buildings in Canada. Some of the marbles, especially the light Rose royale variety, make very delicate and beautiful ornamental stones when polished.

The quarry is situated on the west side of the South Stukely-Lawrenceville road at a point 1¼ miles north of South Stukely. Another quarry lies on the same side of the road, about ¾ mile to the north.

*Reference:*

Parks, Wm. A.: Mines Br., Pub. No. 279, 1914, pp. 203-208.

## South Stukely, Pyrite

Well-developed crystals of pyrite occur in schist at an old bornite mine south of South Stukely village. The pyrite is in cubes measuring up to ¾ inch in diameter. The occurrence is reached by a road, ¼ mile long, which leaves Highway No. 1 at a point ½ mile east of South Stukely.

*Reference:*

Personal communication: D. D. Hogarth.

A similar occurrence of pyrite crystals is found at an old mine on the east side of the road running south from South Stukely, at a point 1¼ miles south of South Stukely.

*Reference:*

Personal communication: C. H. R. Gauthier.

## Baker Talc Mine

Apple-green coarsely-foliated talc is associated with a massive greyish white talc at the Baker talc mine near South Bolton. Good specimens of translucent foliated talc can be obtained from this deposit. Nodules of light brown magnesite occur in the massive talc. The country rock is a green, fine-grained talc schist.

The mine is near the base, and on the north side of a high ridge forming the west side of the Missisquoi River valley. Take the road branching off southward from Highway No. 52 at a point 1¼ miles west of South Bolton village; follow this road for ¾ mile to a branch road which leads south about 200 yards to the mine. The property belongs to the Baker Talc Company.

## 36. ASBESTOS

*(21 E/13 W Warwick)*

### Jeffrey Mine

Vesuvianite, brucite (nemalite), garnet, wollastonite, prehnite, fibrous magnetite, talc, massive dark green serpentine, picrolite and pale green asbestos (chrysotile) occur in peridotite at the Jeffrey mine (Canadian Johns-Manville Company, Limited) in the town of Asbestos. The vesuvianite is in aggregates of delicate sea-green crystals. Crystals of transparent, pink garnet, up to ½ inch in diameter, are associated with grass-green diopside and white prehnite. Brucite (nemalite variety) occurs with asbestos, talc, magnetite and picrolite along slip planes. Two types of brucite have been found in the deposit. One type consists of white to pale green, transparent to translucent fibres, some of which measure over 2 feet in length and are termed "broom fibre" because they project from the walls of the quarry like straws of a broom. The other type is composed of platy masses of sea-green fibres resembling cross fibre asbestos. The asbestos being mined at this deposit is the cross fibre variety. The deposit is similar to the asbestos deposits in Thetford Mines.

*References:*

Allen, C. C. *et al.*: Geol. Can. Indust. Min. Dep., 1957, pp. 27-36.
Goudge, M. F.: Mines Br., Mem. 75, 1939, pp. 41-42.



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## 37. THETFORD MINES AREA

*(21 E/13 E Warwick; 21 E/14 W Disraeli; 21 L/3 E, W Thetford)*

### Broughton Soapstone Quarry

Soapstone suitable for ash trays, clock cases and other ornamental objects occurs at the quarry of Broughton Soapstone and Quarry Company. Some of the soapstone has been used by the company for decorating the interior of the mine office. The material is greyish green to pale green in colour. It is mottled and streaked with grey or brown.

The quarry is in the west side of the Broughton Station-West Broughton road at a point 1½ miles from Broughton Station (lot 12, range 11, Broughton township).

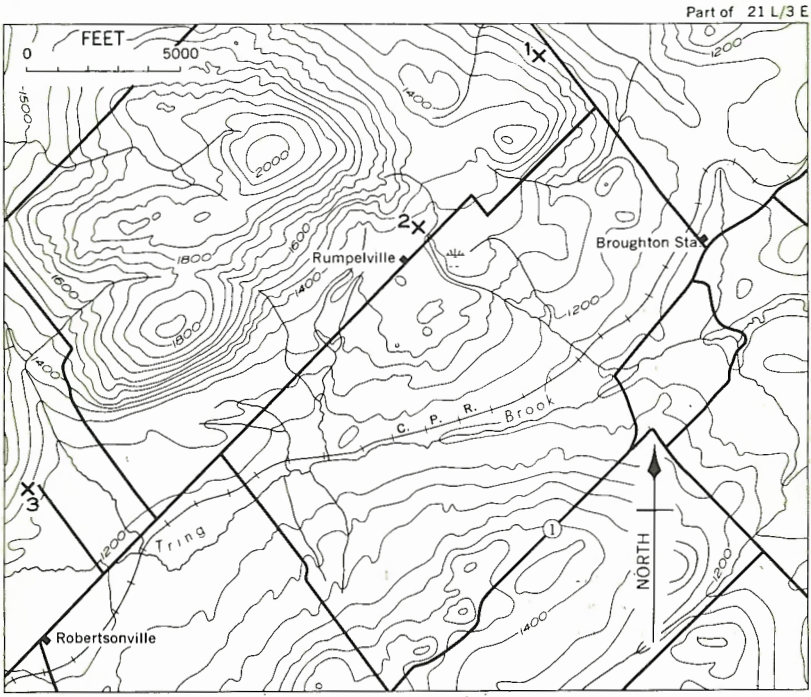
Other soapstone deposits in the area are as follows: (1) Pharo deposit—located on the west slope of a ridge, 200 yards northeast of the Pontbriand-Kinnears Mills road at a point 1.1 miles north of Pontbriand; (2) Kitchener asbestos mine—3½ miles northeast from Robertsonville, on the north side of the road running northeast from this village; (3) Federal asbestos mine—north of Robertsonville; (4) Fraser asbestos mine—at East Broughton station.

