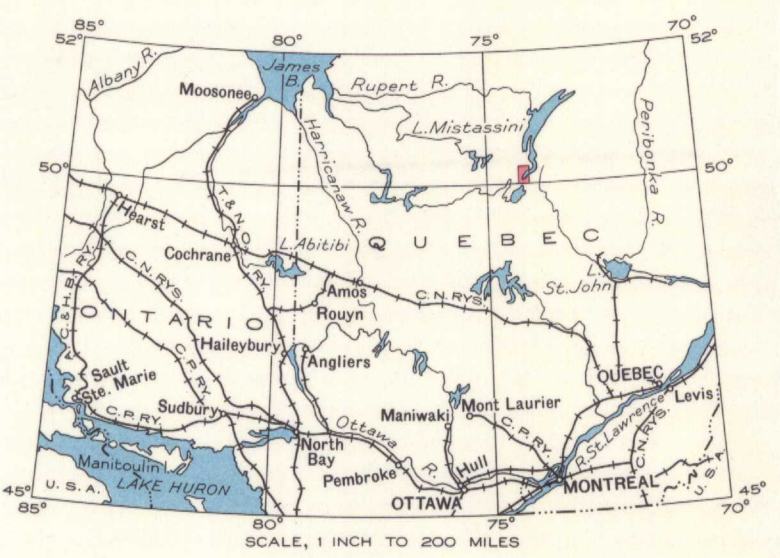


LEGEND

- CHIBOUGAMAU SERIES**
- 6** Greywacke, laminated greywacke-conglomerate
- 5** Boulder conglomerate, arkose, quartzite
- PRE-CHIBOUGAMAU**
- 4** Hornblende syenite, granite
- 2** Massive to well banded slaty tuffs and feldspathic greywacke, conglomerate
- 3** Highly altered massive to strongly foliated quartz-epidote-amphibole rocks
- 1** Pillow lava, minor amounts of tuff and agglomerate, minor gabbro
- Conglomerate**

- Sand covered area
- Drumlinoid ridge of sand, gravel and boulders
- Area of abundant rock outcrops
- NOTE: small observed outcrops may be indicated by a cross (x), by a bedding symbol, or by any of the following letters: P (quartz porphyry), B (gabbro), S (tuffs)
- Bedding (inclined, vertical, horizontal)
- Bedding (direction of dip known, upper side of bed unknown)
- Fault, shear zone
- Portage
- Territory boundary (approximate)
- Township boundary (surveyed)
- Township boundary (unsurveyed)
- Lake and stream (position approximate)
- Rapid
- Marsh
- Height in feet above Mean sea-level

Geology by G. Shaw, 1938.  
Base-map prepared by the Topographical Survey, 1939, from information supplied by Federal Government Departments. Cartography by the Drafting and Reproducing Division, 1940.



DESCRIPTIVE NOTES

Waconichi lake forms part of the canoe route between Oskelaneo on the Quebec-Cochrane branch of the Canadian National Railways and Lake Mistassini. The distance to Waconichi lake is about 200 miles and requires some 30 portages. An alternative but seldom used canoe route is from Lake St. John. Aircraft, flying from bases at Senneterre and Oskelaneo on the railway and Roberval on Lake St. John are often used to reach the general area around Lakes Mistassini, Chibougamau and Waconichi.

Waconichi lake drains northeastward into Lake Mistassini and thence by Rupert river to James bay. Much of the map-area, however, drains to the west and south and is tributary to James bay via the Chibougamau-Nottaway River system. The divide between these two drainage systems is the boundary between Abitibi and Mistassini territories. Within the map-area this divide ranges from a few feet above Waconichi lake, just north of Ospray bay, to 500 feet above the lake at Bouleau mountain. The mountain forms the eastern end of a chain of hills that extends westward south of Barlow river to Peter Lake. A second range of hills extends southwestward along the northwest shore of the lake from Kastell bay. Other high ground occupies the extreme southeast and southwest corners of the area.

