

LEGEND

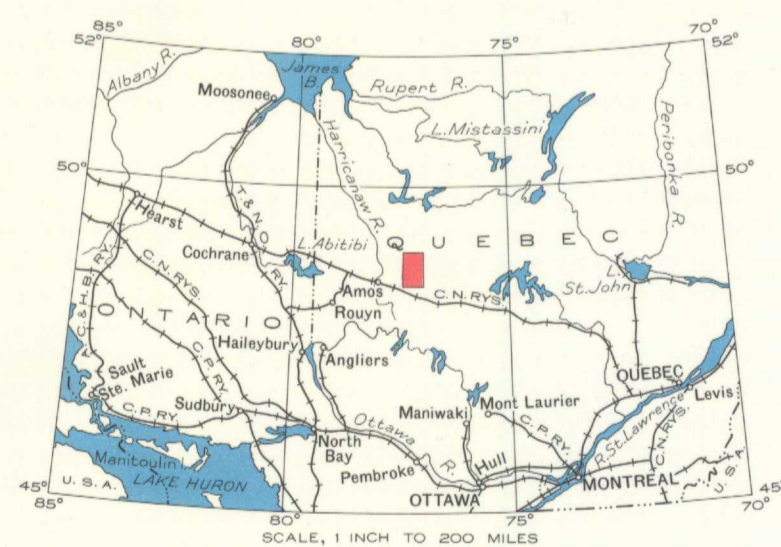
NOTE: Uncoloured areas are drift covered and in them bedrock outcrops are not known. Coloured areas are in part drift covered, the locations of known areas of outcrop are indicated by crosses 'x'; small outcrop 'x'.

- PROTEROZOIC (?) (LATE PRECAMBRIAN)**
- 8 Olivine gabbro
  - 7 Quartz diorite
- KEEWATIN (?)**
- 5 Greywacke, conglomerate, argillite, sandstone
  - 6 Sediments or dykes partly replaced by carbonate
- ARCHEAN (EARLY PRECAMBRIAN)**
- KEEWATIN**
- 4 Altered pyroxenite
  - 3 Tuff, breccia; 3a, with acid lava flows
  - 2 Rhyolite, trachyte, dacite
  - 1 Andesite, basalt
- Sand and gravel with some glacial drift
  - Iron formation

- Geological boundary (defined, approximate, assumed) .....  
 Fault (assumed) .....  
 Bedding (inclined, dip unknown) .....  
 Synclinal axis (position approximate) .....  
 Prospect ..... x
- Road and buildings .....  
 Road not well travelled .....  
 Trail .....  
 Post Office .....  
 Township boundary .....  
 Range number ..... R.VI  
 Lot number ..... 30  
 Stream (position approximate) .....  
 Marsh .....  
 Prospect ..... x

Geology by L.J. Weeks, 1936 and 1937.

Base-map compiled by the Topographical Survey, 1937 from aerial photographs taken by the Royal Canadian Air Force, and from information supplied by the Quebec Department of Lands and Forests. Cartography by the Drafting and Reproducing Division, 1939.



DESCRIPTIVE NOTES

The area is a plain of clay or muskeg, interrupted by scattered rock exposures, and by ridges of sand and gravel that rise to a maximum height above the plain of about one hundred feet.

Keewatin rocks of volcanic origin are usually considerably altered, but very rarely are the original textures and volcanic structures destroyed. In the intermediate and basic members of the group, (1), the ferromagnesian minerals are largely, and often completely, altered to chlorite and iron oxides. Feldspars while retaining their crystal form and to a certain extent, their twinning, are often so clouded with sericite and kaolin that their precise determination is impossible. On weathered surfaces these rocks are dark grey to greenish grey and usually show a slight iron stain. On fresh surfaces the colour may vary from black, for the more basaltic varieties to a greenish grey for the andesites. Grain varies from dense to about 2 mm., in size. Basalts and andesites are characterized to a great extent by the presence of pillow structures. These occur usually on the upper surface of the flow and, in the case of andesite, occasionally reach a length of ten feet. A study of the relationships of adjacent pillows will usually give an indication of the attitude of the beds, and about 90% of the attitude determinations in the area were made by such means.

