

ACCESS

Granville lake is most easily reached by canoe route from Sherridon, by way of Kissinging lake and Kissinging and Churchill rivers. An alternative route starts from Flinlon and follows the summer freight road to Island Falls. From Island Falls the route follows the Churchill as far as Sispuk lake. There it turns north, crosses Loon lake, ascends Loon river to Laurie river and descends this river to Granville lake. Most localities within the area can be reached without much difficulty by the Keewatin, Hughes and Laurie rivers.

PHYSICAL FEATURES

Granville lake, 850 feet above sea level, occupies the lowest depression in the area. From it the ground rises gradually to an elevation of more than 1,000 feet at Goldsand lake in the northwest corner of the map-area. The main drainage channels are broken by many rapids and falls, making travel rather slow and arduous. The country in detail is rugged and characterized by rounded rocky hummocks and abrupt ridges with intervening depressions occupied by lakes or muskegs. In the northern part of the area the vertical relief in few places is more than 150 feet; in the central and southern parts, differences in relief of 300 feet are not uncommon. A heavily sand-covered belt extends across the northern part of the area from Goldsand, Cockeram and Anson lakes east to Barrington lake. Apart from this drift covered belt and small low-lying areas near Granville lake that are covered by glacial clay clays, outcrops of bedrock are numerous.

GENERAL GEOLOGY

The oldest known rocks are the pre-Sickle volcanics (1). Basic lavas form by far the greater part of the group. Normally the lavas, which range from andesite to basalt in composition, are massive, fine-grained, dark green rocks but porphyritic phases occur in which phenocrysts of altered feldspar stand out on the weathered surface. Agglomerates and fine-grained, bedded, tuffs are well exposed on the south side of Barrington lake, east of Hughes lake, and northwest of Sickle lake. Many tuffs and fine-grained argillaceous sediments occur interbedded with the volcanics northeast of Sickle lake and southeast of Chicken lake. Several narrow bands of iron formation also occur at the latter locality. Locally, the basic lavas have been recrystallized to form amphibolites and hornblende-biotite gneisses and schists (2). Acid lavas occur at a number of localities, but make up only a small proportion of the pre-Sickle group. Pale green to yellowish grey rhyolite and trachyte predominate, but some very fine-grained types are almost black. The volcanic rocks are cut by dykes of diorite, amphibolite, quartz porphyry, aplite, pegmatite, granite and lamprophyre.

The Sickle series (3 and 5) is younger than the volcanic group. An unconformable contact between the two groups is well exposed near the shore of the lake two miles east of Chicken lake, south of the creek on the east shore. The main mass of Sickle sediments forms a syncline that extends from Granville lake to Sickle lake. A much smaller syncline of the sediments lies within the basin of Hughes lake. Conglomerate forms the base of the series. The conglomerate passes gradually with an increasing number of arkose interbeds into the overlying sediments which, in turn, grade from relatively coarse-grained arkoses into finer grained arkosic quartzites and greywackes. The sediments are normally grey on fresh fracture but pink varieties are common; on the weathered surface they are reddish brown to grey. Lavas occur locally, interbedded with the sediments west of Ghost lake and on the lake to the north of Chicken lake. Most of the flows are acid types but a very persistent band of altered basic lava (6) outcrops along the southwest shore of Granville lake.

