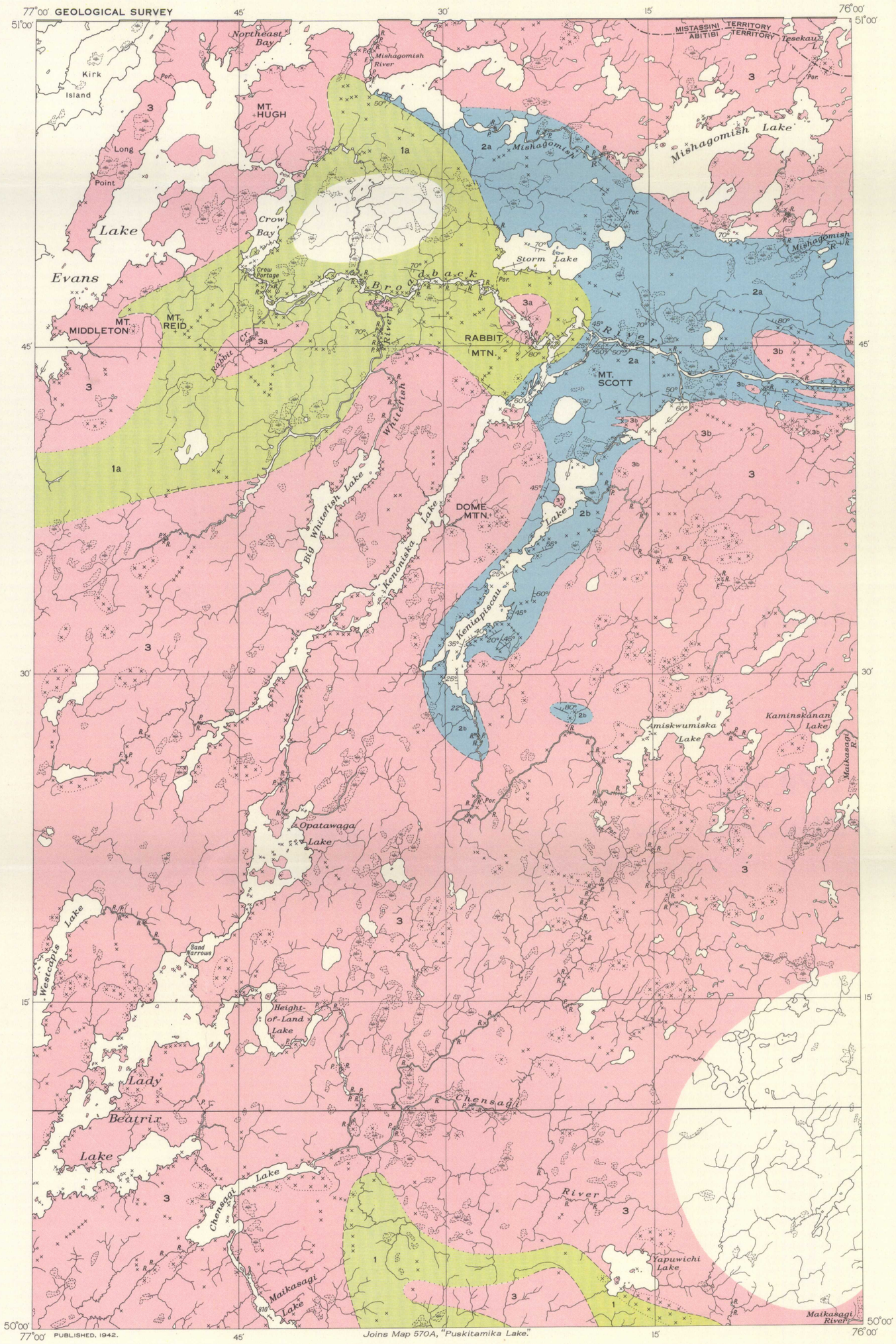
CANADA

DEPARTMENT OF MINES AND RESOURCES

MINES AND GEOLOGY BRANCH

BUREAU OF GEOLOGY AND TOPOGRAPHY

GEOLOGICAL SURVEY



Joins Map 570A, "Puskitamika Lake."

PUBLISHED, 1942.

LEGEND

NOTE: Areas not coloured are unexplored.

ARCHEAN (EARLY PRECAMBRIAN)

- 3 — Biotite granite, hornblende granite, porphyritic biotite granite, hornblende syenite; minor diorite and syenite; some paragneiss; **3a**, porphyritic syenite, hornblende syenite, amphibolite; **3b**, muscovite granite, pegmatite
- 2 — **2a, BROADBACK SERIES:** greywacke, arkose, conglomerate, quartz-mica schist, garnet schist, cordierite schist, hornblende schist; **2b**, hybrid zone of sedimentary and granitic material
- 1 — Pillowed andesite, rhyolite, tuff, agglomerate; some gabbro; minor sedimentary rocks; **1a, LAKE EVANS SERIES:** pillowed andesite, rhyolite, porphyritic lava, tuff, agglomerate; some gabbro; minor sedimentary rocks

Observed outcrop area and small outcrop

Bedding (inclined, vertical)

Bedding (direction of dip known, upper side of bed unknown)

Shear zone (vertical)

Glacial striæ

Portage

Territory boundary

Township line (surveyed)

Stream (position approximate)

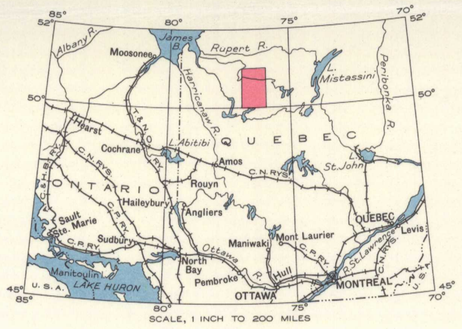
Fall and rapid

Marsh

Height in feet above Mean sea-level

Geology by G. Shaw, 1939, 1940.