*References:*

Cooke, H. C.: GSC, Mem. 211, 1937, pp. 148-149.
Spence, H. S.: Mines Br., Pub. No. 803, 1940, pp. 84, 88, 89.

### Thetford Asbestos Mines

Zeolites occur at the asbestos mines at Thetford Mines. Good specimens of thomsonite, natrolite, epidesmine and scolecite have been obtained from the deposits. Thomsonite, in small colourless to white crystals associated with fibrous diopside or with dogtooth calcite crystals in vugs in altered leucocratic rocks was found at the King, Beaver, and Bennett-Martin mines (property of Asbestos Corporation Limited), and at the Johnson mine (Johnson's Company Limited). The best




**THETFORD MINES AREA: 1. Broughton soapstone quarry; 2. Kitchener asbestos mine; 3. Federal asbestos mine.**

natrolite specimens were obtained from the Johnson mine. The natrolite is in masses of white to colourless crystals, with individual crystals ranging from minute size to 15 inches in length, sometimes associated with small chlorite crystals in cavities in leucocratic rock. Crystals

measuring almost 3 feet long and 4 inches in diameter were found in large aplite blocks. Epidesmine specimens were obtained from the King mine, and scolecite from the Jacob mine.

The asbestos deposits in Thetford Mines have been worked since 1878. The type of asbestos (chrysotile) mined is mostly the cross fibre variety, the veins ranging up to 3 inches in width and rarely up to 4 or 5 inches. The fibres are pale green, soft and flexible. Other varieties of serpentine include the slip fibre asbestos, picrolite, and massive serpentine. The massive variety is commonly green to almost black with none of the variety of colours found at Wakefield or Kilmar. Magnetite, talc and brucite are commonly associated with the serpentine.

*References:*

Cooke, H. C.: GSC, Mem. 211, 1937, pp. 86-125.

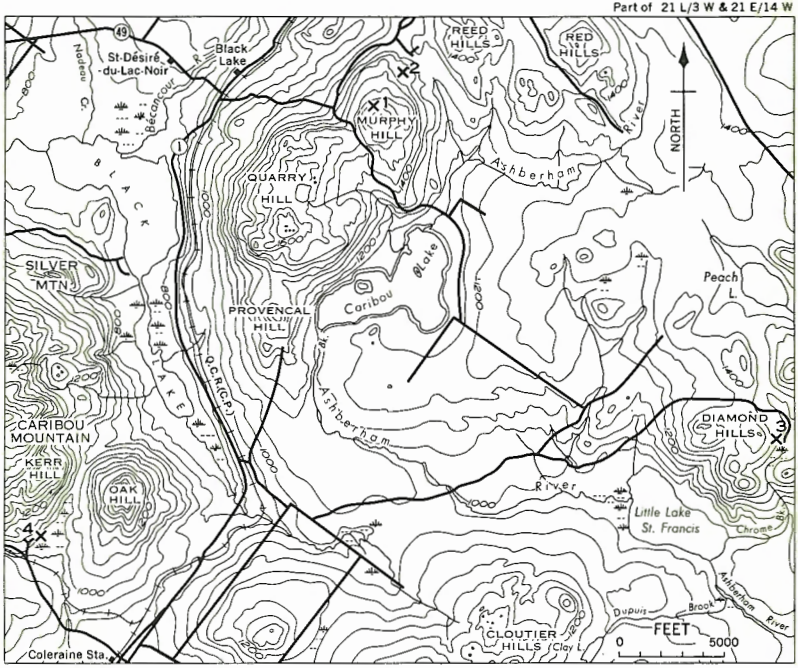
Poitevin, E: Univ. Toronto Studies, Geol. Ser., No. 41, 1938, pp. 57-58.
No. 40, 1936-37, p. 63.
GSC, Mus. Bull. No. 46, Geol. Ser., No. 47, 1927, pp. 15, 18-20.

