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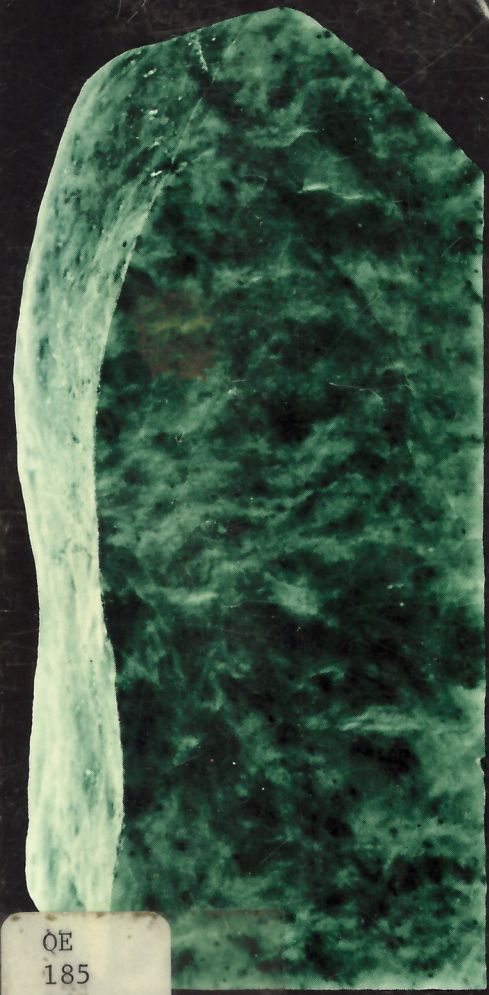

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GEOLOGICAL SURVEY OF CANADA · 1842 ·

Rock and Mineral Collecting in Canada

Ann P. Sabina

Volume I

Yukon
Northwest Territories
British Columbia
Alberta
Saskatchewan
Manitoba

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Cover—
Jade (nephrite) from the Fraser River, British Columbia.

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

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.

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.

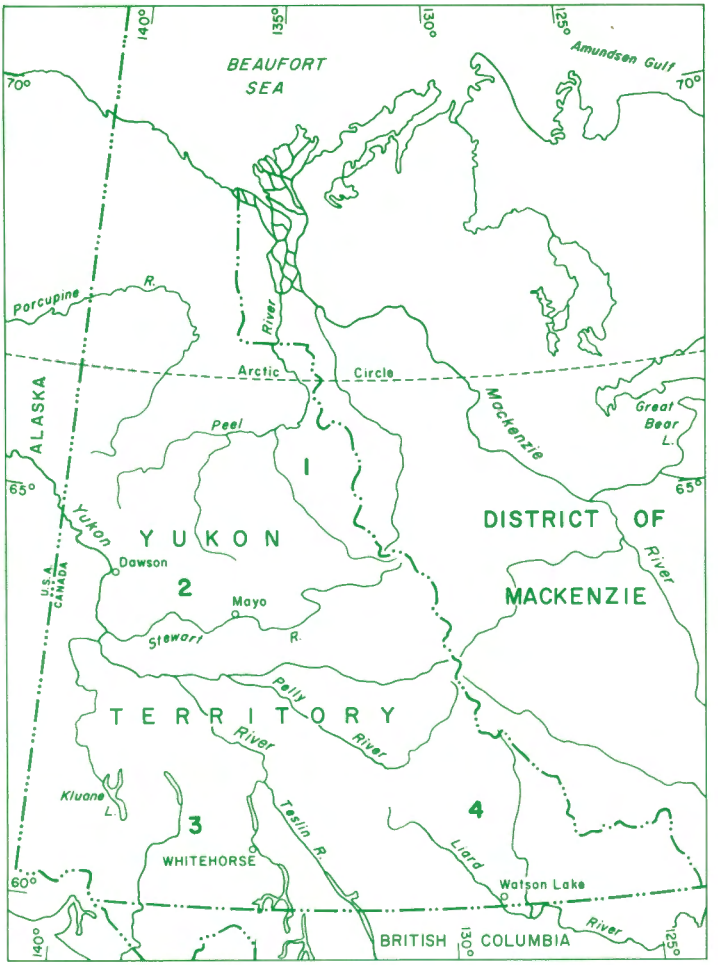
U.B.C., Dept. Geol.—University of British Columbia, Department of Geology.

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).

YUKON TERRITORY



ROCK AND MINERAL COLLECTING AREAS, YUKON TERRITORY

1. Peel River. 2. Dawson-Mayo. 3. Kluane Lake-Whitehorse 4. Pelly River-Watson Lake.

1. PEEL RIVER AREA, NORTHERN YUKON

(106 SW, SE Wernecke Mountains)

Jasper

Attractive iron ore, composed of orange-red nodules (usually less than 1 inch across) and bands of jasper in massive dark grey hematite, occurs as float in the Wind River at the mouth of the Bear River, and in the Bear River above its mouth. It is abundant on the Bonnet Plume, Rackla and Snake rivers. The same rock forms a large proportion of the drift on the portage to the Bonnet Plume River.

Reference:
Bostock, H. S.: GSC, Mem. 284, 1957, pp. 186, 204.

Placer Gold

Placer gold has been reported from the gravels of the Peel River, the Bonnet Plume River, the Wind River (at the mouth of Little Wind River), in Hungry Creek and in a stream nearly opposite the mouth of the Rackla River.

Reference:
Bostock, H. S.: GSC, Mem. 284, 1957, pp. 173, 190, 204.

2. DAWSON-MAYO AREA

(105 NW, NE Pelly River; 115 NW, NE Fort Selkirk; 116 SW, SE Klondike)

Siliceous Hematite ("Black Diamond")

The popular term "Alaska black diamond", or simply "black diamond", refers to the siliceous hematite found as dark brown or black pebbles and small boulders in the gravels of various streams in the North. The black pebbles are the more desirable for jewelry purposes. Owing to the silica the material is harder than ordinary hematite. It takes a brilliant, mirror-like polish, hence the allusion to diamond; it is a

unique and very attractive gemstone. Rings, pendants, earrings and brooches made from the pebbles are widely sold in Canada, especially in the west and northwest.

Pebbles and boulders of siliceous hematite may be found in many creeks in the Yukon. Notable occurrences are in the Klondike and Mayo districts: at Hunker, Bonanza, Secret, and Clear creeks, and at Dublin Gulch.

Reference:

Personal communication: R. W. Boyle.

"Yukon Diamond"

"Yukon diamond" is a local term used in the Yukon with reference to cassiterite (wood tin) pebbles which are found in the gravels of streams in the Yukon. The cassiterite is light to dark brown, or black, and may be concentrically banded light with dark brown; it takes an excellent polish and like "black diamond" has been used in the area for jewelry.

It occurs in numerous creeks in the Dawson area, notably in Dominion Creek.

Reference:

Personal communication: H. S. Bostock.

Rutile

Good specimens of dark reddish brown, sub-translucent, massive rutile are reported to have been obtained from small quartz veins cutting igneous schists on Thistle Creek which enters the Yukon River 8 miles above the mouth of White River.

Reference:

Hoffmann, G. C.: GSC, Ann. Rept., vol. 13, 1900, p. 21R.

Lead-silver-zinc of Keno Hill-Galena Hill Area

Fine specimens of siderite, sphalerite, galena, and hawleyite have been obtained from these deposits.

The siderite is cream to light brown, or brown to black; specimens consisting of fine rhombohedral crystals showing curved and composite faces were found lining vugs and cavities. Sphalerite occurs as dark brown to black crystal groups and individual crystals in vugs, and as crystalline masses associated with galena and siderite.

Galena is common in vugs, where it occurs as crystal groups and as individual and twinned crystals; it also occurs as coarsely crystalline masses in veins and stringers. Hawleyite, a previously unknown mineral, was recently discovered in these deposits as rare bright yellow, earthy coatings on sphalerite and siderite in vugs.

The ore occurs in fault veins cutting quartzites, phyllites, schists and greenstones. Other minerals reported to occur in the deposits are: freibergite (massive), smithsonite, malachite and azurite (as coatings), cerussite (white earthy masses), anglesite (grey, massive), gypsum, quartz, calcite, dolomite, barite, pyrite, arsenopyrite, chalcopyrite, argentite, covellite, limonite, native silver and pyrargyrite.

The first deposit was discovered in 1919 and mining has continued since that date; current producers are the Hector, Calumet and Elsa mines which together represent Canada's leading producer of silver. They are operated by United Keno Hill Mines Limited. Formerly active properties are: Ladue, Sadie-Friendship, Lucky Queen, Onek, Shamrock and Silver King mines at Keno Hill; and Galkeno, Jock, U.N., No-Cash, Birmingham and Dixie mines at Galena Hill.

The Keno Hill-Galena Hill area is about 35 miles northeast of Mayo, and about 220 miles north of Whitehorse to which it is connected by an all-weather road.

References:

Boyle, R. W.: GSC, Paper 55-30, 1956, pp. 1, 2, 39-55.
Skinner, R.: GSC, Paper 61-23, 1961, p. 21.

Placer Deposits

The Klondike gold rush of 1898 began with the discovery of gold in Bonanza Creek in 1896. Subsequent discoveries brought placer-mining activity to numerous streams and rivers in the Dawson-Mayo region. A number of deposits are currently being worked.

The streams which have at one time or another yielded placer gold are:

Dawson area—Klondike River, Sixty-mile River; Eldorado, Bear, Hunker, Quartz, Dominion, Gold-run, Sulphur, All-gold, Eureka, Caribou, Granville, Adams, Bedrock, Gold Bottom, Miller, Kirkman, Henderson, Pan, Hidden, Cash (Gold), Thistle, Indian creeks and many other streams in the area.

Mayo area—Dublin Gulch, Haggart, Highet, Johnson, Duncan, Steep, Minto, Ledge, Scroggie, Barker, Congdon, Canadian, and Rude creeks; Stewart River, above the mouth of Mayo River; the Stewart River tributaries leading to Hess and Lansing rivers.

At Ledge Creek, cassiterite and scheelite occur with the gold which is reported to be unusually coarse in this stream. Other placer scheelite deposits are found in Dublin Gulch and in Haggart, Johnson and other creeks in the Mayo district. In Dublin Gulch, scheelite is associated with cassiterite, hematite and garnet. Hematite-jasper boulders similar to those found in the Peel River area occur in Dublin Gulch (personal communication, C. F. Gleeson). Cassiterite (wood tin) is abundant in Germaine Creek.

References:

Bostock, H. S.: GSC, Mem. 284, 1957, pp. 65, 132-143, 172-173, 375-377, 472-473.

Green, L. H. and Godwin, C. I.: GSC, Paper 63-38, 1963, p. 56.

Little, H. W.: GSC, Econ. Geol. Ser., No. 17, 1959, pp. 19-29.

Skinner, R.: GSC, Paper 61-23, 1961, pp. 6-16.

3. KLUANE LAKE-WHITEHORSE AREA

(105 SW Whitehorse-Teslin; 115 SW, SE St. Elias)

Jade (Nephrite)

Pale green translucent to sub-translucent nephrite occurs as pebbles in the gravels of Lewes River. The finest specimens were found near Miles Canyon, about 4 miles south of Whitehorse. Specimens of apple-green

nephrite were found by the Klukshu Indians along the mountain slope located east of the south end of Klukshu Lake. The locality is to the south of Dezadeash Lake.

References:
Dawson, G. M.: GSC, Ann. Rept. (New Ser.), vol. 3, 1887, p. 38B.
Kindle, E. D.: GSC, Mem. 268, 1952, p. 27.

Olivine

Black olivine crystals, often measuring more than 3 inches in length, are associated with large, pale green, tabular crystals of chrome diopside in coarsely crystalline peridotite on the west side of Dezadeash River. The dark colour of the olivine is due to magnetite inclusions. The occurrence is about 3½ miles south of the point at which the Dezadeash River swings sharply southward (approximately 8½ miles west of Haines Junction on the Alaska Highway).

Reference:
Kindle, E. D.: GSC, Mem. 268, 1952, pp. 37-38.

Obsidian

Obsidian occurs in the Kaskawulsh River and Steele (Wolf) Creek areas. At the former, it is in a sill measuring 2 feet, which cuts sedimentary rocks on the south side of the Kaskawulsh River a mile below the mouth of Dusty River. The sill is 75 feet above the river. In another occurrence, an obsidian dyke, 3 feet wide, intrudes tertiary lavas on the south bank of the Kaskawulsh River, 200 feet up a small stream bed. This occurrence is 2 miles east of the preceding one. Obsidian is a minor constituent of the volcanic rocks which compose much of the north wall of Steele (Wolf) Creek. It outcrops in cliffs 200 feet high west of the bend of Steele Creek Valley. Amygdaloidal cavities in some of the volcanic rocks in the area contain quartz, chalcedony, calcite and aragonite. The amygdules measure up to 1½ inches across.

References:
Bostock, H. S.: GSC, Mem. 267, 1952, pp. 31-32.
Kindle, E. D.: GSC, Mem. 268, 1952, p. 44.

Placer Gold, Copper, Silver

Placer gold has been reported from a number of streams and rivers in the area. Most of them have been worked at one time or another.

Carmacks area—Nansen, Victoria, Discovery, Webber, Back, Seymour and Stoddart creeks, and the east fork of Nansen Creek.

Laberge area—Lewes River, Teslin River, and Livingstone, Summit Lake, Cottoneva, Little Violet, Mendocina and D'Abbadie creeks.

Kluane and Dezadeash lakes area—Shorty, Beloud, Silver and Squaw (Dollis) creeks; Tatshenshini, Bates, Alsek and Primrose rivers; Iron, Sugden, Kimberley, Victoria, Goat, Mush, Marshall, Granite, Sandpiper, Wolverine, Bullion, Sheep, Burwash, Fourth of July, Ruby, Gladstone, Cultus, Printers (New Zealand), McKinley, Dixie, and Arch creeks.

Native copper has been found among the gold-bearing gravels at Beloud, Bullion, Sheep, Burwash, Kletson and Kimberley creeks. At Beloud Creek, copper nuggets weighing up to 28 pounds have been recovered from the gravels.

Small rough nuggets of native silver were found with gold in Burwash and Arch creeks. Platinum was recovered from Burwash and Tetamagouche creeks.

References:

Bostock, H.S.: GSC, Mem. 189, 1936, pp. 31-32.
GSC, Mem. 217, 1938, pp. 22-27.
GSC, Mem. 284, 1957, pp. 125-126, 151, 374-375.
Kindle, E. D.: GSC, Mem. 268, 1952, pp. 48-55.
Muller, J. E.: GSC, Paper 53-20, 1953, p. 7.
O'Neill, J. J. and Gunning, H. C.: GSC, Econ. Geol. Ser., No. 13, 1934, pp. 108-110.

Native Copper

Native copper occurs as tabular masses, sometimes weighing up to several thousand pounds, in cracks in amygdaloidal lavas at Kletson Creek near the International Boundary, in the upper White River canyon, and in the ridge northeast of Tetamagouche Creek.

Reference:

Muller, J. E.: GSC, Paper 58-9, 1958, p. 8.

4. PELLY RIVER-WATSON LAKE AREA

(105 NW, NE Pelly River; 105 SE Wolf Lake-Watson Lake; 105 SW Whitehorse-Teslin)

Chalcedony

Chalcedony and zeolites partly fill vugs in pale green porphyritic dacite rock exposed in several places on the south side of Pelly River, from Lapie River westward to just beyond Excell Creek.

Reference:
Johnson, R.: GSC, Mem. 200, 1936, p. 17.

Amber

Amber is reported to occur in the lignite beds along the Frances River.

Reference:
Johnston, R. A. A.: GSC, Mem. 74, 1915, p. 13.

Canada Tungsten Mining Corporation Limited

The ore mineral—scheelite—is associated with pyrrhotite, chalcopyrite, cubanite, sphalerite, diopside, epidote, actinolite, garnet, axinite, chlorite, tourmaline, serpentine and quartz in limestone and chert. The mine has been worked since 1960 and is accessible by a 200-mile road leading north from Watson Lake.

Reference:
Brown, C. J.: Bull. C.I.M.M., vol. 54, 1961, pp. 510-513.

Topaz

Blue, colourless, yellow and reddish, transparent topaz crystals occur in a pegmatite dyke at the 6,000 foot level near Watson Lake. Most of the crystals grade from yellow to a reddish shade. The topaz is reported to be of gem quality.
The deposit has been staked by Mr. J. Schiell of Rancheria, Mile 710, Alaska Highway.

Reference:
Can. Rockhound, vol. 5, No. 2, 1961, p. 20.

Placer Gold

Gold has been recovered from sand bars of the Pelly River from its mouth to Campbell Creek, and from its tributaries which join it from the south. The most productive bars were those between Hoole Canyon and Hoole River.

Reference:
Johnson, R.: GSC, Mem. 200, 1936, pp. 17-18.

NORTHWEST TERRITORIES

ROCK AND MINERAL COLLECTING AREAS, NORTHWEST TERRITORIES

District of Franklin

1. Meighen Island
2. Ellesmere Island
3. Macbeth Fiord, Baffin Island
4. Exeter Bay, Baffin Island
5. Amadjuak Bay—Lake Harbour, Baffin Island

District of Mackenzie

6. Coronation Gulf
7. Great Slave Lake

District of Keewatin

8. Belcher Island


ARCTIC OCEAN
U.S.A.
CAN.
140°
120°
100°
80°
60°
40°
80°
MILES
0
250
QUEEN ELIZABETH ISLANDS
1
2
Ellesmere I.
Eureka
Isachsen
GREENLAND (DENMARK)
Melville I.
Banks I.
Devon I.
Parry Channel
BAFFIN BAY
DIST. OF FRANKLIN
NORTHWEST TERRITORIES
Victoria I.
Clyde
3
Baffin Island
Foxe Basin
Pangnirtung
4
Coppermine
6
Great Bear L.
ARCTIC CIRCLE
DIST. OF MACKENZIE
7
Yellowknife
Great Slave Lake
Southampton I.
5
Lake Harbour
Hudson Strait
DIST. OF KEEWATIN
HUDSON BAY
Churchill
ALTA.
Belcher Is
8
QUEBEC
SASK.
MANITOBA
ONTARIO
70°
60°
GSC

DISTRICT OF FRANKLIN

1. MEIGHEN ISLAND

(69 N½ and 59 N½ Sverdrup Islands)

Chalcedony, Jasper

Chalcedony and jasper occur as loose fragments and nodules in the area surrounding the periphery of the ice cap at Meighen Island. Much of the chalcedony is translucent. In colour, it is lemon-yellow, orange-red, blue or greyish; the yellow variety sometimes grades to a reddish shade. The jasper is red or deep green.

Reference:

Personal communication: K. C. Arnold.

2. ELLESMERE ISLAND

(39 S½ and 29 S½ Kane Basin)

Agate

Lemon-yellow translucent agate is found as loose fragments on the surface of basalt conglomerate which forms small knolls at a locality 40 miles northeast of Lake Hazen (82° 12′ N, 65° 30′ W). Fragments 2 to 3 inches across are reported to be abundant. Fine- to coarse-banded agate occurs as loose fragments on a basalt flow which is exposed along the top of the cliff forming Gale Point (78° 12′ N, 75° 30′ W) on the east coast of Ellesmere Island. The colour is orange-red to maroon-red with white bands; the reddish parts are somewhat translucent; most of the fragments, which measure 2 to 3 inches across, represent parts of weather-broken geodes.

Reference:

Personal communication: R. L. Christie.

Amber nodules up to 1 inch across occur with finely broken coal along the beach at the east end of Lake Hazen. The amber is yellow, red and brown. It is believed that the material from this locality was used by Eskimos for making beads.

Reference:

Christie, R. L.: GSC, Paper 62-10, 1962, p. 14.

3. MACBETH FIORD AREA, BAFFIN ISLAND

(27 NW, NE Clyde; 27 SW, SE Home Bay)

Tourmaline

Black tourmaline crystals, up to 3 feet long and 6 inches across, are common in pegmatite dykes which extend westward from Macbeth Fiord. The largest dyke was found on the north slope of a hill known as Eskimo Hill. It is exposed for a distance of 700 feet and is about 300 feet wide. The chief constituents of the dyke are grey microcline, white quartz and muscovite. Associated with the muscovite, which is in books up to several feet in diameter, are abundant small crystals of columbite. Eskimo Hill is situated a little to the north of the iron formation at Barnes ice cap.

Reference:

Kranck, E. H.: Bull. C.I.M.M., vol. 44, No. 474, 1951, pp. 682-683.

Marble

A beautiful marble composed of white and light rose or orange-coloured crystalline limestone is reported to occur "in an inland zone west of a line connecting the heads of Sam, Clyde and Macbeth fiords to the edge of Barnes ice cap". The limestone is interbedded with diopside, chondrodite, and phlogopite, and is exposed along the valleys of the Clyde River and the Sam Fiord River. Rock crystal was found at one locality in quartzite underlying the limestone formation.

Reference:

Kranck, E. H.: Bull. C.I.M.M., vol. 44, No. 474, 1951, pp. 682-683.

4. EXETER BAY, BAFFIN ISLAND

(16 NW, NE Exeter Bay)

Soapstone

Soapstone which was used by the Eskimo to make lamps and other objects is reported to have been obtained from the Exeter Bay area.

Reference:

Wilson, M. E.: GSC, Econ. Geol. Ser., No. 2, 1926, p. 53.

5. AMADJUAK BAY-LAKE HARBOUR AREA, BAFFIN ISLAND

(25 NW, NE Frobisher Bay;
35 NW, NE Hudson Strait West)

Lapis-lazuli

Lazurite is intimately associated with white diopside in crystalline limestone at a locality 9 miles north-northeast of the settlement of Lake Harbour. The lazurite rock (lapis-lazuli) is massive, compact, and of a bright cobalt-blue colour. It takes an excellent polish and is an attractive gemstone. It occurs in masses several inches across. The weathered surface is white making it difficult to distinguish from the host rock. The lazurite-bearing limestone is exposed on the west side of the Soper River about 5 miles from its entrance into Soper Lake. The exposure is about 400 yards from the shore of the river.

Reference:

Davison, W. L.: GSC, Map 29-1958.

Scapolite, Diopside

Crystals of white scapolite measuring up to 5 inches in diameter occur in crystalline limestone, and olive-green diopside crystals occur in calcite at MacDonald Island. The diopside crystals, which reach a length of about 3 inches, are characterized by brilliant faces. MacDonald Island lies off the coast of Baffin Island in the vicinity of Markham Bay.

Reference:
Walker, T. L.: Ottawa Field Naturalist, vol. 29, 1915, pp. 64, 65.

Rose Quartz

Colourless to deep rose quartz is reported to occur at Amadjuak Bay, about 35 miles northwest of Markham Bay.

Reference:
Walker, T. L.: Ottawa Field Naturalist, vol. 29, 1915, p. 64.

Garnet, Cordierite

Much of the garnet and some of the cordierite found on Garnet Island are reported to be flawless and of gem quality. The garnet is deep cherry red; it occurs as rounded crystalline masses (up to 4 inches in diameter) in biotite schist. The cordierite is vitreous and deep blue in colour; it forms irregular fragments (up to 2 inches across) in gneiss. Garnet Island is situated at latitude 63°45′, longitude 72°30′ and lies at the northwestern end of a cluster of small islands about 3½ miles north of the northeastern end of MacDonald Island.

Reference:
Walker, T. L.: Ottawa Field Naturalist, vol. 29, 1915, pp. 64, 65.

Miscellaneous Occurrences with Crystalline Limestone

A number of minerals are associated with the crystalline limestone exposed on Baffin Island along the northern shores of Hudson Strait. The limestone can be readily recognized from the shoreline by its almost glacial whiteness. It is well exposed at: the head of North Bay, the northeast side of the upper part of Big Island, the islands adjacent to Big Island, the coastline opposite Big Island, both sides of Crooks Inlet, the entrance to Canon Inlet, the Strathcona Islands, the shoreline opposite the Strathcona Islands, the northern and eastern parts of Markham Bay, Wharton Harbour, Akuling Inlet, the islands of Fair Ness, Aberdeen Bay, the south shore of Amadjuak Bay, and along the route from Amadjuak Bay to the lake of the same name.

Among the minerals reported to occur in the crystalline limestone are: graphite in large cleavable plates (up to 2 inches across) on the north side of Amadjuak Bay; fibrous graphite at Fair Ness; titanite crystals (up to 1½ inches across) at North Bay; mica, garnet, magnetite, pyrite and hornblende in various places along the coast from opposite Big Island to Amadjuak Bay. Lilac coloured spinel crystals (up to ½ inch across) have been found, but the locality is not recorded.

