

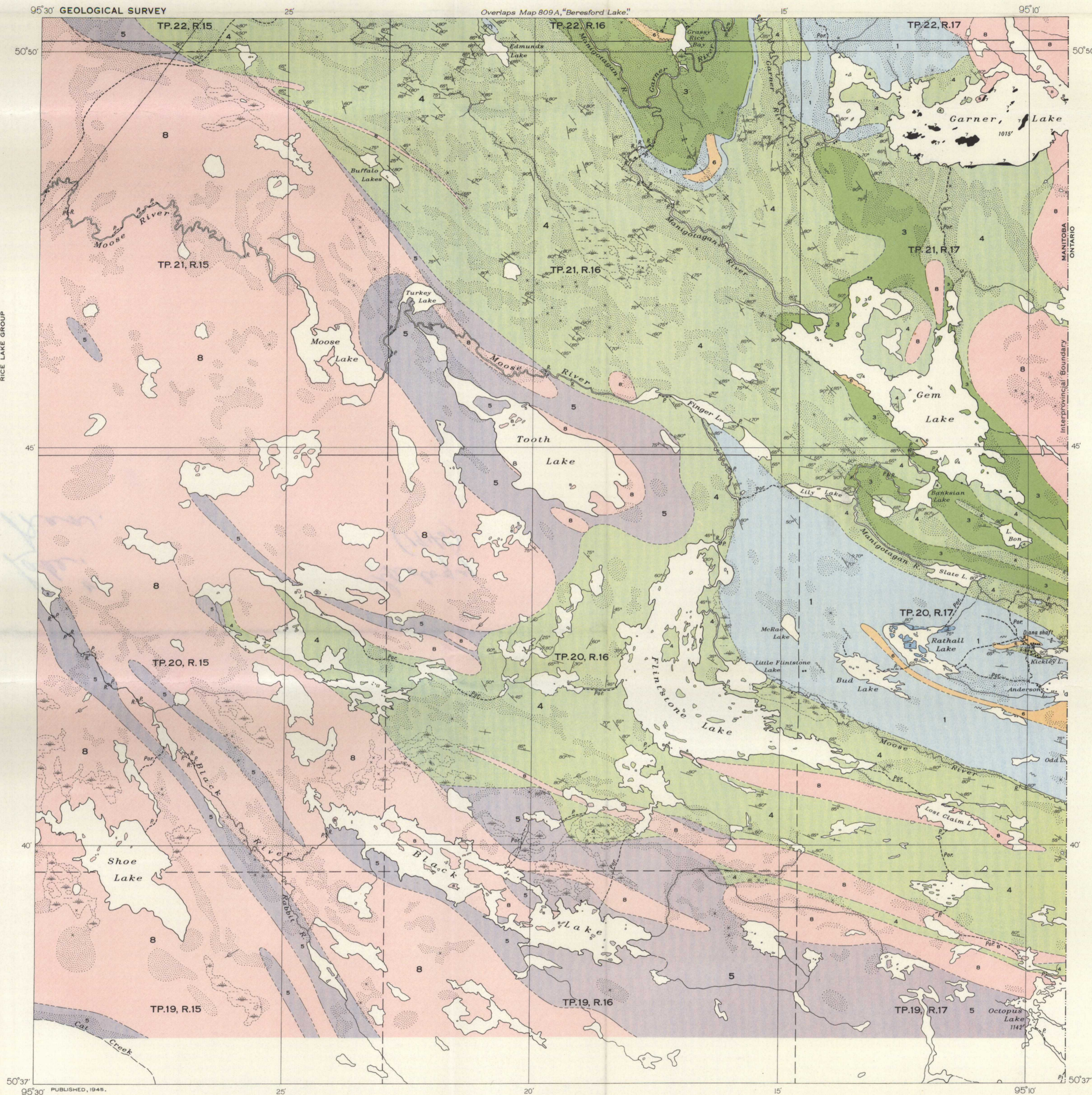
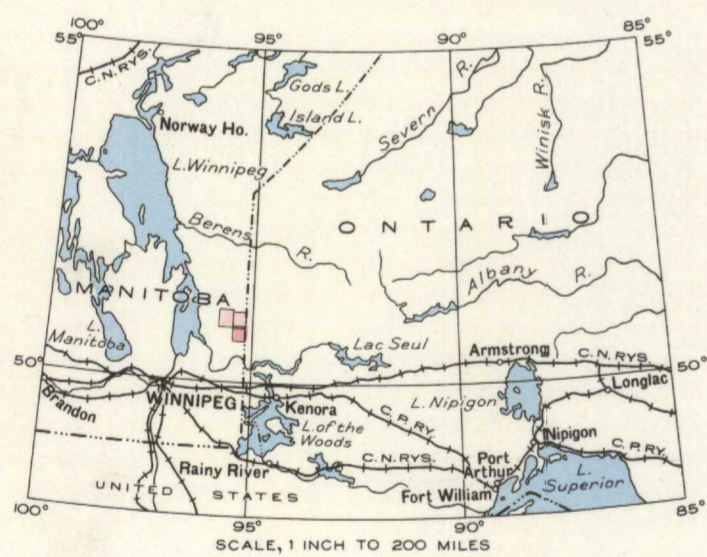
LEGEND

