



EXPLANATORY NOTES

PURPOSE AND SCOPE OF MAP

The main purpose of this map is to show the location of known uranium occurrences in Canada and to permit relating this information to principal geological features. In other words, to illustrate the present state of knowledge of "metalogenic provinces" for uranium in this country. This information will be useful in selecting areas for further prospecting that may be undertaken for uranium, and to companies seeking prospects. It is also a guide to much of the literature on Canadian uranium deposits and their geology.

Because it is impracticable to include data for areal geology on this map, it is printed on fairly transparent paper and on the same scale as the Geological Map of Canada (No. 1065A, price 50 cents), so that geological comparisons can be made by placing the map over Map 1065A. The present map may also be compared with the Tectonic Map of Canada, although this is not on the same scale; the Tectonic Map, published jointly by the Geological Society of America and the Geological Association of Canada, is available at \$1.50 (U.S.) from the Geological Society of America, 419 West 117th Street, New York 20, N.Y.

The information shown on this map is based on about 1,500 discoveries or mining properties at which one or more uranium minerals have been found or from which samples have yielded assays indicating 0.05 per cent U_3O_8 or more. Most of these occurrences or properties are grouped so closely that it is impracticable to show them individually, therefore the areas containing them are indicated. The larger of these areas are generalized to some extent and include some fairly large sections in which occurrences have not yet been found. Virtually all uranium occurrences known up to the end of 1967 are included. A few isolated occurrences have been omitted because the discoverers do not wish them to be revealed, but in almost all cases where permission to publish information is not available the locations fall within the ruled areas outlined by other occurrences that may be revealed. Many of the occurrences appear to be small and only of scientific interest, but their positions are useful in providing more complete information on the distribution of uranium in small quantities. Those occurrences have been omitted unless they are known or believed also to contain uranium in amounts of 0.05 per cent U_3O_8 or more. Occurrences of the mineral uraninite have been omitted unless assays from the occurrences showed 0.05 per cent U_3O_8 or more.

CLASSIFICATION

In the Canadian Shield the uranium ores, and most of the prospects and minor occurrences, are divisible into three general types. The deposits of the Blind River area consist mainly of conglomerates whose matrix contains finely dispersed uranium minerals; these are called the "conglomeratic" type, although a few deposits are actually in quartzite and related rocks. The producing uranium mines of Saskatchewan and the Northwest Territories, and also many prospects and occurrences, consist of veins, lenses, stringers, and disseminations of pitchblende and are called the "vein" type for convenience, although many are not actually veins. The ones of the Bancroft area, and many occurrences there and elsewhere, belong to the general "pegmatitic" class. Many of these are not true pegmatites but are related to them; they include migmatites, unusual calcite-bearing pegmatites, contact metasedimentary deposits, granites, and syenites. The three classes of deposits usually occur in distinct parts of the Shield, which correspond with recognized geological provinces and sub-provinces, or parts thereof. Minor overlapping of types occurs however in some regions, for some of which only the dominant type can be indicated because some generalizations must be made on a map of this scale. For example, one pegmatitic occurrence has been reported from the area between Great Bear and Great Slave Lakes, where all other known occurrences are of the "vein" type. Also, pegmatitic and vein types are intermixed to some extent at the East Arm of Great Slave Lake and in the Taltson area between that lake and Lake Athabasca. Several pegmatitic occurrences have been found in the Beaverlodge region, but it contains thousands of individual veins and related occurrences, and most of the known pegmatitic ones are near the border of the area. In the Blind River area almost all discoveries are of the conglomeratic type, but one stringer of pitchblende has been reported, and a few other occurrences are also of the vein type, but these could not conveniently be separated on a map of this scale.

FAVOURABLE AREAS

Besides the areas in which uranium has already been discovered — where additional occurrences are likely to be found — certain other areas that the compiler believes are favourable in a more general way are indicated roughly. These are mainly extensions of geological provinces or sub-provinces, in other parts of which uranium has been found. This information is based on theoretical and, commonly, very scanty evidence; it should be used cautiously.

Within the Canadian Shield, most such areas are designated as favourable for either the vein or the pegmatitic type of occurrences, although occurrences of other kinds might also be found. A belt extending from the vicinity of Sault Ste. Marie to that of Lake Missinissi is unclassified as to type because occurrences of various kinds have been found along it. Areas favourable in a general way for further discoveries of the conglomeratic type are not designated because certain problems regarding the origin of these deposits are not yet solved. Many additional parts of the Shield are also favourable in a general way but are not indicated because less is known about them.

