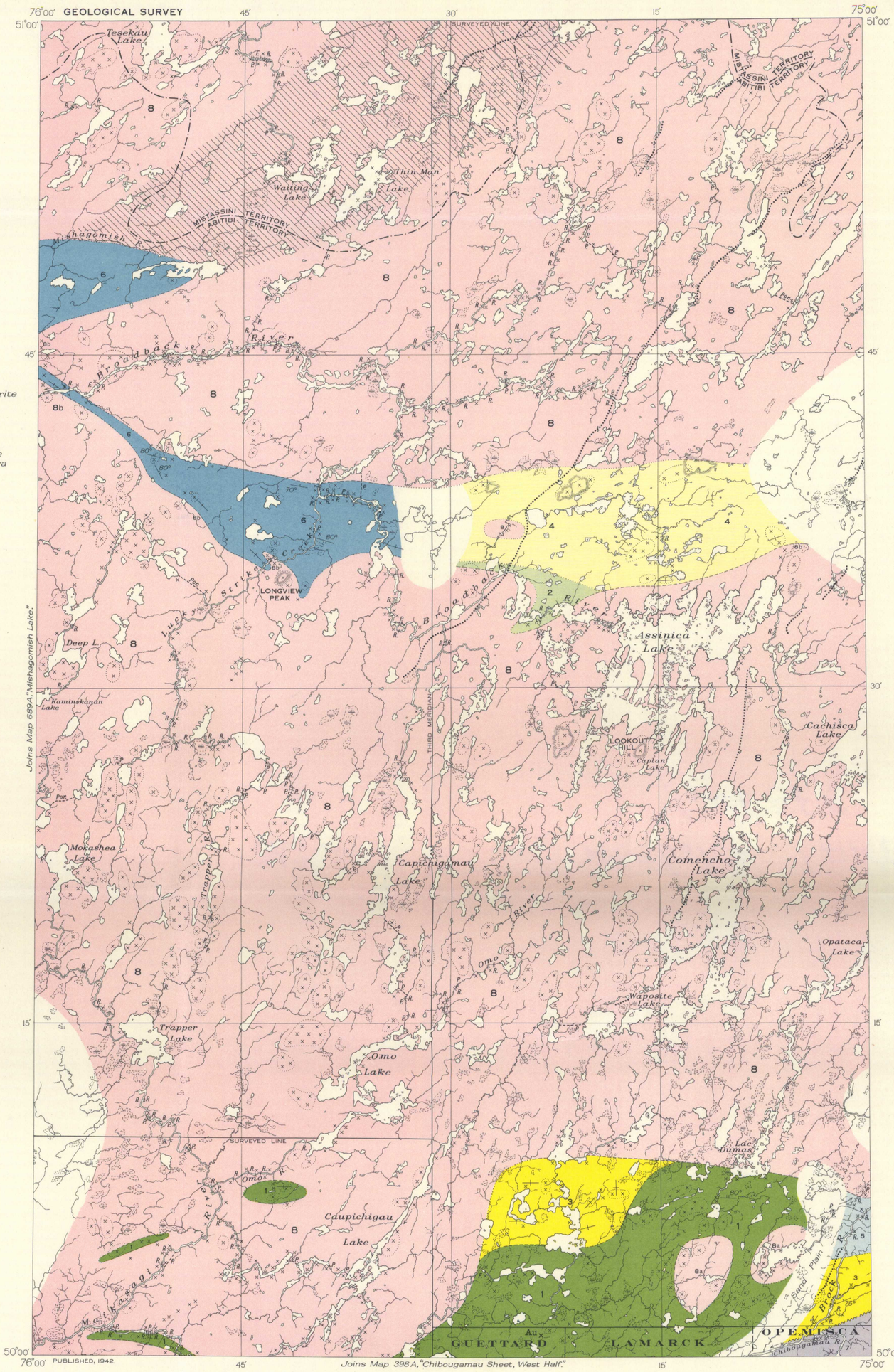
CANADA

DEPARTMENT OF MINES AND RESOURCES

MINES AND GEOLOGY BRANCH

BUREAU OF GEOLOGY AND TOPOGRAPHY

GEOLOGICAL SURVEY



LEGEND

NOTE:– Uncoloured areas, except where marked "Sand Plain", are unexplored.