- |   |   |
|---|---|
| 8 | Quartz diorite, granodiorite, microcline granite  |
| 7 | Serpentine, peridotite, pyroxenite, amphibolite   |
| 6 | Meta-diorite, quartz diorite  |
| 5 | Sedimentary gneiss and schist, cut by many dykes of granite and pegmatite; injection gneiss                       |
| 4 | Quartzite; minor greywacke, arkose, conglomerate, slate, chert, iron formation, and sedimentary gneiss and schist |
| 3 | Rhyolite, trachyte, porphyritic trachyte, porphyritic andesite; agglomerate; minor tuff and arkose                |
| 2 | Quartzite, chert, tuff, arkose, conglomerate  |
| 1 | Andesite, basalt, agglomerate, hornblende schist  |

- Drift-covered area.....
- Small rock outcrop.....
- Bedding (inclined, vertical, overturned).....
- Bedding (upper side of bed faces as indicated, direction of dip unknown).....
- Bedding (direction of dip known, upper side of bed unknown).....
- Fault or shear zone, generally carrying vein quartz.....
- Anticlinal axis.....
- Synclinal axis.....
- Glacial striae.....
- Winter road or trail.....
- Portage.....
- Transmission line.....
- Building.....
- Shaft.....
- Interprovincial boundary.....
- Township boundary (surveyed).....
- Township boundary (unsurveyed).....
- Stream (position approximate).....
- Rapid.....
- Marsh.....
- Height in feet above mean sea-level..... 1015'

Geology by C. H. Stockwell, 1938.

Base-map compiled by the Topographical Survey, 1943, from air photographs taken in October 1934, and from published Federal Government maps and from information supplied by the Department of Mines and Natural Resources, Manitoba. Cartography by the Drafting and Reproducing Division, 1944.



DESCRIPTIVE NOTES

The andesite and basalt (1) of the Rice Lake group are green to black flows that vary from massive to schistose, and, at some localities, are pillowed and amygdaloidal. Vesicles are filled with quartz. Interlayered with the flows are bands of agglomerate. Near the granite body (8) in the northeast corner of the map-area the rocks are altered to hornblende schist. The andesite and basalt occur at various horizons within the Rice Lake group. The main body northeast of Flintstone Lake underlies sedimentary rocks (4) and has apparently been folded into an anticline with the southwest limb overturned. The body northwest of Garner Lake overlies these sedimentary rocks. South of Grassy Rice Bay, where the strata have been folded into an anticline, a narrow band of andesite and basalt overlies other volcanic rocks (3) and in turn is overlain by sedimentary strata (4). Beds of quartzite, chert, tuff, arkose, and conglomerate (2) occur within the largest body of andesite and basalt at Rathall Lake; narrow bands of tuffaceous material were noted elsewhere in this body.