The more acid members (2) of the Keewatin volcanic group, although composing a very minor amount of the entire rock assemblage, are of considerable importance as horizon markers. On weathered surfaces, these rocks are much lighter in colour than the andesites and basalts, often weathering to a dirty white. Darker varieties are distinguished from the lighter andesites by an absence of iron stain on the surface, or if a stain occurs, it is due to the presence of iron sulphides or iron carbonate crystals in the rock mass. On fresh surface, the colour may vary from a light grey for the dacites to a deep vitreous green, or even pitch black, for the rhyolites. Quartz phenocrysts are visible in rhyolite and dacite, but are much larger as a rule in the former, being observed up to 8 mm. in size. The trachytes have phenocrysts only of feldspar, usually weather quite white, and show a vitreous green colour on a fresh surface. Although highly altered forms of these rocks are occasionally found, in general they more nearly portray the original character of the rocks than do the more basic volcanic rocks. The more altered phases are characterized by a development of sericite in the groundmass, and by a cloudiness of the feldspar phenocrysts due to the presence of sericite, kaolin, and occasionally carbonates.

Tuff and breccia (3) particularly in their finer grained phases, are excellent horizon markers, some bands or zones being suspected to continue for thirty miles. The coarser breccias are easily recognizable from the presence of fragments of varying size in a finer, often schistose matrix. Fine beds of tuff are usually highly schistose, and often can be identified with accuracy, only if a horizon of coarser material is found within them. A considerable area of tuff and breccia in north-eastern Barraute and adjacent Carpentier townships has been considerably altered by carbonatizing solutions. These rocks may be recognized by the development of amber coloured crystals on a fresh surface, and by the presence of a deep red to light red iron stain on a weathered surface. The tuffs in this locality are a fine, fissile, light buff coloured sericite schist.

A group of sediments (5) occurs in the northwest corner of the area and apparently overlies the Keewatin rocks to the south of them. They may be late Keewatin or post-Keewatin. In Vassal township these rocks are quite highly contorted and consist mostly of shales interbedded with fine bands of greywacke and in a few cases, narrow beds of conglomerate. Some quartz has been injected in narrow stringers along the bedding planes. Near the eastern end of the large outcrop in Range 1, Vassal township, is a band of iron formation at least 150 feet wide consisting of thin layers of magnetite and quartz, usually one half to one inch wide, separated by narrower bands of grey chert containing some magnetite. The entire assemblage has been much crumpled. The large outcrop in Range 10, Lamorandière township shows less contortion than those just described, and quartz stringers, while present, are not so prominent. Rocks exposed here vary from shale to fine sandstone and are banded, the layers being about one inch wide. These rocks, in places, give way to a rock consisting essentially of iron-calcium-magnesium carbonates and quartz. The carbonate rock is quite massive and is easily recognized by a thick, spongy, rusty red weathering outer zone. This rock where found among the sediments has fairly definite boundaries and remarkably constant widths and directions. It is a replacement by carbonatizing solutions either of the sediments themselves or of dykes which cut them.

Two small bodies of altered pyroxenite (4) intrude the Keewatin volcanic rocks. These rocks weather reddish to buff with abundant iron stain. On fresh surface they show a grain of up to 5 mm. in size and are greenish black to black, with no visible light-coloured minerals. Two bodies of quartz diorite (7) cut the Keewatin volcanics, and are probably also later than the sediments. The rock weathers to a reddish buff, on fresh surface it varies in colour from a light greenish grey to almost black. The grain varies from scarcely visible crystals to about 4 mm. in size. The rocks have undergone considerable alteration with the formation of chlorite and sericite. This rock is very like dioritic intrusives cutting sediments in Montgat township.

The youngest consolidated rock in the area is olivine gabbro (8) which occurs in dykes from 100 to 200 feet wide, striking northeast. This rock weathers to a reddish buff. On a fresh surface it can usually be distinguished from other rocks in the area by its clean-cut crystals of augite and plagioclase, and general fresh appearance. The grain varies from dense, near the dyke margins, to about 3 mm., and occasionally more, at the dyke centers.

MINERAL DEPOSITS

Gold is reported to have been found in very small quartz stringers in sediments in Range 1, Vassal township. No work is known to have been done here. Gold is reported to have been found in quartz stringers in carbonatized tuff and acid flows about 1 1/2 miles east of the highway in Range 6, Barraute township. The stringers are about 1/2 inch wide and strike about 15° south of east. Some chalcopryite is present in the stringers.

MAP 529A  
DUVERNY  
(EAST HALF)  
ABITIBI COUNTY  
QUEBEC

Scale, 1/4 inch or 1 inch to 1 Mile  
Miles  
Approximate magnetic declination, 143° West.

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