## EXPLANATORY NOTES

### PURPOSE AND SCOPE OF MAP

The main purpose of this map is to show the locations of known occurrences of beryllium in Canada and to permit the relating of this information to the principal geological features. In other words, the map helps to indicate "metallogenic provinces" for beryllium so far as present knowledge permits. This information may be useful in selecting promising areas for beryllium prospecting and to companies seeking prospects for examination. A fairly comprehensive selection of the literature relating to Canadian beryllium occurrences and their geology is also given.

Because it is impracticable to show areal geology on this map it is printed on fairly transparent paper and is of the same scale as the Geological Map of Canada (No. 1045A, price 50 cents). Geological comparisons may be made by superimposing this map on Map 1045A.

The information shown is based on the plotting of about sixty reported occurrences of beryllium minerals. None of the deposits is being worked for beryllium at present and very little information is available as regards grades or tonnages. It has not, therefore, been possible to establish a minimum percentage of BeO for distinguishing between occurrences and "traces". Instead, all reliably reported occurrences of what are usually considered beryllium minerals have been plotted. In some areas the occurrences are so closely grouped that it is not possible to show them individually on a map of this scale; such areas are indicated by ruled pattern, in a somewhat diagrammatic way. Many occurrences appear to be small or to contain beryl scattered so widely as to be only of scientific interest, but all provide useful information on the general distribution of beryllium.

### CLASSIFICATION OF DEPOSITS

The following beryllium minerals have been reported from Canadian occurrences: beryl, $Al_2Be_3Si_6O_{18}$; chrysoberyl, $Al_2BeO_4$; phenacite, $Be_2SiO_4$; leucophane, possibly (Ca, Na, H)$BeSi_2O_6$ (OH, F); gadolinite, $Y_2Fe$ (O/$BeSiO_4$)$_2$ and helvite, (Mn, Fe, Zn)$_8$Si(BeSiO$_4$)$_6$S. Beryl, with a theoretical BeO content of 11.5-13.5 per cent, is by far the most abundant of these minerals. All but two of the Canadian deposits of beryllium minerals so far discovered and described are in granite pegmatites. In all but one of these beryl is the chief or only beryllium mineral present. Chrysoberyl, phenacite and leucophane (questionable) each occur in single instances as rare companions of beryl. Gadolinite has been reported from one occurrence, and identified doubtfully from another.

Only two Canadian non-pegmatitic beryllium deposits have been reported to date. One is a "skarn" deposit belonging to the general contact metasomatic class. It occurs in northern British Columbia near a contact between a granite batholith and metamorphic hornfelses and marbles. Other deposits of this kind may await recognition, particularly as helvite is a mineral that superficially may closely resemble garnet. The other non-pegmatitic deposit is in New Brunswick, where scattered beryl crystals occur in granite.

Beryl has also been reported as small grains in placer deposits along Quesnel River and 111 Mile Creek in the Lillooet district of British Columbia. These localities were not indicated with sufficient precision for plotting on the map. Also, beryl was reported in a general way from the District of Franklin, but no localities were stated.

### SOURCES OF INFORMATION

The data used in preparing this map were obtained from publications of the Geological Survey of Canada and provincial Departments of Mines, from papers in scientific and technical journals, and from unpublished records supplied by individual geologists, prospectors, and companies. All available records up to the end of 1957 were checked, and they are gratefully acknowledged. The data are believed to be reliable, but as several of the occurrences have not been visited the information is not guaranteed.

### REFERENCES

References to published accounts of occurrences are listed to aid those who desire to obtain additional information on an occurrence or area. For occurrences not yet described in publications the list of localities includes the name and address of the prospector who reported the occurrence, or the name of the company concerned, if such information is available.

The Geological Survey of Canada cannot supply publications other than its own, or unpublished information.