The entire Appalachian region is shown as favourable because that area is relatively small on a map of this scale. The part of the Cordilleran region lying between the Rocky Mountain, French and the Coast Range Batholiths, exclusive of large areas of young volcanic rocks, is indicated as favourable in a general way, but many parts of the territory farther west are not unfavourable. At present, because of lack of producing uranium mines, neither the Appalachian nor the Cordilleran region can be regarded as favourably as many parts of the Canadian Shield.

The areas indicated are much generalized because of the scale of the map. All parts of them are not equally favourable. Local geological maps and reports available for most areas provide much more detailed data.

It must be emphasized that the present map is only a step in the elucidation of the distribution of uranium in Canada; further discoveries and research will undoubtedly cause changes in the pattern as work progresses.

SOURCES OF INFORMATION

The information on this map is based largely on reports made to the Geological Survey of Canada by prospectors and companies as required by the Atomic Energy Control Regulations, and later released for publication. Additional information has been obtained from studies made and published by the Geological Survey, by Provincial mining departments, and by geologists and mineralogists working for companies or independently. All these sources of information are acknowledged gratefully. Most of the information shown has been verified but it is possible that a few of the occurrences that have not yet been studied may prove to be misplaced or wrongly classified.

REFERENCES

If information has been published on an occurrence or on the uranium deposits of an area, references are listed in the margin of the map. For some areas the literature is extensive, and a selection has been made. Many additional publications are listed in a recent publication: "A Bibliography on the Occurrence of Uranium in Canada, and Related Subjects" (Geological Survey of Canada, Paper 56-3).

For those occurrences not yet described in publications the list of localities includes the name and address of the prospector who reported the discovery or the name of the company concerned.

The Geological Survey of Canada cannot supply publications other than its own, nor unpublished information.

LEGEND

OCURRENCES OF THE CONGLOMERATIC TYPE

Area containing more than one producing mine
Area containing occurrences
Single producing mine
Area containing occurrences
Single occurrence
Favourable area from which occurrences have not been reported

OCURRENCES OF THE VEIN TYPE

Area containing more than one producing mine
Area containing occurrences
Single producing mine
Area containing occurrences
Single occurrence
Favourable area from which occurrences have not been reported

OCURRENCES OF THE PEGMATITIC TYPE

Area containing more than one producing mine
Area containing occurrences
Single occurrence
Favourable area from which occurrences have not been reported

TYPE UNDIFFERENTIATED

Area containing occurrences
Single occurrence
Favourable area from which occurrences have not been reported

Metalogenic data compiled by A.H. Lang, 1957
Cartography by the Geological Cartography Unit, 1958

LOCALITIES

(With key to selected references where available. Otherwise names of companies or individuals concerned are included)

