

**LEGEND**

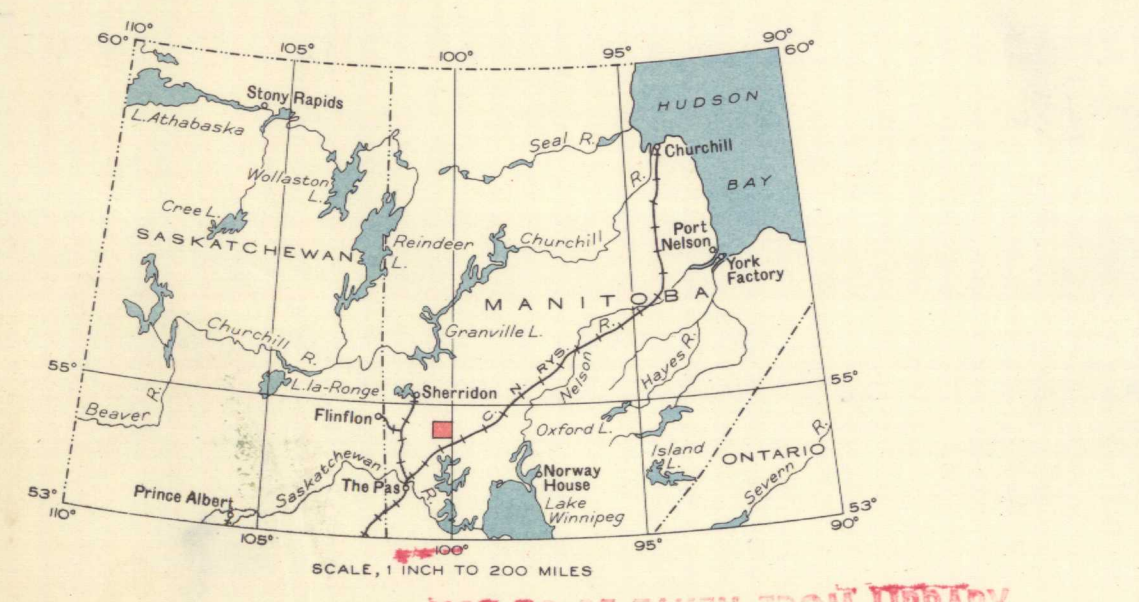
- ORDOVICIAN**
- 10 Dolomite, dolomitic limestone
- ARCHAEO PROTEROZOIC**
- 9 Mainly grey to pink gneissoid biotite granite, granodiorite and allied rocks; 9a, massive pink biotite and biotite-hornblende granite, granodiorite, and allied rocks, in part coarsely porphyritic; 9b, contact breccia of gabbro and diorite (7b) in granite (9a), containing less than 50 per cent 7b
  - 8 Contact breccia of gabbro and diorite (7b) in granite (9a), containing more than 50 per cent 7b
  - 7a, 7b Coarse-grained anorthositic gabbro, gabbro, and pyroxenite; some quartz gabbro and quartz diorite; 7b, fine-to medium-grained gabbro and diorite; minor quartz gabbro and quartz diorite; minor granite (9)
  - 6 Quartz-porphyrty, in part chloritized; may be older than 4; relation to quartz-eye/granite (5) uncertain
  - 5 "Quartz-eye" granite and related porphyry; may be older than 4
  - 4 Interbedded argillite and greywacke with minor slate, arkose, quartzite, breccia, and pebble beds; 4a, conglomerate, pebble beds; minor quartzite and greywacke
- AMISK GROUP**
- ARCHAEO**
- 3 Basic volcanic breccia, agglomerate, and tuff; minor flows
  - 2 Hornblende-feldspar gneiss and medium-grained argillite and diorite derived from 1; in part probably intrusive
  - 1 Massive and pillowed andesite, dacite, and basaltic minor volcanic members; hornblende-feldspar schists; undifferentiated basic intrusions
  - A, B Rocks of granitic texture derived from volcanic rocks (1, 2, 3) and minor sediments (4) by action of granites (5, 9); in part gabbroic; 7a, granitized and epidotized coarse amphibolites containing magnetite; derived by action of granite (9) on volcanic rocks (1)

**MINERAL OCCURRENCES**

Gold	Au
Pyrrhotite and pyrite	Py
Malachite (copper reported)	Mal(Cu)
Magnetite	Mag

