

LEGEND

NOTE. Uncoloured areas are unexplored

- | | | |
|-----------------------------------|--|--|
| PROTEROZOIC
(LATE PRECAMBRIAN) | | 8 ATHABASKA SERIES
Sandstone, pebble conglomerate |
| | | 7 PRE-ATHABASKA
Chiefly norite |
| ARCHEAN
(EARLY PRECAMBRIAN) | | 6 Granite, porphyritic granite, pegmatite;
minor amounts of older formations |
| | | 5 Biotite and biotite-hornblende gneiss,
derived mainly from rocks of igneous origin |
| | | 2 Chiefly andesite and basalt;
rhyolite, tuff |
| | | 1 Garnetiferous quartzite, arkose,
greywacke, argillite and conglomerate;
derived garnetiferous gneisses; quartz-
biotite and mica-carbonate schists;
crystalline limestone; iron formation;
finely banded and massive pyroclastic
rocks with minor flows |

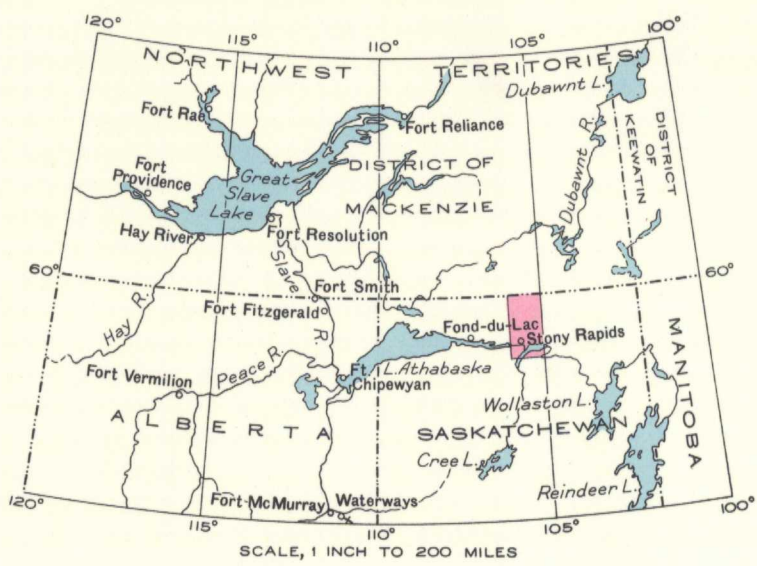
- | | |
|--|---|
| | 4 Undifferentiated
biotite and biotite-
hornblende gneiss |
| | 3 Biotite and biotite-
hornblende paragneiss
derived mainly from 1 |

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..... G
- Bedding (vertical, direction of dip known, but top of bed unknown).....
- Fault.....
- Trail or portage.....
- Provincial boundary.....
- Fall and rapid.....
- Sand bar.....
- Marsh.....
- Height in feet above Mean sea-level..... 925'

Geology by G. M. Furnival, 1939.

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



DESCRIPTIVE NOTES

Stony Rapids is readily accessible by lake, boat, and canoe from Goldfields and a regular air service is maintained with both Goldfields and Prince Albert, Saskatchewan.

South of Fond-du-Lac River and Black Lake most of the country is drift-covered and of low relief with extensive muskogs and a few gently rounded hills. A 50-foot scarp commonly marks the contact of the Athabaska series with older formations. North of this contact the topography is comparatively rugged; relief is in excess of 500 feet and is at its maximum in the southwestern part of the map-area where the streams are deeply incised. The average relief diminishes to less than 150 feet near the north boundary of the area, and also falls off toward the east.

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.

Outcrops form prominent ridges within the main belt of volcanic rocks (2). In general these rocks are not as much altered as those of the sedimentary assemblage and consist mainly of varieties of andesite porphyry and basalt with some rhyolite. Finely banded, acid and basic tuffs are intercalated with the lavas and are most abundant along the borders of the volcanic belt. At the south border garnetiferous sedimentary rocks are interbedded with thin lava flows and with tuffs. 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 both along and across their strike 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-colored 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 (G) 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 apilite. 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.

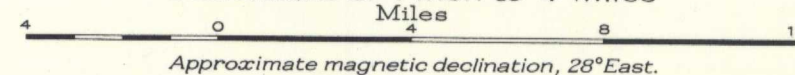
Norite (7) intrudes garnetiferous sedimentary rocks, generally parallel to the bedding planes. Areas mapped as norite are those in which norite predominates.

The rocks of the Athabaska series (8) are nearly flat lying. Though no gold-bearing deposits are known in the map-area some gold-bearing quartz veins have been investigated at Sucker Bay on Lake Athabaska, 20 miles to the west. These occur in garnetiferous sedimentary rocks that lie on the strike of those south of Clut Lakes.

Pyrrhotite, chalcopyrite, and arsenopyrite are widely disseminated in the norite and garnetiferous sedimentary rocks northwest of Stony Rapids. On the east side of Axis Lake they are associated with magnetite in a shear and fracture zone in chloritized and silicified fine grained norite. The deposit was trenced and diamond drilled in 1929 and 1930.

MAP 659A
STONY RAPIDS
NORTHERN SASKATCHEWAN

Scale, 253446 or 1 inch to 4 Miles



Approximate magnetic declination, 28° East.

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