1. Atlin area. Ref. 2, 1953, p. 79; 2, 1955, p. 7 (uraninite)
2. Lincoln Creek, Y.T. (B. A. Saps, 10824-82 Ave., Edmonton, Alta.)
3. Hazleton area. Ref. 1, p. 40; 2, 1948, p. 80; 2, 1949, p. 82 (uraninite)
4. Granite Creek. Ref. 2, 1955, p. 29 (pyrochlore)
5. Grandview Claim, near Houston (C. S. Powney, Fort St. James, B.C.)
6. Nation River. Ref. 3 (uraninite)
7. Fraser Lake (south of). Ref. 2, 1955, p. 28; 2, 1956, p. 28 (uranite, etc.)
8. Tuden Lake (N. Nichols, 515 Marine Drive, Burnaby, B.C.)
9. Zebalos area (S. H. Ray, 4717 Persimmon, Vancouver, B.C.)
10. Bridge River area. Ref. 1, p. 43; 2, 1948, p. 112
11. Clinton area. Ref. 1, p. 44
12. Horsey River (R. B. Farie, 2254 Bowker Ave., Victoria, B.C.)
13. Birch Island area (including Ragsdale deposit). Ref. 2, 1953, p. 101; 2, 1954, p. 101; 2, 1955, p. 80; 2, 1956, p. 79 (uranite, uranorthite)
14. Lumprose area. Ref. 2, 1952, p. 115; 2, 1954, p. 111 (pyrochlore)
15. Texas Creek. Ref. 1, p. 45 (uranite)
16. Lytton area. Ref. 1, p. 45; 2, 1955, p. 33, 34 (metazirconite)
17. Harrison Lake (south of) (G. G. Woodman, 1671 Herrow St., Vancouver, B.C.)
18. Hope area. Ref. 1, p. 45
19. A.M. claims. Ref. 2, 1954, p. 152 (uranite)
20. Hedley Lake (north of) (G. Ramsay, Keremeos, B.C.)
21. Armstrong area. Ref. 1, p. 44 (uranite)
22. Kelowna area. Ref. 1, p. 45 (ferugosite)
23. Part of Kootenay region. Ref. 1, p. 44, 45; 2, 1954, p. 142, 150; 2, 1955, p. 86; 2, 1956, p. 142 (uranite, pyrochlore)
24. Great Bear Lake area (Eldorado mine). Ref. 1, p. 46-57 (pitchblende)
25. Beale Lake. Ref. 1, p. 56
26. Hepburn Lake (A. M. Barry, 14 Marconite Bldg., Edmonton, Alta.)
27. Hotton Lake area. Ref. 1, p. 57-60 (pitchblende)
28. Convent Lake (approx.). Ref. 5 (pitchblende)
29. Marian River area (Rayrock mine). Ref. 1, p. 61; 6, 7 (pitchblende)
30. De Stafford property. Ref. 1, p. 61
31. Barnston River area. Ref. 1, p. 63, 64 (uranite)
32. Coppor property. Ref. 1, p. 64
33. Sparks Lake and Murky Channel areas (Rag property, etc.). Ref. 1, p. 64, 65 (pitchblende)
34. Rag property. Ref. 1, p. 65 (uranite)
35. Te Lake. Ref. 1, p. 66
36. Nonacho (Taltson) area. Ref. 1, p. 66 (pitchblende)
37. Nicholson Lake. Ref. 1, p. 67
38. Lago Lake area (geographical). Dog River Mining Co. Ltd.
39. Lago Lake. Dog River Mining Co. Ltd. (pitchblende)
40. Abtau River. New Santiago Mines Ltd.
41. Fort Chipewyan. New Delhi Mines Ltd., etc. (uranite)
42. Fidler Point. Goldfields Uranium Mines Ltd. (pitchblende)
43. Beaverlodge or Goldfields area. Ref. 1, p. 68-69; 8, 9, 10, 11 (pitchblende)
44. Sucker Bay and Grasse River. Ref. 1, p. 107, also Fond-du-Lac Exploration Co. Ltd. (pitchblende)
45. Black Lake area (geographical). Ref. 1, p. 108-109; 13
46. Black Lake area. Ref. 1, p. 108-112; 13 (pitchblende)
47. Middle Lake occurrence. Ref. 12 (uranite)
48. Charlebois Lake area. Ref. 1, p. 108-112; 13, 14 (uranite)
49. Foster Lakes. Ref. 15 (uranite)
50. Cup Lake area. Ref. 15 (uranite)
51. Lac la Ronge area. Ref. 1, p. 114-116; 15; 17; 18 (uranite)
52. Bleasdale Lake area. Ref. 20 (uranite)
53. Herb Lake area. Ref. 21 (uranite)
54. Manigotogan River. Red River area. Ref. 1, p. 116-117; 21 (uranite)
55. Whiteshell area. Ref. 1, p. 117 (uranite, uranorthite)
56. Kenora area. Ref. 1, pp. 117-121; 22; 23; 24 (uranite)
57. Wolf Island. Lake of the Woods. Ref. 1, p. 120; 22
58. Bernal Lake. Ref. 24
59. Fort Frances area. Pioneer Consultants Ltd.
60. Port Arthur. Ref. 1, p. 120 (uranite)
61. Port Arthur. Ref. 1, p. 120
62. Greenwich Lake. Ref. 1, p. 118 (pitchblende)
63. Mountain Bay. Ref. 1, p. 118
64. Marathon area. Ref. 1, p. 118-121
65. Montreal River area (Sault Ste. Marie Region). Ref. 1, pp. 121-136; 25 (pitchblende)
66. Nemegos area. Ref. 1, p. 131 (pyrochlore)
67. Township 100. Ref. 1, p. 128 (essay in this reference should read 0.081, not 0.11)
68. Aulabegama Lake. Ref. 1, p. 123 (uranite)
69. Aubrey Falls. Ref. 1, p. 132; 26
70. Tarbutt Township. Tarbutt Mines Ltd.
71. Blind River area. Ref. 1, p. 124, 124; 27; 28; 29; 30 (uranite, uranorthite)
72. Carter Township. Ref. 1, p. 150 (uranite)
73. Elk Lake-New Liskard area. Ref. 1, p. 150
74. Vermilion River-Timagami Lake area. Aubay Uranium Mines Ltd.
75. D'Silva Gold Mines (Ontario). Ref. 1, p. 150
76. Lake Nipissing area. Ref. 34 (pyrochlore)
77. Perry Sound area. Ref. 1, pp. 136-149 (uranite, etc.)
78. Haliburton area. Ref. 1, p. 151 (uranite, ferugosite)
79. Bancroft area. Ref. 1, pp. 136-150; 31; 32; 33 (uranite, uranorthite)
80. Kipawa area (Dr. J. T. MacLean, 202 Medical Arts Bldg., Ottawa, Ont.; Mr. Gerald Jones, Kipawa, Que.) (ferugosite, etc.)
81. Albita area. Ref. 1, p. 155; 35; 36 (detritite)
82. Pontiac-Gatineau area. Ref. 1, pp. 151-154; 37; 38; 39 (uranite, etc.)
83. Oka area. Ref. 40 (pyrochlore)
84. Laviolette-Portneuf area. Ref. 1, p. 152-153 (uranorthite, etc.)
85. Bessant Township. Barnet Mines Ltd. (uranite)
86. Levy Township. Opemiska Copper Mines Ltd.
87. Harvey Township (J. R. Deltore, 466 rue de Sales, Chicoutimi, Que.)
88. Charlevoix area. Ref. 1, p. 151 (uranite, ferugosite)
89. Latellier Township. Ref. 41 (uranite)
90. Cross Point. Ref. 1, p. 154; 42 (pitchblende)
91. Cox Brook. Ref. 42 (pitchblende)
92. Shipigan Island. Ref. 42 (pitchblende)
93. Harvey area. Ref. 42 (uranosapine)
94. Hampton. Ref. 42 (uranium-bearing hydrocarbon)
95. Shediac River. Maritime Exploration Co. Ltd.
96. Black Brook. Ref. 42
97. Georgierville. Ref. 42 (pyrochlore)
98. New Ross. Ref. 42 (uranite)
99. Barnes Ice Sheet, Baffin Island (radioactive columbite-tantalite)
100. Ryan Bay
101. Ten Mile Lake. Froisher Ltd. (pyrochlore)
102. Seal Lake area. British Newfoundland Exploration Ltd. (pitchblende)
103. Makkovik area. British Newfoundland Exploration Ltd. (uranite)
104. Makkovik area. British Newfoundland Exploration Ltd. (pitchblende)
105. Indian Head area. Ref. 43 (uranite)
106. Flat Bay area (J. J. Dodd, Flat Bay River, Newfoundland)
107. Searaton area (J. J. Dodd, Flat Bay River, Newfoundland)
108. Torbay area (J. J. Dodd, Flat Bay River, Newfoundland)

