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LOCATION AND ACCESS

The south side of this area is about 60 miles north of Lac la-Ronge. This lake is approximately 140 miles north of Prince Albert. In summer it may be reached from Prince Albert travelling by road to Montreal lake, and from there by water crossing Montreal lake and descending Montreal river to Lac la-Ronge. From Lac la-Ronge there are two routes into the map-area. One is via Nemeiben lake and Churchill river to McIntosh lake and thence by Paull river to the western part of the area. The other is by the four-portage route to Stanley on Churchill river and thence up Churchill river to where a stream from Forbes lake enters. The route follows across Forbes and a number of small lakes and streams to Maribelli and Hickson lakes in the eastern part of the area. An alternative but longer canoe route begins at Amisk lake near Flin Flon, ascends Sturgeon-weir river to Pelican narrows and Wood lake. From Wood lake a portage connects with Churchill river and the route continues up Churchill river to either the McIntosh or Forbes lakes' routes mentioned before. The nearest settlements, Stanley on Churchill river, and La-Ronge on Lac la-Ronge are connected with Prince Albert by a winter road over which most heavy supplies are taken by sleigh. During the summer practically all freighting and passenger work is done by airplane.

PHYSICAL FEATURES

Rock outcrops are numerous over all this area and the shore-lines of many lakes are almost continuous rock exposure. Outwash plains and sand ridges a mile long occur in a number of places. The relief is generally less than 200 feet, but southeast of Kenwood lake it is over 300 feet. The elevation of a small lake near the middle of the west side of the area is 1,756 feet and is the highest recorded lake elevation in this part of Saskatchewan. Paull river in the southwest part of the area has an elevation of 1,330 feet. In granite areas the southeast shore-line of the lakes usually forms smoothly rounded slopes. The slopes of the northwest shore-line are more rugged, especially where there are inclusions of schist. Here blocks of granite and schist have been broken away by glacial ice movements.

GENERAL GEOLOGY

The oldest known rocks of the area are interbedded sediments (2,3) and volcanic rocks (1). The succession of volcanic and sedimentary rocks and structural features observed at two places indicate a syncline; the axis being about the centre of the widest conglomerate belt and paralleling its length. The two narrow bands of sedimentary rocks lying to the north and south of the widest conglomerate band are thought to be corresponding north and south limbs of the syncline. Volcanic rocks occurring between these narrow bands of sediments and the widest conglomerate band indicate the interbedded relationship. The sediments, consisting of conglomerate, quartzites, and argillites, occur about 4 miles south of Kenwood lake. The pebbles of the conglomerate are mostly of light-coloured acid felsites with some of greenstone, diorite, and quartzite. They average about ½ inch by 1 inch by 4 inches in size, but boulders up to 18 inches in length were observed. The matrix is usually fine-grained, grey material. The volcanic rocks vary from rhyolite to basalt in composition, the more abundant types being andesite and basalt. Some tuffs and agglomerate are associated with the flow rocks. The greenstones in some places have poorly developed pillows and one narrow band has prominent amygdules filled with quartz, feldspar, and calcite.

Schists and gneisses (7), which are probably metamorphosed forms of the volcanic and sedimentary rocks mentioned above, occur in several belts in the southeast part of the area. These grade into recognizable sedimentary and volcanic rocks in several places. Schists are more common than gneisses and of these the most abundant type is a siliceous biotite schist probably formed from an impure quartzite. Other common types are garnetiferous, chlorite, hornblende, and sericite schists. The belt of schist north of Kenwood lake appears to be dominantly sedimentary in origin and that southwest of Windrum lake is dominantly volcanic. Much of the schist and gneiss is greatly metamorphosed, and contorted areas, rusty zones, and small quartz veins are common. One rusty sulphide zone north of the west end of Kenwood lake is at least half a mile long. Although this zone is well within the schist area some granite is exposed nearby.

A rock that varies from quartz diorite to granodiorite (4) forms two bodies near Kenwood lake. This rock was not observed in contact with large bodies of granite, but it is cut by dyke-like bodies of granite and is, therefore, older than some of the granite. Although the bulk of this rock has a massive texture, at some places along its contacts with the schist it is gneissic. Numerous inclusions of schist in some parts of the massive rock suggest that the intrusive rock has been contaminated considerably by assimilation of the intruded rock.

