

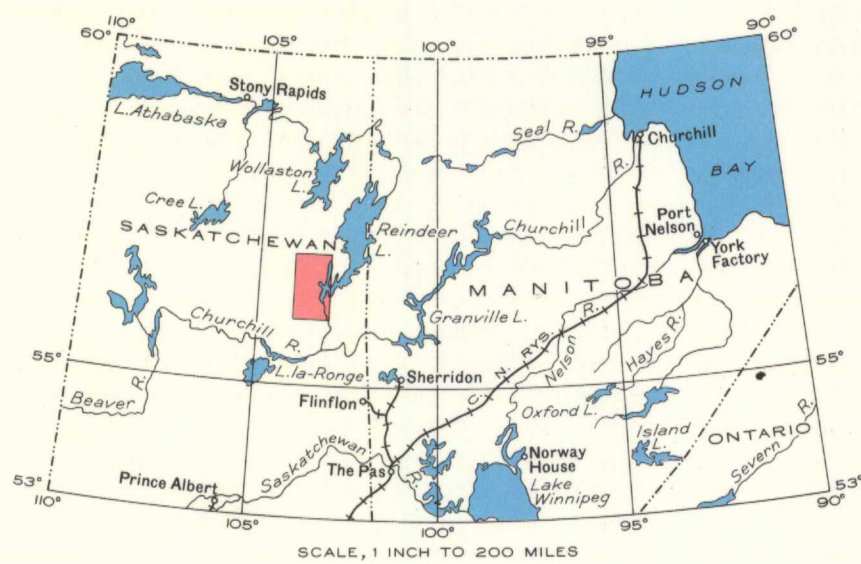
LEGEND

- PROTEROZOIC (LATE PRECAMBRIAN)**
- 6 Diabase
 - 3 Granite and granite-gneiss, some granodiorite and diorite
- ARCHEAN (EARLY PRECAMBRIAN)**
- 5 Granite and granite-gneiss (in part intrusives, in part granitized sedimentary and volcanic rocks); lesser amounts of garnet gneiss, hornblende gneiss, mica schist, etc. (altered sedimentary and volcanic rocks)
 - 2 Garnet gneiss and other gneisses, biotite schist, etc. (altered sedimentary rocks); some quartzite and argillite; minor amounts of dark schists and gneisses (altered volcanic rocks)
 - 4 Garnet gneiss, hornblende gneiss, mica schist, etc. (altered sedimentary and volcanic rocks); lesser amounts of granite and granite-gneiss (in part intrusives, in part granitized sedimentary and volcanic rocks)
 - 1 Hornblende schist, greenstone, etc. (altered andesitic, rhyolitic and basaltic flows and tuffs); minor amounts of gneiss, biotite schist, etc. (altered sediments)

- Geological boundary (defined, approximate, assumed)
 Bedding (inclined, vertical)
 Glacial striae
 Winter road
 Trail or portage
 Indian Reserve boundary
 Marsh
 Fall and rapid
 Sand bar or shoal
 Height in feet above Mean sea-level 1150'

Geology by F. J. Alcock, 1937.

Base-map prepared by the Topographical Survey, 1938, from Federal Government map published in 1932. Cartography by the Drafting and Reproducing Division, 1939.



DESCRIPTIVE NOTES

The surface consists of irregular, hummocky hills and ridges separated by depressions most of which are occupied by lakes or muskeg. The higher hills rise to elevations of about 150 feet above the level of the adjacent lakes. Reindeer lake has an elevation of 1,150 feet. The higher summits of the area are around 1,400 feet.

The area is well supplied with canoe routes and all the main lakes are accessible without much difficulty. The portages are readily found and most of them are in good condition.

