

PROTEROZOIC  
 (LATE PRECAMBRIAN)

ARCHEAN  
 (EARLY PRECAMBRIAN)

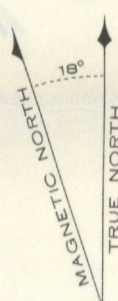
LEGEND

- 11 Gabbro, olivine diabase
- 8 Granite, syenite, diorite and allied rocks. 8a: granite, and biotite and/or hornblende gneiss and schist. 8b: granite and biotite schist. (possibly the granitic rocks are not all of one age)
- 7 Anorthosite, gabbro. 7a: gabbro
- 5 Altered gabbro
- 4 Feldspar rich sediments, slate, banded chert, conglomerate, some lavas, pyroclastics and small intrusive bodies (in part probably younger than Keewatin but in part possibly Keewatin)
- 6 Undifferentiated altered gabbro (5), diabase, quartz diabase or diorite, pyroxenite, serpentine and Keewatin lavas, etc. (3). 6a: altered gabbro (5), and Keewatin lavas, etc. (3)
- KEEWATIN
- 3 Lavas (greenstone), some tuff, agglomerate and small intrusive bodies

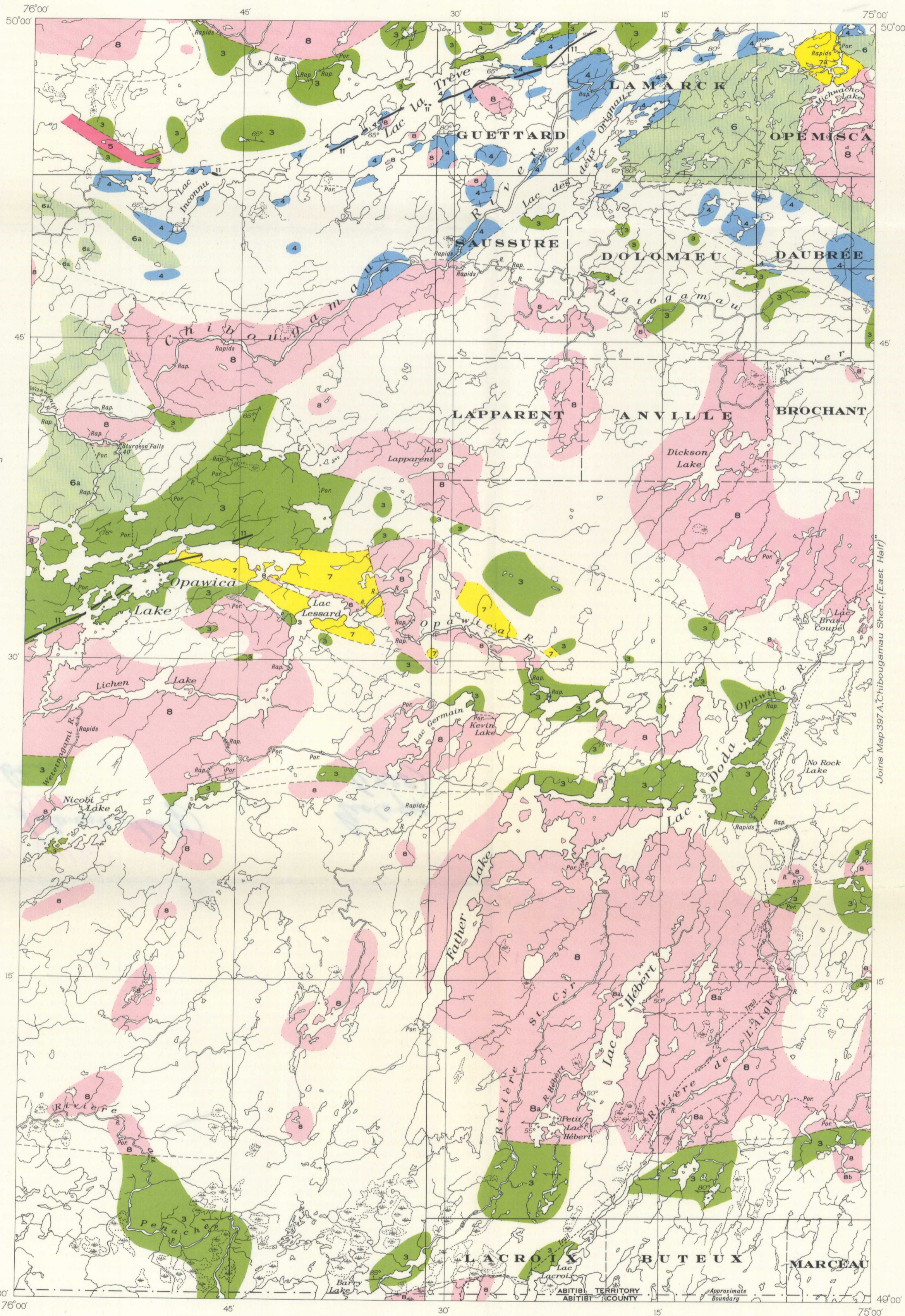
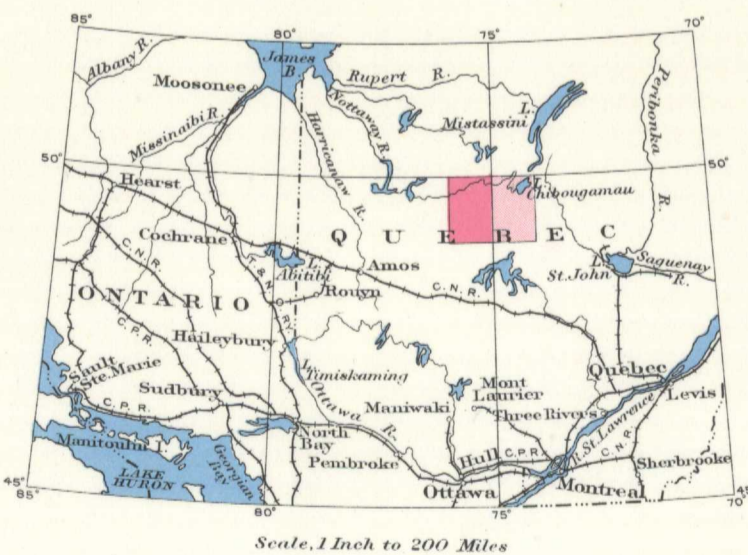
- Geological boundary (approximate).....
- Bedding (inclined, vertical).....
- Schistosity (inclined, vertical).....
- Trail or portage.....
- Fall or rapid.....
- Marsh.....