- Areas of few or no rock outcrops**
- Bedding (horizontal, inclined, vertical, overturned)
  - Bedding (direction of dip known, upper side of bed unknown)
  - Schistosity or gneissosity (inclined, vertical, dip unknown)
  - Foliation or lineation
  - Direction and amount of plunge
  - Fault or shear zone
  - Anticlinal axis
  - Glacial striae
  - Prospect trench
- Portage or winter road**
- Building**
- Survey monument** 0.3 M 19 2.25 6
- Township boundary (surveyed)**
- Township boundary (unsurveyed)**
- Stream (position approximate)**
- Marsh**
- Reef or small island**
- Height in feet above mean sea-level** 815'

Geology by M.S. Stanton 1945.  
 Base map from surveys by the Department of the Interior, 1913, 1917 and 1923, and by the Topographical Survey, 1944 and 1945. Compiled by the Topographical Survey, 1945 with air photographs taken in 1943. Cartography by the Drafting and Reproducing Division, 1947.



**DESCRIPTIVE NOTES**

Mapping was completed southward to a line extending approximately from latitude 54°37' at the eastern edge of the map-area to latitude 54°34' at longitude 100°18'. Farther west the southernmost explored part is a strip along the shore of Reed Lake. Elsewhere the entire southern unexplored part of the area is believed to be underlain by Ordovician dolomite and limestone.

Intermediate to basic volcanic rocks (1) of the Amisk group, and their metamorphosed derivatives, constitute most of the oldest formations in the map-area. The least altered rocks underlie the northern islands of Reed Lake and include the adjacent volcanic belt to the north. They consist dominantly of pale green andesites in which pillow structures occur locally, but which are for the most part massive and structureless. Strong shearing has transformed much of the volcanic belt on the east shore of Reed Lake and on some of the larger islands into a soft, chloritic schist in which quartz stringers are present locally. Metamorphism northwest of Tramping Lake has produced a wide area of hornblende-feldspar schists. A coarser, medium-grained, dioritic phase (2) has been mapped separately and may in part be intrusive. The volcanic breccia (3) in the north-central part of the map-area is the southern extension of the breccia belt in which gold-bearing quartz veins were discovered at Morgan Lake, one-half mile north of the area. It consists dominantly of an andesitic matrix containing fragments of similar composition. The breccia belt east of Tramping Lake includes some finer lapilli-bearing and tuffaceous zones, and a little sedimentary material may be present. An intimate interbedding or interfingering of breccia (3) and andesitic flows (1) in places necessitated the mapping of zones composed dominantly of either one or the other.

Sedimentary rocks (4) in the northeast part of the map-area consist chiefly of fine-grained argillites, most of which have a baked, rhythmic appearance. Interbedded with them are fine to coarse greywackes, quartzites, and arkoses. Dips are in general steep, but are locally as low as 30 degrees. Massive, impure quartzites or greywackes, thin, slaty beds, underlie some of the islands in the northwest arm of Reed Lake, and extend as a narrow belt along the shore. A few restricted pebble beds occur in this belt and consist of a matrix of greywacke containing ovoid pebbles of similar material. A narrow selvage of conglomerate and pebble beds (4a), interbedded with quartzite and greywacke and containing minor chert and jasper, occurs on the southeast shore of Tramping Lake. Excellent exposures of conglomerate were noted on a small point on the central part of the east shore of the lake, and in several places northeast of the inlet of Grass River. In these localities the conglomerate is relatively unaltered and undeformed, and contains pebbles of quartz, basic volcanic rocks, pink and grey granite, pegmatite, pink felsite, quartz-feldspar porphyry, diorite, epidotized material, and possibly some tuff and argillite. Its unaltered appearance and the variety of pebbles, many of which are lithologically similar to rocks classified in the map-legend as younger than the conglomerate, would suggest a later age for this formation. On the other hand, the conglomerate is definitely cut by granite dykes in one or two places. Its tentative position in the legend presupposes an earlier granite that is not exposed in the area, but it is quite probable that the "quartz-eye" granite (5) may be older, or that the granitic rocks (9) may be of two distinct ages but not distinguished in the field. At no place was the actual conglomerate contact observed, nor could its relation to the volcanic or other sedimentary rocks be determined. It may, however, be equivalent to the Missi series of the Fin Flon area.

"Quartz-eye" granite (5) is in general medium-grained, and varies from grey to pink, purplish, and greenish. It is characterized by prominent "eyes" of white or blue quartz, and in the northern part of the area is somewhat schistose. On Fourmile Island in Reed Lake, the "quartz-eye" granite is highly silicified, locally strongly sheared and chloritized, and commonly contains bluish quartz "eyes" from one-eighth to one-quarter inch in diameter.