Attractive, ornamental-type serpentines and marbles are associated with the limestone deposits. Grey, green and yellow massive serpentine occurs at Canon Inlet, and a bright green and blue variety occurs at White Bluff Harbour and at the head of North Bay. A serpentine suitable for carving has been obtained from near McKellar Bay. Ophicalcite, a beautiful and delicate rock composed of equal amounts of white calcite and sulphur-yellow serpentine has been found in the area, but the exact locality has not been reported. Attractive, variegated limestones occur at the point just west of Glasgow Island in North Bay.

References:

Bell, R.: GSC, Ann. Rept. (New Ser.), vol. 11, 1898, pp. 24-27M
Davison, W. L.: GSC, Map 29-1958.
Walker, T. L.: Ottawa Field Naturalist, vol. 29, 1915, pp. 63-66.

DISTRICT OF MACKENZIE

6. CORONATION GULF AREA

(76 NW, NE Bathurst Inlet; 86 NW, NE Coppermine)

Soapstone

A material used by the Eskimo for pots, lamps and other objects is reported to occur in this area. Because the term soapstone was used for any rock that lent itself to carving, it is not certain that talc is the mineral referred to. The "soapstone" was found in the Rae River,

Topaz crystal from Wolf Lake, locality 4, Yukon (actual width, one inch).

Chiastolite in altered sedimentary rock, Great Slave Lake, locality 7, Northwest Territories.

near Coronation Gulf, and at Port Epworth, near the mouth of the Tree River.

In the Rae River occurrence, the "soapstone" is associated with nephrite and apatite in limestone and quartz rocks. The "talc-chlorite-schist" at Port Epworth occurs in granite.

Reference:

Wilson, M. E.: GSC, Econ. Geol. Ser., No. 2, 1926, pp. 52-53.

7. GREAT SLAVE LAKE AREA

(75 NW, NE Artillery Lake; 85 NW, NE Rae; 85 SE Great Slave)

Cordierite, Garnet

Blue translucent to transparent cordierite occurs as prismatic crystals (measuring up to 4 inches by 2 inches) and as irregular masses in gneiss and in pegmatite stringers at a locality about 7 miles south of Ghost Lake on longitude 115°. Although it is usually much fractured, small fragments of gem quality have been found. It is abundant in places but less so than garnet (almandite) which is plentiful as crystals and as quartz-garnet aggregates up to 4 inches across. Associated minerals are sillimanite, tourmaline, spinel, quartz, feldspars and graphite. Similar occurrences were noted at several localities between Ghost Lake and Ranji Lake to the north, and at a locality 3 miles northwest of the west end of Ghost Lake. The area is about 100 miles north-northwest of Yellowknife.

Reference:

Lord, C. S.: GSC, Mem. 235, 1942, p. 53.

Sodalite, Fluorite

Bright blue sodalite occurs as irregular veinlets and patches in nepheline syenite which outcrops near the eastern and western shores of Bigspruce Lake. Associated minerals are titanite, apatite, perthitic feldspar, mica and a zeolite. Purple fluorite is reported to be abundant at the contact

between syenite and white crystalline limestone on the northwest shore of Bigspruce Lake. The occurrence is about ½ mile south of the entrance of Snare River. Bigspruce Lake is situated about 90 miles northwest of Yellowknife.

Reference:

Lord, C. S.: GSC, Mem. 235, 1942, pp. 34-35.

Yellowknife, Gold Deposits

Excellent specimens of stibnite, arsenopyrite, hematite and sulphosalts have been obtained from the gold deposits at Yellowknife. The stibnite occurs as nests of intergrown aggregates of acicular and short prismatic crystals in vugs and in quartz lenses, and as slender prismatic crystals and aggregates of crystals in seams and fractures in the quartz. It is associated with sulphosalts, native antimony, sphalerite and chalcopyrite. The sulphosalts which include the tetrahedrite series, bournonite, jamesonite, boulangerite, chalcostibite, berthierite, zinkenite, semseyite, meneghinite, freieslebenite and jordanite occur in vugs, fractures and crushed zones of the gold-quartz lenses. They may also occur in quartz-carbonate veinlets and lenses. In some places, tetrahedrite crystals are associated with pyrite and crystallized calcite and dolomite.

Arsenopyrite occurs as slender prismatic crystals associated with gold-quartz lenses, and as large crystal intergrowths in vugs with calcite in quartz-carbonate stringers.

Specularite is the most common variety of hematite; other varieties include foliated, fibrous, micaceous, platy and ochreous hematite and the rosette form, popularly referred to as "iron roses".

The ore minerals—gold and aurostibite—are contained in quartz lenses in chlorite schist zones cutting Precambrian greenstones, and in quartz lenses in Precambrian sedimentary rocks. The gold assumes various forms; it may be found as nuggets, plates, blebs in carbonate or quartz lenses, as thin films with pyrite and calcite, as gold leaves, as spongiform gold, and as distorted octahedral crystals.

Other minerals associated with the deposit are pyrite, marcasite, gudmundite, pyrrhotite, bismuthinite, sphalerite, chalcopyrite, galena, molybdenite, scheelite, magnetite and ilmenite.

Current gold producers are Con-Rycon mine (Consolidated Mining and Smelting Company, Limited) and the Giant mine (Giant Yellowknife Gold Mines Limited). The Ptarmigan and Negus mines are now inactive. The properties of Akaitcho Yellowknife Gold Mines Limited and of Crestaurum Mines Limited are under development.

Reference:
Boyle, R. W.: GSC, Mem. 310, 1961, pp. 48-65.

Amethyst

Crystals and massive amethyst occur with white quartz along the Vega fault which extends southeastward from the south end of Prosperous Lake across Island Lake and to the second small lake south of Island Lake. Specimens of amethyst may be obtained from numerous exposures along the 28-mile fault.

Reference:
Boyle, R. W.: GSC, Mem. 310, 1961, p. 49.

Andalusite (Chiastolite)

Andalusite, including the chiastolite variety, has been reported from a number of localities in the Great Slave Lake area. The chiastolite is reported to be outstanding for size and pattern. Andalusite occurs as pink nodules or knots with cordierite and biotite in quartz-mica schist and in hornfels at the Spud Arsenault mine, a former gold producer. The mine is situated on the northwest side of Mac Lake, 8 miles west of Gordon Lake and 52 miles north-northeast of Yellowknife.

Chiastolite crystals measuring up to 3 inches long are associated with the nodular argillaceous schist which occurs extensively for 70 miles north of Great Slave Lake. Occurrences of chiastolite were noted at a few localities along the Yellowknife River and at the Ted group of claims located east and south of the rapids at the outlet of Prosperous Lake, 8 miles northeast of Yellowknife. The claims were staked for scheelite which is associated with garnet and quartz in the schist.

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References:
Field, D. S. M.: J. Gemm., vol. 2, No. 5, 1950, p. 191.
Little, H. W.: GSC, Econ. Geol. Ser., No. 17, 1959, p. 125.
Lord, C. S.: GSC, Mem. 261, 1951, pp. 268-271.
Stockwell, C. H.: GSC, Sum. Rept., 1932, pt. C, p. 50.

Thompson-Lundmark Gold Mine

Spectacular pockets of coarse gold were found near the surface at the Treasure vein, Thompson-Lundmark mine. The gold at this mine occurs in quartz veins and in pegmatite dykes. The host rocks are quartz-mica schists and hornfels.

The Treasure vein was worked on an island in Thompson Lake; it lies about 4,000 feet west-northwest of the Fraser Shaft which is near the south shore of the east arm of the lake. The mine is now inactive.

Reference:
Lord, C. S.: GSC, Mem. 261, 1951, pp. 279-290.

Beryl-spodumene-amblygonite

Beryl occurs in pegmatite dykes in several localities to the north of Great Slave Lake. It is usually associated with spodumene and amblygonite crystals, dark brown to black cassiterite aggregates, tourmaline, and blue-black tabular or bladed crystals of columbite-tantalite. In colour it varies from white to green, light blue or golden-yellow. The spodumene and amblygonite are commonly in huge crystals measuring several feet in length. Lazulite as blue aggregates has been reported from the Moose and the Tan groups of claims and the Lit 1 and 2 claims. Lithiophilite is often present. The chief constituents of the pegmatite dykes are microcline, cleavelandite, quartz and muscovite. The dykes intrude sedimentary and granitic rocks.

At a number of localities, the deposits have been prospected and staked. Some have been worked for beryl and for columbite-tantalite. Additional details on the location of some of the deposits are as follows:

Sparrow Lake beryl deposit (26 miles east-northeast of Yellowknife)—Beryl crystals up to 2 inches in diameter occur in the pegmatite on the Casper group of claims. One outcrop surface contains an estimated 25

to 30 per cent beryl by volume. Claims have been staked on the east side of Sparrow Lake by C. Vaydik of Yellowknife.

Blaisdell Lake beryl deposit (34 miles northeast of Yellowknife)—Beryl is in greenish yellow crystals measuring 2 to 5 inches in diameter and several inches long. Prospecting was recently conducted by Columbia Explorations Limited on the B.E. group of claims which extend north from the northwestern tip of Blaisdell Lake, and on the Bill group of claims which covers much of the peninsula at the north end of the lake.

Prelude Lake beryl deposit (17 miles northeast of Yellowknife)—The beryl crystals are greenish yellow in colour and measure up to 7 inches across and 17 inches long; black, purplish red, and green tourmaline, gahnite and columbite-tantalite crystals (up to ¼ inch by 1¼ inches) are associated with beryl in the dykes which lie 2 to 4 miles north of Prelude Lake and are enclosed in an area of 10 square miles. The highest concentration of beryl is in dykes 1 to 2 miles north of the most northerly bay of the lake.

T and B group of claims (50 miles northeast of Yellowknife)—Beryl crystals measuring up to 4 inches by 10 inches occur with garnet, graphite, pyrite and columbite-tantalite. The claims lie 2 miles west of Mac Lake and 10 miles west of Gordon Lake.

Ross Lake—Redout Lake deposits (44 miles east-northeast of Yellowknife)—Columbite-tantalite is in blocky crystals up to 2 inches square, and in plates up to 2 inches by 4 inches. Dykes in the area between the two lakes were worked for columbite-tantalite first by Peg Tantalum Mines, Limited, and later by Tantalum Refining and Mining Corporation of America. A tractor road, 1½ miles long, leads to the workings from Ross Lake.

Freda No. 1 claim (31 miles east-northeast of Yellowknife and 2 miles north of the Thompson-Lundmark mine)—Beryl crystals measure up to 6 inches across.

Waco pegmatite (30 miles east-northeast of Yellowknife)—Beryl crystals up to 12 inches long occur usually with milky quartz. The occurrence is 4,500 feet northwest of the Fraser Shaft of the Thompson-Lundmark mine, and 700 feet north of Thompson Lake.

Taco, formerly Bore, group of claims (34 miles northeast of Yellowknife and 10 miles north of Thompson-Lundmark mine)—Beryl crystals, up to 2 inches across, are white to light green; spodumene is in radiating aggregates up to 1 foot long; blue-green tourmaline (indicolite) occurs as tiny crystals in muscovite; columbite-tantalite forms bladed or tabular crystals, up to $1\frac{1}{4}'' \times \frac{3}{4}'' \times \frac{3}{16}''$; cassiterite aggregates measure up to $1\frac{1}{4}'' \times 1'' \times \frac{3}{8}''$. Occurrences are in dykes extending 1,600 feet southeastward from Sproule Lake.

Lit 3 claim, formerly the Ramona group (50 miles east and slightly south of Yellowknife)—Beryl is white; columbite-tantalite crystals measure up to $2\frac{1}{4}'' \times 1\frac{1}{4}'' \times 1''$. The deposit is known as the McDonald dyke and lies 5 miles southwest of the north end of Buckham Lake.

Lit 1 and 2, formerly Lita 5 and 6, claims (55 miles southeast of Yellowknife)—Lazulite is associated with beryl, cassiterite, etc. in a pegmatite zone which extends for a distance of 2,400 feet along the north shore of Buckham Lake. The deposit is known as the Campbell pegmatite.

Tan group of claims (5 miles west northwest of the Moose claims)—Columbite-tantalite is in tabular crystals up to $\frac{3}{4}$ inch long; lazulite occurs as blue aggregates. Occurrences are in dykes grouped around a small lake just west of "Johnson Lake", about $1\frac{1}{2}$ miles east of the southeast corner of Blatchford Lake.

Moose group of claims (72 miles east-southeast of Yellowknife)—Beryl is usually white; columbite-tantalite is in thin radiating plates up to 3 inches across. The dyke was worked for beryl and for columbite-tantalite. It extends 1,400 feet north from a point less than 150 feet from the east arm of Great Slave Lake, immediately north of Hearne Channel. The workings consist of a shaft, several pits and open-cuts.

Best Bet claims (5 miles northwest of the Moose claims)—Beryl crystals are pale yellowish green or creamy white; cassiterite crystals measure up to 1 inch long; columbite-tantalite occurs as thin plates up to 10 inches long. The deposit was worked for beryl and for columbite-tantalite. The workings, which consist of a quarry and a shallow pit, lie just northwest of the north-central part of Drever Lake.

References:

Lord, C. S.: GSC, Mem. 261, 1951, pp. 85-88, 119-123, 152, 199-200, 231-235, 278-289.

Mulligan, R.: GSC, Paper 60-21, 1961, pp. 12-17.

Tibbitt Lake

Crystals of clinozoisite, garnet and scheelite occur in pegmatitic quartz veins cutting basic dykes and sills. The clinozoisite crystals are as much as 4 inches long while the garnet crystals are about 1 inch in diameter. The scheelite crystals are white or grey and are usually less than 2 inches in diameter. These minerals are found in a zone, ½ to 1 mile wide and 6 miles long, that extends north along the east side of Peninsula Lake, Tibbitt Lake, and Cameron River. The area is about 33 miles east-northeast of Yellowknife.

Reference:

Lord, C. S.: GSC, Mem. 261, 1951, pp. 290-291.

Turnback Lake

Vesuvianite as individual stout prisms up to 1 inch long and as crystal groups, about 5" × 3" × 3", has been obtained from the X.L. group of claims on the northwest shore of Turnback Lake. In colour, it is chocolate-brown with a greenish tint. It is associated with garnet and wollastonite which occur in crystalline limestone near its contact with amphibole gneiss. Crystals of garnet up to 1 inch across, black to green amphibole as laths up to 2 inches, quartz, biotite, chalcopyrite, sphalerite, pyrrhotite, galena, pyrite, arsenopyrite, molybdenite and native copper occur in the gneiss.

The property was prospected for ores of copper, lead and zinc. It is exposed by pits and trenches. The occurrence is 58 miles east-northeast of Yellowknife.

References:

Lord, C. S.: GSC, Mem. 261, 1951, pp. 298-300.

Meen, V. B.: Univ. Toronto Studies, Geol. Ser., No. 42, 1939, pp. 69-74.

Outpost Islands

Transparent deep blue corundum (sapphire) crystals up to ½ inch across occur sparingly at the old Philmore mine. Although transparent and of a good colour, it is not of gem quality. It has been found only within andalusite which is enclosed in quartz pegmatite. The andalusite is mauve, pink or brown; it forms aggregates up to 2 feet across with individual crystals showing prism faces up to 1½ inches across and 4 inches long.

Knots or nodules of andalusite up to 2 inches across may also be found in the quartz-mica-schist and gneiss. It is most abundant in the schist where it is associated with staurolite crystals usually less than an inch across.

Other minerals reported from the property are cassiterite, gold, chalcopyrite, pyrite, specularite, marcasite, ilmenite, bornite, covellite, molybdenite, chlorite, mica, scheelite and ferberite. Gold occurs as veinlets or seams, and as leaf-gold in quartzite.

The Slave Lake or Philmore mine, is a former producer of gold, tungsten and copper. The most recent (in the early 1950's) operator was Tungsten Corporation of Canada. The mine is on the Outpost Islands, the most westerly islands in the east arm of Great Slave Lake. The property comprises the Fox group of claims and is 55 miles south-southeast of Yellowknife.

References:

Ellsworth, H. V. and Jolliffe, F.: Univ. Toronto Studies, Geol. Ser., No. 40, 1936-37, pp. 71-81.

Little, H. W.: GSC, Econ. Geol. Ser., No. 17, 1959, pp. 143-145.

Lord, C. S.: GSC, Mem. 261, 1951, pp. 238-240.

Jasper

Jasper is associated with beds of oölitic hematite and hematite-rich shales exposed at a number of localities along 5 miles of the shoreline on the east side of a narrows 5 miles north of Utsingi Point which is the southern tip of Pethei Peninsula. The occurrence is 86 miles east of Yellowknife.

Boulders of jasper and of quartz occur in a conglomerate on the west side of Faber Lake, at the base of the north-trending peninsula. The boulders measure up to 2 feet across. The locality is about 150 miles northwest of Yellowknife.

References:

Kidd, D. F.: GSC, Mem. 187, 1936, p. 14.
Lord, C. S.: GSC, Mem. 261, 1951, p. 293.

Gypsum Point, Gypsum

Flesh-coloured gypsum outcrops at Gypsum Point, and along the southwest shore of the north arm of Great Slave Lake. It occurs in thin seams along the bedding planes between reddish arenaceous limestone and calcareous sandstone. Some of the gypsum is well-crystallized into long satin-spar crystals.

Reference:

Cameron, A. E.: GSC, Sum. Rept. 1916, p. 74.

Native Sulphur

Small quantities of sulphur occur at Sulphur Point on the south shore of Great Slave Lake, and at the tar springs north of Point Brûlé on the north shore. It occurs in the basins of the mineral springs and along channels of the streams which drain them.

Reference:

McConnell, R. G.: GSC, Ann. Rept. (New Ser.), vol. 4, 1888-89, p. 31D.

Placer Gold

Placer gold is reported to occur in the gravels of the South Nahanni River and of its tributary, Flat River.

Reference:

Lord, C. S.: GSC, Mem. 261, 1951, p. 265.

DISTRICT OF KEEWATIN

8. BELCHER ISLANDS

(34 SW Belcher)

Jasper

Jasper occurs in the Kipalu iron formation which is exposed at a few places on the east side of Tukarak and Innetalling islands, the most easterly of the Belcher Islands group.

Alternating beds, up to 10 inches thick, of jasper and hematite-rich rock occur west of Spracklin Point in the northern part of Innetalling Island. Beds of coarse granular bright red jasper and chert up to 1½ feet thick occur at Laddie Harbour, on Tukarak Island, and at Fairweather Harbour, on Innetalling Island.

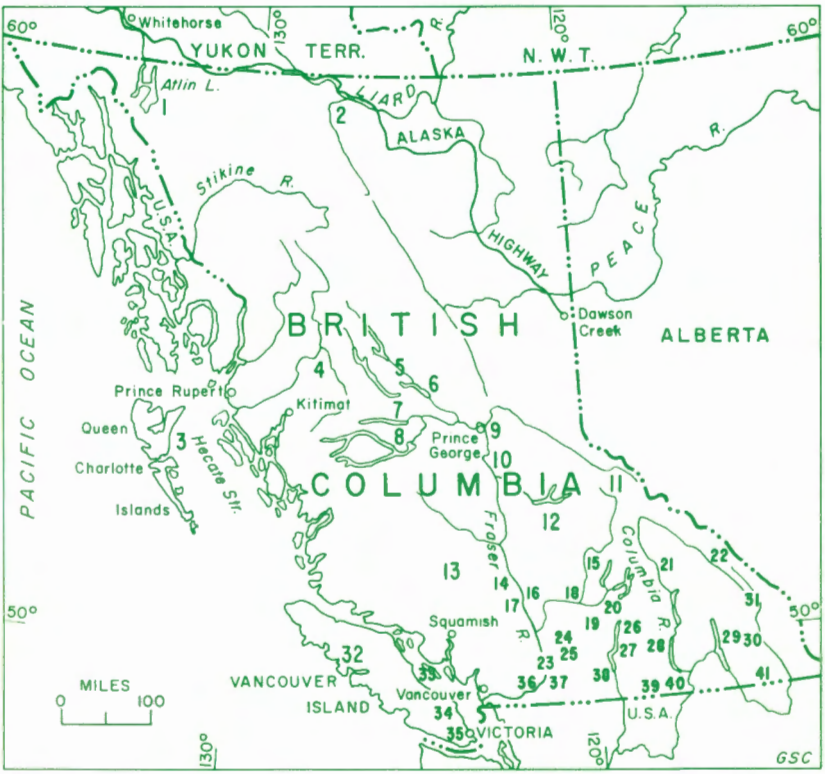
Reference:

Jackson, G. D.: GSC, Paper 60-20, 1960, pp. 9, 12-13.

BRITISH COLUMBIA

ROCK AND MINERAL COLLECTING AREAS, BRITISH COLUMBIA

1. Atlin Lake
2. Liard and Turnagain Rivers
3. Queen Charlotte Islands
4. Hazelton
5. Tsitsutl Mountain
6. Stuart Lake
7. François Lake
8. Kenny Dam
9. Prince George
10. Quesnel
11. Tête Jaune Cache
12. Takomkane Mountain
13. Chilko Lake
14. Empire Valley
15. Birch Island-Chu Chua
16. Clinton–Cache Creek
17. Lillooet
18. Kamloops Lake
19. Monte Lake
20. Shuswap Lakes
21. Revelstoke–Big Bend
22. Yoho and Kootenay Parks
23. Spences Bridge–Hope
24. Highland Valley
25. Aspen Grove
26. Vernon
27. Kelowna
28. Lightning Peak
29. Kaslo
30. Skookumchuck Creek
31. Canal Flats
32. Zeballos
33. Texada Island
34. Cowichan Lake
35. Victoria
36. Fraser R., Chilliwack to Hope
37. Hope–Princeton
38. Penticton
39. Grand Forks
40. Rossland
41. Moyie


60°
Whitehorse
YUKON TERR.
130°
120°
N. W. T.
60°
Atlin L.
1
2
LIARD
ALASKA
R.
Stikine R.
U.S.A.
HIGHWAY
PEACE
Dawson Creek
ALBERTA
BRITISH
COLUMBIA
PACIFIC OCEAN
Prince Rupert
Kitimat
Queen Charlotte Islands
Hecate Str.
Prince George
Fraser R.
Columbia R.
Squamish
Vancouver
VANCOUVER ISLAND
VICTORIA
U.S.A.
50°
MILES
0 100
GSC

1. ATLIN LAKE AREA

(104 N Atlin)

Jasper

Red jasper occurs in the chert rocks at Sentinel Mountain and at Gold Bottom Creek. Lavender and purple varieties of chert are also found in the area, but are reported to be rare. Sentinel Mountain is on the east side of Atlin Lake, approximately 12 miles south of Atlin village. A road leads southward from the village, along the western and southern base of the mountain. Gold Bottom Creek is a tributary of Sloko River.

Reference:
Aitken, J. D.: GSC, Mem. 307, 1959, pp. 18-19.

Chalcedony, Opal

Opal, chalcedony, calcite, chlorite and quartz fill amygdules in the andesitic and basaltic flows which are well exposed south of the east end of Sloko Lake, situated about 3 miles south of the south end of Atlin Lake. Amygdules measuring up to 6 inches in diameter are common in these rocks and may contain the various minerals either individually or in combination. Identical rocks surround Sloko Lake, extending a few miles to the north and south of it, and are also found along the south slope of Mount McCallum, 10 miles to the north of the lake.

Reference:
Aitken, J. D.: GSC, Mem. 307, 1959, pp. 66-67.

Placer Gold

Placer gold has been recovered from the following streams, all east of Atlin Lake, in the vicinity of Surprise Lake: from Ruby, Otter, Wright, McKee, Spruce, Lower Spruce and Pine creeks; from Birch Creek which was noted for its large nuggets; from Boulder Creek where placer wolframite occurs with the gold; from the O'Donnell River and its tributaries.

Reference:
Aitken, J. D.: GSC, Mem. 307, 1959, pp. 74-77.

2. LIARD AND TURNAGAIN RIVERS

(104 I Cry Lake; 104 P McDame)

Jade

Jade (nephrite) is reported to occur at two localities in the area: (1) as dark boulders along Wheaton Creek which flows into the Turnagain River from the south. The boulders were found about ½ mile north of the head of the lower canyon in the lower 1½ miles of the creek; most of them are at the old Peacock lease (P.M.L. No. 628) where they were left when placer mining operations had ceased. (2) in the Liard River at the mouth of the Hyland River. Mr. Fred Allen of Lower Post is reported to have found a boulder of excellent quality here.

Reference:
Holland, S. S.: B.C. Min. Mines, Ann. Rept., 1961, pp. 126, 174.