Riordan, P. H.: Que. Dept. Mines, Prel. Rept. 295, 1954, pp. 15-18.

## Union Mine

This mine, formerly worked for chromite and asbestos, is the property of Asbestos Corporation Limited. The deposit is similar to the one at the Montreal chrome pit, except that the lilac and emerald vesuvianite are not found here.

Rose-coloured garnet crystals up to ½ cm in diameter occur in cavities in compact rose-coloured grossular garnet rock, accompanied by brown diopside and aragonite. Apple-green and pale yellowish andradite, bottle-green and reddish brown vesuvianite, and clinochlore occurs at this deposit. Colerainite was first described from this area for which it was named (Coleraine township). It occurs in botryoidal spheres in cavernous pegmatitic rocks. The spheres, measuring up to ½ inch in diameter, are white, compact, and show concentric banding resembling chalcedony.




**THETFORD MINES AREA: 1. Union mine; 2. Southwark mine; 3. Montreal chrome pit; 4. Continental mine.**

The mine is on the northwest side of Murray Hill, east of Black Lake village. The property is held by Asbestos Corporation Limited.

*Reference:*

Poitevin, E. and Graham, R. P. D.: GSC, Mus. Bull. No. 27, Geol. Ser., No. 35, 1918, pp. 45-46, 57, 66-72.

## Southwark Mine

Garnet and vesuvianite specimens have been obtained from the Southwark asbestos deposit. Vesuvianite, as clove-brown and reddish brown crystals, is closely associated with grossular garnet which is remarkable in that it is colourless and transparent. The garnet forms granular somewhat cavernous crystalline masses composed almost entirely of grossularite. The crystals measure up to ½ cm across; the most common form is the dodecahedron. Minute hexagonal plates of clinochlore are associated with the garnet-vesuvianite specimens.

The property lies less than a mile to the north of the Union mine; it is held by Asbestos Corporation Limited.

*Reference:*

Poitevin, E. and Graham, R.P.D.: GSC, Mus. Bull. No. 27, Geol. Ser., No. 35, 1918, pp. 46-47, 57.

## Montreal Chrome Pit

Vesuvianite, diopside, andradite, aragonite, clinochlore, calcite, crystals and serpentine are found at this deposit, formerly worked for chromite. The vesuvianite occurs as lilac and emerald-green, compact, fine-grained crystalline aggregates, some containing druses lined with vesuvianite crystals of the same colour, also colourless or wine-yellow. Aragonite, as tufted groups of flat-bladed crystals, calcite, andradite, clinochlore and porcellophite (white amorphous serpentine) are closely associated with the vesuvianite in compact white to pale lilac-coloured massive diopside rocks. Small, bright honey-yellow or colourless, well-formed crystals of diopside sometimes fill cavities in the diopside rock. Another form of diopside consists of white to lilac-coloured thin-bladed masses closely associated with pale green andradite crystals, clinochlore, lilac and yellowish vesuvianite crystals, and tiny white calcite crystals. Williamsite, a translucent, rich apple-green massive variety of serpentine, occurs in fissures in dark green serpentinized peridotite. This serpentine could

be used for lapidary purposes. Most of the serpentine at this deposit is the massive deep green variety; picrolite is also common. The chromite occurs as fine-grained compact black masses in peridotite.

The mine is on a hill northeast of Little Lake St. Francis. Leave Highway No. 1 2¼ miles north of Coleraine and proceed east toward Little Lake St. Francis. On the north side of the lake, the mine road branches off and leads up the hill; when recently visited by the writer, this part of the road was very rough.

*Reference:*

Poitevin, E. and Graham, R. P. D.: GSC, Mus. Bull., No. 27, Geol. Ser., No. 35, 1918, pp. 16-17, 24-26, 30-36, 49-50, 51-57, 73-74, 76-78.

## Continental Mine

Precious serpentine in pastel shades of blue, green, yellow and pink (rare) occurs in dark green serpentine at this property. The material is translucent and, when cut into cabochons, makes unusual and beautiful gemstones. Usually only small fragments measuring up to 3 inches across can be obtained. Some of the serpentine resembles common opal. Zeolites and vermiculite also occur at the mine.

The property belongs to the Montreal Titanium Corporation and is about 1½ miles by road northwest of the village of Coleraine.