The granitic intrusives (5) include various kinds of granite with its differentiates, pegmatite, aplite, and small amounts of syenite and granodiorite. Some small bodies of quartz diorite, which generally seem to be the result of assimilation of older rocks by the granite, are also grouped with the granites. The granites are younger than the sediments and volcanics and their metamorphosed equivalents, the schists and gneisses. This is shown by the intrusive contacts, dykes of the granites cutting the other rocks, and by inclusions of the sediments, etc., in the granites. Many of the granites are massive, and pink or grey. A fairly abundant type is a light pink or whitish granite with abundant quartz, very little biotite, and in some places small garnets. Small bodies of porphyritic granite with phenocrysts of pink or grey feldspar are common. Much of the granite is gneissic. Pegmatite is abundant as dykes and small masses and has usually pink feldspar, quartz, and muscovite. One small area in which the rock is almost entirely composed of grey feldspar and biotite was seen. Aplite is not common, but where seen has a fine, sugary texture and pink colour.

The rocks mapped as forming a complex (8) are various kinds of intimate mixtures of granitic intrusives (5) with the schists and gneisses (7). Much of the intruded rock was probably sedimentary and volcanic in origin, but is so much altered that its original nature cannot be determined. Basic intrusive rocks appear to have been abundant in the sediments and volcanics and can still be identified as amphibolites, gabbros, and diabases. Some of the amphibolite appears to have had a sedimentary origin. In the complex the proportion of intrusive to intruded rock varies from place to place. Lit-par-lit injection, on coarse to fine scale, granitization in all stages, inclusions of schist and gneiss in the granites with boundaries sharp or gradational, are all common.

Large areas (10) consist of numerous small areas of complex (8) and equally numerous small areas of granite (5).

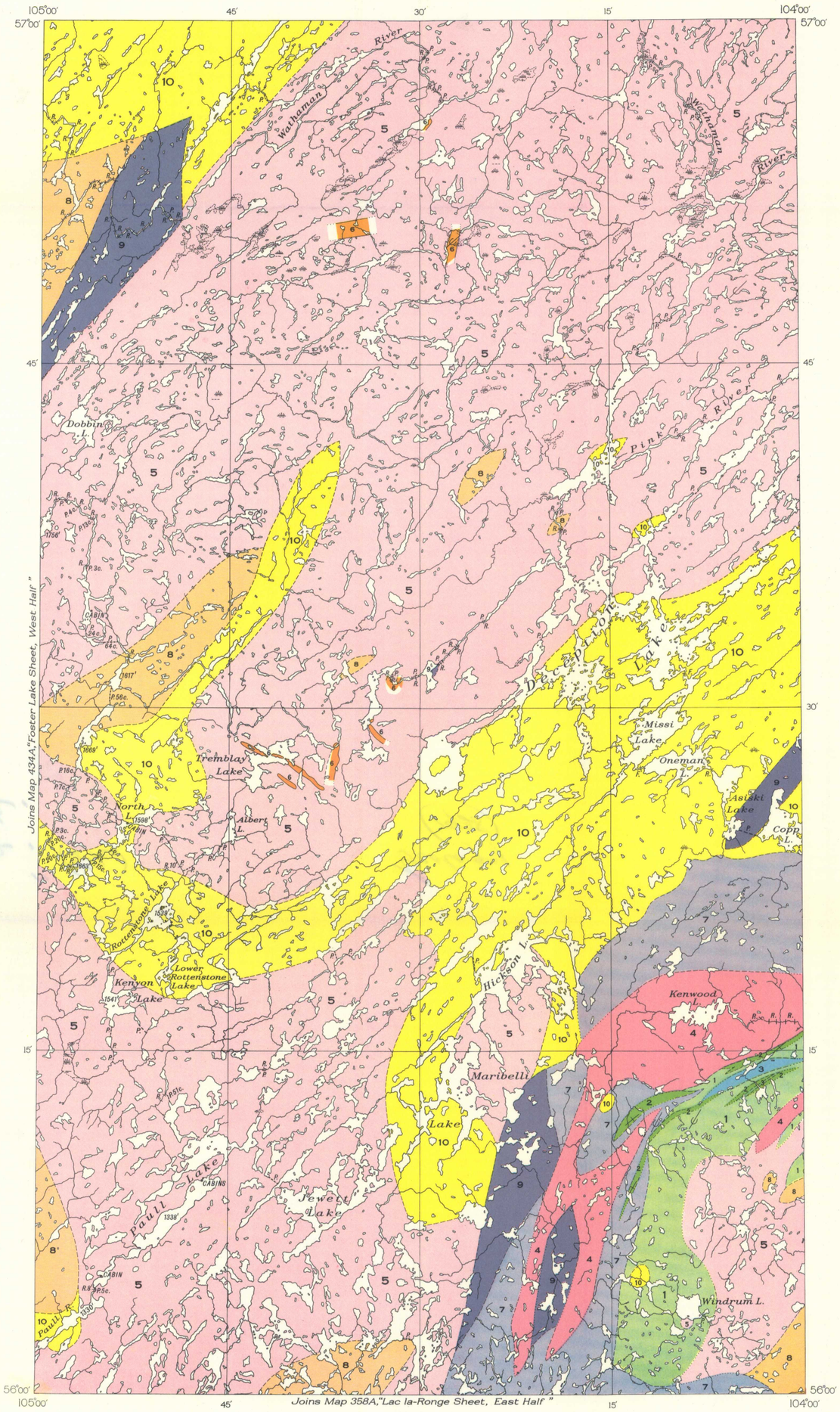
The areas represented as underlain by division (9) are occupied by small areas of schist (7) and small areas of complex (8) in approximately equal amounts. In addition there are small bodies of granitic rocks (5) free from inclusions.