All the consolidated rocks are of Precambrian age. The oldest form an interbedded series of volcanic and sedimentary rocks altered in varying degrees and closely resembling the Wekusko group of northern Manitoba. The less altered assemblages of these rocks are divisible into two phases: one (1) consisting chiefly of volcanic rocks but with some sediments; and the other (2) consisting mainly of sediments but containing also some volcanic members. The volcanic rocks consist of massive flows and banded tuffs, and vary in composition from acid to basic. The tuffs are fine-grained, well-bedded, grey to dark green rocks. Flows of dense, light grey rhyolite occur in a few places but grey to dark greenish, andesitic lavas are much more abundant and vary in character from massive greenstones to hornblende schists. South of Macoun lake is an area underlain by altered sediments. Along its eastern margin are some associated volcanic rocks. The sediments are mainly dark, fine-grained, banded quartz-biotite schists and gneisses with some bands of quartzite and argillite. Similar rocks in places are interbedded with the volcanic rocks.

A few dykes and small masses of basic rocks intrude the sediments and volcanic rocks. Some of the bodies of basic rock consist of amphibolite, others are gabbro or peridotite. Some, if not all, of these basic bodies are older than the granites.

The granites (3) of the several large and small areas of these rocks vary in appearance and composition. Many are pink to reddish, others are grey and some are almost white. They vary from fine-grained to coarse, pegmatitic types, and from massive to gneissic. For the most part they are granites but some small bodies and the borders of the large bodies and zones where inclusions are abundant, are granodiorites or quartz diorites. In the region of Waddy, Nistoassini and Nayelles lakes the contact between the granite and the older rocks is sharply defined. Near the contact the volcanic rocks are altered to hornblende schists and the sediments to mica schists. The volcanic and sedimentary rocks are cut by numerous granite dykes, and the border zone of the granite contains many inclusions of the older rocks. In other places, especially where the granite contact parallels the strike of the adjoining altered sediments, there is, in most places, a transition zone of gneissic rocks of mixed origin.

Much of the area is underlain by a complex of sedimentary and volcanic rocks injected and altered by granitic material. In some parts of the area, rocks (4) derived from sediments and volcanics predominate, in other parts granitic rocks (5) form the greater proportion. The granitic rocks are in part intrusive granite and in part represent sediments transformed into types resembling granites and granite-gneisses. A characteristic feature of the complex are assemblages of banded rocks that have been produced by the injection of granite, apatite and pegmatite along parallel structural planes in the gneissic sediments. A very common phase of the complex is a grey, garnetiferous gneiss with a prominent banded structure that appears to represent original bedding. Such gneisses grade into other varieties that resemble granite-gneiss which in turn grades into granite-like material. Many other rock varieties form parts of the complex. Dark hornblende schists and hornblende gneisses are common in some places. They vary from fine to coarse-grained and commonly are intruded by granite, apatite and pegmatite. It is probable that most of them represent volcanic rocks that have been altered and in places granitized. Certain massive, hornblende rocks may be altered basic intrusives. Where granitic types preponderate in the complex the granitic phases include, apparently, both intrusive granites and granites formed by granitization of older rocks. In what seems to be intrusive granites, are inclusions with sharp outlines; in the other granitic rocks there are banded zones and masses grading into the enclosing altered sedimentary rocks. These zones and masses are commonly traversed by pegmatitic stringers and cut by apatitic and pegmatitic dykes. The enclosing granites vary widely in colour, texture and structure.

Coarse-grained diabasic rock (6) occurring near the north end of Numabin bay on Reindeer lake, and on Oliver lake are the youngest consolidated rocks. At Numabin bay the intrusion is a sill-like body 50 to 60 feet thick and dipping at angles of 25 to 45 degrees. The northernmost mass of diabase is also a sill-like body 80 feet thick.

In the area of volcanic rocks with some interbedded sediments that extends on either side of Waddy lake, sulphide-bearing bodies have been found in both the volcanic rocks and the altered sediments. In both, the mineralized zones commonly conform to the structure and vary from massive sulphide bodies to rock containing disseminated sulphide crystals and masses. The common sulphide present is pyrrhotite, but in places there is much pyrite and locally some chalcocite. Gold values, so far as known, are low.

MAP 528 A
OLIVER LAKE
NORTHERN SASKATCHEWAN

Scale, 25,340 or 1 Inch to 4 Miles

Approximate magnetic declination, 19° East.

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