### LOCALITIES

1. Wolf Lake area, Cassiar Mountains. Ref. 1 (beryl)
2. Low Grade claims, Needlepoint Mountain. Ref. 2, 1955, p. 11 (helvite)
3. Cassiar Beryl claims, Horseranch Range. Ref. 2, 1955, p. 9 (beryl)
4. Bonanza Mica mine. Ref. 3; 4, p. 137 (beryl)
5. Fly Hill, near Salmon Arm (beryl)
6. Mount Bigble. Ref. 28, (beryl)
   Erdahl and Pinchback claims, Duncan River. Ref. 2, 1945, pp. 107-8A (mineral not identified)
8. White Creek. Ref. 29, p. 33 (beryl)
9. Midge Creek. Ref. 29, p. 35 (beryl)
10. Paul Lake. Ref. 5 (beryl)
11. Aylmer Lake area. Ref. 6; 7 (beryl)
12. Yellowknife-Beaulieu region. Ref. 8; 9; 10; 11 (beryl)
13. Herb Lake area. Ref. 12, p. 23 (beryl)
14. Cat Lake-Winnipeg River area. Ref. 4, p. 163; 12; 13; 14; 15, 49-7 (1950); 15, 56-1 (1957) (beryl, gadolinite?)
15. Lucy No. 1 claim, West Hawk Lake area. Ref. 12 (beryl)
16. Zeeland township. Ref. 16, Vol. L, pt. 2, 1941, p. 55 (beryl)
17. Turtle Lake. Ref. 4, p. 169; 14 (beryl)
18. Lake St. Joseph area. Ref. 16, Vol. XXXI, pt. 8, 1923, p. 20 (beryl)
19. Linklater Lake. Ref. 16, Vol. XLIX, pt. 6, 1940, p. 5 (beryl)
20. Saga Lake. Ref. 16, Vol. XL, pt. 4, 1931, p. 82 (beryl)
21. Orient Bay area. Ref. 12, pp. 13-15 (beryl)
22. Walrus Island, James Bay; Paint Hills Group. Ref. 17, p. 83
23. Calvin township. Ref. 4, p. 188 (beryl)
24. Conger township. Ref. 4, p. 173 (beryl)
25. Monmouth township (beryl)
26. Ragian and Lyndoch townships, Jacobus Mining Corporation and Ref. 4, p. 228; 14; pp. 7-9; 16, Vol. LXII, pt. 5, 1953, pp. 42-46 (beryl, chrysoberyl)
27. Madoc township. Ref. 17 p. 40 (beryl)
28. Loughborough township. Ref. 4, p. 232 (gadolinite)
29. Height-of-Land mine, Preissac township. Ref. 4, p. 248; 14, p. 9; 18, p. 417 (beryl, phenacite)
30. Lacorne township. Ref. 12; 17, p. 414; 19; 20 (beryl)
31. Desroberts township. Ref. 21 (beryl)
32. Granet township (beryl)
33. Robertson township. P. Arbic and J. H. Lamarche, Mont Laurier, Quebec (beryl, chrysoberyl)
34. Campbell township. Ref. 22 (beryl)
35. Villeneuve mine, Villeneuve township. Ref. 4, p. 241 (beryl)
36. Wentworth township. Ref. 23 (beryl and leucophane)
37. Brassard township. Ref. 17, p. 41 (beryl)
38. Maisonneuve mine. Ref. 4, p. 249 (beryl)
39. Rivière du Poste. Ref. 17, p. 68 (chrysoberyl)
40. Lac Pied des Monts, Lacoste township. Ref. 24 (beryl)
41. Chicoutimi county. Ref. 4, pp. 252, 254 (beryl)
42. Lac Xavier mica mine, Harvey township (beryl)
43. McGie mica mine, Bergeronnes township. Ref. 4, p. 254 (beryl)
44. Grand Watsheshou river, Drucourt township (beryl)
45. Burtts Corner, York county. Ref. 25 (beryl)
46. Pigeon Lake, Bathurst township. Ref. 26 (beryl)
47. Reeves Farm, New Ross. Ref. 4, p. 255 (beryl)
48. Jordan Falls area; Shelburne county (beryl)
49. Indian Head area. Ref. 27 (beryl)
50. Nutak area, British Newfoundland Exploration Ltd. (beryl)