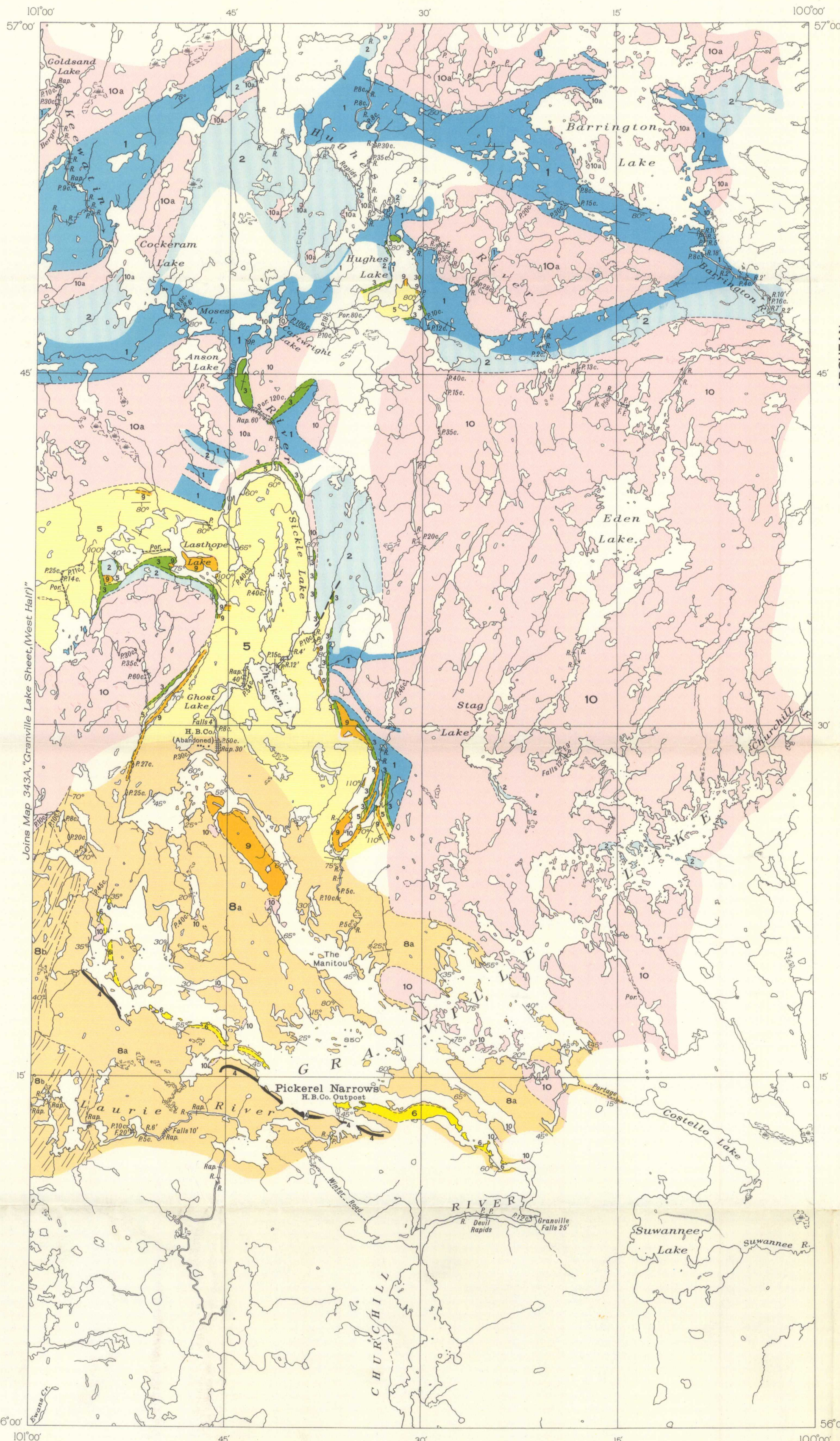
In the vicinity of Granville lake the sediments have been altered to biotite and biotite-hornblende gneisses and schists (8a), locally injected with pegmatite and aplite. South of Granville lake, and to the west in the district south of Laurie river, the metamorphism has been more intense and the sedimentary gneisses have been extensively invaded by igneous material to form a complex of varying proportions of sedimentary and igneous gneisses (8b). The conglomerate occurring along the southwest shore of Granville lake (4) has been so highly altered that the pebbles are not readily distinguishable from one another or from the matrix. The sedimentary gneisses are commonly grey to dark grey, medium grained, granular rocks. The prevailing types vary from quartz-feldspar-biotite gneiss to an impure quartzite. In a few areas where the metamorphism has been less intense, bedding planes and other evidence of an original clastic character are preserved. Several areas of hornblende gneiss and schist have the appearance of basic lava flows; they are regarded as altered pre-Sickle volcanics (2) or Sickle volcanics (3).

Dykes, sills, and irregular stock-like masses of basic intrusives grading from quartz-diorite to gabbro, (9) cut the Sickle and pre-Sickle rocks. In general, the basic intrusives are medium to rather coarse-grained, grey to dark grey rocks with a granitic texture, composed of hornblende, biotite, and altered grey feldspar. They are cut by granite and pegmatite and are therefore older than the granitic intrusives.

The granitic intrusives (10 and 10a) vary in composition from granite to quartz diorite and locally, near contacts with the greenstones, are dioritic. The two most widespread types are microcline granite and a soda rich quartz-oligoclase granite or tonalite. The granitic rocks are medium to coarse-grained, light grey to pink in colour, and generally contain a large percentage of quartz. Porphyritic phases are common. The crushed granites (10a) may be older than the undeformed, massive granites.