SOURCES OF INFORMATION

Geology by J. A. Retty, and G. W. H. Norman, 1935.  
 Compiled and reproduced by the Bureau of Geology and Topography from information supplied by Federal Government Departments.



Approximate magnetic declination, 18° West.



GENERAL GEOLOGY

The general succession, type of structure, and lithology of the greenstones (3), sediments (4) and various intrusives are in many ways like those of similar rocks in the Rouyn and adjacent districts of western Quebec and therefore the greenstones and associated strata have been grouped as being Keewatin. The Keewatin rocks (3) although probably representing many volcanic types are now typically aggregates of secondary minerals chiefly chlorite, amphibole, epidote, zoisite, sericite, carbonate, albite and quartz. Dark to light green varieties form the largest part of the Keewatin assemblage and commonly have pillow structures. Here and there sediments or well banded tufts and in places medium to coarse agglomerates are interbedded with the lavas. The Keewatin rocks are as a rule somewhat sheared and in places have been almost completely converted to schistose chloritic rocks. Pillow structures if present may be drawn out to many times their original length and flattened or distorted. In many zones of intense shearing and in some cases where the rocks are unshredded, the Keewatin rocks particularly and those of other groups also are replaced either partly or completely by carbonates and are cut by quartz stringers and veins.

The sedimentary rocks (4) are possibly equivalents of the Timiskaming and Keewatin sediments in the Rouyn-Bell River region of western Quebec. They appear to lie in synclinal structures and to be younger than the greater part of the Keewatin lavas (3). It is possible that they comprise at least two distinct groups: (1) an older group of pyroclastic sediments and breccias that seem conformable with and even to some extent interstratified with Keewatin lavas; and (2) a younger group resting unconformably on older rocks. The younger (7) group forms a large part of the sedimentary belt that extends east and west from lac la Trève. Along the north side of this belt conglomerates occur that contain well rounded boulders of granite, greenstone, and feldspar porphyry. Although not traced, sediments may extend along the north side of the Father Lake granite mass and possibly are represented on Doda lake by altered banded rocks displayed south of the mouth of L'Ange river. North of the river pillowed lavas occur.

Gabbro forms the greater part of the altered basic intrusives (5). Serpentine and pyroxenite form small masses only. Small bodies of altered, green, quartz-bearing diabase and diorite are fairly common. The intrusives are probably of more than one age. They are typically sill-like masses. Basic intrusives, except for a few small dykes and sills, do not occur in the sediments (4) west of lac des Deux Originaux although they are present as large masses in the Keewatin rocks (3) that border the sediments (4) on both sides of lac Inconnu. The presence of large intrusive basic masses within the lac la Trève belt of sediments and their presence immediately east and west of this belt is interpreted as indicating that the greater part of the basic rocks were intruded as sills beneath the sediments and that they owe their present distribution to subsequent folding.

The anorthosite (7) of the Opawica Lake mass is partly altered to a white, chalky rock mottled green but is in part coarse and fresh. The gabbro (7a) on Chibougamau river has a very high feldspar (probably labradorite) content and resembles anorthosite.

Biotite granite is the most widespread type of the granitic group (8) and is comparatively fresh although altered and intensely sheared in places. Hornblende rich types occur in the eastern part of the Father Lake mass and probably elsewhere. The marginal phases of the larger granitic bodies tend in places to be dioritic.

The gabbro and diabase (11) are in places fresh but in other places contain secondary minerals in place of pyroxene and other ferromagnesian constituents.

STRUCTURAL GEOLOGY

The major folding of the Keewatin (3) and sedimentary rocks (4) strikes east southeasterly to easterly except northeast of Opawica lake and along Chibougamau river east and southeast of lac la Trève where the strike is north of east. The belts of sediments are considered to be synclinal as indicated by the attitudes of tops of the Keewatin lava flows. The volcanic and sedimentary rocks everywhere dip steeply or vertically and their strikes, in general, parallel the trend of the belts in which they occur. Cleavage where developed near granitic intrusives is typically parallel to the granitic contact.

ECONOMIC GEOLOGY

Gold occurs in both the Opawica and lac la Trève belts of greenstone and sediments. The known occurrences: the Opawica belt are small and are located at a few places near the border of the syenite stock on the north arm of Opawica lake and about three miles east northeast of the outlet of this arm. At the latter locality the gold is coarse and very clearly visible but is confined to a small quartz stringer. In the lac la Trève belt quartz veins containing in places gold are known to occur in greenstone immediately north of the tip of the narrow north-east arm of lac la Trève.

MAP 398 A  
**CHIBOUGAMAU SHEET**  
 (WEST HALF)  
 ABITIBI TERRITORY  
 QUEBEC  
 Scale, 253,440 or 1 Inch to 4 Miles  
 Miles  
 Kilometres

NOT TO BE TAKEN FROM LIBRARY  
 NE PAS SORTIR DE LA BIBLIOTHÈQUE

398A