The quartz porphyry (6) in the northeast part of the area is sheared and faulted, and appears to be intrusive into the basic volcanic rocks rather than an interbedded flow.

The position of the basic complex (7a, 7b) in the map-legend is based on exposures in the File Lake area to the north where similar rocks were found cutting "quartz-eye" granite. The coarse-grained, more basic phase (7a) occurring chiefly in the western part of the map-area varies in composition from quartz gabbro to gabbro, anorthositic gabbro, and pyroxenite. The gabbro commonly intrudes and includes areas of andesitic volcanic rocks. Weathering has produced a coarse, regolithic mantle of parts of some of the gabbro bodies. The quartz gabbro phase of 7a contains conspicuous, bluish "eyes" one-eighth inch in diameter. East of Highway Lake is an extensive, though apparently shallow, roof pendant of fine- to medium-grained quartz gabbro and diorite (7b), commonly showing a diabasic texture, and lithologically quite distinct from the coarse quartz gabbro of 7a.

Between granite (9) and relatively uncontaminated quartz gabbro and diorite (7b) is a belt of contact breccia (8) varying in width from a few hundred feet to almost 1½ miles. The breccia consists of closely spaced xenolithic blocks of quartz gabbro and diorite in a granitic matrix. Within the contact zones show the xenoliths form more than 50 per cent of the exposed rock. The wide contact zones and various granite plugs intruding the basic rocks suggest the shallow nature of the latter.

The greater part of the map-area is underlain by grey to pink granite (9) with gneissoid, schistose, massive, and porphyritic textures, and with associated pegmatitic, granodioritic, and dioritic phases. Granitized contact zones are common, and numerous granitized remnants of original volcanic and sedimentary material (A) within the batholith have been differentiated in the mapping. The hybrid rocks forming the islands in the northeast part of Reed Lake appear to be the result of granitization along the axis of a westward-plunging anticlinal structure. A contact zone (B) consisting of granitized and epidotized, coarse amphibolites is distinctive enough to differentiate. It commonly contains appreciable amounts of magnetite.

Flat-lying Ordovician dolomite and dolomitic limestone (10) is best exposed at the south end of Tramping Lake, where it forms an escarpment 15 to 20 feet high. It is a massive, fine-grained, buff rock. Near the base of the escarpment the strata are quite reddish, but in no place was a basal sandstone member observed.

In the northeast section of the map-area, the southern extension of the Berry Creek fault continues as a shear zone along the west shore of Tramping Lake, from where it is believed to curve gently to the southwest and fan out eventually as a wide zone of shearing in the andesites that form the blunt peninsula at the east end of Reed Lake. Thence it continues westerly beneath the lake, as indicated by pronounced shearing on some of the larger islands. A subsidiary, east-west fault is believed to extend across the south part of Tramping Lake, and to effect a right-hand displacement with a horizontal component of about 1,000 feet. The displacement along a strong zone of shearing following the northeast arm of Tramping Lake is not known.

Sulphide deposits have long been known in the gabbro-andesite complex around Jackfish Lake, and considerable development work was done on them by Manitoba Basin Mines, Limited, in 1928 and 1929. The sulphide is dominantly pyrrhotite, both disseminated and massive. It is associated with pyrite and marcasite, and chalcocite and sphalerite have been reported in minor quantity. Pyrite and pyrrhotite are sparsely disseminated in much of the andesite belt in and along the north part of Reed Lake, and magnetite is common in the amphibolite contact zones (B) and in the gabbro (7a). Magnetite is concentrated in a small gabbro body in andesite within the map-area 1½ miles from the western border, and near latitude 50°40'. On Fourmile Island, gold prospects occur in milky white quartz veins, lenses, and gash veinlets within a small body of silicified and chloritized "quartz-eye" granite that is intrusive into sheared volcanic rocks. Minerals noted in some of these pits include visible gold, chalcocite, sphalerite, pyrite, and a ferruginous carbonate. Considerable surface work was done in 1937 and 1938 on the Reed Lake Mines showings on Fourmile Island, and in 1945 surface trenching was being undertaken on gold prospects 1 mile east of these showings. As in the nearby Elbow-Morton area, gold showings in general bear a close association with small bodies of "quartz-eye" granite.

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MAP 906 A  
**TRAMPING LAKE**  
 WEST OF PRINCIPAL MERIDIAN  
 MANITOBA

Approximate magnetic declination, 14°00' East.

906A