## Lac Nicolet Antimony Mine

Native antimony, stibnite, kermesite, valentinite and the rare mineral gudmundite occur at an old antimony mine near Lac Nicolet. The minerals occur in a chlorite schist along the contact with diabase and serpentine.

The pits and dumps are in an overgrown area on the south side of a ridge, northeast of Lac Nicolet. To reach the deposit, proceed south from Highway No. 34 along the Lac Nicolet road which leaves the highway at a point 6½ miles east of Ham Nord, where the highway



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bends sharply to the north. About ¾ mile from the highway a road leads east ¼ mile to a garbage dump. From here, walk east along the trail which follows the base of the south side of the ridge and leads to the workings, about 500 yards away.

*Reference:*

Cooke, H. C.: GSC, Mem. 211, 1937, p. 153.

## 38. ST. GEORGES AREA

*(21 L/1 W St. Zacharie; 21 L/2 E, W Beauceville; 21 L/7 W St. Joseph)*

### Placer Gold

Placer gold occurs in the Chaudière River and in some of its tributaries. Gold was discovered in the region in 1834 and operations continued intermittently until the beginning of this century. Most of the gold was found in a 2-mile stretch along the Gilbert River. One nugget valued at $851 was recovered from this river during that time. The Beauce Placer Mining Company has recently renewed operations in the Gilbert River and some of its tributaries.

Gold is reported to occur in the following rivers and streams in the area: Chaudière, Famine, Linière, Moulin (Mill), Metgermette, Cumberland, du Loup and des Plantes rivers; Bolduc, D'Ardoise (Slate), Stafford, Meule, and Black Creeks. Platinum and iridosmine were found with the placer gold in the Rivière du Loup, Rivière des Plantes, and the tributaries of the Chaudière River.

*References:*

Gorman, W. A.: Que. Dept. Mines, Prel. Rept. 314, 1955, p. 5.
MacKay, B. R.: GSC, Mem. 127, 1921, pp. 13-14, 34, 77-78.
O'Neill, J. J. and Cumming, H. C.: GSC, Econ. Geol. Ser., No. 13, 1934, p. 55.
Can. Mining J., vol. 82, No. 10, 1961, p. 124.

## 39. MEGANTIC AREA

*(21 E/6 E La Patrie; 21 E/7 W Woburn)*

### Placer Gold

In the latter part of the 19th century, placer gold was recovered from the following streams and rivers in the area south of Mount Megantic: Mining Brook, from near its junction with the Ditton River for about 2 miles upstream; Ditton River, from a point about ½ mile above Little Canada Road to the junction with Mining Brook; the stream flowing into the Chesham River from the north at a point approximately 4 miles from the junction with the Salmon River; Salmon River about 2 miles south of the junction with the Chesham River. The gold was fine to nugget-sized, some nuggets weighing up to 7 ounces. Smaller amounts of gold were found in other parts of these streams and in other streams in the area.

To the south of Lac Megantic, placer gold was worked in the Arnold River, mostly in the vicinity of Morin Brook, about 2 miles south of St Augustin de Woburn.

*References:*

Marleau, R. A.: Que. Dept. Mines, Prel. Rept., 336, 1957, p. 5.
McGerrigle, H. W.: Que. Dept. Mines, Ann. Rept., 1934, pt. D, pp. 91, 93.

### Nordmarkite

Nordmarkite, a deep green medium-grained rock suitable for use as an ornamental stone is quarried by Scotstown Granite Company, Limited on the northwest side of Mount Megantic (Hampden township). When polished, the rock exhibits a blue schiller due to the feldspar. It takes an excellent polish. "Scotstown Green Granite" is the commercial name for the rock.

The quarry is about 6 miles by road from Scotstown. Proceed east from Scotstown along the Scotstown-Milan road for 2¼ miles to a schoolhouse; turn south for 3½ miles to the north side of Mount



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Megantic where a road branches off southward. This road leads directly to the quarry, about ½ mile.

*Reference:*
Hogg, Wm. A.: Ph.D. Thesis, Dept. Geol. Sci., McGill Univ., 1959, pp. 33-34.

## 40. MAGDALEN ISLANDS

*(11 N/4 W Havre-Aubert; 11 N/5 E, W Grindstone Island)*

### Gypsum

Gypsum forms cliffs along the shoreline of Grindstone, Entry, Amherst and Alright islands. On Grindstone Island pink, blue and grey varieties are found, the grey variety being the most abundant. Selenite crystals occur in the dark greyish gypsum exposed along the shore near Cape Meule; the pink variety occurs in the cliffs near Cape Meule; and, the dark bluish gypsum occurs at Ryan Cove. White fibrous gypsum is associated with white to dark grey granular gypsum on the south shore of Entry Island, near the lighthouse and along the southwest coast of Amherst Island, from Southwest Cape to West Point. On Amherst Island along the shores of Pleasant Bay, east of Demoiselle Hill, the exposures include a white compact variety, often streaked with red. On Alright Island gypsum is exposed near Cape Alright on the southeast corner of the island.