3. QUEEN CHARLOTTE ISLANDS

(103 SE Queen Charlotte Islands-Bella Bella; 103 NE Prince Rupert-Stewart)

Garnet

Grossular garnet in yellowish white opaque crystals occurs at Lepas Bay, immediately south of Cape Knox on the northwestern tip of Graham Island. The crystals are said to be perfectly formed trapezohedrons.

Reference:
Hoffmann, G. C.: GSC, Ann. Rept. (New Ser.), vol. 7, 1894, p. 13R.

Agate

Agates and chalcedony have been found along the northern shoreline of Graham Island, near Masset, and along the southeastern shores of the island in the vicinity of Skidegate.

References:

Dawson, G. M.: GSC, Ann. Rept. (New Ser.), vol. 3, 1888, pp. 110-111R.
Sinkankas, John: Gemstones of N. Amer., p. 323.

Placer Gold, Platinum

Platinum and gold occur in the beach placers along the northeastern coast of Graham Island.

Reference:

O'Neill, J. J. and Gunning, H. C.: GSC, Econ. Geol. Ser., No. 13, 1934, p. 81.

4. HAZELTON AREA

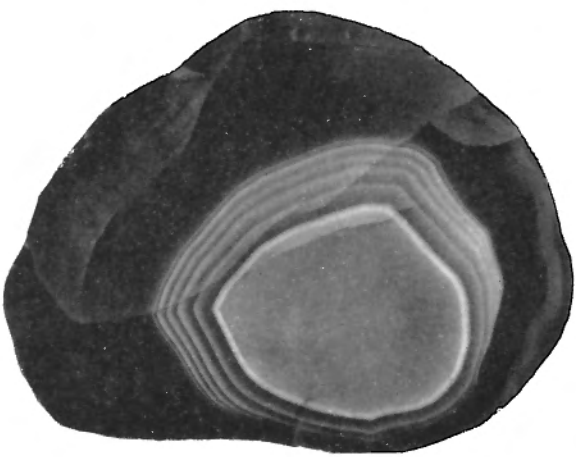
(93 M Hazelton)

Rocher Déboulé Mine (Western Tungsten Copper Mines Ltd.)

Crystals of white scheelite measuring up to 2 inches in diameter occur in quartz-rich fissure veins cutting granodiorite near its contact with sedimentary rocks. Some even larger crystals, including one 4 inches long and 2 inches across, have been reported from the deposit. The scheelite fluoresces blue. Gangue minerals include quartz, hornblende, actinolite, feldspar, apatite, calcite, siderite, chlorite, titanite, tourmaline and rutile. The apatite occurs as pale grey to greenish white prismatic fibrous crystals up to $\frac{5}{8}$ inch across and 6 inches long. Other minerals reported are: chalcopyrite, magnetite, pyrrhotite, pyrite, galena, sphalerite, cobaltite, arsenopyrite, molybdenite, tetrahedrite, smaltite-chloanthite and glaucodot.

The mine is on Rocher Déboulé Mountain near the head of Juniper Creek, about 8 miles northeast of Skeena Crossing station. The property has been worked for copper, silver and gold; production commenced

Polished agates from Shuswap Lakes area, locality 20, British Columbia.



Polished agates from Shuswap Lakes area, locality 20, British Columbia.

in 1911 and has been carried on intermittently since that date. An 8-mile road leads east from Highway No. 16 at Skeena Crossing to the mine.

Reference:
Kindle, E. D.: GSC, Econ. Geol. Ser., No. 17, 1959, pp. 46-51.

Red Rose Tungsten Mine (Western Tungsten Copper Mines Ltd.)

Light green and buff to cream-coloured scheelite occurs as individual crystals and as veinlets and bands in quartz-rich fissure veins and in diorite. It fluoresces blue. Other minerals include: ferberite, pyrite, magnetite, chalcopyrite, orthoclase, apatite, biotite, uraninite, hornblende, pyrrhotite and quartz crystals in vugs.

The mine is at the 5,600 foot level on a ridge between Armagosa and Red Rose creeks (tributaries of Juniper Creek). It is 3 miles southeast of the Rocher Déboulé mine and 11 miles by road from Skeena Crossing. The property is controlled by Western Tungsten Copper Mines Limited.

References:
Brown, A.: B.C. Dept. Mines, Bull. 43, 1960, pp. 54-58.
Kindle, E. D.: GSC, Econ. Geol. Ser., No. 17, 1959, pp. 51-54.

5. TSITSUTL MOUNTAIN

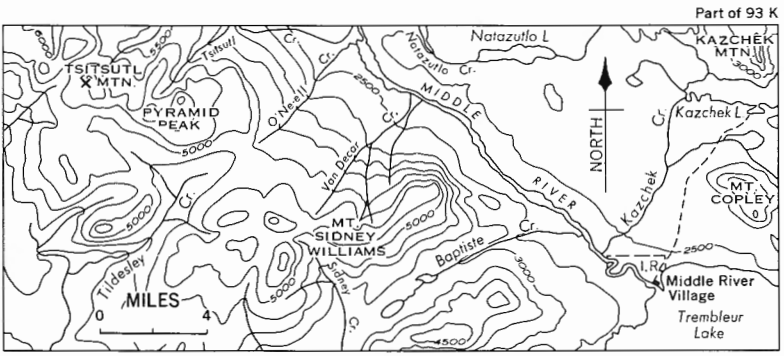
(93 N Manson River)

Rhodonite

Rhodonite occurs in a vein which cuts sedimentary rocks at the 5,500 foot level on the north slope of Tsitsutl Mountain in the Middle River Range, south of the southern tip of Takla Lake. The vein strikes northeasterly and consists of rhodonite (70%) and variable amounts of calcite, spessartite garnet, ilmenite and arsenopyrite (2-3%). Access is by 20 mile packtrail from Middle River.

Reference:
Armstrong, J. E.: GSC, Mem. 252, 1949, p. 194.

74277—4



TSITSUTL MOUNTAIN AREA: Rhodonite.

6. STUART LAKE AREA

(93 K Fort Fraser)

Agate

Agates are found in the beaches of Stuart Lake; they are reported to be most abundant in the Sowchea Bay area, due west of Fort St. James on the southwestern end of the lake.

Reference:

Bell, A.: Can. Rockhound, vol. 5, No. 2, 1961, p. 5.

7. FRANÇOIS LAKE AREA

(93 K Fort Fraser)

François Lake, Agate

A beautiful agate resembling the Mexican red agate occurs along the shores of François Lake. The agate is banded and varies in colour from pink to scarlet and is found as pebbles on the beaches and as nodules

in the basalt rock along the shoreline. Some of the larger nodules measured 3 by 6 by 10 inches. Local collectors refer to them as Omineca agates. Associated with this deposit are geodes containing quartz (some amethystine) crystals.

The agates were first found on the north shore of the lake about 7 miles west of the Nithi River; a similar deposit has since been found on the opposite shore.

References:

Bell, A.: Can. Rockhound, vol. 5, No. 2, 1961, pp. 2-4.
Wells, D. J.: Can. Rockhound, vol. 5, No. 3, 1961, pp. 16-17.

François Lake, Collinsite

The rare mineral collinsite occurs with quercyite as nodules in a vein cutting andesite at the Collier Ranch, 2 miles north of François Lake post office. The nodules, from 2 to 8 inches in diameter, are composed of collinsite and quercyite arranged in concentric layers of radial fibres. The light brown fibres have a silky lustre. The nodules are coated with black asphaltum. Since this is the only known occurrence of collinsite, specimens of this mineral have become collectors items. The mineral was named for W. H. Collins, a former director of the Geological Survey of Canada.

Reference:

Armstrong, J. E.: GSC, Mem. 252, 1949, pp. 197-198.

Tchesinkut Lake, Agate

Good quality blue agate has been found along the shore of Tchesinkut Lake which lies north of François Lake.

Reference:

Wells, D. J.: Can. Rockhound, vol. 5, No. 3, 1961, p. 17.

Ootsa Lake, Chalcedony

Chalcedony is reported as nodules along the shores of Ootsa Lake.

Reference:

Sinkankas, John: Gemstones of N. Amer., p. 323.

74277—4½

Nechako River, Amber

Amber occurs in the black lignite beds of the Nechako River south of Fort Fraser.

Reference:
Harrington, B. J.: GSC, Rept. Prog., 1876-77, p. 472.

8. KENNY DAM AREA

(93 F Nechako River)

Jasper, Agate

An attractive jasper-agate in shades of blue and brown occurs in a 1 foot vein on the east bank of the Nechako River about 2½ miles north of the dam, opposite a slide on the west bank. A 60-mile road south from Vanderhoof goes to the dam; the agate occurrence is about an hour's walk from there.

Agates may be found along the road from Vanderhoof to Kenny dam, and in the adjacent streams bridged by the road.

References:
Bell, A.: Can. Rockhound, vol. 5, No. 2, 1961, pp. 5-6.
Wells, D. J.: Can. Rockhound, vol. 5, No. 3, 1961, p. 18.

9. PRINCE GEORGE AREA

(93 G/15 W Prince George)

Agate, Jasper

The gravels of the Nechako and Fraser rivers in the vicinity of Prince George contain agate and jasper. Agate ranges from shades of red to honey-brown and black; varieties include moss, iris, turtle-back, dendritic and sagenitic. There are also petrified wood fragments.

The best collecting places are the Miworth gravel pit on the south side of Nechako River about 8 miles west of Prince George, and at the Big Slide on the north side of Nechako River about 7 miles west of Prince George.

Reference:
Bell, A.: Can. Rockhound, vol. 5, No. 2, 1961, pp. 5-6.

10. QUESNEL

(93 SE Williams Lake-Prince George)

Agate, Jasper

The gravels of Hixon and Ahbau Creeks (tributaries of the Fraser River, north of Quesnel), the Cottonwood River and other streams around Quesnel contain agate and jasper.

Reference:
Bell, A.: Can. Rockhound, vol. 5, No. 2, 1961, pp. 5-6.

Amber

Small grains of amber have been reported from lignite beds on the south bank of the Quesnel River.

Reference:
Dawson, G. M.: GSC, Rept. Prog., 1875-76, p. 257.

Placer Gold

Gold was discovered in the creeks and rivers of the Cariboo area in the 1860's and work on several of the deposits has been going on almost continuously since. Placer streams include Keithley, Antler, Grouse, Williams, Lightning, Cedar, Hixon, and Government creeks and their tributaries, and Cottonwood, Quesnel and Horsefly rivers.

Reference:
B.C. Dept. Mines, Bull. No. 21, 1946, pp. 21-22.

11. TÊTE JAUNE CACHE AREA

(83 SW Tête Jaune-Edson)

Mica Mountain, Mica

At the Bonanza mica mine white pegmatite dykes consisting of white feldspar, quartz and muscovite cut through garnetiferous mica schists. Accessory minerals are red garnet, bright blue prisms of kyanite, tourmaline, beryl, staurolite, yellowish apatite crystals up to 4 inches across, and biotite. Topaz has been found in association with the large mica plates. The mine is on Mica Mountain (locally known as 'Nigger's Knob') facing Sand Creek and approximately 5,300 feet above the level of the Fraser River. A similar deposit was worked on the Reliance claim at the 6,000 foot level on the same side of the mountain.

Mica Mountain is about 7 miles southwest of the village of Tête Jaune Cache. A wagon-road which leaves the railway a short distance east of Sand Creek bridge (2 miles east of Tête Jaune station) extends 4 miles to the base of Mica Mountain. At the end of the road a camp was set up during operations on the Reliance claim. A 3-mile trail leads from the camp to the property. The road to the mountain connects with the Tête Jaune-Swift Creek road.

References:

de Schmid, H. S.: Mines Br., Sum. Rept., 1913, pp. 42-46.
Galloway, J. D.: B.C. Min. Mines, Ann. Rept., 1920, pp. N95-96.
Johnston, R. A. A.: GSC, Mem. 74, 1915, p. 226.

Albreda, Kyanite

Boulders of mica-garnet schist containing blue kyanite blades have been found along the railway for a distance of about ½ mile in the vicinity of Albreda Station, on the Canadian National Railways about 17 miles south of Tête Jaune Cache.

References:

Cummings, J. M.: B.C. Min. Mines, Ann. Rept., 1947, p. 216.
Rutherford, R. L.: Univ. Toronto, Geol. Ser., No. 48, 1943, pp. 102-3.

12. TAKOMKANE (BIG TIMOTHY) MOUNTAIN

(93 A Quesnel Lake)

Peridot

Pale yellow-green to dark green and black translucent olivine (peridot) grains occur in irregular masses of red, brown and green basaltic rocks (hypersthene peridotite) which form two cone-shaped hills on the summit of Takomkane Mountain. The olivine occurs mostly on the northeast and steepest side of the hills. A few prospect pits were sunk on the top and sides of a cliff immediately to the west of the contact between the granite and lava, just below the 6,900 foot level. Most of the olivines range in size from 1/50 to 1/4 inch but have been found up to 1 foot long. Some small ones are a good transparent green (peridot), but most are semi-opaque, highly fractured and altered. The pyroxene with which the olivine is associated is deep green in colour, occurring as crystals up to 1½ inches across. It can be distinguished from the olivine by its opaque appearance contrasted with the translucency and vitreous lustre of the olivine.

Takomkane Mountain is on the headwaters of Moffat and Boss Creeks, near the western foot of the Cariboo Mountains, 16 to 20 miles in a straight line north of Canim Lake, and 30 to 35 miles northeast of Lac la Hache. To reach the deposit, take the road from 100 Mile House through Forest Grove village and along Bradley Creek to the southern end of Murphy Lake. This road is about 35 miles long; the last 22 miles of it is suitable only for four-wheel-drive vehicles. From the end of Murphy Lake, a pack-horse trail leads northeast for about 20 miles to Takomkane Mountain and to the molybdenite property on the south slope above Molybdenite Creek. The olivine prospect (Hailstone claim) lies about 1½ miles to the northwest of the molybdenite property. The trail to the olivine deposit branches off to the northeast from the main trail at a point about ½ mile east of a small lake on the south side of the trail and on the west side of the mountain. The distance from the lake to the prospect on the northeast side of the mountain is about a mile.

References:

Brown, A. Sutherland: B.C. Min. Mines, Ann. Rept. 1957, pp. 18-22.
Patterson, J. W.: B.C. Min. Mines, Ann. Rept. 1956, p. 34.
Reinecke, L.: GSC, Mem. 118, 1920, pp. 81-84, 91.

13. CHILKO LAKE

(92 N Mount Waddington)

Petrified Wood

Petrified logs occur with weathered boulders of rock on a slope along the west shore of Chilko Lake. The logs are grey and have many white quartz veinlets; cells are well preserved.

The north end of Chilko Lake may be reached by air from Kamloops or by a road which leaves the Williams Lake-Bella Coola highway at a point 12 miles west of Alexis Creek. The distance by road is 55 miles; this road is passable only in dry weather. From Chilko Lodge at the north end of the lake, proceed by boat for 37 miles to a point on the west shore directly opposite the broad delta of Rainbow Creek (on east shore of lake). Note the large bluff near the shore of the lake; it lies about 1½ miles north of the only island in this part of the lake. On the south side of this bluff the land surface rises steeply for about 500 feet. Climb up this cliff and walk south for several hundred yards across an area dissected by a series of stream-cuts, some of which are dry gullies and channels. Along the flat and up the south slope of one of the south-east-trending dry gullies, specimens of petrified logs are found. The specimens are scattered for a distance of ¾ mile to 1 mile and are concentrated in two general areas: one higher up and the other 700 yards nearer the lake shore.

Reference:

Fry, W. L.: GSC, Bull. 48, 1959, pp. 11-14.

14. EMPIRE VALLEY

(92 O/8 W Empire Valley)

Chalcedony (Thunder Eggs)

Spherical chalcedony concretions, commonly referred to as "thunder eggs", have been found in volcanic detrital material (perlite, obsidian) in the Empire Valley region. The "thunder eggs" which sometimes reach a diameter of 8 inches are filled with colourless to amber, green and orange chalcedony in a variety of patterns, often with quartz crystals in the centre. Jasper, including a blue orbicular variety, and quartz of various colours have also been reported from this locality. The deposit was discovered by Mr. Fred Frese of Empire Valley while building a road. An area of 40 acres has since been uncovered, about 60 miles northwest of Clinton and 3 miles from "Black Dome" peak; the distance by road from Clinton is approximately 100 miles. Proceed north from Clinton for 12 miles; turn west onto the Meadow Lake road and cross the Fraser River at Dog Creek (about 90 miles away). Turn left after crossing Dog Creek bridge and continue to the Empire Valley Ranch, then toward "Black Dome". The deposit is along the road near Lone Cabin Creek.

References:

Lapidary J., vol. 15, No. 1, 1961, p. 133.
Western Homes, October, 1961, p. 21.

Gem Claims (Perlite)

Stringers and nodules of chalcedony occur in basic volcanic porphyry which is overlain by perlite at the Gem No. 1 and Gem No. 2 claims situated on the top of a ridge on the east side of a small valley. The claims are on Lot 5151 on Spring Creek, a tributary of Lone Cabin Creek and are held by Mr. Lawrence Frenier of Clinton. The distance from the Fraser River is 3 miles. A 6-mile rough jeep road from Empire Valley Ranch leads to the deposit.

Reference:
McCammon, J. W.: B.C. Min. Mines, Ann. Rept., 1949, pp. 261-262.

15. BIRCH ISLAND-CHU CHUA AREA

(82 NW Vernon-Golden; 92 P/8 E Chu Chua Creek)

Birch Island, Fluorite

Violet to deep purple fluorite occurs as fine-grained bands in pale to nearly white quartz porphyritic rock which is exposed at frequent intervals on the summit of Red Ridge, a prominent hill on the south side of the North Thompson River and southeast of Birch Island station (Canadian National Railways). Two claims, the Atlantic and Pacific, have been staked. A pure white translucent fluorite is reported to occur in similar rock about 50 feet east of the purple fluorite occurrence.

Reference:
Wilson, M. E.: GSC, Econ. Geol. Ser., No. 6, 1929, pp. 21-22.

Rhodonite

Boulders of rhodonite heavily coated with black manganese oxides have been found near the Canadian National Railways 80 miles north of Kamloops, and in Boulder (Joseph) Creek which enters the North Thompson River north of Dunn Lake.

Placer Platinum

Platinum is reported to occur in the gravels of Clearwater River near its mouth on the North Thompson River.

Reference:
O'Neill, J. J. and Gunning, H. C.: GSC, Econ. Geol. Ser., No. 13, 1934, p. 87.

16. CLINTON-CACHE CREEK AREA

*(92 I/NW Ashcroft; 92 P Bonaparte River)**

Upper Hat Creek, Agate

An attractive jasper-agate occurs along a ridge northeast of Upper Hat Creek village.

Reference:
Personal communication: D. J. Wells.

Cache Creek, Agate, Petrified Wood

Agate and petrified wood occur at the Perry Ranch, 5 miles east of Cache Creek village (personal communication: D. J. Wells). In a rock exposure along Highway No. 1 at a point 6 miles south of Cache Creek village, quartz crystals are associated with agate, and along a cliff overlooking the Thompson River just west of McAbee station (Canadian Pacific Railway) there is a deposit of green jasper.
Rattlesnakes are common in this area and it is advisable to wear high boots.

Reference:
Western Homes, October, 1961, p. 21.

Bonaparte River, Chalcedony, Opal

Chalcedony, quartz, and opal occur in buff-weathered serpentine which outcrops on either side of the Bonaparte River valley in a stretch from south of Cache Creek to Clinton. Chrome garnet (uvarovite) has also been found in this rock. When fresh, the serpentine is dark green in colour with light green translucent patches.

Reference:
Duffell, S. and McTaggart, K. C.: GSC, Mem. 262, 1952, pp. 76-77.

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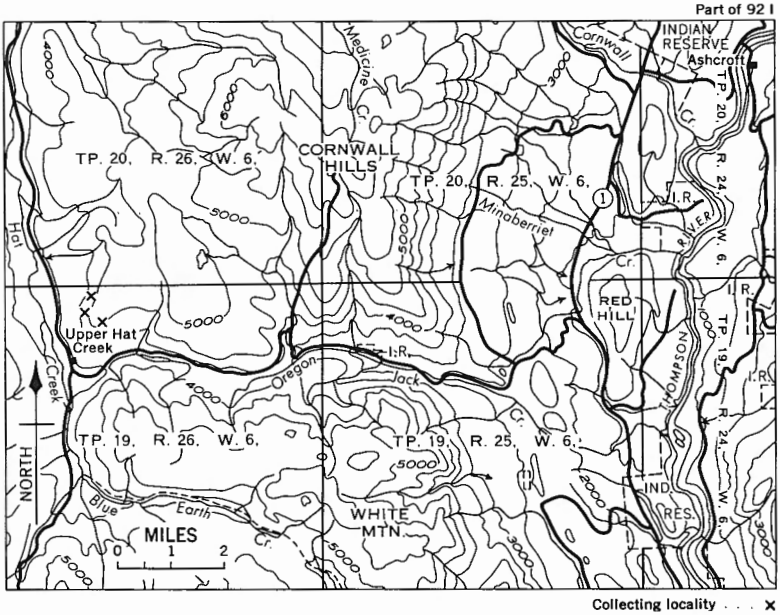
* These maps may be obtained from the British Columbia Department of Lands and Forests, Victoria.



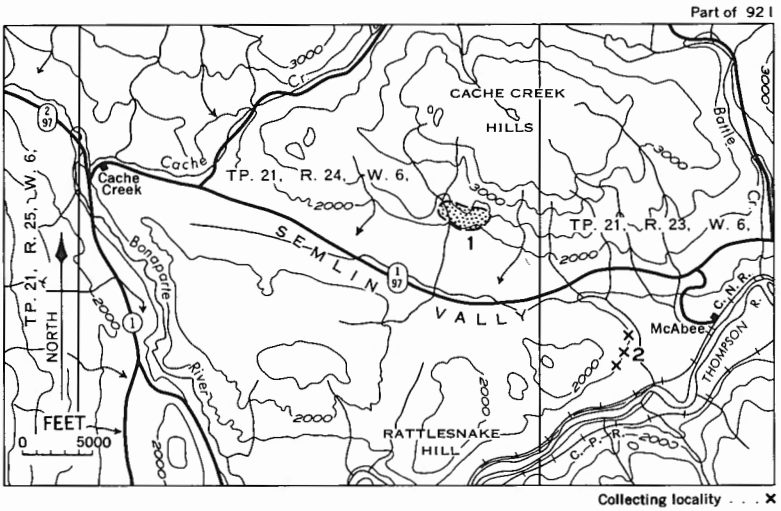
CLINTON–CACHE CREEK AREA: Upper Hat Creek.

Bonaparte River, Prehnite

Colourless, translucent crystals of prehnite fill fissures up to 4 inches wide and 2 to 3 feet long in peridotite rock along the east side of the valley of the Bonaparte River, a short distance north of Ferguson Creek. This creek enters the river about 1½ miles south of the mouth of Scottie Creek.

Reference:

Nuffield, E. W.: Univ. Tor. Studies, Geol. Ser., No. 48, 1943, pp. 49-64.



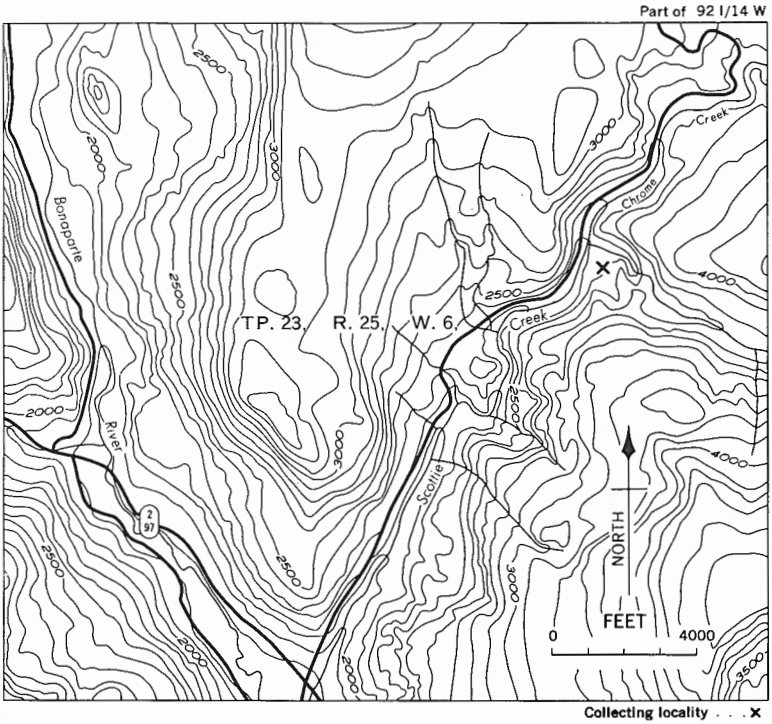
CLINTON–CACHE CREEK AREA: 1. Perry Ranch; 2. McAbee jasper.

