

LEGEND

NOTE: Uncoloured areas are unexplored

PROTEROZOIC (LATE PRECAMBRIAN)
ARCHAIC (EARLY PRECAMBRIAN)

- | | |
|---|---|
| 7 | ATHABASKA SERIES
Sandstone, pebble conglomerate |
| 6 | Granite, porphyritic granite, pegmatite, minor amounts of older formations |
| 5 | Biotite and biotite-hornblende gneiss, derived mainly from rocks of igneous origin |
| 2 | Andesite, basalt, tuff, some rhyolite |
| 1 | Garnetiferous quartzite, arkose, greywacke, argillite and conglomerate; derived from garnetiferous gneisses; quartz-biotite and mica-carbonate schists; crystalline limestone; iron formation; finely banded and massive pyroclastic rocks with minor flows |

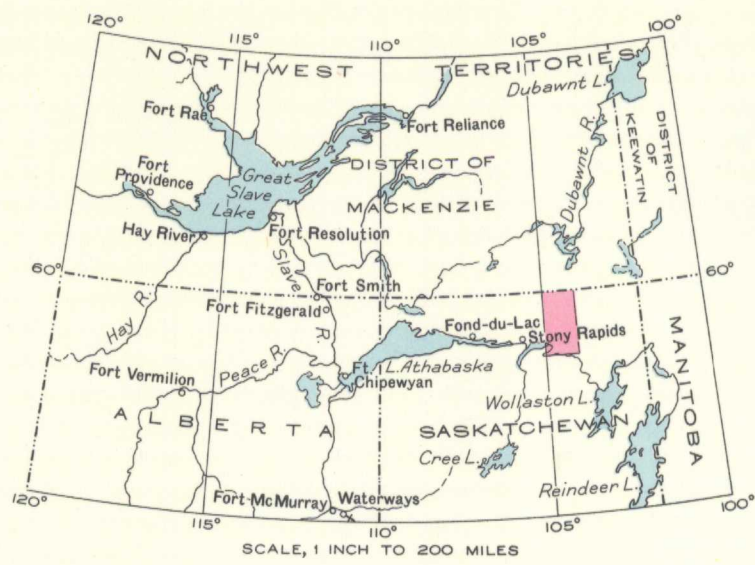
- | | |
|---|---|
| 4 | Undifferentiated biotite and biotite-hornblende gneiss |
| 3 | Biotite and biotite-hornblende gneiss derived mainly from 1 |

NOTE: The Tazin group of this map-area may include strata of Proterozoic age

- Sand and boulder-covered area
- Observed outcrop of gabbro and amphibolite
- Bedding (direction of dip known, top of bed unknown)
- Fault
- Portage
- Provincial boundary
- Survey monument
- Stream (position approximate)
- Fall and rapid
- Marsh
- Height in feet above Mean sea-level

Geology by G. M. Furnival, 1939.

Base-map prepared by the Topographical Survey, 1940, from Federal Government map published in 1935. Cartography by the Drafting and Reproducing Division, 1941.



DESCRIPTIVE NOTES

The map-area is accessible by canoe from Stony Rapids with which a regular air service is maintained from Goldfields and Prince Albert, Saskatchewan.

Hummocky hills and rocky ridges, interspersed with many sand plains, occupy the map-area north of Black Lake and Fond-du-Lac River. Relief is at a maximum of about 300 feet in the area between Charlebois and Bompas Lakes. Along its southern border the map-area is of low relief, is largely drift covered, and muskegs are numerous.

Most of the oldest sedimentary rocks (1) show varying degrees of alteration to schists and garnetiferous and sillimanite-bearing gneisses in which the original characters of the beds are obscured. Large crystals of hornblende, grey to white plagioclase feldspar, and red to pink garnet are common and widespread throughout the assemblage. Graphite flakes and shreds are particularly noticeable in the quartzitic members. In places finely banded acid and basic tuffs, beds of agglomerate, and thin volcanic flows, are intercalated with the sedimentary rocks. Crystalline limestone and mica-carbonate schist are prominent at Charlebois and Spreckley Lakes.

Volcanic rocks (2) form the eastern end of a belt that extends across the adjoining Stony Rapids map-area. Banded tufts constitute a larger part of the volcanic belt here than farther west. The sedimentary formations south of the volcanic belt dip to the north and probably underlie the volcanic rocks, but evidence for the attitude of the beds is obscured by metamorphism.

Acid and basic, finely banded tuffs along the north border of the volcanic belt, and other banded sedimentary rocks elsewhere in the map-area, pass gradually into biotite and hornblende-biotite gneisses that are distinctly banded (3). Dark bands, containing a large proportion of biotite and hornblende, alternate sharply with light-coloured bands consisting chiefly of quartz and feldspar.

The bodies of biotite and biotite-hornblende gneiss (5) are not banded but have a foliated, granitoid texture and may be of intrusive origin. Foliated dykes of fine to medium grained granite and syenite intrude biotite schists and mica-carbonate rocks of the Tazin group and, in places, are themselves cut by dykes of younger, massive granite.

Small dykes and sills of altered gabbro or amphibolite (6) are widespread. They are dark green, fine to coarse grained rocks and, in general, are distinctly foliated. They intrude altered sedimentary rocks (1) and biotite and biotite-hornblende gneisses (3, 4, 5) and are intruded by younger granite and pegmatite (6). Where they occur in garnetiferous rocks they may be garnetiferous. Some fine-grained masses of amphibolite rocks may represent altered volcanic flows.

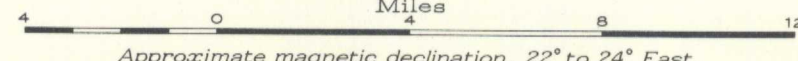
The granitic rocks (6) consist mainly of pink and white, coarse grained and porphyritic, biotite granite associated with abundant pink to white pegmatite and aplite. In places the pegmatite forms dykes as much as 100 feet wide and half a mile long. Granite contacts with older formations are not well defined but occupy broad zones of mixed intrusive and intruded rocks within which the positions of the contacts, as mapped, are placed arbitrarily. The transition from intruded rocks into massive granite begins with the appearance of small dykes of massive granite that parallel and crosscut foliation planes. It passes into a zone in which the dykes become larger and the intruded rocks form angular blocks intersected by numerous smaller dykes. Along the borders of the main granite mass angular blocks of granitized rocks are scattered in a matrix of the massive granite. Vestiges of such blocks may continue well within the granite and, though persistently angular, become increasingly difficult to recognize and are only apparent because of slightly less resistance to weathering, a slightly larger proportion of dark minerals, and a slightly finer texture.

The rocks of the Athabaska series (7) are nearly flat lying. No discoveries of economic interest have yet been made within the map-area.

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MAP 658A
PORCUPINE RIVER
NORTHERN SASKATCHEWAN

Scale, 1/4 inch to 4 Miles



Approximate magnetic declination, 22° to 24° East.



658A