*Reference:*
Jennison, W. F.: Mines Br., Pub. No. 84, 1910, pp. 98-102.

### Zeolite

Zeolites (analcite, chabazite, etc.) are reported to occur in amygdaloidal cavities in some of the volcanic rocks of the islands. The rock is a dark green to black agglomerate composed of angular fragments. Exposures are found along the shoreline at the following locations: at Amherst Island, from Painchaud Cove to Demoiselle Hill in Pleasant

Bay; at Grindstone Island, from Grindstone Island village to Baie du Sud; at Alright Island, in the vicinity of Cape Adele and to the west of Anse à Damase.

*Reference:*
Alcock, F. J.: Trans. C.L.M.M., vol. 44, 1941, pp. 623-649.

## Magdalen Manganese Mine

Crystal aggregates of pearly dolomite and calcite crystals line vugs and cavities in altered iron-stained carbonate rock at a former manganese mine (Magdalen Manganese Mines) on Grindstone Island. Veins and masses of manganese oxide occur in the rock. The principal oxide is pyrolusite which forms finely crystalline nodules and blebs in the carbonate rock.
The property was worked during World War II. Proceed west from Grindstone Island village for about 1 mile along the road to Étang du Nord; turn north for ½ mile to the mine.

*Reference:*
Alcock, F. J.: Trans. C.I.M.M., vol. 44, 1941, pp. 623-649.

# APPENDICES

## ADDITIONAL READING

### Books on Mineralogy

The list includes basic textbooks on mineralogy of the type used in colleges and universities. They deal with the physical, chemical and crystallographic properties of minerals and with their mode of occurrence.


Berry, L. G. and Mason, B.: *Mineralogy: Concepts, Descriptions, Determinations.* (W. H. Freeman and Company, 1959).

Dennen, Wm. H.: *Principles of Mineralogy.* (Ronald Press Company, 1960).

Ford, W. E.: *Dana's Textbook of Mineralogy.* (John Wiley and Sons, Inc., 1945).

Hurlbut, C. S. Jr.: *Dana's Minerals and How to Study Them.* (John Wiley and Sons, Inc., 3rd ed.).

Krauss, E. H., Hunt, W. F. and Ramsdell, L. S.: *Mineralogy: An Introduction to the Study of Minerals and Crystals.* (McGraw-Hill Book Co. Inc., 1959).

Palache, C., Berman, H. and Frondel, C.: *Dana's System of Mineralogy* volumes I and II (volume III in preparation). (John Wiley and Sons, Inc., 1944, 1951).

Rogers, A. F.: *Introduction to the Study of Minerals.* (McGraw-Hill Book Co. Inc., 1937)

## Books on Minerals and Rocks for the Amateur

These books have been written specifically for the amateur mineralogist. The material is presented in a popular style and the books are usually well-illustrated.


Börner, R.: *Minerals, Rocks and Gemstones.* (Oliver and Boyd, 1962). Translated by W. Mykura.

Dake, H. C.: *The Uranium and Fluorescent Minerals.* (Mineralogist Publishing Company, 1953).

English, L. and Jensen, D. E.: *Getting Acquainted With Minerals.* (McGraw-Hill Book Co. Inc., 1959).

Fenton, C. L. and Fenton, M. A.: *The Rock Book.* (Doubleday, Doran and Co., 1940).

Fritzen, D. K.: *The Rockhunter's Field Manual: A Guide to Identification of Rocks and Minerals.* (D. Van Nostrand Co. Inc., 1960).

Gleason, Sterling: *Ultraviolet Guide to Minerals.* (D. Van Nostrand Co. Inc., 1960).

Graves, H. B. Jr.: *The Mineral Key.* (McGraw-Hill Book Co. Inc., 1947).

Lang, A. H.: *Prospecting in Canada.* (Geological Survey of Canada, Economic Geology Series No. 7, 1956).

Lee, Elsie: *The Exciting World of Rocks and Gems.* (Trend Books Inc., 1959).

Pearl, R. M.: *How to Know the Minerals and Rocks.* (McGraw-Hill Book Co. Inc., 1955).

Pough, F. H.: *A Field Guide to Rocks and Minerals.* (Houghton Mifflin Co., 1957).

Sinkankas, John: *Gemstones and Minerals; How and Where to Find Them.* (D. Van Nostrand Co. Inc., 1961).