ECONOMIC GEOLOGY

A number of gold bearing quartz veins have been discovered in the belt of pre-Sickle volcanic rocks east and southeast of Chicken lake. The gold occurs in the quartz associated with pyrite, chalcopyrite and molybdenite. Gold has also been found associated with pyrite and arsenopyrite in quartz veinlets filling fractures in banded iron formation near the south end of this belt. On the east shore of the bay at the south end of Cartwright lake an aplite dyke in the pre-Sickle volcanics, averaging 40 feet in width, is cut by a network of quartz veinlets and, in places, is well mineralized with pyrite. Encouraging values in gold are reported to have been obtained from samples of the dyke. Several shear zones occur in agglomeratic bands in the pre-Sickle volcanic rocks along the south shore of Barrington lake near the mouth of the river. The country rock along the shear zones has been locally silicified and impregnated with pyrite and chalcopyrite.



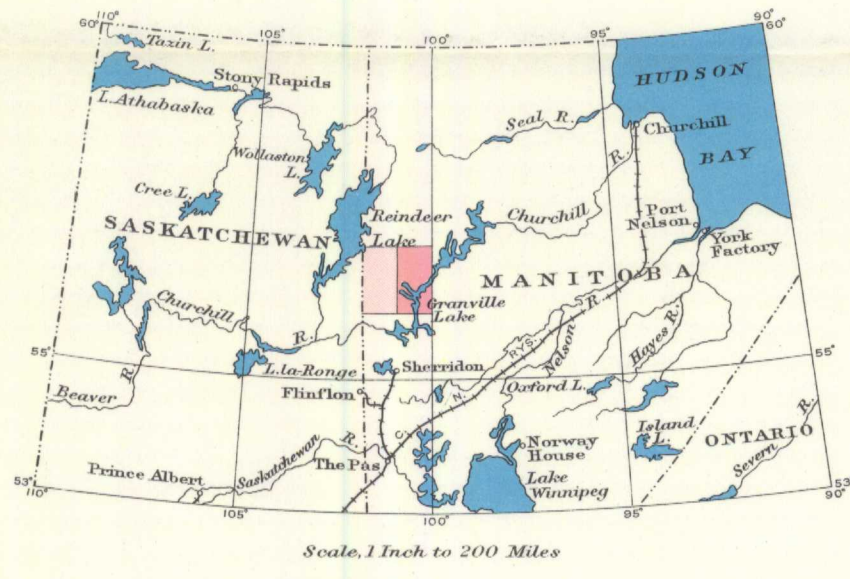
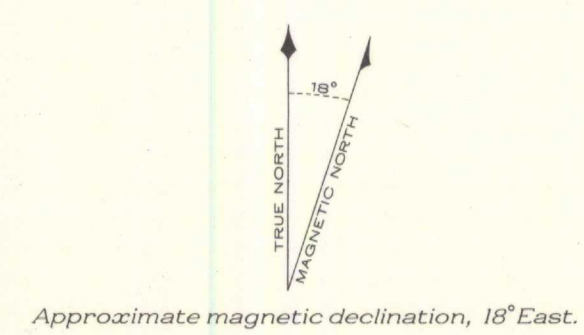
LEGEND

- 10 Granite, granite-gneiss, quartz diorite, diorite; 10a, varieties exhibiting shearing or crushing
- 9 Altered diorite and gabbro
- 8a, biotite gneiss and schist (probably derived from Sickle sediments) injected with pegmatite or aplite; some quartzite and arkose.
8b, complex of sedimentary gneiss and schist, in many places garnetiferous, and igneous gneiss (injections of granite, pegmatite or aplite) in about equal proportions.
- 5 SICKLE SERIES
Arkose, feldspathic sandstone, greywacke, quartzite, mica schist; thin lava flows may be interbedded with sediments in places
- 6 Hornblende schist, hornblende gneiss, and amphibolite injected by granite, pegmatite or aplite and probably derived from Sickle lava
- 3 Conglomerate with thin interbeds of arkose
- 4 Biotite gneiss derived from a coarse fragmental rock probably Sickle conglomerate
- 1 PRE-SICKLE
Basic lavas, greenstone and greenstone schist; tuff; some rhyolite and trachyte
- 2 Hornblende schist, hornblende-biotite schist; hornblende gneiss and amphibolite, injected by granite, pegmatite, diorite or gabbro and probably derived from Pre-Sickle lavas

- Geological boundary (approximate)
- Gneissic trend
- Bedding (inclined, vertical, overturned)
- Fault
- Glacial striae
- Portage
- Fall or rapid
- Marsh
- Height in feet

Geology by J.F. Henderson, 1932; G.W.H. Norman, 1933; and D.L. Downie, 1935.

Base-map prepared from information supplied by the Topographical and Air Survey Bureau, Department of the Interior.



MAP 344A
GRANVILLE LAKE SHEET
(EAST HALF)
MANITOBA
Scale, 233/40 or 1 Inch to 4 Miles
Miles
Kilometres

344A

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