### REFERENCES


1. Wolf Lake, Yukon Territory; Geol. Surv., Canada, Paper 55-21, 1955
2. Annual Reports, Minister of Mines, British Columbia
3. Geol. Surv., Canada, Annual Report, Vol. XI, 1898, pt. D, p. 39
4. Rare-element Minerals of Canada; Geol. Surv., Canada, Econ. Geol. Series, No. 11, 1932, (out of print)
5. Lac de Gras; Geol. Surv., Canada, Map 977A
6. Aylmer Lake; Geol. Surv., Canada, Map 1031A
7. Walmsley Lake; Geol. Surv., Canada, Map 1013A
8. Rare-element Minerals in Pegmatites, Yellowknife-Beaulieu Region, Northwest Territories; Geol. Surv., Canada, Paper 44-12, 1944
9. Mineral Industry of District of Mackenzie, Northwest Territories; Geol. Surv., Canada, Mem. 261, 1951
10. Pegmatite Mineral Deposits of the Yellowknife-Beaulieu Region, District of Mackenzie, Northwest Territories; Geol. Surv., Canada, Paper 52-8, 1952
11. Regional Zonation of Pegmatites near Ross Lake, District of Mackenzie, Northwest Territories; Geol. Surv., Canada, Bull. 34, 1955
12. Lithium Deposits of Manitoba, Ontario and Quebec, 1956; Geol. Surv., Canada, Paper 57-3, 1957
13. Beryllium Prospects in Manitoba; Precambrian, Vol. 10, Nos. 8 and 9, 1937
14. Notes on Beryllium and Beryl; Mines Branch, Dept. of Mines and Tech. Surveys, Ottawa, Mem. Ser. No. 40, 1930
15. Manitoba Dept. of Mines and Natural Resources, Mines Branch Publications
16. Annual Reports, Ont. Dept. of Mines
17. A List of Canadian Mineral Occurrences; Geol. Surv., Canada, Mem. 74, 1915, (out of print)
18. Geology of Quebec; Que. Dept. of Mines, Vol. 3, 1949
19. Pegmatitic Beryllium and Lithium Deposits, Preissac-Lacorne Region, Abitibi County, Quebec; Geol. Surv., Canada, Paper 53-3, 1953
20. Fiedmont Map-Area, Abitibi County, Quebec; Geol. Surv., Canada, Mem. 253, 1950
21. Annual Report on Mining Operations in the Province of Quebec, Dept. of Colonization, Mines Branch, 1912, p. 214
22. Canadian Mining Journal, Vol. 72, No. 1, 1951, p. 112
23. Financial Times, Feb. 10, 1939
24. Mica in the Province of Quebec; Quebec Dept. of Colonization and Mines, Annual Report, 1901, p. 21
25. Burtts Corner (west half); Geol. Surv., Canada, Map 7-1957
26. Molybdenite prospect at Pabineau Lake, Gloucester County, N.B.; New Brunswick Dept. of Lands and Mines, Mining Section, Paper 41, 1940
27. The Iron Deposits of the Indian Head Area, Newfoundland; Geol. Surv., Canada, Bull. 27, 1954, p. 46
28. Vernon Map-area; Geol. Surv., Canada, Mem. 296 (in preparation)
29. Nelson, East Half; Geol. Surv., Canada, Mem. 228, 1941


### LEGEND

PEGMATITIC DEPOSITS
- Single occurrence +
- Area containing several occurrences ///

CONTACT METASOMATIC (SKARN) DEPOSITS
- Single occurrence ×

DEPOSIT IN GRANITE
- Single occurrence △

Metallogenic data compiled by F. M. Vokes, 1957

Cartography by the Geological Cartography Unit, 1958

CANADA
DEPARTMENT
OF
MINES AND TECHNICAL SURVEYS
GEOLOGICAL SURVEY OF CANADA

MAP 1045A-M2

METALLOGENIC MAP

# BERYLLIUM IN CANADA

SCALE: 1 INCH TO 120 MILES = 1/7,603,200

MILES 100 0 100 200 300 400 MILES
KILOMETRES 100 0 100 200 300 400 500 KILOMETRES


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