Spock, L. E.: *Guide to the Study of Rocks.* (Harper and Brothers, 1962).

Zim, H. S. and Shaffer, P. R.: *Rocks and Minerals.* (Simon and Shuster Inc., 1957).

## Books on Gemmology

These publications describe gem minerals, their properties and occurrences. They are written in a popular or semi-technical style.

Dake, H. C., Fleener, F. L. and Wilson, B. H.: *The Quartz Family Minerals: A Handbook for the Collector.* (McGraw-Hill Book Co. Inc., 1938).

Krauss, E. H. and Slawson, C. B.: *Gems and Gem Materials.* (McGraw-Hill Book Co. Inc., 1947).

Leechman, F.: *The Opal Book.* (Ure Smith Ltd., Sydney, 1961).

Parsons, C. J. and Soukup, E. J.: *Gem Materials Data Book.* (Gemac Corporation, Mentone, Calif., 1957).

Pearl, R. M.: *Popular Gemmology.* (Sage Books, Denver, 1958).

Sinkankas, John: *Gemstones of North America.* (D. Van Nostrand Co. Inc., 1959).

Smith, G. F. Herbert: *Gemstones.* (Methuen and Co., 1958).

Walton, Sir James: *Physical Gemmology.* (Sir Isaac Pitman and Sons, Ltd., 1952).

Webster, R.: *Gems: Their Sources, Descriptions and Identification.* (Butterworth & Co. Ltd., 1962).

## Lapidary Books

A number of books describing the techniques used in cutting and polishing have recently been published. Various phases of the lapidary art are discussed including cabochon and facet cutting, tumbling, sculpturing and other methods used for the fashioning of rocks and minerals into ornamental objects.

Dake, H. C.: *The Art of Gemcutting.* (Bruce Publishing Company, 1957).

Quick, L. and Leiper H.: *Gemcraft: How to Cut and Polish Gemstones.* (Chilton Company—Book Division, 1959).

Sinkankas, John: *Gem Cutting: A Lapidary's Manual.* (D. Van Nostrand Co. Inc., 1955).

Sperisen, F. J.: *The Art of the Lapidary.* (Bruce Publishing Co., 1950).

Willems, S. D.: *Gem Cutting.* (Manual Arts Press, 1948).

——— *The Books of Gem Cuts,* Volumes 1 and 2. (M.D.R. Mfg. Co., Inc., Los Angeles).

## Rockhound Magazines

A number of periodicals catering to the mineral collecting and lapidary hobby are now in existence. They cover such topics as mineral occurrences, gem-cutting techniques, reports on mineral exhibitions, rock club news, etc.

*Canadian Rockhound (The).* Published quarterly by The Lapidary Rock and Mineral Society of British Columbia, P.O. Box 194, Station A, Vancouver.

*Earth Science—Rockhounds' National Magazine.* Published bi-monthly by Earth Science Publishing Co. Inc., P.O. Box 1357, Chicago 90, Illinois.

*Gems and Minerals.* Published monthly by Gems and Minerals, P O. Box 687, Mentone, California.

*Lapidary Journal (The).* Published bi-monthly by Lapidary Journal, Inc., P.O. Box 2369, San Diego 12, California.

*Mineralogist (The).* Published 6 times per year by Mineralogist Publishing Company, 329 S.E. 32nd Avenue, Portland 15, Oregon.

*Rocks and Minerals.* Published bi-monthly by Rocks and Minerals Association, P.O. Box 29, Peekskill, New York.

## Gemmological and Mineralogical Journals

These publications are of a technical nature requiring a good background in gemmology or mineralogy.

*American Mineralogist (The)*. Published bi-monthly by the Mineralogical Society of America. Secretary: G. Switzer, U.S. National Museum, Washington 25, D.C.

*Canadian Mineralogist (The)*. Published annually by the Mineralogical Association of Canada. Secretary: S. Kaiman, 300 LeBreton Street, Ottawa.

*Gemmologist (The)*. Published monthly by N.A.G. Press Limited, Finwell House, 26 Finsbury Square, London, E.C. 2, England.

*Gems and Gemmology*. Published quarterly by the Gemmological Institute of America, 11940 San Vicente Boulevard, Los Angeles 49, California.

*Journal of Gemmology (The)*. Published quarterly by the Gemmological Association of Great Britain, 93/94 Hatton Garden, London, E.C. 1, England.

*Mineralogical Magazine*. Published quarterly by the Mineralogical Society, 41 Queen's Gate, South Kensington, London, E.C. 3, England.