Scottie Creek, Agate, Amethyst

Amethyst crystals reported to be of a good colour occur with banded agate along the walls of caves and in vugs near Scottie Creek. The locality is 4½ miles in a northeasterly direction along a dirt road which leaves Highway No. 97 at a point 13½ miles southeast of Clinton and 19¼ miles northwest of Cache Creek. The occurrence is on the south side of Scottie Creek just west of the mouth of Chrome Creek and near the 3,000 foot level.

Reference:

Can. Rockhound, vol. 5, No. 3, 1961, p. 7.



CLINTON–CACHE CREEK AREA: Scottie Creek.

The "Chasm", Zeolite, Opal

At the head of the gorge known as the "Chasm", located north of Clinton near 59 Mile House, amygdaloidal olivine basalts are exposed in a section over 200 feet thick. The amygdules contain chabazite,

heulandite, analcite and opal, and are most plentiful near the top of the section.

Reference:
Reinecke, L.: GSC, Mem. 118, 1920, pp. 17-18.

Placer Gold, Platinum

Placer gold and platinum have been recovered from Scottie Creek and from the Fraser River between Quesnel and Lillooet.

Reference:
O'Neill, J. J. and Gunning, H. C.: GSC, Econ. Geol. Ser., No. 13, 1934, pp. 87, 100.

17. LILLOOET AREA

*(92 J Pemberton)**

Yalakom River, Jasper, Cinnabar

Jasper, in 4- to 10-inch bands, occurs in a zone of well-bedded ankerite rocks exposed along the northeast side of the Yalakom River for a distance of 1½ miles above the mouth of Shulaps Creek. An 8-foot-wide banded jasper bed outcrops 175 feet above the Golden Eagle workings located at an elevation of 2,650 feet on the northeast side of the Yalakom River. Interest in this property centred on the cinnabar which occurs as blebs and grains in dolomite stringers. A 23½-mile motor-road leads from Lillooet to a trail, 3½ miles long, which continues along the north side of the Yalakom River to the workings.

References:
Leech, G. B.: B.C. Dept. Mines, Bull. No. 32, 1953, p. 20.
Stevenson, John S.: B.C. Dept. Mines, Bull. No. 5, 1940, pp. 64-66.

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* This map may be obtained from the British Columbia Department of Lands and Forests, Victoria.

Jade

Jade (nephrite) boulders have been found in the Bridge River gravels from the mouth of the river to Minto Mines, and in the Fraser River around Lillooet. Jade is found with agate and jasper in the gravels of the Fraser River in the vicinity of the bridge and in the bar downstream. This bar extends south to the Seton River.

The nephrite is green and provides some good cutting material. One boulder of 800 pounds was collected from the area.

References:

Sinkankas, John: Gemstones of N. Amer., p. 246.
Can. Rockhound, vol. 5, No. 2, 1961, p. 13.
Western Homes, October, 1961, p. 21.

Placer Gold

In the middle of the 19th century placer gold deposits were worked in the bar and bench diggings along the Fraser River from Foster's Bar to Fountain and for some distance above. The gold was coarse compared with the finer flour gold found in the lower Fraser River. Many deposits produced very rich diggings with sizeable nuggets; some up to 6 oz. were recovered from the gravels near Lillooet. Other placer discoveries were made in the Bridge River and its tributaries, and in Cayoosh Creek.

Reference:

B.C. Dept. Mines, Bull. No. 21, 1946, pp. 22-23.

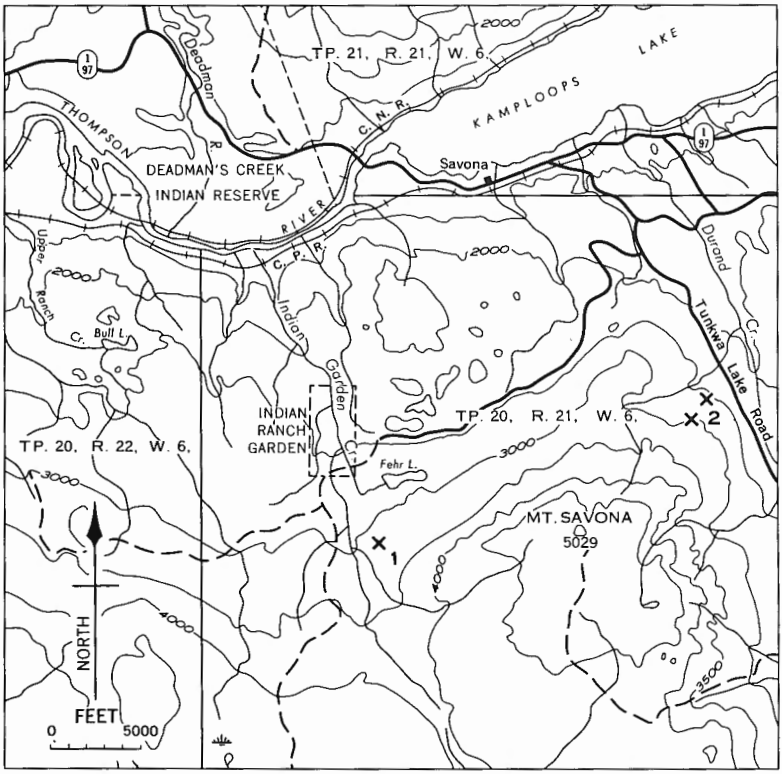
18. KAMLOOPS LAKE AREA

*(92 I/NE Kamloops Lake)**

Deadman River, Petrified Wood

Petrified wood occurs with agate along the face of a cliff on the west side of the Deadman River about 13 miles north of the junction of

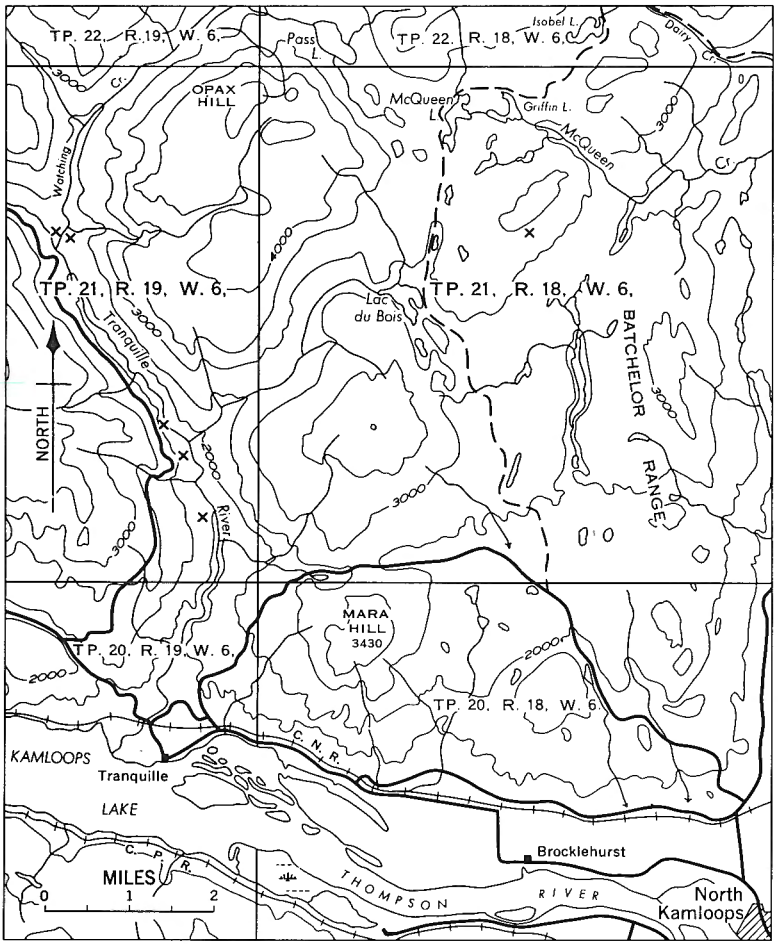
* This map may be obtained from the British Columbia Department of Lands and Forests, Victoria.



Collecting locality . . . ×

KAMLOOPS LAKE AREA AND SAVONA MOUNTAIN: 1. Jasper-agate-prehnite; 2. Green opal.

74277—5



KAMLOOPS LAKE AREA: Tranquille River agate.

the Deadman River road and Highway No. 1/97. Leave the highway at a point 4½ miles west of Savona and proceed north along the Deadman River road for a distance of 13 miles; pass through the gate on the pipeline (at two valves) and follow the old road which branches off to the left. The occurrence is about ½ mile up this road and on the west side of it.

Reference:
Can. Rockhound, vol. 6, No. 1, 1962, pp. 9, 10.

Savona Mountain

Jasper, agate and prehnite occur at a locality near Indian Garden Ranch, south of Savona. To reach the locality leave Highway No. 1/97 at a point 1¼ miles east of Savona and go south along the Tunkwa Lake road for 2.6 miles; turn right (west) along the Indian Garden Ranch road for 4 miles to a fork; follow the left fork for 0.9 mile to another fork; take the left fork again and proceed 0.8 mile to the point where the road crosses the pipeline. From here, walk north for about ¼ mile to the occurrence at the top of the hill.

Green opal occurs as nodules on the northeast slope of Savona Mountain. The occurrence is on the west side of the Tunkwa Lake road at a point 1¾ miles south of the junction of the Indian Garden Ranch and Tunkwa Lake roads.

Reference:
Personal communication: D. J. Wells.

Hardie Mountain, Chalcedony

Chalcedony occurs as stringers and irregular masses in volcanic rocks in the Hardie Mountain area. Much of it is coloured pink by the inclusion of fine grains of cinnabar.

Two sets of claims have been prospected in the area; they are held by Thomas Hardie and Jack Smith of Red Lake and D. B. Sterritt and Gordon F. Dickson of Kamloops. The work was done on the southeast side of Dickson Hill and the west side of Hardie Hill.

74277—5½

The deposit lies 4 miles north of Copper Creek Post Office; leave the Copper Creek-Red Lake road at a point approximately 6½ miles from Copper Creek P.O. and proceed south for about a mile to the mining camp between Dickson Hill and Hardie Hill.

Reference:
Cockfield, W. E.: GSC, Mem. 249, 1948, pp. 100-103.

Tranquille River, Agate

Jasper and agate occur in the gravels of Tranquille River and along the high cliffs in the general area where the Tranquille River and Watching Creek meet, approximately 6 miles north of Kamloops Lake. A trail leading near the east side of the river to the collecting site leaves the North Kamloops-Tranquille road at a point just under 9 miles west of North Kamloops.

Reference:
Personal communication: D. J. Wells.

Placer Platinum, Gold

Platinum and gold have been reported from the gravels of Tranquille River and from Criss Creek near its mouth on the Deadman River.

Reference:
O'Neill, J. J. and Gunning, H. C.: GSC, Econ. Geol. Ser., No. 13, 1934, pp. 87-88.

Miscellaneous Occurrences

The following minerals have been reported from the Kamloops Lake area: agate, opal, chalcedony and jasper at Dufferin Hill and at Savona Lake; fire opal in the beds and along the banks of Deadman River; petrified wood at McGlashan Lake and in the Petrified Forest (Robbins Range).

Reference:
Sinkankas, John: Gemstones of N. Amer., pp. 109, 323.

19. MONTE LAKE AREA

*(82 L/SW Vernon; 82 L/NW Shuswap Lake)**

Robbins Creek, Agate, Amethyst

Agate nodules and geodes containing amethyst occur in basalt rock near Robbins Creek. Access is by Robbins Creek road which leaves Highway No. 97W at a point 6½ miles south of the junction with Highway 1/97.

Reference:
Personal communication: D. J. Wells.

Monte Lake, Agate

Moss agate occurs as nodules in the bluffs on the east side of Highway No. 97 opposite the south end of Monte Lake. The deposit was discovered when the highway was being constructed.

Reference:
Can. Rockhound, vol. 1, No. 4, 1957, p. 7.

Douglas Lake Road, Agate

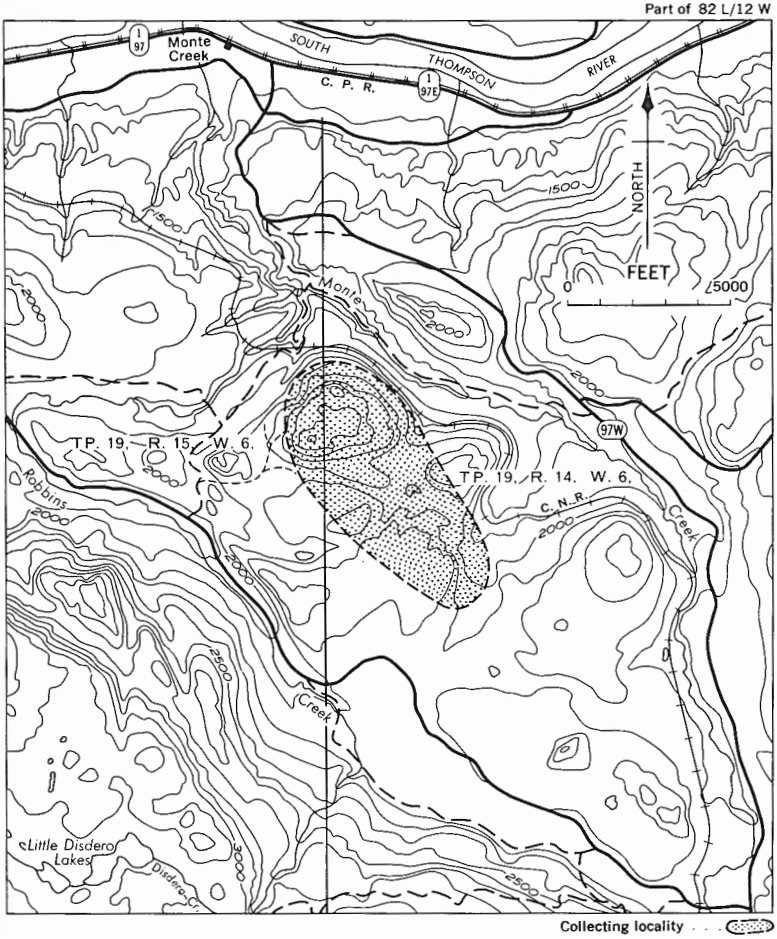
Agate occurs as nodules in the bluffs on the west side of the Douglas Lake road at a point 6.9 miles south of the junction with Highway No. 97W (one mile west of Westwold village).

Reference:
Western Homes, October, 1961, p. 22.

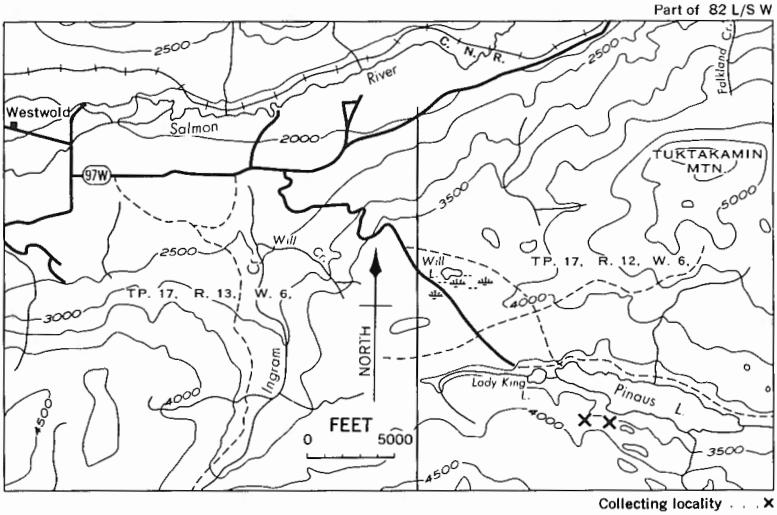
Pinaus Lake, Jasper, Agate

Jasper and agate occur in basalt rock along a steep bluff on the south side of Pinaus Lake. The jasper varies in colour from brown to black and includes yellow and green shades. A heavy sledge is required for

* These maps may be obtained from the British Columbia Department of Lands and Forests, Victoria.



MONTE LAKE AREA: Robbins Creek amethyst, agate.



MONTE LAKE AREA: Pinaus Lake agate, jasper.

removing large specimens from the rock. To reach the occurrence leave Highway No. 97 at a point 6 miles west of Falkland and proceed south along a dry-weather road for a distance of 6 miles to a lodge at the northwest end of Pinaus Lake. The locality is south of the lake.

Reference:

Personal communication: D. J. Wells.

Falkland, Gypsum Quarry

Massive white translucent gypsum occurs at the Gypsum, Lime and Alabastine, Canada Limited quarry at Falkland on the north side of the Salmon River at an elevation of 500 feet above the Kamloops-Vernon railway (CPR). It is not in operation now.

Reference:
Cole, L. H.: Mines Br., Pub. No. 714, 1930, p. 58.

20. SHUSWAP LAKES AREA

*(82 L/NW Shuswap Lake)**

Squilax Mountain, Agate

Fine blue agates including banded and plume varieties have been found along the south slope of Squilax Mountain. Similar material occurs on the north side of the mountain in the bed of a creek which runs into the Little River fishing camp.

Reference:
Personal communication: D. J. Wells.

Little River, Carnelian

Good quality carnelian occurs in the bed of the Little River.

Reference:
Western Homes, October, 1961, p. 22.

Adams Lake, Agate

Agate occurs along the west shore of Adams Lake between Agate and Squam bays. Adams Lake is situated immediately north of Shuswap Lake.

Reference:
Western Homes, October, 1961, p. 21.

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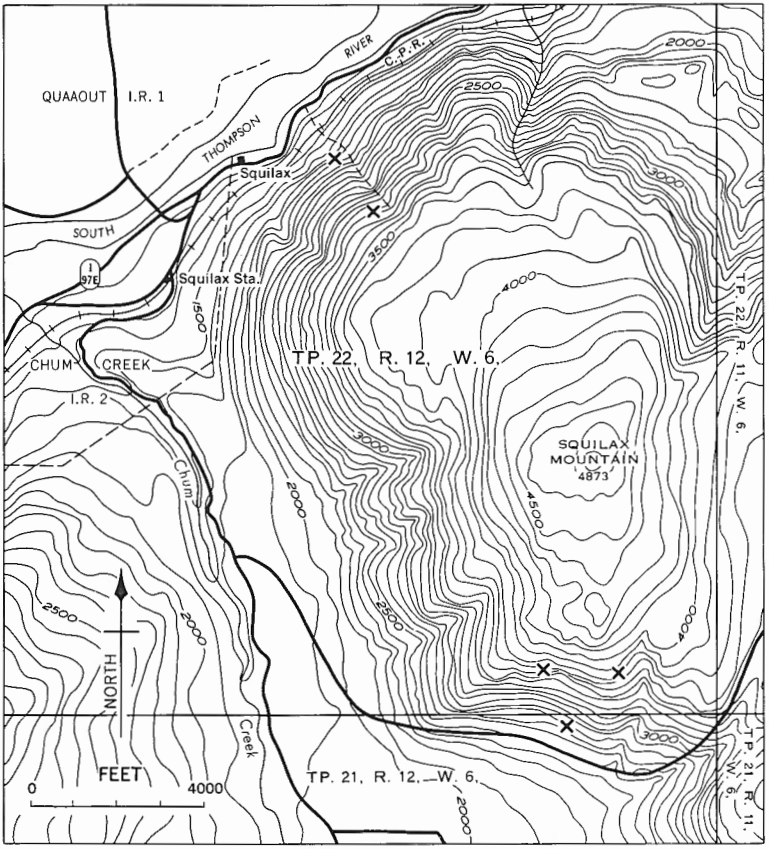
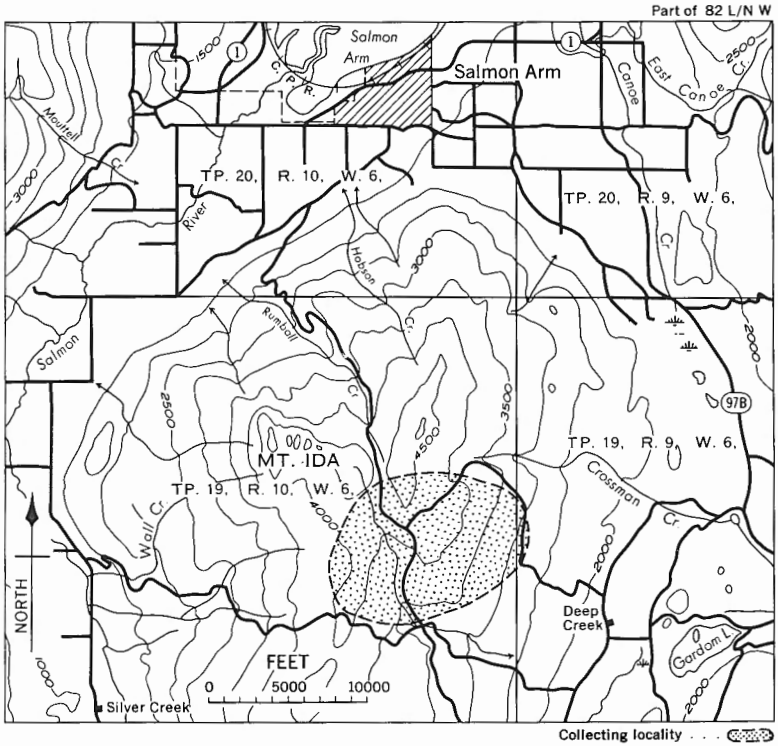
* This map may be obtained from the British Columbia Department of Lands and Forests, Victoria.



SHUSWAP LAKES AREA: Agate.



SHUSWAP LAKES AREA: Mount Ida agate, jasper.

Mount Ida, Agate, Jasper

An occurrence of pink agate and jasper was recently discovered on the southern slopes of Mount Ida in Mount Ida Provincial Park. The material occurs at several places along the mountain slope.

Reference:
Personal communication: D. J. Wells.

Placer Gold

Placer gold has been recovered from the gravels of Scotch Creek which flows into Shuswap Lake from the north.

Reference:
Jones, A. G.: GSC, Mem. 296, 1959, p. 139.

21. REVELSTOKE-BIG BEND AREA

(82 NW Vernon-Golden; 83 SW Tête Jaune-Edson)

Kyanite

Pegmatite boulders containing blue kyanite crystals have been found in a slide area extending for a distance of approximately 1,000 feet between Death and Priest rapids along the Columbia River, 40 miles north of Revelstoke.

Reference:
O'Grady, B. T.: B.C. Min. Mines, Ann. Rept., 1931, pp. 148-49.

Blades of blue kyanite occur in a garnet-kyanite schist exposed at intervals in road cuts along the Big Bend highway in an area extending southward from Potlatch Creek located near the top of the Big Bend of the Columbia River.

Reference:
Personal communication: J. E. Reesor.

Mount Begbie, Tourmaline

Tourmaline, green beryl, red garnet and lepidolite occur in pegmatite dykes which outcrop on Mount Begbie. The tourmaline is commonly in thick black prismatic crystals up to 3 inches long, but may also occur as red and green crystals up to 1 inch long. Red and green varieties

were seen associated with the beryl and garnet in a small dyke on the northeast side of Mount Begbie, on the lower edge of the great snow field. Mount Begbie is situated west of the Columbia River about 8 miles south of Revelstoke.

Reference:
Jones, A. G.: GSC, Mem. 296, 1959, p. 126.

Illecillewaet, Talc

Sub-translucent greenish grey talc has been uncovered in a prospect pit located ¼ mile west of Illecillewaet station (CPR), and from the north side of a railroad-cut near this station.

Reference:
Wilson, M. E.: GSC, Econ. Geol. Ser., No. 2, 1926, p. 50.

Placer Gold

Placer gold has been recovered from the Goldstream River and from French, McCulloch, Camp and Carnes creeks north of Revelstoke. The gold was mostly rough and coarse; one nugget found on French Creek was valued at $253.

Reference:
B.C. Dept. Mines, Bull. No. 21, 1946, p. 25.

22. YOHO AND KOOTENAY PARKS

(82 N/SE Yoho)

Ice River

Sodalite occurs with pink and yellow cancrinite in the nepheline-syenites which outcrop at the following localities in the Ice River district: Mollison Creek valley about ¾ mile from the mouth of the creek; and ½ mile south of the first large creek which enters Ice River from the west side of the valley.