Near Tremblay lake and farther north a number of diabase dykes (6) occur cutting the granitic rocks. Some of these are relatively broad for their length, but were not all traced to their full extent. The texture varies from fairly coarse in the centre to fine near the edge. A few inches at the border have been chilled to a cryptocrystalline texture except for a few small phenocrysts of feldspar and pyroxene. A conspicuous feature of the diabase is the good jointing in three directions.

ECONOMIC GEOLOGY

In 1928 and 1929 there was considerable mining activity in the vicinity of Rottenstone lake. Many claims were staked and some surface work and diamond drilling were done on prospects reported to have values in copper, nickel, gold, and the metals of the platinum group. Pyrrhotite and pyrite are abundant in the mineralized zones and their presence is marked by a rusty, decomposed surface. The sulphides occur as replacement bodies in inclusions of schist, gneiss, gabbro, amphibolite, etc., in the granites. As the inclusions are relatively small no large bodies of ore were outlined and work ceased, only a few of these claims being held now. Elsewhere in the map-area other rusty sulphide zones in the areas of granitic rocks and complex have been examined with poor results.

The areas of volcanic rock, sediment, schist, and gneiss in the southeast part of the map-area offer the best chances for successful prospecting. Of these the schist areas seem the most promising, as quartz veins are numerous in some parts and a sulphide zone that extends over half a mile was seen. On Reindeer lake, east of Foster lake map-area a quartz diorite is said to have related mineralization. The fact that the areas of schist, gneiss, sediments, and volcanic rocks are close to a quartz diorite and granodiorite intrusive may have some significance in Kenwood lake area. Several claims were staked in September 1936 in the schist area. The prospect is reported to exhibit quartz mineralized with sulphides and having values in gold.



MAP 433A

FOSTER LAKE SHEET

(EAST HALF)

NORTHERN SASKATCHEWAN

Scale, ~~253440~~ or 1 Inch to 4 Miles

Miles 4 0 4 8 12

Kilometres 5 0 5 10 15

Approximate magnetic declination, 18° to 20° East.

LEGEND

ARCHEAN (EARLY PRECAMBRIAN)

- 6 — *Diabase*
- 5 — *Granite; small amounts of syenite and granodiorite; pegmatite, aplite*
- 4 — *Quartz diorite, granodiorite*
- 3 — *Conglomerate, some fine-grained sediments*
- 2 — *Argillite, slate, quartzite*
- 1 — *Andesite, basalt; some rhyolite, tuff and agglomerate*
- 10 — *Small bodies of granite (5) and equally numerous small bodies of intimately mixed schist, gneiss and granitic intrusives (8)*
- 9 — *Small bodies of schist and gneiss (7), and equally numerous small bodies of intimately mixed schist, gneiss and granitic intrusives (8)*
- 8 — *Granitic intrusives (5), schist and gneiss (7) intimately mixed in varying proportions*
- 7 — *Schist and gneiss derived from sedimentary and volcanic rocks (1, 2, 3)*

Geological boundary (defined, approximate, assumed)
Bedding (vertical)
Glacial striæ
Trail or portage
Fall or rapid
Marsh
Height in feet 1338'

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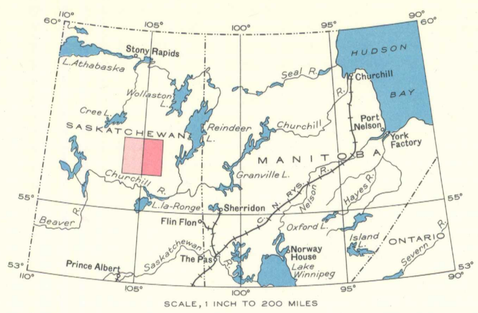

SCALE, 1 INCH TO 200 MILES

433A