# AMATEUR MINERAL AND ROCK CLUBS IN CANADA

## British Columbia

| | |
|---|---|
| Abbotsford: | Fraser Valley Rock and Gem Club, Secretary—Mrs. G. Clingwall, P.O. Box 93. |

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|---|---|
| Burnaby: | Burnaby Laphounds,<br>Secretary—Wilfried Tasse,<br>115 S. Gilmour Avenue, North Burnaby. |
| Chilliwack: | Fraser Canyon Jade and Rock Society,<br>Secretary—A. Kipp,<br>149 Heather Street. |
| Cranbrook: | Kootenay Valley Rockhounds,<br>President—R. Dale,<br>Cranbrook. |
| Duncan: | Cowichan Valley Rockhounds,<br>Secretary—H. Townsend,<br>P.O. Box 1573. |
| Golden: | Columbia Valley Rock and Fossil Club,<br>Secretary—Mrs. M. McQuarrie,<br>P.O. Box 312. |
| Haney: | Maple Ridge Lapidary Club,<br>Secretary—Mrs. J. Vilae,<br>10683-17th Avenue, Whonnock. |
| Hatzic: | Mission Valley Rock and Mineral Club,<br>Secretary—Mrs. W. R. Jack,<br>P.O. Box 36. |
| Kamloops: | Thompson Valley Rock Club,<br>Secretary—Mrs. L. Fisher,<br>1493 Valley View Drive, Route 2. |
| Kelowna: | Kelowna Rockbusters,<br>Secretary—J. H. Burrows,<br>R.R. No. 3. |
| | The 1120 Rock Club,<br>Secretary—Mrs. L. Hallisey,<br>General Delivery, Kelowna. |
| Keremeos: | South Similkameen Rockhounds,<br>Secretary—Mrs. V. Lund,<br>P.O. Box 67. |

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|---|---|
| Ladner: | Delta Rock Club,<br>President—B. Chandler,<br>1638 Duncan Drive, R.R. 2. |
| Lillooet: | Mile 'O' Jade and Rock Club,<br>Secretary—R. Pichette,<br>P.O. Box 495. |
| Marguerite: | Cairn-Site Rock and Gem Club,<br>Secretary—Mrs. Beatrice McLean,<br>P.O. Box 14. |
| Nanaimo: | Nanaimo Gemfinders Association,<br>Secretary—Miss Kay Spence,<br>716 Winchester Street. |
| | Skyline Rock and Mineral Club,<br>Secretary—Mrs. Paula Clarke,<br>520 Northumberland. |
| New Westminster: | New Westminster Lapidary Society,<br>Secretary—Mrs. E. McMyn,<br>19489 Laugheed Highway, Pitt Meadows. |
| North Vancouver: | North Shore Rock and Gem Club,<br>Secretary—Mrs. S. Lucas,<br>671 Montroyal Boulevard. |
| Oliver: | Ukanook Rockhound Club,<br>Secretary—Mrs. B. J. Slack,<br>P.O. Box 297. |
| 100-Mile House: | 100-Mile and Cariboo Rockhounds Club,<br>Secretary—Mrs. M. McNeil,<br>100-Mile Post Office. |
| Penticton: | Penticton Geology Club,<br>Secretary—Mrs. M. Oliver,<br>106 Jonothon Drive. |
| Port Alberni: | Alberni Rock and Gem Society,<br>Secretary—Miss G. McGarrigle,<br>Port Alberni. |

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|---|---|
| Prince Rupert: | Lapidary Club of Prince Rupert,<br>c/o Civic Centre Association. |
| Princeton: | Princeton Rock and Mineral Club,<br>Secretary—Mrs. B. Clark,<br>P.O. Box 345. |
| Quesnel: | Quesnel Rockhound and Gem Craft Club,<br>Secretary—R. Karney,<br>P.O. Box 586. |
| Richmond: | Richmond Gem and Mineral Club,<br>Secretary—Mrs. G. McLeod,<br>2337 West King Edward Avenue,<br>Vancouver. |
| Sidney: | Sidney Rock Club,<br>Secretary—Mrs. H. Seeley,<br>7033 East Saanich Road, Saanichton. |
| Terrace: | Terrace Lapidary Club,<br>Secretary—Mrs. Ashton,<br>P.O. Box 248. |
| Vancouver: | Dunbar Lapidary Club,<br>Secretary—Miss M. Bergren,<br>c/o Dunbar Community Centre,<br>4747 Dunbar Street. |
| | Hastings Centre Rockhounds,<br>Secretary—Mrs. L. Dunnick,<br>4767 East Pender Street, North Burnaby. |
| | Kerrisdale Mineral and Gem Lapidary Club,<br>Secretary—Mrs. R. Stubbs,<br>7938 Laburnum Street. |
| | Lapidary Club of Vancouver,<br>P.O. Box 145, Station 'A'. |

| | |
|---|---|
| Vernon: | Vernon Lapidary and Mineral Society,<br>Secretary—Mrs. D. Mohr,<br>Route 3. |
| Victoria: | Victoria Lapidary and Mineral Society,<br>Secretary—Mrs. W. F. Erichsen,<br>2075 Lansdown Road. |