Base-map compiled by the Topographical Survey, 1939, from aerial photographs taken by the Royal Canadian Air Force, June, 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

MAP 689A

MISHAGOMISH LAKE

ABITIBI AND MISTASSINI TERRITORIES

QUEBEC

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

4 0 4 8 12 Miles

Approximate magnetic declination, 19°00' West.

DESCRIPTIVE NOTES

Access to the map-area by canoe is difficult. The route is from Senneterre, on the Quebec-Cochrane branch of the Canadian National Railways, down Bell River through Mattagami, Olga, and Gull Lakes to Maikasagi Lake in the southwest corner of the area. It is 200 miles long and 15 portages are necessary. An alternative route is by plane to Waswanipi Lake, 95 miles north of Senneterre, and thence by canoe to Maikasagi Lake via Waswanipi River and Gull Lake. There is only one short portage on this route.

All drainage in the map-area is to James Bay. The southeastern part, including the basins of Chensagi and Maikasagi Rivers, drains into Nottaway River. Mistassini Territory, in the extreme northeast corner of the area, is drained by the Rupert-Marten River system. Drainage elsewhere is tributary to Broadback River which empties into James Bay between the Nottaway and Rupert.

The highest ground in the map-area is a range of granite hills south of Amiskwumiska Lake. From this region the land surface falls away in a series of smaller hills to a rolling plain in the western part of the area. The plain is broken by a number of rocky hills that rise from 400 to 800 feet above the surrounding country.

The age of the Lake Evans series (1a) relative to the Broadback series (2a) is not definitely established. The contact between the rocks of the two series was nowhere observed. At most places in its vicinity outcrops are few, but a number were seen near the junction of Kenoniska Lake and Broadback River and on Storm Lake. In each of three separate localities different interpretations of the relationships of the two series can be made. Along the southwest shore of Storm Lake well bedded tuffs are interbedded with lavas. The number of tuff bands increases northward and on the large point on the west shore a narrow band of arkose is interbedded with them. The arkose is identical in appearance with the matrix of Broadback conglomerate that outcrops on two islands in the lake, suggesting that the two series may be conformable in this locality. On Broadback River, where it is joined by Kenoniska Lake, lenses of conglomerate contain boulders of lava, gabbro, chert, granite, and quartz. The lava and gabbro closely resemble rocks of the Lake Evans series a few miles to the west. In this locality also, four top determinations indicate that the sedimentary series faces eastward away from the lavas. These facts suggest that the Broadback series lies unconformably above the Lake Evans series. Five miles to the southwest, at the north end of Kenoniska Lake, the sedimentary rocks appear to dip toward the lavas but, as a result of metamorphism, no top determinations could be made. However, the lavas in this vicinity strike to the southeast, almost at right angles to the sedimentary series, so that the contact northeast of Kenoniska Lake may be a faulted one.

Much gabbro occurs within the Lake Evans series west of Rabbit Creek.

The rocks of the Broadback series have been metamorphosed to a varying degree by granite intrusives. They are least altered along Broadback River near Kenoniska Lake where there are recognizable conglomerates, arkose, and greywacke. Northward the sedimentary rocks become increasingly more metamorphosed to where, along their contact with granitic rocks, they are represented by well foliated quartz-biotite schists. South of the Broadback and along Keniapiscau Lake the sedimentary beds have been partly altered to amphibole rich gneisses and schists that are cut by many dykelets of hornblende granite and pegmatite (2b). Eastward along Broadback River the sedimentary series is intruded by muscovite granite and pegmatite (3b) and has been altered thereby to garnet and cordierite-bearing schists. Their schistose character is not as apparent as in the rocks along the northern, granitic contact and they have a pronounced knotted appearance on weathered surfaces.

The muscovite granite and pegmatite (3b) are considered to be late phases of the widespread intrusions of biotite and hornblende granite (3) that occupy much of the map-area. Their age relative to the porphyritic syenite, hornblende syenite and amphibolite (3a), that cut only the rocks of the Lake Evans series, is not known. Minor amounts of paragneiss were observed within the large granite area at a few localities along the shores of Lady Beatrix and Chensagi Lakes.

Varved clays and silt are exposed along the shores of many of the lakes and rivers and it is probable that much of the map-area was covered by the waters of Glacial Lake Barlow-Ojibway. Terraces, or beaches, occur near the tops of many of the higher hills in the vicinity of Amiskwumiska Lake. Sediments deposited in this glacial lake covered much of the rock surface and, as a result, bedrock is poorly exposed in the lower parts of the area. This is particularly true of the broad belt of sedimentary and volcanic rocks on both sides of Broadback River, but along the river valley itself outcrops are plentiful.

Younger than the varved clays are small northwesterly-trending moraines that occur in swarms at various places, particularly northeast and east of Amiskwumiska Lake. Here also is an abundance of sand that obscures much of the underlying bedrock.