ARCHÆAN (EARLY PRECAMBRIAN)

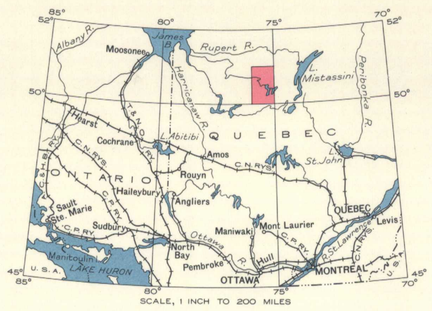
- 8 — Biotite granite, hornblende granite; minor diorite; some paragneiss; 8a, porphyritic granite; 8b, muscovite granite, pegmatite
- OPÉMISCA SERIES
  - 7 — Porphyritic lava, tuff
  - 5 — Arkose
- PRE-OPÉMISCA
  - 3 — Greywacke, black slate, mica schist
  - 1 — Pillow lava, rhyolite, tuff, agglomerate; some gabbro
- BROADBACK SERIES
  - 6 — Greywacke, arkose, conglomerate, quartz-mica schist, garnet schist, cordierite schist, hornblende schist
- PRE-BROADBACK (?)
  - 4 — Feldspar-rich sedimentary rocks, greywacke, hornblende schist. May include some lava
  - 2 — Pillow lava

Belt of granitic rocks containing abundant inclusions of sedimentary material

- Bedding (inclined, vertical)
- Bedding (direction of dip known, upper side of bed unknown)
- Fault
- Glacial striæ
- Observed outcrop or area of outcrop
- Mineral occurrence (gold) — Au ×
- Portage
- Territory boundary
- Township boundary (surveyed)
- Township boundary (unsurveyed)
- Survey monument
- Stream (position approximate)
- Fall and rapid
- Marsh
- Esker
- Hill

Geology by G. Shaw, 1940.

Base-map compiled by the Topographical Survey, 1940, from aerial photographs taken by the Royal Canadian Air Force, July, 1937, and from information supplied by the Quebec Department of Lands and Forests. Cartography by the Drafting and Reproducing Division, 1942.



SCALE, 1 INCH TO 200 MILES

DESCRIPTIVE NOTES

The area is difficult to reach by water. There are two alternative routes. One is from Roberval on Lake St. John, or from Oskelaneo on the Canadian National Railways, to Chibougamau Lake and thence down the Chibougamau to Brock River. The other is from Senneterre by Bell River to Maikasagi Lake and up Maikasagi River. Both routes are difficult and entail many portages. Aircraft operating from bases on the railway offer the best means of access.

Drainage of the map-area is to James Bay. Mistassini Territory is drained by the Rupert-Marten river system. Maikasagi, Brock, and Chibougamau Rivers are tributary to the Nottaway. The central part of the area is drained by Broadback River which enters James Bay between the Nottaway and the Rupert.

Lowest elevations are in the southwestern portion of the area. From there the ground surface rises to the north and northeast to a chain of granite hills extending from west of Capichigamau Lake eastward to Comencho Lake. A parallel range underlain by altered sedimentary rocks extends eastward from Broadback River, north of Assinica Lake.

The western part of the northern sedimentary belt is largely drift-covered but outcrops are more numerous to the east. The eastern part of the area of greenstones and sedimentary rocks west of Brock River is well exposed but in the western part there are few outcrops.

The age relations of the rocks of the northern sedimentary belt to those of the sedimentary and volcanic rocks in the southern part of the map-area are uncertain. A tentative correlation, based on lithology, is indicated in the legend. Adjoining areas to the south and southeast have been studied in more detail and many of the rock types encountered there extend into the Assinica Lake map-area.

The area of volcanic rocks (1) west of Brock River is a northward continuation of a band of similar rocks that extends across the adjoining Michwacho Lake and Mechamego Lake map-areas. There they are considered to be older than black slates that are lithologically similar to those (3) that outcrop along the lower reaches of Brock River. Both volcanic (1) and sedimentary (3) rocks are considered to be older than arkoses (5) and porphyritic lavas (7) of the Opémisca series.

The contact between the lavas (7) and the slates (3) is probably a faulted one, as indicated by the intense shearing exhibited at the junction of Brock and Chibougamau Rivers; by the absence of sedimentary rocks of the Opémisca series (5) between the slates (3) and the lavas (7); and by the northward facing attitude of the slates. The abrupt termination of the sedimentary bands (3, 5) just west of Brock River suggests that they are separated from the older lavas (1) by a fault. A series of strong, northeasterly-trending faults has been observed a few miles to the southwest in the Michwacho Lake and Mechamego Lake map-areas and it is likely that one or more of these continue across the southeastern corner of the Assinica Lake area, beneath the large sand plain west of Brock River.

The northern sedimentary belt contains rocks of the Broadback series in the western half and lithologically dissimilar rocks in the eastern half. The lavas (2) and sedimentary rocks (4) of the eastern portion of the band closely resemble pre-Opémisca lavas and sedimentary rocks of the southern part of the map-area. The rocks of the Broadback series more closely resemble the Opémisca beds found in the Michwacho Lake, Mechamego Lake, and Opémisca map-areas to the south.

Some narrow, northeasterly-trending quartz veins that occur in greenstone in the northeast corner of Guettard Township are known to carry low values in gold.

MAP 712 A

ASSINICA LAKE

ABITIBI AND MISTASSINI TERRITORIES

QUEBEC

Scale, 1/253,440 or 1 Inch to 4 Miles

Miles 4 0 4 8 12

Approximate magnetic declination, 19° West.

712A