The pre-Chibougamau volcanic rocks and overlying sediments are conformable. Some of the lower members of the sediments are interbedded with upper volcanic members and the contact has been drawn arbitrarily where sediments constitute 50 per cent of the observed outcrops.

The volcanic rocks (1) are part of a greenstone belt that extends through Opémisca and Chibougamau Lake map-areas to the south. The lavas are pale dark green, altered, andesitic to basaltic rocks and include both massive and schistose types. Some of the flows show a distinct change in grain from coarse at the base to fine at the top. Small outcrops of the coarser phases may be mistaken for intrusives. Pillow lavas are common but as the rocks are closely folded the pillows are distorted.

The lower members of the sedimentary series (2) consist of well-banded, tuffaceous sediments which, higher in the series, become interbedded with feldspathic greywackes. The latter rocks are massive to well-banded, grey rocks that contain fragments of quartz, feldspar, amphibole, epidote, and mica. In some of the coarser types feldspar fragments can readily be seen in hand specimens and, where no bedding is visible, the rock has the appearance of an acid intrusive. The greywackes form the bulk of the sedimentary series although narrow bands of tuffs and some lavas are present. Conglomeratic phases of the greywacke contain subangular to rounded pebbles of granite, quartz porphyry and a few of greenstone. The pebbles are scattered throughout the greywacke matrix at intervals of from one to three feet.

The intrusive rocks (4) are mainly a medium-grained, hornblende syenite containing hornblende, acid plagioclase and microcline as the essential mineral constituents. Local minor phases of granite are present in the northern part of the area.

A wide zone of altered rocks (3) has developed at the contact of the intrusive mass. These altered rocks were, at least in part, sediments as indicated by the continuation of a band of conglomerate into the metamorphic zone. The rocks now range from light to dark and contain varying amounts of quartz, epidote and amphibole as the principal mineral constituents. In part the beds are massive and in part strongly foliated and they range in grain size from very fine to coarse. Dykes from the adjoining intrusive body are rare.

Overlying the older sediments (2) but separated from them by a major unconformity are the Proterozoic sediments of the Chibougamau series (5 and 6). These form a broad open syncline that rests on the truncated edges of the steeply-dipping pre-Chibougamau beds. The basal member of the series is an unsorted boulder conglomerate that ranges in thickness between 10 and 200 feet, the thicker portions occupying depressions in the surface upon which they were deposited. The conglomerates pass upwards into reddish-brown to grey arkose and quartzite and these in turn grade into fine-grained greywacke and delicately-banded greywacke-conglomerate. Rounded and subangular boulders of greenstone and granite are of all sizes up to three feet in diameter and are sparingly scattered through the matrix. The boulders in both this and the older unsorted boulder conglomerate are chiefly of pink granite, quartz porphyry, greenstone and older sediments.

Known faults in the area are confined to the southeast corner. The fault that trends northeasterly along the chain of lakes there is a continuation of the McKenzie Narrows fault of Chibougamau Lake area where it disrupts sediments of the Chibougamau series. The fault zone in Waconichi area is characterized by intense brecciation of the rocks along the shores of the lakes through which it passes. Other faults trending north-northeast are thought to be subsidiary to the McKenzie Narrows fault. They are marked by scarps or by schistose or brecciated zones.

Sediments of the Chibougamau Series at the outlet of Waconichi lake 5 miles northeast of the map-area are downfaulted on the northwest side of a northeasterly trending fault. If this fault were projected southwestward along its strike it would pass through the shear zone 1 mile southeast of Heart Island. This indicates the possibility that the younger sediments on Waconichi lake may also be on the downthrow side of a major fault.

There are no known ore deposits in the area. Free gold has been observed in association with quartz and pyrite in fractures in the greenstone near Lemoine lake. Shear zones and fractures containing ferruginous carbonate, quartz and pyrite occur in the lavas and older sediments. They trend easterly and northeasterly and dip vertically. Quartz veins containing pyrite and specular hematite lie parallel to the bedding in the conglomerates of the Chibougamau series.

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