## Alberta

| | |
|---|---|
| Calgary: | Rock and Gem Society of Calgary,<br>President—M. Bakker,<br>85 Langdon Drive. |
| | Calgary Rock and Lapidary Club,<br>Secretary—Mrs. P. E. Hofforth,<br>2004-26th Avenue N.W. |
| | Calgary Rockcrafters Club,<br>Secretary—Mrs. N. R. Anderson,<br>2711-3rd Avenue N.W. |
| Edmonton: | Edmonton Geological Society,<br>c/o Mr. E. Pelzer,<br>14605-118th Avenue. |
| | Edmonton Lapidary Club,<br>Secretary—S. Uren,<br>12038-105th Street. |
| Red Deer: | Red Deer Mineral Club,<br>President—D. W. Harrison,<br>5912 West Park Crescent. |

## Saskatchewan

| | |
|---|---|
| Regina: | Prairie Rock and Gem Society,<br>Secretary—Mrs. M. Morrow,<br>3077 Montague Street. |
| Saskatoon: | Saskatoon Rock and Mineral Society,<br>Secretary—R. Drinkle,<br>816-32nd Street West. |

## Manitoba

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|---|---|
| Winnipeg: | The Winnipeg Rock and Mineral Club,<br>Secretary—C. Green,<br>1205 Kildonan Drive. |

## Ontario

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|---|---|
| Bancroft: | The Bancroft Mineral Society,<br>c/o Bancroft Chamber of Commerce. |
| Kingston: | The Kingston Lapidary and Mineral Club,<br>Secretary—Mrs. S. Leach,<br>P.O. Box 1123. |
| North Bay: | Nipissing Lapidary and Mineral Club,<br>c/o A. Cadieux,<br>1220 Beattie Street. |
| Oshawa: | Oshawa Rock and Mineral Club,<br>Secretary—Mrs. Barbara Brockman,<br>P.O. Box 53. |
| Ottawa: | Ottawa Valley Mineral Association,<br>Secretary—Mrs. D. W. Parker,<br>R.R. 1, Bells Corners. |
| Port Arthur: | Thunder Bay Lapidary Club<br>Secretary—Mrs. A. S. Gilby,<br>264 Ray Court. |
| Toronto: | The Walker Mineralogical Club,<br>Secretary—Wm. L. Smith,<br>100 Queen's Park. |
| Sault Ste Marie: | Sault Ste Marie Rock and Mineral Club,<br>Secretary—Mrs. Eve Kersey,<br>67 McMeekin Street. |
| Willowdale: | Willowdale Gem and Mineral Club,<br>c/o North York Public Library,<br>5156 Yonge Street. |

## Quebec

| | |
|---|---|
| Montreal: | Montreal Gem and Mineral Club,<br>Secretary—Miss B. Morris,<br>3454 Oxford Avenue. |

## Nova Scotia

| | |
|---|---|
| Yarmouth: | The Nova Scotia Mineral and Gem Society,<br>President—S. C. Hood,<br>375 Main Street. |

# ADDRESSES

## For Federal Geological Reports and Maps:

The Director,
Geological Survey of Canada,
Department of Mines and Technical Surveys,
601 Booth Street, Ottawa.

## For Federal Topographical Maps

*The Director,
Surveys and Mapping Branch,
Department of Mines and Technical Surveys,
615 Booth Street, Ottawa.

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* Prepayment is required for all orders; cheques should be made payable to the Receiver General of Canada. Maps cost 50 cents per sheet.

## For Provincial Government Reports and Maps:

| | |
|---|---|
| Alberta: | Department of Lands and Mines,<br>Edmonton. |
| British Columbia: | Department of Mines,<br>Victoria. |
| Manitoba: | Mines Branch,<br>Department of Mines and Natural Resources,<br>Winnipeg. |
| New Brunswick: | Department of Lands and Mines,<br>Fredericton. |
| Newfoundland: | Department of Mines and Resources,<br>St. John's. |
| Nova Scotia: | Department of Mines,<br>Halifax. |
| Ontario: | Department of Mines,<br>Toronto. |
| Prince Edward Island: | The Deputy Provincial Secretary,<br>Provincial Government Offices,<br>Charlottetown. |

## For Travel Information:

The Canadian Government Travel Bureau,
Department of Trade and Commerce,
150 Kent Street, Ottawa.

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