Aegirine in radiating crystals, some up to 11 inches in length, occur with widely scattered corundum crystals in the nepheline-syenite peg-

matites near the top of Garnet Mountain. On the west side of the mountain, similar rock-outcrops contain crystals of pyroxene, nepheline, black garnet, corundum and kyanite.

Other minerals reported from the district include apatite, titanite (in small honey-coloured crystals), scapolite, olivine, epidote, zoisite, zeolites, zircon, vesuvianite, wollastonite, quartz crystals, spinel and periclase.

Ice River is to the east of the Trans-Canada Highway in the southern end of Yoho National Park.

Reference:

Allan, J. A.: GSC, Mem. 55, 1914, pp. 124-180.

Mount Whymper, Talc

Greenish grey, massive and fibrous talc occurs at the Silver Moon claims. The claims are within Kootenay National Park and are on the east slope of Mount Whymper which is north of the Vermilion River near the Alberta-British Columbia boundary, about 25 miles from Banff. The claims are about 750 feet above and to the north of the Windermere highway. Other exposures of talc and steatite have been reported from various places adjacent to the interprovincial boundary.

Reference:

Wilson, M. E.: GSC, Econ. Geol. Ser., No. 2, 1926, p. 51.

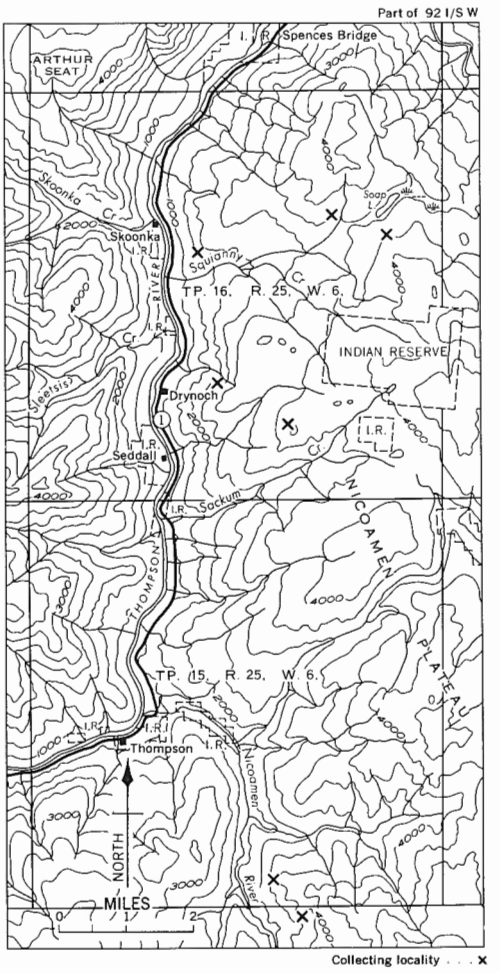
23. SPENCES BRIDGE-HOPE AREA

(92 I SW Lytton; 92 H Hope)*

Shaw Springs and Nicoamen River, Agate

Blue-grey banded agate occurs as nodules at the Drynoch slide, on the north side of Squianny Creek, near Soap Lake, and on a slope north

* This map may be obtained from the British Columbia Department of Lands and Forests, Victoria.



HOPE-LYTTON AREA: "Shaw Springs" and Nicoamen River.

of Sackum Creek. The same variety occurs as nodules weighing up to 21 pounds on the east bank of the Nicoamen River.

Reference:
Personal communication: D. J. Wells.

Agate and nephrite jade have been found in the gravels of the Thompson River between Lytton and Spences Bridge.

Reference:
Sinkankas, John: Gemstones of N. Amer., pp. 246, 323.

Vesuvianite

Vesuvianite occurs as a fine-grained aggregate in brown, grey, yellow-green and apple-green shades. Much of it is opaque, but some of the apple-green variety is translucent and may have gem possibilities. The vesuvianite is found in serpentine rock on the ridge 2 miles southwest of Skihist Mountain at the Green Gold Jade claims. A 16-mile trail from Kanaka leading westward to the occurrence follows Kwoiek Creek for approximately 7 miles, then branches off in a slightly northwesterly direction. Kanaka station (CPR) is located on the west side of the Fraser River about 9 miles south of Lytton.

Reference:
Duffell, S. and McTaggart, K. C.: GSC, Mem. 262, 1952, p. 114.

Fraser River Deposits

Gravel bars along the Fraser River from Hope to Lytton yield jade (nephrite), agate, jasper, garnet, and rhodonite. The jade occurs as boulders, sometimes weighing several pounds; the material is used by local lapidarists for ornamental purposes. Some of the more accessible areas are: Hope-Greenwood area, Spuzzum, Boston Bar, Anderson Creek, Gold Nugget Bar, Lytton. These localities are accessible between October and April when the water is low.

Reference:
Western Homes, October, 1961, p. 21.

Talc

A dark green somewhat translucent talc occurs at the Pacific Talc and Silica Company property (Gisby claims) on the west side of the Fraser River 3 miles below Keefers and 2 miles above Chaumox stations (CPR). There are exposures of similar material along the Nahatlatch River.

Reference:
Wilson, M. E.: GSC, Econ. Geol. Ser., No. 2, 1926, pp. 40-45.

Placer Gold

Rich deposits of 'heavy' gold were worked along the Fraser River from Boston Bar to Sisco Flat; Hills Bar, below Yale, is reported to have yielded more gold than any other single locality on the Fraser. Placers were also worked in Siwash Creek and in the Coquihalla River.

Reference:
B.C. Dept. Mines, Bull. No. 21, 1946, pp. 22-23.

24. HIGHLAND VALLEY AREA

(92 I/11 E Ashcroft)

Bethlehem Copper Property

Several minerals of possible interest to the collector are associated with the Highland Valley copper deposits. Ore minerals include chalcopyrite, bornite, pyrite, molybdenite, chalcocite, tetrahedrite, galena, linnaeite, hematite and scheelite. Malachite and, less commonly, azurite occur as coatings and films; botryoidal masses and fibrous aggregates of malachite fill vugs and joints at the Iona and Jersey zones (Bethlehem Copper Corporation property). Chrysocolla in banded crusts up to ½ inch thick occurs in joints and fractures at the Krain property, and small masses of it enclose radiating stilbite crystals in the Iona zone. Native copper is associated with cuprite at the Krain property.

Other minerals include: yellowish to greenish brown and black tourmaline associated with quartz, and sometimes with fine-grained rutile crystals (Iona and Jersey zones and Jackson Basin property); prehnite along joints with epidote, bornite, chlorite (White zone), pale pinkish white prismatic crystals of leonhardite in masses 1 foot across; salmon pink radiating sheaves of stilbite; colourless to white rhombohedral crystals of chabazite; colourless to white vuggy masses of heulandite. Epidote and chlorite are commonly associated with the copper minerals. The Highland Valley mining area lies north of Witches Brook on the north side of South Forge Mountain. A road to the mine site leads north from the Highland Valley road just west of Quiltanton Lake. A gravel road connects the mining area with Ashcroft, 30 miles to the northwest, and with Merritt, 40 miles to the southeast. The mine is operated by Bethlehem Copper Corporation Limited.

Reference:

White, Wm. H., Thompson, R. M., and McTaggart, K. C.: Bull. C.I.M.M., vol. 50, No. 544, 1957, pp. 487-503.

25. ASPEN GROVE AREA

*(92 H/NE Tulameen; 92 I/SE Merritt)**

Chalcedony, Jasper

Chalcedony, epidote, jasper, and serpentine are of frequent occurrence in the copper prospects in the vicinity of Aspen Grove. White stalactitic chalcedony has been reported from the Maggie claim. Jasper occurs with epidote and native copper at the Copper Star claim 7½ miles north of Aspen Grove and a little to the east of the Merritt-Princeton road. The mineralized area has been exposed by stripping and open cuts.

References:

Johnston, R. A. A.: GSC, Ann. Rept. (New Ser.), vol. 16, 1904, pp. 75-77A.
Rice, H. M. A.: GSC, Mem. 243, 1947, p. 93.

* These maps may be obtained from the British Columbia Department of Lands and Forests, Victoria.

74277—6

Agate

Massive agate occurs in volcanic rock north of Aspen Grove. To reach the locality leave the Aspen Grove-Merritt road at a point 2 miles from Aspen Grove, and go up a logging road for about 1½ miles.

Reference:
Western Homes, October, 1961, p. 22.

26. VERNON AREA

*(82 L/SW Vernon)**

Whiteman Creek, Jasper

Fine-grained red jasper is found along the banks of Whiteman Creek upstream from the road which follows the west shore of Okanagan Lake.

Reference:
Western Homes, October, 1961, p. 22.

Camels Hump, Agate

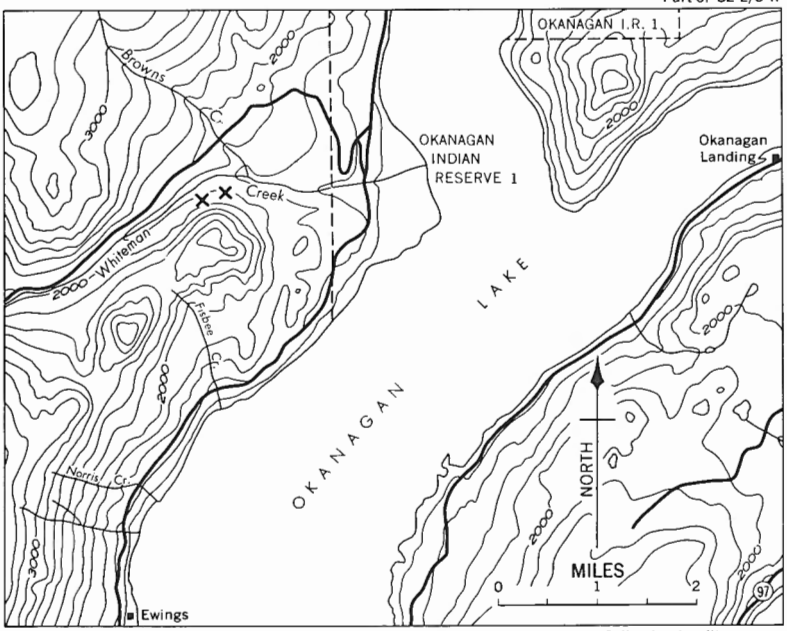
Nodules of banded agate in grey and black shades occur in the volcanic rocks which made up the prominent hill known as Camels Hump, 10 miles east of Lumby. The nodules are up to 6 inches in diameter. A few veinlets of opal are also found in these rocks.

Reference:
Jones, A. G.: GSC, Mem. 296, 1959, p. 161.

Staurolite

Staurolite occurs as thick prisms up to 3 inches long in a staurolite-kyanite gneiss. The staurolite crystals, which are reddish brown to

* This map may be obtained from the British Columbia Department of Lands and Forests, Victoria.



VERNON AREA: Jasper.

black, show prominently in the lighter rock. Cruciform twins are common. The kyanite crystals are up to 2 inches or more in length. Potential collecting places are: 2 miles southwest of Sugar Lake; 5 miles southeast of Sugar Lake; the hills east of Armstrong; and near Revelstoke.

Reference:

Jones, A. G.: GSC, Mem. 296, 1959, pp. 161-162.

74277—6½

Placer Gold

Placer gold has been worked in several of the streams in the Vernon area; some streams also have garnetiferous sand. The following creeks are reported to carry gold: Whiteman, Bouleau, Siwash, Equesis, Moffat, Newport, Winfield, Harris and Cherry.

Reference:
Jones, A. G.: GSC, Mem. 296, 1959, pp. 136-138.

27. KELOWNA AREA

*(82 E/NW Kelowna)**

Agate

Agate nodules occur on a bluff which faces Okanagan Lake at a locality just north of the old ferry landing at Westbank.

Reference:
Western Homes, October, 1961, p. 22.

28. LIGHTNING PEAK

*(82 E/NE Upper Kettle River)**

Olivine

Olivine occurs in basalt near the top of Lightning Peak. The crystals are reported to be clear, of a good colour and up to 1 inch across. The basalt is exposed near the old St. Paul property. (Personal communication: R. M. Thompson.)
Lightning Peak is in the southern Monashee Mountains. A 16-mile road to the mountain leads west from the Lumby-Edgewood road (Highway No. 6) at a point approximately 21½ miles from Edgewood.

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* This map may be obtained from the British Columbia Department of Lands and Forests, Victoria.

29. KASLO AREA

(82 F Nelson; 82 K Lardeau)

Rhodonite

Pink rhodonite is associated with carbonates, manganese oxides and garnet in quartz veins at the Harp group of claims located less than 1 mile to the east and about 350 feet above Zwicky station (on the Canadian Pacific railway, west of Kaslo). Some work was done on these claims which in 1932 belonged to Mr. W. J. Murphy of Kaslo.

Reference:
Hanson, G.: GSC, Econ. Geol. Ser., No. 12, 1932, p. 111.

Fluorite

Purple and pink fluorite is reported to be abundant at the Early Bird mineral claim situated on the west shore of Kootenay Lake, 2 miles north of Ainsworth. It occurs as cubes and as masses with calcite in the galena-sphalerite deposits. The property was worked for silver at about the time of World War I.

Reference:
Schofield, S. F.: GSC, Mem. 117, 1920, pp. 34, 41-42.

Marble

Mottled blue marble suitable for ornamental purposes was quarried at two places near Kootenay Lake: at the Canadian Marble and Granite Works property near Marblehead (8 miles north of Lardeau), and at a quarry on the south fork of Kaslo Creek, 5 miles from Kaslo.

Reference:
Parks, Wm. A.: Mines Br., Pub. No. 452, vol. 5, 1917, pp. 128-129, 138-139.

Placer Platinum, Gold

Platinum and gold have been reported in the gravels of the Lardeau River, Five Mile Creek and Canyon Creek all northwest of the north end of Kootenay Lake.

Reference:
O'Neill, J. J. and Gunning, H. C.: GSC, Econ. Geol. Ser., No. 13, 1934, p. 100.

30. SKOOKUMCHUCK CREEK AREA

(82 F/16 Dewar Creek)

Beryl

Blue-green beryl crystals (mostly shattered) and black tourmaline crystals occur in the pegmatites in the White Creek Batholith along the north side of Skookumchuck Creek, particularly in the area between Burnt Creek and the next major tributary of the Skookumchuck to the west. A road leads westward along the north side of Skookumchuck Creek from Torrent, a CPR station north of Skookumchuck; the distance from Torrent to the occurrence is approximately 25 miles.

Reference:
Personal communication: J. E. Reesor.

Pale, glassy crystals of beryl are reported to occur north of the first west fork of Burnt Creek. One crystal from this area measured 2 inches across and several inches in length. Beryl also occurs in the pegmatites north of Burnt Creek, about 2 miles upstream from the other locality. In these occurrences it is associated with abundant black tourmaline; muscovite and garnet are plentiful.
Burnt (Greenland) Creek enters Skookumchuck Creek from the north at longitude 116°9′.

Reference:
Mulligan, R.: GSC, Paper 60-21, 1960, pp. 11-12.

31. CANAL FLATS AREA

(82 J/4 E, W Canal Flats; Windermere—Map No. 4G)*

Lussier River, Gypsum

Gypsum outcrops at several places along the banks of the Lussier River and the immediate vicinity. It is fine- to medium-grained ranging in colour from white to grey, often with alternating light and dark laminae. At some localities a medium grey anhydrite is associated with the gypsum. Particles of native sulphur occur with gypsum at two localities: on the east bank of the Lussier River 1 mile above Roam Creek (the gypsum here forms steep slopes and bluffs), and on the same side of the river 1¼ miles south of Mutton Creek. Selenite crystals in earthy gypsite are reported from two outcrops: one on the west bank of the Lussier River 800 feet below Roam Creek and the other on the west side of Coyote Creek Valley, 4 miles above the mouth of Coyote Creek and 2½ miles east of the Lussier River occurrence.

Reference:
Leech, Geoffrey B.: GSC, Paper 54-7, 1954, pp. 29-30.

Kootenay River, Gypsum

Extensive gypsum deposits are found along the Kootenay River from 5 to 9½ miles northeast of Canal Flats; in one place the east bank of the river is made up of a continuous cliff of gypsum extending for almost a mile. Mining operations are carried on in two places in the area: at the Western Gypsum Products Limited Quarry located ¼ mile west of the Kootenay River at a point ½ mile south of Nine Mile Creek (a ¼-mile road connects this property with the main Kootenay River road at a point about 8½ miles northeast of Canal Flats); and, at the Columbia Gypsum Products Quarry situated north of Windermere Creek and about 10 miles (by road) east of Athalmer.

* These maps may be obtained from the British Columbia Department of Lands and Forests, Victoria.

Reference:
Henderson, G. G. L.: B.C. Dept. Mines, Bull. No. 35, 1954, pp. 61-64.

32. ZEBALLOS, VANCOUVER ISLAND

(92 E/15 E Zeballos; 92 L/2 W Woss Lake)

Native Gold

Excellent specimens of flake gold in calcite vugs have been obtained from the quartz-feldspar veins at the Golden Horn group of claims. Other minerals present are arsenopyrite, sphalerite, and small glassy quartz crystals. The mineralized area has been exposed at intervals by a series of open cuts at an altitude of 1,875 to 2,240 feet on the south side of Nomash Valley on Curly Creek. Take the trail from Zeballos first along the Zeballos River, then along the Nomash River where, at an altitude of 410 feet, a pack-horse trail branches off and continues up Curly Creek to the main camp at 1,460 feet. Gold has also been found in the gravels of the Zeballos River and its tributaries.

Reference:
Bancroft, M. F.: GSC, Paper 40-12, 1940, pp. 7, 35.

33. TEXADA ISLAND

*(92 F Alberni-Powell River)**

Garnet

Garnet crystals (andradite) occur in crystalline limestone with diopside, tremolite, epidote and the metallic minerals—native silver, gold, chalcopyrite, bornite, pyrrhotite, tetrahedrite, molybdenite and magnetite—at the following copper mines in the northern part of Texada Island: (1) Marble Bay mine on the east coast of Texada Island, a short distance west of Sturt Bay, at an elevation of 55 feet, (2) Cornell mine near

* These maps may be obtained from the British Columbia Department of Lands and Forests, Victoria.

the head of Emily Lake, about 1¼ miles southeast from Vananda Bay at an elevation of 239 feet, (3) Copper Queen mine situated ¾ mile southeast from Vananda Bay, and (4) Little Billy mine close to the east coast, about ½ mile southeast of Vananda Bay.

Reference:
McConnell, R. G.: GSC, Mem. 58, 1914, pp. 48-64.

Marble Quarries

Delicate pink, red to chocolate brown and greenish crinoidal marble occurs at the Malaspina Quarries Company property located at lot 339, group 1, on a ridge west of Anderson Bay near the southern tip of the island. Another quarry in this area, Nootka Quarries Limited, produces a pink and white marble. It is situated on lot 26, 100 feet above sea level and about 900 feet from the head of Anderson Bay. Outcrops of a pure white to greyish and bluish marble are found in the northern part of the island in an area extending from the northern tip southward for a distance of 6 miles, in the Davis Bay and Crescent Bay areas. At one time a quarry was operating in the southwestern corner of Blubber Bay.

Reference:
Parks, Wm. A.: Mines Br., Pub. No. 452, vol. 5, 1917, pp. 150-162.

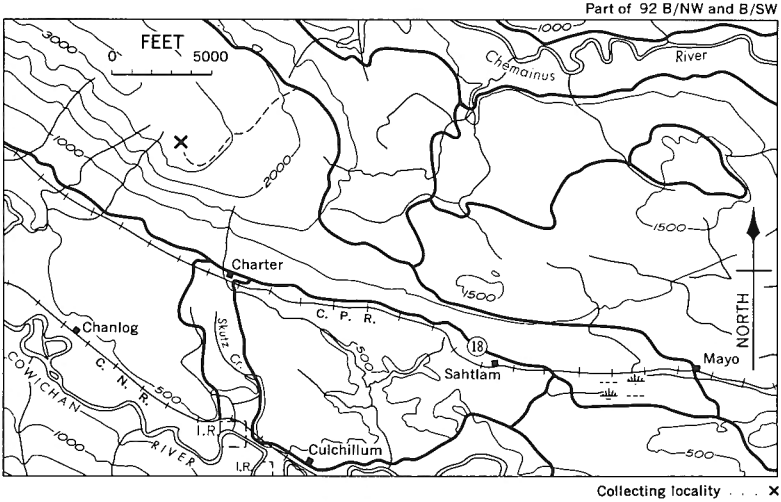
34. COWICHAN LAKE AREA

*(92 B/NW, SW Victoria; 92 C/16 Cowichan Lake)**

Rhodonite

Rhodonite occurs as lenses, veinlets and irregular masses in cherty rocks in the Cowichan Lake area, ranging from pink to brick red in colour, and associated with rhodochrosite, garnet, manganese silicates and red jasper. The most popular collecting area is at Hill 60 which is 4 miles

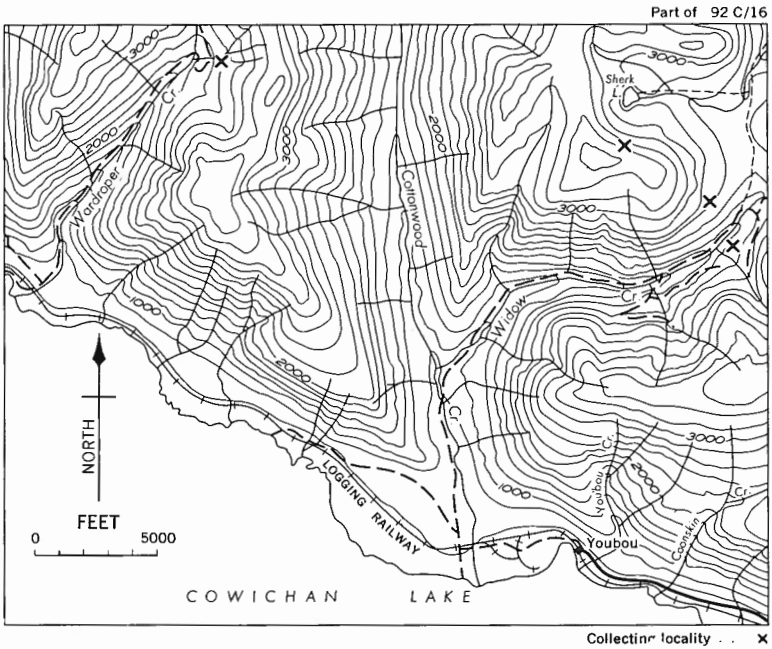
* These maps may be obtained from the British Columbia Department of Lands and Forests, Victoria.



COWICHAN LAKE AREA: Hill 60 rhodonite deposit.

east of Lake Cowichan village. The deposit is located near the top of a steep north slope of Cowichan Valley at an elevation of approximately 2,600 feet. Leave the Duncan-Cowichan Lake Highway (No. 18) at a point 8 miles from Duncan and proceed north to Paldi Post Office; from here a 7-mile trail leads westward to the workings. Lenses of rhodonite in cherty tuffs occur along the eastern wall of a steep canyon, the head of which is approximately 500 feet west of the pit. Other occurrences of rhodonite in the Cowichan Lake area are as follows:

Stanley Creek—about 500 yards east of the creek, at a point 1.8 miles up the creek from its mouth in the Cowichan River.



COWICHAN LAKE AREA: Rhodonite.

Meade Creek—on the east side. This deposit has been exposed by two open-cuts, 200 yards apart. Proceed up the Meade Creek trail for 3½ miles from the Lake.

Cowichan-Youbou road—turn right (east) and continue to the end of the trail (about 1 mile). The pits are about 1,100 feet due east of this point.

Widow Creek—on the east side of the creek at 2,100 feet; on the west side of the creek at 2,600 feet lies the Cottonwood deposit.
Sherk Lake—about ½ mile south of the lake at 3,500 feet.
Shaw Creek—on the west side of the creek at 1,800 feet (the former Black Prince deposit). It lies ½ mile west of the creek at a point 7 miles up the logging road from the railway near the north shore of Cowichan Lake.
The Widow Creek, Wardroper Creek and Sherk Lake deposits are indicated on the map.

Reference:
Fyles, J. T.: B.C. Dept. Mines, Bull. No. 37, 1955, pp. 67-69.

35. VICTORIA AREA

(92 B/5 E Sooke; 92 SW Nootka-Nanaimo; 92 SE Victoria-Vancouver)

Wolf Creek, Talc

A mottled grey and pale green sub-translucent talc occurs at the property of the Eagle Talc and Mining Company located ½ mile above the mouth of Wolf Creek, a tributary of the Sooke River. The property may be reached by taking a 5½ mile trail which leaves the Sooke road 8 miles from Victoria.