REFERENCES

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2. Annual Reports, Minister of Mines, British Columbia.
3. "An Occurrence of Uraninite in a Black Sand". American Mineralogist, No. 38, p. 549, 1953.
4. "The Ragsdale Uranium Property". Western Miner, vol. 27, No. 12, p. 40, 1954. See also Western Miner, vol. 26, No. 11, p. 138, 1953 and vol. 26, No. 10, p. 54, 1955.
5. "Some Dates and Subdivisions of the Canadian Shield". Proceedings, Geological Association of Canada, vol. 7, pt. II, p. 72, 1955.
6. "Tumi Lake". Geol. Surv. Canada, Paper 54-1, 1957.
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16. "The Geology of the Middle Foster Lake Area, Northern Saskatchewan". Dept. of Mineral Resources, Sask., Report No. 26, 1957.
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21. Twenty-fifth Annual Report on Mines and Minerals. Dept. of Mines and Natural Resources, Manitoba, p. 75-76, 1953.
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24. "Recent Activities in the Kenora District". The Precambrian, June, p. 7, 1954.
25. "Geology of the Montreal River Area". Ontario Dept. of Mines Annual Report vol. LXVI, Part 3, 1955.
26. "The Geology Along the Mississagi Road". Ontario Dept. of Mines Preliminary Report 1955-2.
27. "Geology of Parts of Long and Sprague Townships, Blind River Uranium Area". Ontario Dept. of Mines, Preliminary Report 1953-2.
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