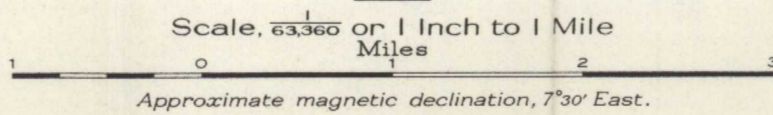
An assemblage of chiefly acidic to intermediate lavas and pyroclastic rocks (3) stratigraphically underlies sedimentary rocks (4) south of Grassy Rice Bay but appears to be interstratified with them near Gem Lake. Fragments in the agglomerate are commonly about 6 inches or less in diameter, but where the rocks have been deformed to sericitic schists the fragments are flattened to thin plates a foot or less long and 1/2 inch or less in thickness. Pillows and amygdulites are occasionally seen in the porphyritic andesite.

Impure quartzite and associated sedimentary material (4) overlies conformably most of the other volcanic and sedimentary rocks of the Rice Lake group but, in part, are overlain by them. Beds of quartzite are 1 to 3 feet thick or are thin laminae showing grain variation from coarse material at the bottom to fine at the top. Crossbedding is uncommon. South and southeast of Edmunds Lake the grain variation indicates that the rocks have been folded into a succession of closely compressed isoclinal folds with southwest limbs overturned; as many as eight anticlinal and synclinal axes were observed in a distance of 1 mile across the strike. A few layers of greywacke, black slate, and chert are interbedded with the quartzite. Most of the layers are thin but one of slate is 400 feet thick on the north shore of Salt Lake. Conglomerate is exposed at the base of the section west and southwest of Garner River; just north of Kickley Lake; and on the north shore of Slate Lake. Boulders are as much as 2 1/2 feet in diameter but usually much smaller. They consist of granite, rhyolite, porphyritic trachyte, andesite, quartzite, slate, chert, and vein quartz. Interbeds of arkose, quartzite, and pebbly layers occur in the conglomerate. A little banded magnetite iron formation outcrops on the north shore of Garner Lake close to the west end. Northeast of Gem Lake and around Flintstone Lake the quartzose sediments have been altered to schists and gneisses. Bedding is preserved but grain textures are mostly destroyed. A few layers of the schist contain garnets; others contain knots of andalusite. Near the contacts of granitic bodies the sedimentary rocks (4) have been altered to quartz-plagioclase-biotite-muscovite gneiss and schist cut by numerous dykes, stringers, and lenses of granite and pegmatite and by lit-par-lit injections of these igneous rocks (5). Other patches or bands of similar mixed rock occur within the areas of granitic rocks but have not been mapped separately.

Meta-diorite and quartz diorite (6) form a few sills cutting the rocks of the Rice Lake group. A body of basic rock varying from peridotite to pyroxenite (7) outcrops on many islands in Garner Lake and on the shores of the lake. Its age relation to other basic intrusions (6) is unknown. The peridotite is chromiferous, weathers brown, is much altered to serpentine, and is cut by small veinlets of cross-fibre asbestos. Near a contact with granite the peridotite is altered to amphibolite. Granitic rocks varying in composition from quartz diorite to granodiorite and potash granite (8) form batholiths, sills, and stocks. They are cut by many small dykes of pegmatite and aplite, but pegmatitic intrusions are larger and more plentiful in nearby sedimentary gneiss (5) where they are associated with dykes, lenses, and stringers of granite and aplite. Minerals noted in the pegmatite dykes include quartz, white and pink feldspar, biotite, muscovite, black tourmaline, garnet, and apatite. Tourmaline was also seen in aplite dykes, and garnet occurs in some of the granite dykes. A few dykes of quartz porphyry and of sodic feldspar porphyry cut the large body of andesite and basalt (1) northeast of Flintstone Lake.

Vein quartz has been deposited along shear zones. Most of the veins seen lie in the large body of andesite and basalt (1) northeast of Flintstone Lake, where porphyry dykes also occur. Minerals noted in the quartz include gold, pyrite, chalcopyrite, pyrrhotite, sphalerite, galena, arsenopyrite, carbonate, chlorite, feldspar, and tourmaline. It is reported that, from 1931 to 1936, gold to the value of approximately \$150,000 was produced from the Diana mine situated near the west end of Kickley Lake. The deposit, on the surface at least, lies in andesitic lava adjacent to a sill-like body of meta-diorite and quartz diorite.

MAP 811A  
GEM LAKE  
EAST OF PRINCIPAL MERIDIAN  
MANITOBA



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