Reference:
Wilson, M. E.: GSC, Econ. Geol. Ser., No. 2, 1926, pp. 33-35.

Agate, Jasper

Jasper and agate may be found on the beaches along the shores of Vancouver Island in the vicinity of Sooke, and from Victoria northward for about 8 miles.

Reference:
Sinkankas, John: Gemstones of N. Amer., p. 323

Placer Gold

Several of the streams and rivers in the southern part of the island were once worked for gold. These include Loss Creek, Leech, Jordan, Gordon, Sooke, Sombrio and San Juan rivers.

Reference:
B.C. Dept. Mines, No. 21, 1946, pp. 23-24.

36. FRASER RIVER, CHILLIWACK TO HOPE

(92 H Hope)

Jade, Rhodonite, Jasper

The gravels of the lower Fraser River from Chilliwack to Hope have produced a variety of the type of mineral specimens suitable for fashioning into gem stones. These include boulders of a dark blue quartz; football size specimens of rhodonite; nephrite jade boulders in shades of green; and jasper pebbles. The jasper occurs notably at Ruby Creek. Other popular collecting areas are at Waleach, Seabird Island, and at Flood.

References:
Sinkankas, John: Gemstones of N. Amer., pp. 242, 262, 323.
Wells, D.: Quart. Bull. Lap. Soc. B.C., vol. 3, No. 1, 1959, p. 14.
Western Homes, October, 1961, p. 21.

Placer Gold

The discovery of rich deposits of gold in the bars of the lower Fraser River led to the gold-rush in the area in the 1850's. The placers here produced a fine, or flour, gold. Maria Bar near the mouth of the Chilliwack River was the lowest bar on which work was done.

Reference:
B.C. Dept. Mines, Bull. No. 21, 1946, p. 22.

37. HOPE-PRINCETON AREA

*(92 H/3 E Skagit; 92 H/NE Tulameen; 92 H/SE Princeton)**

Skagit Bluffs, Axinite

Wedge-shaped crystals (¼ inch in size) of axinite in violet, brown, and black colours are associated with white radiating aggregates of stilbite crystals, white prismatic laumontite crystals, and greenish white prehnite crystals in tuffs and calcareous rocks along the Hope-Princeton highway at Skagit Bluffs, in the road-cut near mile 24.

Reference:

Peebles, G. A.: U.B.C., Dept. Geol., B.A.Sc. thesis, 1957.

McCormack Flats

Agate and amethystine quartz occur in the soil at the top of a cliff at McCormack Flats. The occurrence is about 4 miles west of Princeton. To reach it leave the Hope-Princeton Highway at a point 3 miles from the Princeton post office and proceed west along a dirt road for about 1 mile to a tree with a large blaze, on the right side of the road; turn right (north) continuing beyond two short steep hills to a bluff overlooking the Tulameen River. Walk to the top of the cliff. A material known to local collectors as 'opalized bog' occurs in a vein near a collapsed coal shaft, 1.8 miles west of the agate occurrence.

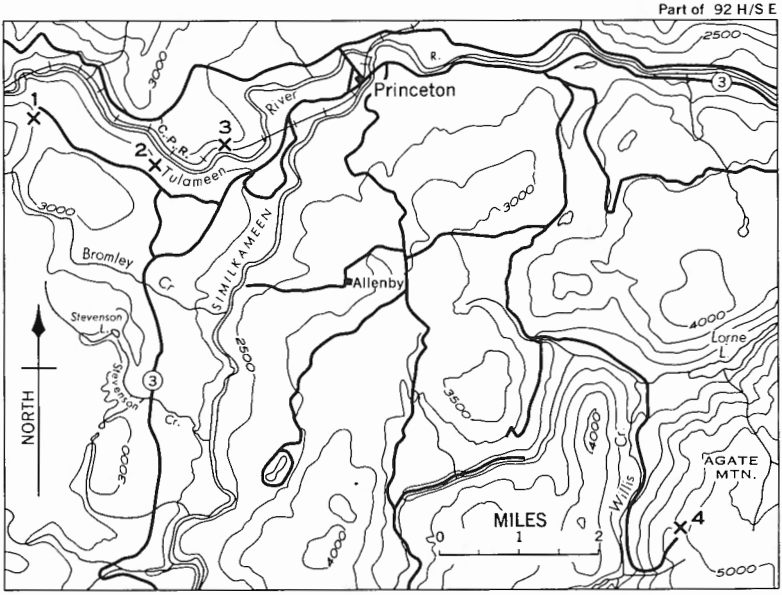
Reference:

Waddington, P. and Craig, G.: Can. Rockhound, vol. 6, No. 2, 1962, pp. 2, 10.

Vermilion Bluffs, Petrified Wood

Petrified wood occurs plentifully at Vermilion Bluffs, just west of Princeton. Much of the siliceous material replacing the wood is grey

* These maps may be obtained from the British Columbia Department of Lands and Forests, Victoria.



HOPE–PRINCETON AREA: 1. 2. McCormack Flats opal, agate; 3. Vermilion Bluffs petrified wood; 4. Agate Mountain.

agate. One agate nodule from this locality weighed 50 pounds and measured 17 by 12 by 8 inches; it was composed of smoky chalcedony from which smoky quartz crystals protruded.

Reference:

Sinkankas, John: Gemstones of N. Amer., p. 322.

Curry Ranch Opal

Common opal occurs as seams in rock exposed on a bluff west of the Curry Ranch buildings north of Princeton. The opal varies from milky

to shades of green or yellow. A 4-mile winding road from the Princeton airport leads north to the ranch.

Reference:
Personal communication: D. J. Wells.

Agate Mountain, Petrified Wood, Jasper

Petrified (opalized) wood and jasper occur at the 4,000 foot level on Agate Mountain. The deposit, recently staked by Mr. Graham Gibson of Princeton, is reached by a 6-mile road which leads south from the Princeton-Hedley Highway at a point 2 miles east of Princeton.

Reference:
Personal communication: D. J. Wells.

Sunday Summit, Petrified Wood

Petrified (agatized) wood occurs at the top of a bluff 300 yards west of Sunday Summit on the Hope-Princeton Highway. To reach the occurrence follow the path which leaves the highway at two culverts and leads up a bluff to the south.

Reference:
Western Homes, October, 1961, p. 22.

Miscellaneous Occurrences

Pebbles and boulders of chalcedony have been found in the gravels of Whipsaw Creek, Wolf Creek and the Similkameen River. Amethyst geodes have been reported along the Similkameen River near the International Boundary, and good quality wood opal in cavities in trachyte along the same river in the vicinity of Vermilion Forks. Plume agate has been found near D'Arcy Lake.

References:
Camsell, C.: J. Can. Mining Inst., vol. 14, 1911, p. 606.
Dawson, G. M.: GSC, Ann. Rept. (New Ser.), vol. 3, 1887-88, pp. 110-111R.
Sinkankas, John: Gemstones of N. Amer., p. 322.

Gold crystals from creeks in the Cariboo district, locality 10, British Columbia.

Barite from the Rock Candy mine, locality 39, near Greenwood, British Columbia.

Apophyllite from the Le Roi mine, Rossland, locality 40, British Columbia.

Coalmont, Amber

Transparent to translucent amber in shades of yellow, brown, green and black is associated with the lignite deposits at the Coalmont Collieries at Coalmont.

Reference:
Field, D. S. M.: J. Gemm., vol. 1, No. 3, 1947, pp. 8-9.

Sky Blue Lake, Honey Onyx

'Honey Onyx' (travertine) has been found one mile north of Sky Blue Lodge and one mile east of the highway. Sky Blue Lake is on the east side of Highway No. 5, north of Princeton.

Reference:
Western Homes, October, 1961, p. 22.

Placer Gold, Platinum

Placer gold was found on the Similkameen River, Granite and Lockie (Boulder) creeks; the largest nugget, valued at $900, came from Lockie Creek. Platinum was recovered as nuggets up to ½ ounce with gold from the Tulameen River, Granite, Cedar, Slate and Lawless (Bear) creeks.

Reference:
B.C. Dept. Mines, Bull. No. 21, 1946, p. 24.

38. PENTICTON AREA

*(82 E/SW Penticton)**

Rhodonite

Rhodonite occurs at the following localities: (1) with hausmannite, red orbicular jasper and pyrite cubes in a slide area near Keremeos. Take the

* This map may be obtained from the British Columbia Department of Lands and Forests, Victoria.

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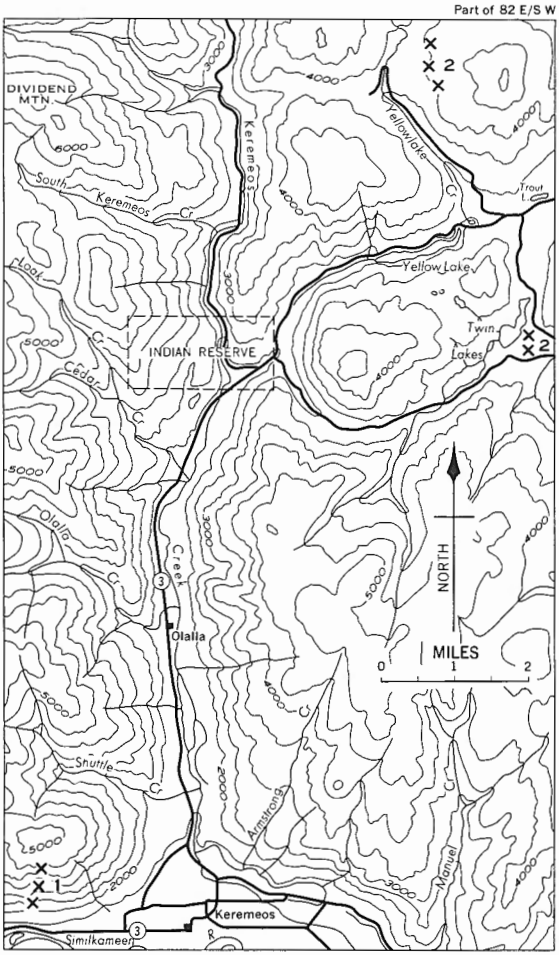

PENTICTON AREA, KEREMEOS AND YELLOW LAKE: 1. Keremeos rhodonite 2. Yellow Lake agate.

main highway from Princeton to Keremeos; turn left at the sign "Entering Keremeos" and proceed 200 yards to a gravel pit. The slide area is 200 yards from this point. (2) as thin veins and irregular masses in bright red chert associated with zones of hard black siliceous manganese ore at the Iron King No. 1 and Iron King No. 2 claims on the south side of the ridge separating the north and middle forks of Olalla Creek at an elevation of 3,800 to 5,300 feet. The claims were staked by Mr. S. J. Fairclough of Chilliwack. A 3½ mile trail connects the property with Highway No. 3 at Olalla. (3) with chert in an exposure about 1 mile up Orofino Creek from the Back road (personal communication: R. M. Thompson). The Back road leads north from Oliver along the west side of the Okanagan River. The distance from Oliver to the junction of Orofino Creek is about 8 miles.

References:

White, W. H.: B.C. Min. Mines, Ann. Rept., 1949, p. 132.
Lapidary J., vol. 13, No. 3, 1959, p. 414.

Agate, Jasper

Blue-grey agate occurs as nodules along a mountain slope about 2 miles north of Yellow Lake and as nodules and veins near Twin Lakes.

Reference:

Personal communication: D. J. Wells.

Agate geodes and good quality red jasper occur in basalt at a slide about 21 miles from Penticton. To reach it proceed west from Penticton along the Green Mountain road to Allen's Ranch (about 14 miles); one mile beyond the ranch, turn right onto a logging road and continue for about 6 miles to Clarke Lake. Walk along a trail to the north end of the lake, then north over a ridge and across a creek to the slide area. The total walking time is about an hour.

Very fine specimens of agate are reported to have been found in the gravel pit behind the high school in Oliver.

Reference:

Western Homes, October, 1961, p. 22.

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Chalcedony, Amethyst

Geodes containing amethyst crystals and grey chalcedony are found along the Green Mountain road, 8 to 10 miles west of Penticton. The geodes are said to measure up to 10 inches in diameter.

Reference:
Sinkankas, John: Gemstones of N. Amer., p. 322.

39. GRAND FORKS AREA

*(82 E/SE Grand Forks)**

Rock Candy Fluorite Mine

Large vugs and cavities in the mine are lined with barite, fluorite, quartz and calcite crystals. The fluorite is mostly green but purple and colourless varieties are also present. Barite occurs as pale yellow, perfectly transparent tabular crystals up to 4 inches long. Well-formed quartz crystals and kaolin are also found lining the vugs. Barite and fluorite occur in a cream coloured chert as well as in vugs. Other associated minerals are chert, quartz crystals, calcite, pyrite and kaolin. The minerals form veins which cut pink syenite rock.

The deposit, first worked in 1918, once the most important fluorite deposit in the province, has not been worked in recent years. The mine is situated on Kennedy Creek (a tributary of the Granby River) about 15 miles north of Grand Forks. To reach it, proceed north along the west side of the Granby River for a distance of 12 miles from Grand Forks; turn left (west) and continue for 7 miles to the mine.

Reference:
Dolmage, V.: GSC, Econ. Geol. Ser., No. 6, 1929, pp. 22-28.

* This map may be obtained from the British Columbia Department of Lands and Forests, Victoria.

Placer Gold, Platinum

Platinum in minute grains occurs with gold in the gravels of Boundary Creek and Rock Creek; the latter flows into the Kettle River at the town of Rock Creek to the west of Grand Forks.

Reference:
O'Neill, J. J. and Gunning, H. C.: GSC, Econ. Geol. Ser., No. 13, 1934, p. 98.

40. ROSSLAND AREA

(82 F/4 E, W Rossland-Trail)

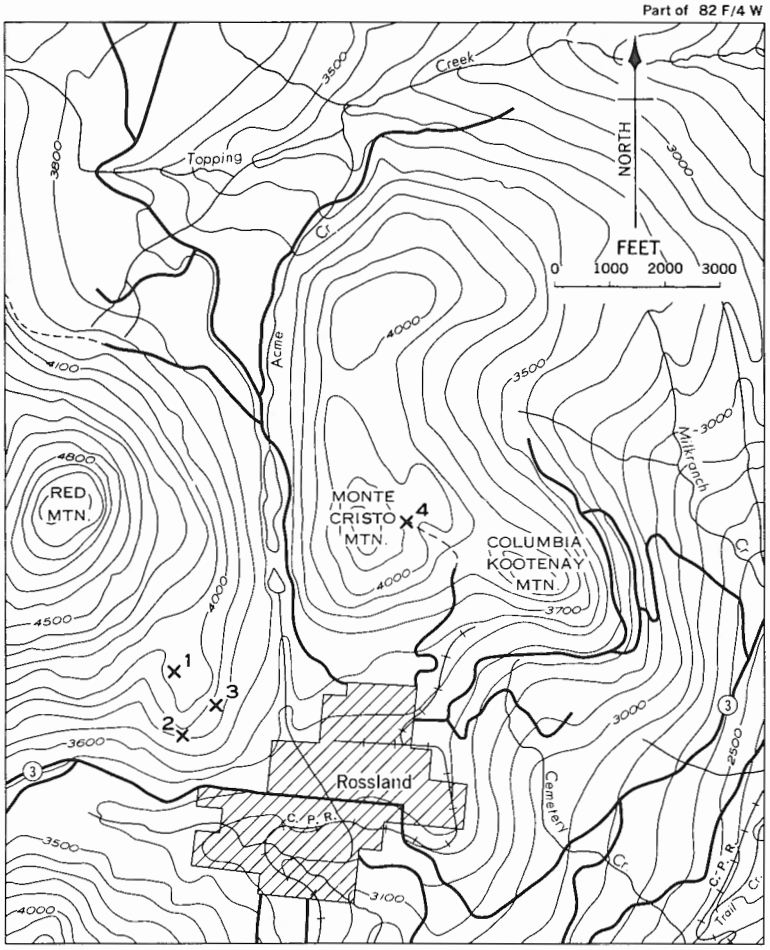
Erythrite, Garnet, Zeolite

Some minerals of interest to the collector are associated with the pyrrhotite-chalcopyrite orebodies of the Rossland area. These include erythrite, as bladed crystals, from the Evening Star claim; small deep red garnets (in vugs) and greenish coloured prehnite at the Le Roi mine; white, pink and reddish transparent apophyllite crystals in vugs and open fissures at the Centre Star mine; green prehnite at the War Eagle mine. Other minerals of interest in the area are wollastonite, actinolite, epidote, gmelinite, natrolite, laumontite, chabazite and serpentine. The Le Roi, War Eagle, and Centre Star mines are on the southern slope of Red Mountain overlooking the town of Rossland. The Evening Star claim is on the east slope of Monte Cristo Mountain, one mile north of the town. The deposits are not being worked at present.

Reference:
Drysdale, C. W.: GSC, Mem. 77, 1915, pp. 80-85, 96, 110, 145.

Scheelite

Scheelite crystals up to ¾ inch long occur in clusters in quartz veins cutting granodiorite. The crystals fluoresce blue. The veins are exposed by trenches at the Blue Moon (Blue Eyes) claim located near Stony Creek. The deposit was worked by Bayonne Consolidated Mines,



ROSSLAND AREA: 1. War Eagle claim; 2. Le Roi claim; 3. Centre Star claim; 4. Evening Star claim.

Limited for a short time (1942-43). It lies 3½ miles north of Rossland; access is by the Stony Creek road.

Reference:
Little, H. W.: GSC, Econ. Geol. Ser., No. 17, 1959, pp. 99-100.

Pend d'Oreille Placer Deposits

A celadine-green variety of corundum was reported in gravels of the Pend d'Oreille River by Johnston (1915), but the exact locality was not given. Platinum and gold are also carried by this river.

References:
Johnston, R. A. A.: GSC, Mem. 74, 1915, p. 79.
B.C. Dept. Mines, Bull. No. 21, 1946, p. 25.

41. MOYIE AREA

(82 G/5 W Moyie Lake)

Society Girl Mine

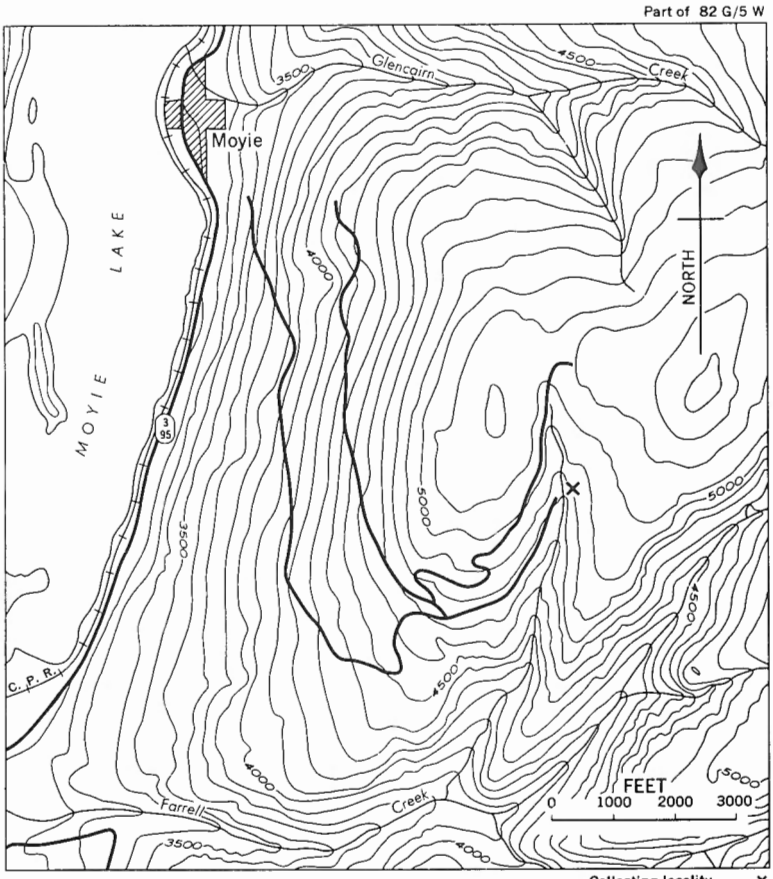
Pyromorphite occurs as single crystals, as barrel-shaped aggregates of crystals and in massive form. Both the yellow and green varieties are present. Cerussite in excellent white to colourless crystals and crystal aggregates is associated with pyromorphite and limonite. The primary ore minerals at this mine are galena and sphalerite. These are associated with pyromorphite and cerussite in veins cutting quartzite.
The property was worked for silver and lead in about 1911 and is at the headwaters of Farrell Creek, at an elevation of 5,000 feet; access is by road from Moyie village. It is connected by road.

Reference:
Schofield, S. J.: GSC, Mem. 76, 1915, pp. 109, 110, 127.

Placer Gold, Platinum

The following streams in the Moyie area are reported to carry platinum and gold: Moyie River, Weaver, Palmer Bar and Findlay creeks.

Reference:
B.C. Dept. of Mines, Bull. No. 21, 1946, p. 25.



MOYIE AREA: Society Girl mine.

ALBERTA

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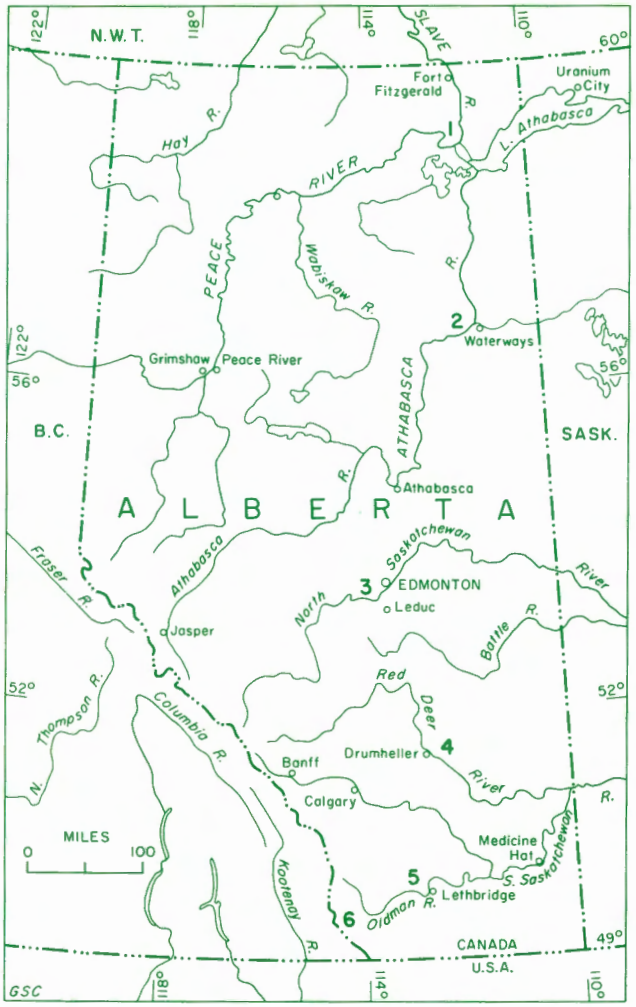

ROCK AND MINERAL COLLECTING AREAS, ALBERTA

1. Peace River. 2. McMurray. 3. Edmonton. 4. Drumheller 5. Lethbridge 6. Crowsnest Lake.

1. PEACE RIVER AREA

(84 P Peace Point)

Gypsum

White massive gypsum is exposed along the Peace River between Bonille rapids and Peace Point (59°7′N, 112°25′W), and below Peace Point for a distance of 5 miles. Satin-spar veins and beds are fairly common, but selenite is rare. Anhydrite is found as nodules and thin beds.

Reference:
McConnell, R. G.: GSC, Ann. Rept. (New Ser.), vol. 5, 1890, 64D.

2. McMURRAY AREA

(74 E Bitumount)

Native Sulphur

At La Saline, 28 miles north of McMurray and one-half mile east of the Athabasca River mineral springs have deposited halite, sulphur and gypsum in the calcareous tufa.

Reference:
McConnell, R. G.: GSC, Ann. Rept. (New Ser.), vol. 5, 1890, 35D.

3. EDMONTON AREA

(83 H Edmonton)

Placer Gold

Gold was recovered from the placer deposits in the North Saskatchewan River in the late 19th century. The operations extended for a distance of 60 miles above and below Edmonton.

Reference:
Ingall, E. D.: GSC, Ann. Rept. (New Ser.), vol. 10, 1897, 180S.

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4. DRUMHELLER AREA

(82 P Drumheller)

Selenite

Selenite as individual crystals and clusters of crystals has been found in the Bearpaw shales in the Red Deer River valley.

Reference:
Cole, L. Heber: Mines Br., Pub. No. 714, 1930, pp. 53-56.

Petrified Wood

Petrified wood occurs in bedrock and loose gravels along the valley of the Red Deer River, and in the gravel pits throughout the badland areas.

Reference:
Personal communication: B. A. Latour.

5. LETHBRIDGE AREA

(82 SE Cranbrook-Lethbridge)

Selenite

Clusters of selenite crystals occur in the unconsolidated clays at Barons, just north of Lethbridge.

Reference:
Cole, L. Heber: Mines Br., Pub. No. 714, 1930, pp. 53-56.

Placer Gold

Placer gold has been reported from the Oldman River, but the exact locality was not given.

Reference:
Ingall, E. D.: GSC, Ann. Rept. (New Ser.), vol. 10, 1897, p. 180S.

6. CROWSNEST LAKE AREA

(82 SE Cranbrook-Lethbridge)

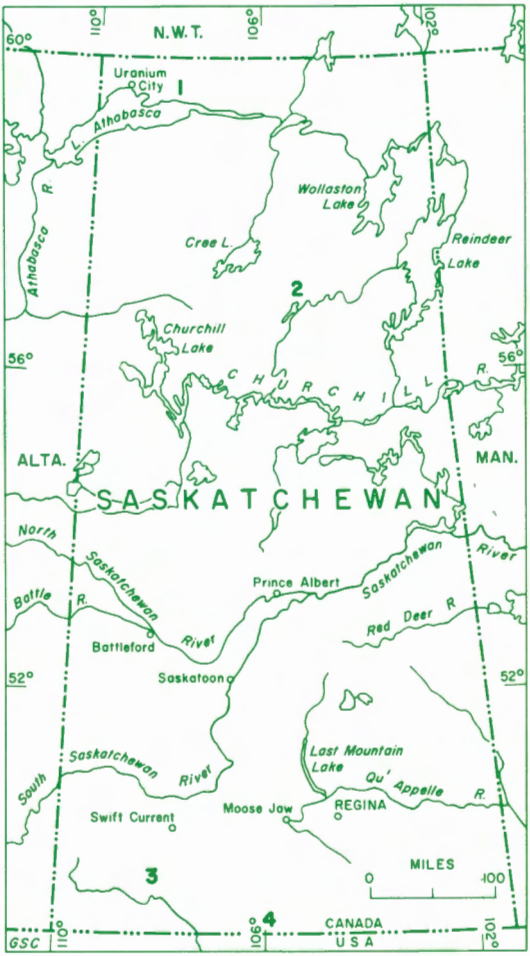
Analcite

Analcite crystals in trachyte have been reported from a railway-cut on the Crowsnest branch of the Canadian Pacific railway, 4 miles east of Crownest Lake (a small lake west of Coleman), also in a series of tuffs and breccias located in an area about 12 miles east of the Alberta-British Columbia boundary, 50 miles north of the International Boundary, and 5 miles west of the Livingstone Range.

Reference:

Knight, C. W.: The Canadian Record of Science, vol. 9, No. 5, 1904, pp. 265-278.

SASKATCHEWAN



ROCK AND MINERAL COLLECTING AREAS, SASKATCHEWAN

1. Mackintosh Bay
2. Foster Lakes
3. Cypress Hills
4. Wood Mountain

1. MACKINTOSH BAY

(74 N/8 Goldfields)

Garnet

Red garnet crystals up to 2 inches across occur in biotite schist on a prominent hill just north of the narrows of Mackintosh Bay. This bay is situated a few miles east of Goldfields, on the north shore of Lake Athabasca.

Reference:
Alcock, F. J.: GSC, Mem. 196, 1936, p. 13.

2. FOSTER LAKES AREA

(74 A Foster Lake)

Cordierite

Blue cordierite crystals measuring up to 1 and 2 inches in diameter have been found with garnet in pegmatite stringers in gneisses along the southern and eastern shores of Middle Foster Lake. Garnet-cordierite-sillimanite gneiss outcrops in several places along the western shores of Lower Foster Lake and above its northern end, but the size of the individual mineral constituents is usually less than an inch across. Associated with the pegmatites on the west shore of Middle Foster Lake are black tourmaline crystals measuring up to 3 inches long.

Reference:
Mawdsley, J. B.: Sask. Dept. Min. Res., Rept. No. 26, 1957, p. 29.

Scapolite

Honey-coloured and reddish brown scapolite are present as constituents of the calcareous metamorphic rocks which extend in a long band along the southern shoreline and through most of the islands of Chatwin Lake. In places, the honey-coloured scapolite makes up most of the rock.

Reference:
Mawdsley, J. B.: Sask. Dept. Min. Res., Rept. No. 26, 1957, p. 14.

3. CYPRESS HILLS AREA

(72 F Cypress; 72 G Wood Mountain; 72 J/5 E Swift Current)

Selenite

Selenite crystals up to 5 inches long occur in the shales exposed in the valley of Frenchman River, Swift Current Creek, Rush Lake Creek, Belanger Creek (about ½ mile east of Cypress Lake), Woodpile Creek (near the U.S. border), Battle Creek, and the north shore of Cypress Lake. In the Rush Lake Creek beds, they occur as radiating crystals incrusting large arenaceous nodules. In some of these localities fibrous gypsum, barite (as nodules of radiating fibres), aragonite (cone-in-cone structures), melanterite and limonite are found in shale.

References:
Furnival, G. M.: GSC, Mem. 242, 1946, pp. 35-37.
Kupsch, W. C.: Sask. Dept. Min. Res., Rept. No. 20, 1956, p. 6.
McConnell, R. G.: GSC, Ann. Rept. (New Ser.), vol. 1, 1886, p. 34C.

Petrified Wood

White silicified wood fragments up to 10 inches across occur in lignite and sandstone at these localities: along Boxelder Creek (upright tree trunks measured up to 4 feet across); along the east side of McShane Creek; along coulées west of Cypress Lake in an area extending north from section 1, township 6, range 28 to section 30, township 6, range 27; along Fish Creek in sections 24 and 25, township 8, range 28 (fragments measured up to 12 feet long and 1 foot across); along the north shore of Cypress Lake; along Battle Creek in townships 6 and 7, range 29; along Petrified Coulée in sections 28 and 33, township 8, range 28; in an outcrop on top of a hill immediately west of a coulée

in the southeast quarter of section 28, township 9, range 29 (upright tree trunks are up to 4 feet across); and in numerous gravel pits throughout the area.

Reference:
Furnival, G. M.: GSC, Mem. 242, 1946, pp. 46-59.

4. WOOD MOUNTAIN AREA

(72 SE Swift Current-Regina)

Selenite

Selenite crystals are associated with the lignite beds in the vicinity of Porcupine Creek southeast of Wood Mountain settlement near the International Boundary.

Reference:
Dawson, G. M.: Report on the Geology and Resources of the Region in the Vicinity of the 49th Parallel. North American Boundary Commission, Dawson Bros. Montreal, 1875, p. 101.

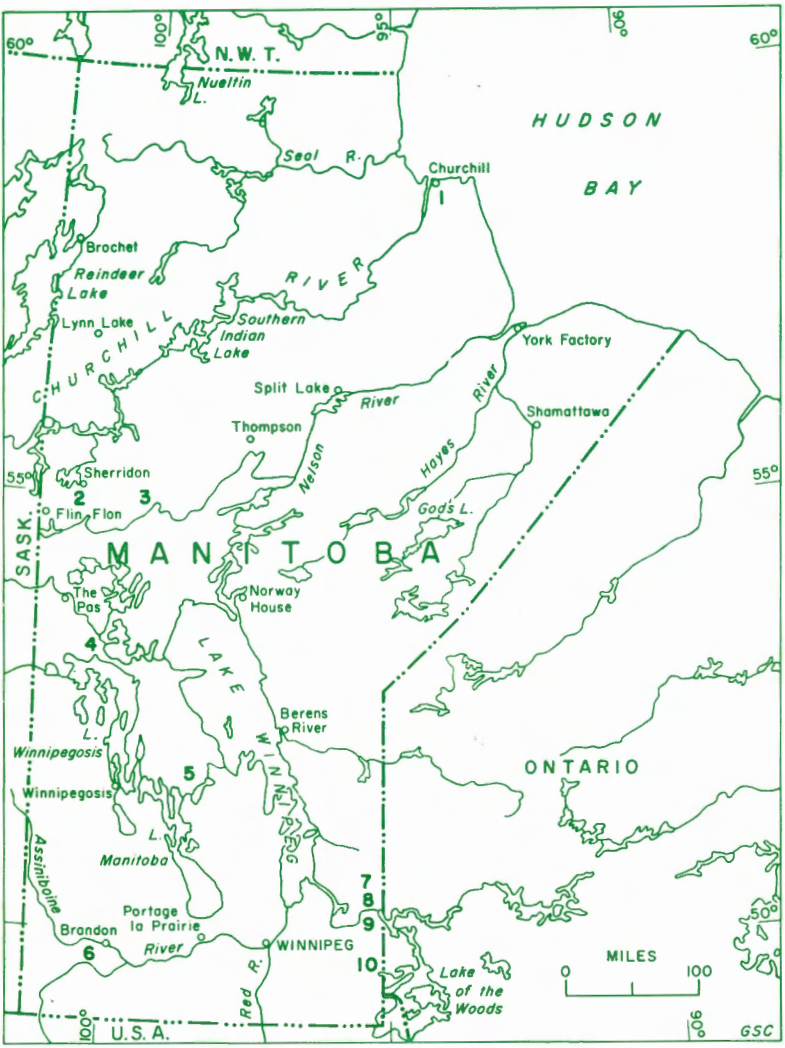
Petrified Wood

Petrified wood may be found in the gravel beds in the Wood Mountain area.

MANITOBA

ROCK AND MINERAL COLLECTING AREAS, MANITOBA

1. Churchill
2. Kississing Lake
3. Herb Lake
4. Cedar Lake
5. Gypsumville
6. Souris
7. Cat Lake
8. Bernic Lake
9. Winnipeg River
10. Falcon Lake


60°
100°
95°
90°
N.W.T.
Nueltin L.
HUDSON
BAY
Seal R.
Churchill
1
Brochet
Reindeer Lake
RIVER
Lynn Lake
CHURCHILL
Southern Indian Lake
York Factory
Split Lake
River
Hayes River
Shamattawa
Thompson
Nelson
55°
Sherridon
2
3
Flin Flon
SASK.
God's L.
MANITOBA
The Pas
Norway House
4
LAKE WINNIPEGOSIS
Berens River
L. Winnipegosis
ONTARIO
5
Winnipegosis
L. Manitoba
Assiniboine
7
8
9
Portage la Prairie
Brandon
River
6
WINNIPEG
10
Red R.
Lake of the Woods
50°
MILES
0
100
U.S.A.
GSC

1. CHURCHILL

(54 L Churchill)

Lazulite

Massive, deep azure-blue lazulite occurs in veins cutting greyish to milky white sub-translucent quartz. The maximum width of the veins is reported to be 7 mm. The locality from which this mineral was reported is ¾ mile east of the mouth of the Churchill River.

References:

Hoffmann, C.: GSC, Ann. Rept., 1878-79, p. 2H.
Hoffman, G. C.: GSC (New Ser.), No. 4, 1888-89, p. 42T.

2. KISSISSING (COLD) LAKE

(63 N/3 Sherridon)

Sherritt-Gordon Mine

Zeolites have been reported from the Sherritt-Gordon copper-zinc mine at Sherridon on the eastern shore of Kississing (Cold) Lake. Cavities in gneiss were seen lined with the following: natrolite in small spherical aggregates of colourless crystals; individual crystals and encrustations of white analcite crystals; pale greyish green chabazite (rare); and siderite in flat rhombohedrons. The ore minerals at this deposit are pyrrhotite, pyrite, chalcopyrite and sphalerite. The mine was last worked in 1951.

Reference:

Brownell, G. M.: Univ. Toronto, Geol. Ser., No. 41, 1938, pp. 19-21.

3. HERB (WEKUSKO) LAKE AREA

(63 J Herb Lake; 63 K File Lake)

A variety of minerals are reported to occur in the rocks of the Herb (Wekusko) Lake area—staurolite, garnet, kyanite and sillimanite in schists and gneisses, and beryl, tourmaline, spodumene, garnet, etc., in pegmatite dykes. Schists containing staurolite and garnet often in large crystals, and reddish kyanite in tufts and clusters are exposed along the shores of Snow, Anderson, File and Corley lakes, Herb Lake at Crowduck Bay, and in the Niblock Lake area.

Snow Lake, Staurolite

Staurolite crystals up to 6 inches long occur in a schist along the north shore of the Snow Lake narrows and northward to the south end of Squall Lake. The largest crystals were seen along the north shore of Snow Lake and for one or two miles northward. Staurolite crystals also occur along the east shore of Squall Lake, but are less plentiful here. Where the rock formation continues in a narrow band in a northeasterly direction from the northeast end of Squall Lake, large euhedral garnet crystals were found but exposures are rare. Staurolite-sillimanite schists and gneisses comprise the small islands in Snow Lake as well as the peninsula which extends southward at the eastern end of the lake.

Reference:

Harrison, J. M.: GSC, Mem. 250, 1949, p. 25.

File Lake, Staurolite, Garnet

In the File Lake region large staurolite crystals occur in a quartz-sillimanite schist along the north shore of the lake at its western end. Southward along the point separating Dummy Bay from the main body of File Lake, staurolite crystals are associated with garnet in a rock which grades from a sillimanite schist in the northern part of the point to argillite in the south. Both garnet and staurolite crystals become smaller and less abundant toward the southern part of the point. Large garnets occur in staurolite-sillimanite schist in the area

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immediately to the north of Corley Lake which is situated between File and Loonhead lakes.

Reference:
Harrison, J. M.: GSC, Mem. 250, 1949, pp. 24-25.

Anderson Lake, Garnet, Staurolite

Garnet, as rhombic dodecahedrons measuring up to 2½ inches across, occurs abundantly with staurolite crystals in biotite schist on a ridge extending in a northeasterly direction from east of the outlet of Anderson Lake. The ridge is 1,500 feet long and 100 to 200 feet wide and is well-grooved by glaciation. The largest garnet crystals are reported from the northeastern end of the ridge. Anderson Lake is a small body of water between Herb and Snow lakes.

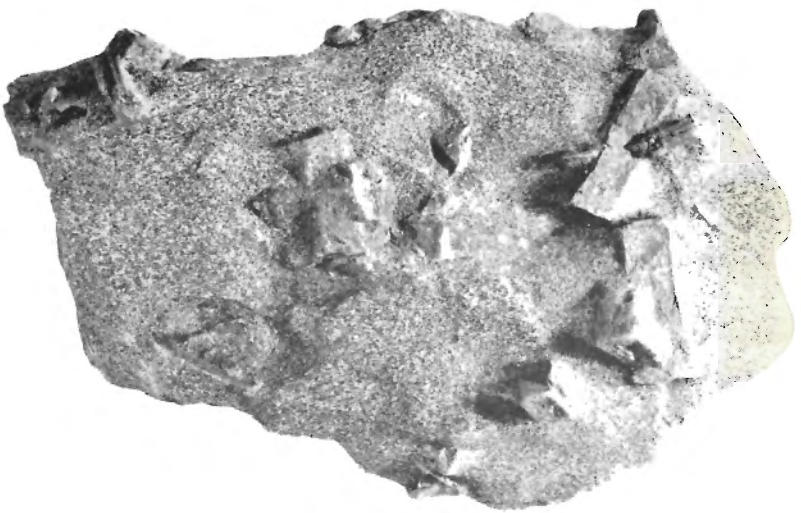
Reference:
Alcock, F. J.: GSC, Mem. 119, 1920, pp. 22-23.

Crowduck Bay, Staurolite, Garnet, Spodumene, Beryl

Crystals of staurolite up to 4 inches long, some as cruciform twins, have been reported from the small islands near the southern end of Crowduck Bay; from the northern part of the bay (Crowduck) at the entrance of the Grass River; and from the vicinity of the mouth of the creek which enters the bay from the southwest. Garnets are abundant in gneiss along the eastern shore of Crowduck Bay at its northern end. Crowduck Bay is formed by the widening of the Grass River before it enters the northeast end of Herb Lake.

Reference:
Alcock, F. J.: GSC, Mem. 119, 1920, p. 23.

Pegmatite dykes composed of white to pink perthite and cleavelandite, quartz, muscovite, crystals of apple-green spodumene up to 1½ feet long, black tourmaline, and red garnet, outcrop at the Sherritt-Gordon property, ½ mile west of the narrows of Crowduck Bay. A few small crystals of golden beryl were found in rock pieces in a small trench here. Shallow cuts have been made into the dykes in several places exposing



Staurolite crystals in garnet schist from Staurolite Island, Crowduck Bay, Wekusko (Herb) Lake, locality 3, Manitoba.

the rock. A trail leads to the pegmatites from the narrows. The distance from the settlement of Herb Lake to the narrows is about 5 miles.

Reference:
Rowe, R. B.: GSC, Paper 55-26, 1955, pp. 3-4.

4. CEDAR LAKE

(63 F The Pas)

Amber

Amber is found in association with small fragments of partially decomposed wood on the west side of Cedar Lake, near the mouth of the Saskatchewan River. It is reported to occur in the beach sands, along the ridges and marshy deltas, and in the swampy beach areas. The amber fragments are of the chemawinite variety and range up to the size of a robin's egg, and are pale yellow to dark brown; some contain dark carbonaceous matter. Similar resin (amber) has been reported from the lignite beds of the Saskatchewan River nearby.

Reference:
Tyrell, J. B.: GSC (New Ser.), vol. 5, 1890, pp. 225-228E.

5. GYPSUMVILLE AREA

(62 O Dauphin Lake)

Gypsum

Gypsum deposits in this area occur as hills and ridges surrounded by swamp. There are exposures in three quarries owned by Gypsum, Lime and Alabastine, Canada, Limited:

(1) *Old quarry* in section 26, township 32, range 9WPM, just north of the town (Gypsumville)—finely crystalline white massive gypsum beds are separated by thin beds of grey and red clay. Massive white anhydrite is associated with the gypsum. Satin-spar in stringers ½ to 1 inch thick is reported to be abundant.

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(2) *New quarry*, about 3 miles north of the original quarry—massive white gypsum is associated with grey to white translucent anhydrite and greyish transparent platy crystals of selenite. The selenite occurs in thin beds mostly along the east wall of the quarry.

(3) *Quarry at Elephant Hill* (White Elephant deposit) northeast of the town and connected by a 6-mile trail—large colourless, transparent, platy crystals of selenite occur in beds with white gypsum and anhydrite. Some of the selenite plates are over 1 foot square and are most abundant in the central pit on the south side of the hill. Alabaster (pure white) and small amounts of selenite are reported from the pit on the southeast side of the hill.

At Anhydrite Hill located southeast of Gypsum Lake in section 10, township 33, range 8W, a bluish white hard variety of anhydrite is associated with gypsum. It has been suggested that this material may have a potential use as a decorative stone for interior use.

Reference:

Bannatyne, B. B.: Man. Dept. Mines, Pub. 58-2, 1959, pp. 32-38.

6. SOURIS AREA

(62 F/9 E, W Souris)

Agate, Jasper, Petrified Wood, Epidote

Jasper, agate, petrified wood and epidote are found as pebbles and fragments in the gravel pits in the town of Souris and are suitable for lapidary work. Jasper is abundant and occurs as fragments up to the size of a fist in shades of yellow, orange, brown, dark red, green and black. Agate pebbles up to 4 inches across include: clear to waxy yellow, light blue with black inclusions, clear with red or white inclusions, banded, jet black and, rarely, red and green moss varieties. The petrified wood is deep ruby red to brown and black. Specimens weighing up to 10 pounds have been found. Agate and common opal are often associated with the wood. Green epidote pebbles suitable for polishing have been reported from the deposit.

The only gravel pit being worked at present is at the southeast end of the town on the south side of the Souris River. Access is by a road which leads east from Highway No. 22 just south of the bridge over the Souris River. There is a small charge for collecting at this pit. Similar material may be found in two other gravel pits now inactive. One is at the east end of town between Highway No. 2 and Souris River; the other is at the west end of the town on the north side of the river.

Reference:

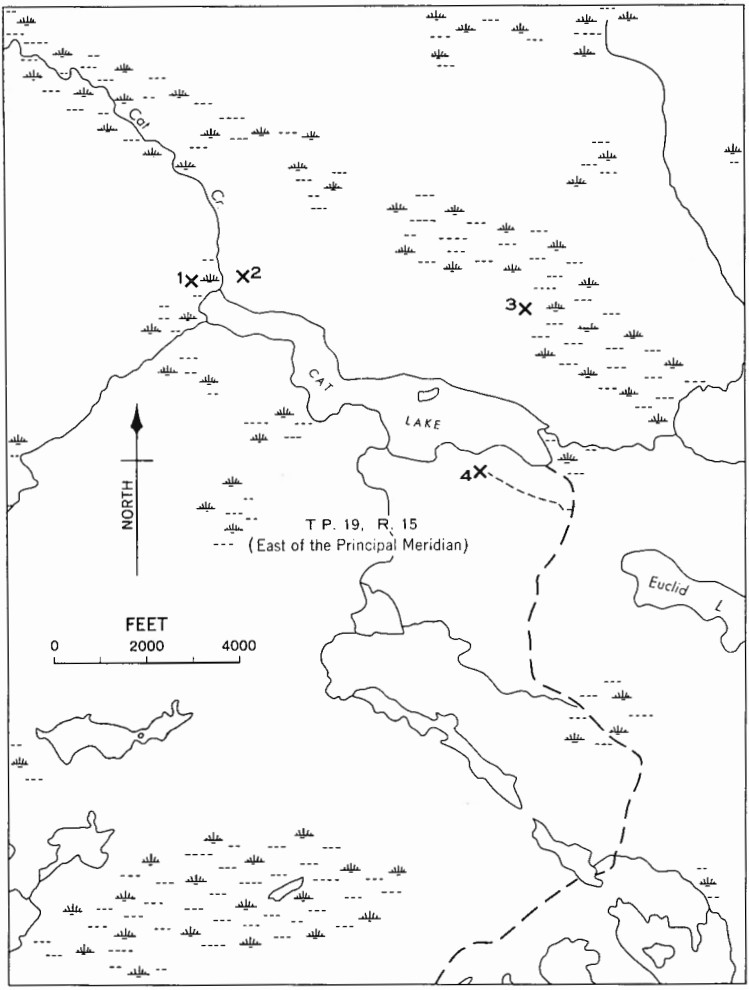
Personal communication: Ray Loving and E. A. Tyderkie.

7. CAT LAKE AREA

(52 L Pointe du Bois)

Spodumene, Beryl

Several dykes containing a variety of minerals cut into granite and basalt in the Cat Lake area. At the Eagle group of claims (Lithium Corporation of America) the main constituents of the dykes are white and green spodumene, microcline and albite feldspar, quartz, garnet and muscovite. Other minerals include purple fluorite (rare), pink cleavelandite, blue and black tourmaline, and green and white beryl crystals measuring up to 1 inch in diameter. The Eagle claims are about 400 yards northwest of the west end of Cat Lake. Similar mineral constituents are reported from the pegmatites at the F.D. 5 claim east of the Eagle, the Irgon claim (Lithium Corporation of Canada, Limited) located 1,700 feet north of the eastern end of the lake, and the Central claim (owned by H. Johnson of Bird River) 1,000 feet south of Cat Lake. Blue apatite has also been reported from the Central claim Access is by a gravel road which connects the eastern end of Cat Lake (the Irgon claims) to Provincial Highway No. 11 at Lac du Bonnet. A branch road leads to the Central claims. Cat Lake is 80 miles northeast of Winnipeg.



CAT LAKE AREA: 1. Eagle claims; 2. F.D. 5 claim; 3. Irgon claim; 4. Central claim.

References:
Mulligan, R.: GSC, Paper 57-3, 1957, pp. 18-21.
Springer, G. D.: Man. Dept. Mines, Pub. 49-7, 1950, pp. 8-9.

8. BERNIC LAKE-BIRD LAKE AREA

(52 L Pointe du Bois)

Garnet

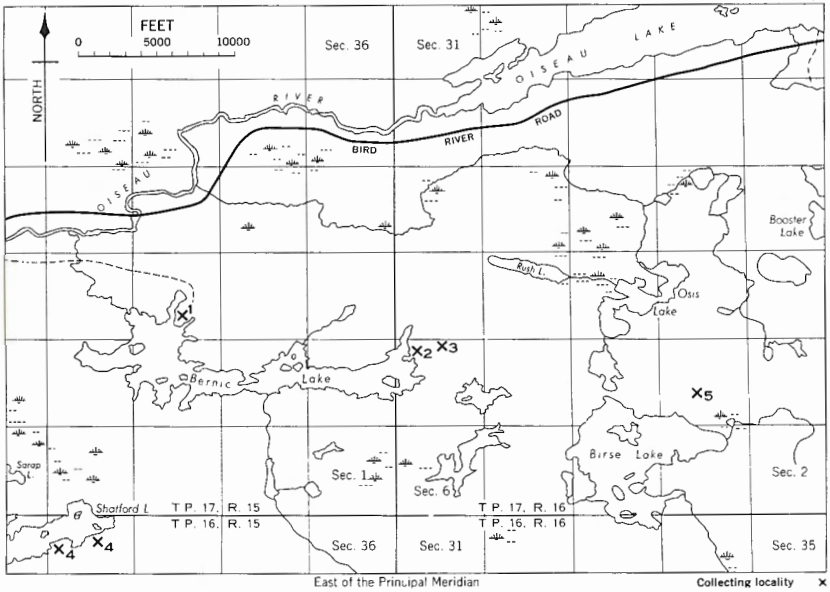
Abundant pink garnets are reported from the dark greywacke along the south shore of Bird Lake. Crystals up to 2 inches across have been found on a small island near the south shore of the lake about 2 miles east of the outlet of Bird River, and along the shore of the lake east of the island. Small ellipsoidal masses of cordierite with quartz and biotite inclusions are associated with the garnet in some places along the south shore of the lake.

Reference:
Davies, J. F.: Man. Dept. Mines, Pub. 54-1, 1955, pp. 11-12.

Chemalloy Minerals Mine

A large variety of minerals occur in the pegmatites at the Chemalloy (formerly Montgary) Minerals property near the north shore of the western half of Bernic Lake. Pollucite, an important ore of caesium, is the mineral being mined here. Transparent pollucite has been used in a small way for gemstones. The pollucite is closely associated with quartz, amblygonite, lepidolite, and petalite. Other minerals here include spodumene, cleavelandite, microcline, albite, muscovite, zinnwaldite, white beryl, columbite-tantalite, black and red (rare) tourmaline, rhodochrosite, lithiophilite, tapiolite—ixiolite, blue, pink and brown apatite. Access by gravel road to Lac du Bonnet via the Bird River road.

References:
Brinsmead, Ralph: Precambrian, Aug., 1960, pp. 19-20.
Sinkankas, John: Gemstones of N. Amer., p. 411.



BERNIC LAKE AREA: 1. Chemalloy minerals mine; 2. Coe claim; 3. Buck claim; 4. Beryl; 5. Rose quartz.

Bernic Lake Beryl and Lithium Minerals

Uncommon lithium minerals including grey lamellar petalite, lepidolite, the amblygonite-montebrasite series, the triphylite-lithiophilite series and purpurite are prominently associated with spodumene, quartz, feldspar, mica, black and deep green translucent tourmaline, blue apatite, red garnet (rare), and scattered pale yellowish green beryl crystals in dykes near the east end of Bernic Lake. A large pit on the Buck claim located about 1,500 feet east of the lake, and a smaller pit on the Coe

claim 700 feet southwest of the first pit expose the mineral-bearing dykes. The property belongs to the Lithium Corporation of Canada.

References:

Davies, J. F.: Man. Dept. Mines, Pub. 54-1, 1955, pp. 40-41.
Mulligan, R.: GSC, Paper 57-3, 1957, pp. 21-22.

Shatford Lake Beryl, Topaz

Along the south shore of Shatford Lake, pegmatite dykes outcrop in a belt extending eastward from approximately 1 mile west of the east end of the lake. The property, which includes the original workings of the Manitoba Tin Company, is now held by Contact Minerals Limited. The quartz-feldspar, muscovite dykes carry white to yellow beryl crystals up to 2 inches in diameter. The most interesting outcrops are reported to be located 3,000 to 6,000 feet from the east end of the lake and less than 300 feet from the shore. One large dyke approximately 3,500 feet from the east end of the lake carries beryl in association with coarse curvilammelar lithium mica, topaz (altered), monazite and columbite-tantalite. Shatford Lake is situated less than 2 miles south and slightly west of Bernic Lake.

Reference:

Mulligan, R.: GSC, Paper 60-21, 1960, p. 20.

Birse Lake, Rose Quartz

Rose quartz occurs with minor amounts of topaz in a pegmatite intrusion north of the east end of Birse Lake. The quartz ranges in colour from rose to flesh-coloured.

The occurrence is approximately 2,000 feet north of the lake shore at a point 1,500 feet west of the eastern end of the lake. Some surface work has been done on the deposit.

Reference:

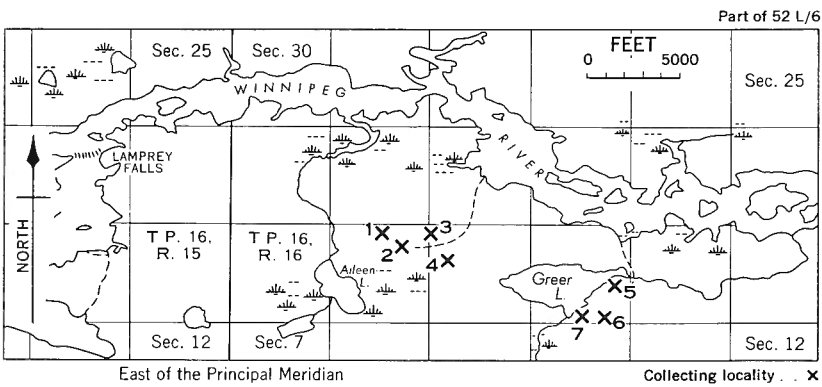
Springer, G. D.: Man. Dept. Mines, Pub. 49-7, 1950, p. 14.

9. WINNIPEG RIVER AREA

(52 L Pointe du Bois)

Silverleaf Deposit (Lithium Minerals)

Pegmatites containing spodumene and lithia micas, have been exposed by stripping, trenching and quarrying at the Bob (formerly Bear) claim. The property often referred to as the Silverleaf deposit is held by Lithium Corporation of Canada; it is located about 1¼ miles south of the Winnipeg River and about 3 miles east of Lamprey Falls. The spodumene is white to pale green and is closely associated with quartz. The micas include grey zinnwaldite, purple lepidolite and lilac-coloured curvilamellar, hemispherical and radiating lithia mica. Crystals of spessartite and platy columbite have been observed in the zinnwaldite. Other minerals reported from the pegmatite include fluorite; white, pink and greenish beryl; crude crystals and crystalline masses of faintly



WINNIPEG RIVER AREA: 1. Gray claim; 2. Bob claim; 3. Annie claim; 4. Huron claim; 5. Feldspar quarry; 6. Grace 1 claim; 7. Grace 2 claim.

blue-green topaz; greyish white montebrasite; salmon to orange-coloured lithiophilite; cassiterite, blue tourmaline, and apatite. Similar lithium-bearing rocks occur in the Annie claim (⅜ mile northeast of the Bear claim), held by Dalhart Beryllium Mines and Metals Corporation and the Gray claim (¼ mile northeast of the Bear claim). Access by the Winnipeg River from Pointe du Bois, a distance of 9 to 10 miles and a one-mile walk southward from the river.

References:

Davies, J. F.: Man. Dept. Mines, Pub. 56-1, 1957, pp. 22-23.
Ellsworth, H. V.: GSC, Econ. Geol. Ser., No. 11, 1932, pp. 148-157.
Rowe, R. B.: GSC, Paper 55-26, 1956, pp. 8-10.

Huron Claim (Rose Quartz, Beryl, etc.)

Rose quartz and beryl from the Huron claim have been used to some extent for gem material. The quartz is opalescent and deep pink; it is reported to be equal in quality to the best rose quartz from other countries. The beryl varies from colourless to green, golden and amber, the crystals ranging from ½ to 18 inches in diameter. Black platy and lath-shaped crystals of columbite-tantalite, black vitreous quartz, uraninite, monazite, dark grey massive and granular zoisite, small delicate striated honey-coloured crystals of zoisite, massive greenish to aquamarine topaz, and triphylite are reported to be associated with the beryl and rose quartz. The uraninite from this occurrence is of historical interest since it was one of the first minerals used to establish the age of Canadian Precambrian rocks. Feldspar, the most abundant constituent of the pegmatite, was at one time quarried here. The claim is held by Dalhart Beryllium Mines and Metals Corporation and is about ½ mile south of the Winnipeg River and about 3,000 feet west of the west end of Greer Lake.

References:

Davies, J. F.: Man. Dept. Mines, Pub. 56-1, 1957, pp. 17-18.
DeLury, J. S.: Can. Mining J., vol. 51, 1930, p. 1017.
Mulligan, Robert: GSC, Paper 60-21, 1960, pp. 20-21.
Walker, T. L.: Univ. Toronto, Geol. Ser., No. 30, 1931, pp. 9-13.

Grace Claims, Beryl Crystals

Green beryl crystals ranging from ½ to 12 inches across occur with black tourmaline, columbite (rare), smoky to black quartz and yellowish mica in pegmatite dykes at the Grace 1 and Grace 2 claims (Dalhart Minerals Corporation Limited). Most of the crystals are small, many in long slender pencil-shaped forms. Green beryl is reported to be quite abundant in a small area on the face of a trench in the Grace 2 claim. The property is on the south side of Greer Lake, just east of the southernmost point of the lake. A trail from the Winnipeg River leads to a quarry near the east end of the lake.

Reference:

Davies, J. F.: Man. Dept. Mines, Pub. 56-1, 1957, pp. 18-19.

Winnipeg River, Garnet

Well-developed deep red garnet crystals up to ½ inch in diameter occur in a fine clayey matrix; in places the garnet forms 75 per cent of the rock which outcrops at intervals along the south shore of the Winnipeg River in sections 21, 28 and 29, range 16, township 16. The outcrop area extends eastward from a point about 3 miles east of Lamprey Falls, and is located directly north of the Bob and Huron claims. Similar garnets occur in pillow lavas exposed on the west end of the large island situated in the Winnipeg River (section 24, range 16, township 16) about 1¼ miles east of the point where the trail from the feldspar quarry on the east end of Greer Lake leads into the river.

Reference:

Wright, J. F.: GSC, Sum. Rept. 1924, pt. B, pp. 63, 99-100.

Greer Lake Feldspar Quarry

Microcline and albite occur in a pegmatite dyke which has been quarried near the east shore of Greer Lake. Bismuthinite is reported to occur sparingly at the deposit. A trail leads from the quarry to the Winnipeg River.

Reference:

Springer, G. D.: Man. Dept. Mines, Pub. 49-7, 1950, p. 14.

10. FALCON LAKE AREA

(52 E Kenora)

West Hawk Lake, Tourmaline

Pink, somewhat turbid, tourmaline crystals have been found in a pegmatite dyke composed of quartz, albite, lepidolite, and spodumene. The crystals were small and not of gem quality. On a recent visit to the deposit the writer did not find any tourmaline. The dyke cuts volcanic rocks. It is exposed by natural outcrops, stripping and open-cuts. The deposit is near the southwest shore of West Hawk Lake. To reach it, walk north along the shore of the lake from the wharf on the picnic grounds at the West Hawk Lake camp-site to the rock exposures on the hill just beyond the first bay. The distance from the wharf is about 200 yards; the dyke is near the top of the ridge overlooking the lake. Similar smaller lithium-bearing dykes are exposed 4,400 feet north and 1,200 feet south of the main dyke.

Reference:

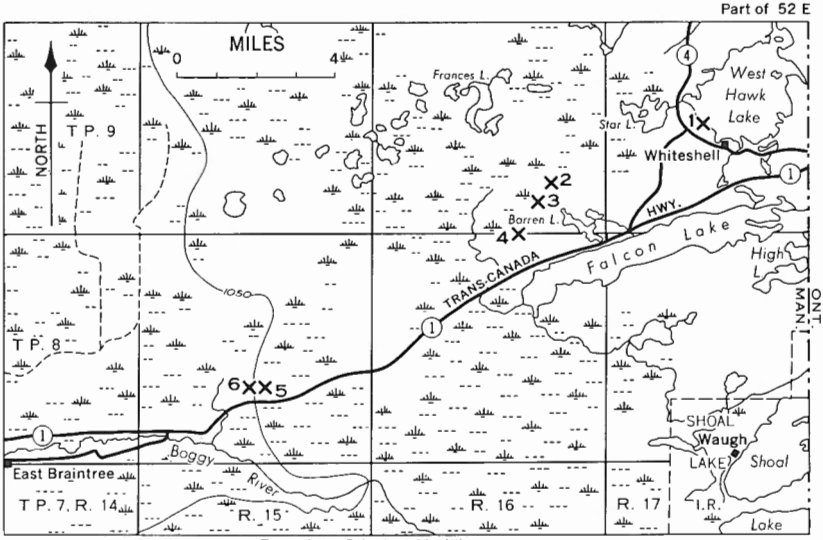
Stockwell, C. H.: GSC, Mem. 169, 1932, p. 126.

Barren Lake, Scheelite

Scheelite occurs in two types of deposit in the area between Barren and West Hawk lakes. In one type, it is associated with quartz and brown garnet; in the other, it occurs with epidote, quartz, garnet, amphibole and calcite. These minerals are all coarsely crystalline. The scheelite varies in colour from brown to white, and occurs as small lenses or disseminated. The deposits are associated with shear zones and minor folds in pillow lavas near the contact with porphyritic granodiorite.

Scheelite-bearing rock has been exposed in the following claims:

M.J.T. No. 3 claim lies about 1 mile north of Barren Lake. It has been exposed in two places, the more northerly cut being made into the face of a cliff. In the northern openings, brown garnet and sugary quartz are the gangue minerals; in the south pits, coarse-grained amphibole, epidote and scheelite form the gangue.



FALCON LAKE AREA: 1. Tourmaline; 2. M.J.T. No. 3 and P.M.W. No. 2 claims; 3. P.M.W. No. 8 and Lake 10 claims; 4. Molybdenite mine; 5. Lucy No. 1 claim; 6. AD No. 2 claim.

P.M.W. No. 2 (formerly M.J.T. No. 14) claim—The deposit is exposed at the northeast side of a large outcrop in muskeg; well-crystallized epidote is a common gangue mineral. Scheelite was shipped from the deposit in 1918.

P.M.W. No. 8 (formerly Felrite No. 1) claim lies about ½ mile northwest of the north end of Barren Lake. Large brown garnet crystals are particularly prominent in sugary quartz and in recrystallized volcanic rock. Epidote, pyrite, pyrrhotite and chalcopyrite are associated with the ore.

Lake 10 (formerly Empress) claim—The deposit which lies southwest of the P.M.W. No. 8 claim, yielded most of the tungsten ore that was shipped from the area in 1918. Hornblende, biotite and epidote are accessories.

References:
Bateman, J. D.: Precambrian, vol. 16, No. 8, 1943, pp. 4-7.
Little, H. W.: GSC, Econ. Geol. Ser., No. 17, 1959, pp. 155-156.
Springer, G. D.: Man. Dept. Mines, Pub. 50-6, 1952, pp. 17-18.

Barren Lake, Molybdenite

Exceptional specimens of molybdenite as large clusters of radiating crystals weighing as much as 20 pounds were recovered from this deposit during mining operations at about the time of World War I. Individual crystals (up to 3 inches or more in diameter) were found with the crystal aggregates in a pegmatite composed chiefly of pink feldspar and quartz. Associated minerals included native bismuth, beryl (rare), and gold. Smaller crystals of molybdenite were found in quartz veins. According to a recent report, very little exceptional material can now be found in the pits.

The mine lies approximately a mile west of the western end of Barren Lake and to the north of Falcon Lake.

References:
Bruce, E. L.: GSC, Mem. 169, 1938, pp. 130-131.
Springer, G. D.: Man. Dept. Mines, Pub. 50-6, 1952, pp. 18-19.

East Braintree, Spodumene, Beryl

Two pegmatite dykes outcrop at the Lucy and AD (Artdon) No. 2 claims located about ½ mile north of the Trans-Canada Highway at a point 6.6 miles east of the East Braintree turnoff. In the northeast corner of the Lucy No. 1 claim, the dyke is exposed at the side of a small hill and in a trench which strikes north 20 degrees east. It is reported to consist of large pink and white feldspar crystals, albite, black tourmaline, blue acicular tourmaline, blue apatite, fluorite, silvery lithium mica, pyrophyllite, small pale green beryl crystals (approaching

aquamarine), and white spodumene crystals up to 12 inches in length. The second dyke outcrops for a distance of 60 feet at the AD No. 2 claim which adjoins the Lucy No. 1 claim to the west. The mineral constituents in this dyke are similar to the assemblage described above.

References:

Mulligan, Robert: GSC, Paper 60-21, 1960, p. 21.
Springer, G. D.: Man. Dept. Mines, Pub. 50-6, 1952, pp. 19-20.

Epidote Rock

A rock composed of pistachio-green epidote with colourless to white quartz, suitable for ornamental objects such as paper-weights, book-ends, etc. was found by the writer along Highway No. 1 near East Braintree. It has an attractive streaked or mottled appearance when polished. Weathered specimens may be mistaken for serpentine, but a check on hardness readily distinguishes it. The calcite associated with the epidote rocks in the area is faintly fluorescent (pink).

The material is found among the broken blocks of volcanic rocks on the north side of Highway No. 1 at points 13 and 14 miles east of the East Braintree turn-off.

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).

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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).

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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.

Burnaby:	Burnaby Laphounds, Secretary—Wilfried Tasse, 115 S. Gilmour Avenue, North Burnaby.
Chilliwack:	Fraser Canyon Jade and Rock Society, Secretary—A. Kipp, 149 Heather Street.
Cranbrook:	Kootenay Valley Rockhounds, President—R. Dale, Cranbrook.
Duncan:	Cowichan Valley Rockhounds, Secretary—H. Townsend, P.O. Box 1573.
Golden:	Columbia Valley Rock and Fossil Club, Secretary—Mrs. M. McQuarrie, P.O. Box 312.
Haney:	Maple Ridge Lapidary Club, Secretary—Mrs. J. Vilae, 10683-17th Avenue, Whonnock.
Hatzic:	Mission Valley Rock and Mineral Club, Secretary—Mrs. W. R. Jack, P.O. Box 36.
Kamloops:	Thompson Valley Rock Club, Secretary—Mrs. L. Fisher, 1493 Valley View Drive, Route 2.
Kelowna:	Kelowna Rockbusters, Secretary—J. H. Burrows, R.R. No. 3.
	The 1120 Rock Club, Secretary—Mrs. L. Hallisey, General Delivery, Kelowna.
Keremeos:	South Similkameen Rockhounds, Secretary—Mrs. V. Lund, P.O. Box 67.

Ladner:	Delta Rock Club, President—B. Chandler, 1638 Duncan Drive, R.R. 2.
Lillooet:	Mile 'O' Jade and Rock Club, Secretary—R. Pichette, P.O. Box 495.
Marguerite:	Cairn-Site Rock and Gem Club, Secretary—Mrs. Beatrice McLean, P.O. Box 14.
Nanaimo:	Nanaimo Gemfinders Association, Secretary—Miss Kay Spence, 716 Winchester Street.
	Skyline Rock and Mineral Club, Secretary—Mrs. Paula Clarke, 520 Northumberland.
New Westminster:	New Westminster Lapidary Society, Secretary—Mrs. E. McMyn, 19489 Laugheed Highway, Pitt Meadows.
North Vancouver:	North Shore Rock and Gem Club, Secretary—Mrs. S. Lucas, 671 Montroyal Boulevard.
Oliver:	Ukanook Rockhound Club, Secretary—Mrs. B. J. Slack, P.O. Box 297.
100-Mile House:	100-Mile and Cariboo Rockhounds Club, Secretary—Mrs. M. McNeil, 100-Mile Post Office.
Penticton:	Penticton Geology Club, Secretary—Mrs. M. Oliver, 106 Jonothon Drive.
Port Alberni:	Alberni Rock and Gem Society, Secretary—Miss G. McGarrigle, Port Alberni.

Prince Rupert:	Lapidary Club of Prince Rupert, c/o Civic Centre Association.
Princeton:	Princeton Rock and Mineral Club, Secretary—Mrs. B. Clark, P.O. Box 345.
Quesnel:	Quesnel Rockhound and Gem Craft Club, Secretary—R. Karney, P.O. Box 586.
Richmond:	Richmond Gem and Mineral Club, Secretary—Mrs. G. McLeod, 2337 West King Edward Avenue, Vancouver.
Sidney:	Sidney Rock Club, Secretary—Mrs. H. Seeley, 7033 East Saanich Road, Saanichton.
Terrace:	Terrace Lapidary Club, Secretary—Mrs. Ashton, P.O. Box 248.
Vancouver:	Dunbar Lapidary Club, Secretary—Miss M. Bergren, c/o Dunbar Community Centre, 4747 Dunbar Street.
	Hastings Centre Rockhounds, Secretary—Mrs. L. Dunnick, 4767 East Pender Street, North Burnaby.
	Kerrisdale Mineral and Gem Lapidary Club, Secretary—Mrs. R. Stubbs, 7938 Laburnum Street.
	Lapidary Club of Vancouver, P.O. Box 145, Station 'A'.

Vernon:	Vernon Lapidary and Mineral Society, Secretary—Mrs. D. Mohr, Route 3.
Victoria:	Victoria Lapidary and Mineral Society, Secretary—Mrs. W. F. Erichsen, 2075 Lansdown Road.

Alberta

Calgary:	Rock and Gem Society of Calgary, President—M. Bakker, 85 Langdon Drive. Calgary Rock and Lapidary Club, Secretary—Mrs. P. E. Hofforth, 2004-26th Avenue N.W. Calgary Rockcrafters Club, Secretary—Mrs. N. R. Anderson, 2711-3rd Avenue N.W.
Edmonton:	Edmonton Geological Society, c/o Mr. E. Pelzer, 14605-118th Avenue. Edmonton Lapidary Club, Secretary—S. Uren, 12038-105th Street.
Red Deer:	Red Deer Mineral Club, President—D. W. Harrison, 5912 West Park Crescent.

Saskatchewan

Regina:	Prairie Rock and Gem Society, Secretary—Mrs. M. Morrow, 3077 Montague Street.
Saskatoon:	Saskatoon Rock and Mineral Society, Secretary—R. Drinkle, 816-32nd Street West.

Manitoba

Winnipeg:	The Winnipeg Rock and Mineral Club, Secretary—C. Green, 1205 Kildonan Drive.

Ontario

Bancroft:	The Bancroft Mineral Society, c/o Bancroft Chamber of Commerce.
Kingston:	The Kingston Lapidary and Mineral Club, Secretary—Mrs. S. Leach, P.O. Box 1123.
North Bay:	Nipissing Lapidary and Mineral Club, c/o A. Cadieux, 1220 Beattie Street.
Oshawa:	Oshawa Rock and Mineral Club, Secretary—Mrs. Barbara Brockman, P.O. Box 53.
Ottawa:	Ottawa Valley Mineral Association, Secretary—Mrs. D. W. Parker, R.R. 1, Bells Corners.
Port Arthur:	Thunder Bay Lapidary Club Secretary—Mrs. A. S. Gilby, 264 Ray Court.
Toronto:	The Walker Mineralogical Club, Secretary—Wm. L. Smith, 100 Queen's Park.
Sault Ste Marie:	Sault Ste Marie Rock and Mineral Club, Secretary—Mrs. Eve Kersey, 67 McMeekin Street.
Willowdale:	Willowdale Gem and Mineral Club, c/o North York Public Library, 5156 Yonge Street.

Quebec

Montreal:	Montreal Gem and Mineral Club, Secretary—Miss B. Morris, 3454 Oxford Avenue.

Nova Scotia

Yarmouth:	The Nova Scotia Mineral and Gem Society, President—S. C. Hood, 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, Edmonton.
British Columbia:	Department of Mines, Victoria.
Manitoba:	Mines Branch, Department of Mines and Natural Resources, Winnipeg.
New Brunswick:	Department of Lands and Mines, Fredericton.
Newfoundland:	Department of Mines and Resources, St. John's.
Nova Scotia:	Department of Mines, Halifax.
Ontario:	Department of Mines, Toronto.
Prince Edward Island:	The Deputy Provincial Secretary, Provincial Government Offices, Charlottetown.

For Travel Information:

The Canadian Government Travel Bureau,
Department of Trade and Commerce,
150 Kent Street, Ottawa.

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