



DESCRIPTIVE NOTES

The surface of the map-area appears flat when viewed from the air, but in detail it is rugged, with cliffs and ridges rising steeply to as much as 400 feet above adjacent lakes and muskegs. Bedrock is well exposed throughout most of the area, except for several square miles north and east of the east end of Ghost Lake, and southwest of Wecho Lake along Wecho River, where outcrops are scattered. A large part of the area has been burnt over and is poorly wooded. Good timber is found along Yellowknife River near Rowland Lake.

The sedimentary rocks of the Yellowknife group are the oldest rocks known within the area. No exposures of the volcanic members of this group were seen, although they are present in adjoining map-areas. The subdivision of the sedimentary rocks into relatively unaltered (1) and metamorphic types (2) is arbitrary, as every gradation exists between them.

The less altered sedimentary rocks (1) occupy the southeast corner of the map-area. The various types are interbedded, although one type may predominate locally. Greywackes are dark grey, sandy textured rocks that weather greenish grey to buff. They consist mainly of quartz and biotite with some plagioclase. Quartzite and arkose have more quartz and feldspar and less mica than the greywacke. The slates are black to grey, thin-bedded rocks with good cleavage. Gradation of grain size from coarse to fine is common, and in a few places greywacke beds have slaty tops. No crossbedding was observed.

The degree of alteration of the metamorphosed sedimentary rocks (2) is, apparently, determined by their position relative to the granite batholiths. Knots and nodules commonly project above the weathered surface, and vary from small oval forms to 3 inches or more in length. Bedding is well preserved, although grain gradation can usually be recognized only in the coarse-textured beds.

The sedimentary rocks (1, 2) appear, in general, to lie in a series of isoclinal folds, so that the greater dip steeply, followed south they are seen to dip eastward at from 20 to 50 degrees, and then they swing to the east and dip steeply north just south of Leith Lake.

The gneissic rocks (3) include intimately mixed marginal material near the granite contacts, garnetiferous biotite gneiss, and cordierite gneiss. Boundaries selected are arbitrary, for the contacts are gradational, so that much, more or less gneissic rock is included with the granitic rocks. Several other areas of gneiss occur but were not differentiated because of their small areal extent or lack of obvious banding.

The granitic intrusions (4) include a variety of massive and gneissic rocks. They are pink to light grey, medium- to coarse-grained rocks, locally porphyritic, consisting largely of quartz, feldspar, biotite and/or hornblende. Mica and hornblende granites are the principal varietal types. So far as known, all the granites and allied rocks intrude the Yellowknife group, but granitic rocks of more than one age may be represented.

In places, contacts with sedimentary rocks are well defined, elsewhere, as along the northern part of Fishing Lake and near Rowland Lake, the batholithic rocks are in contact with a zone of intimately mixed granitic material, schist, and gneiss.

Basic dykes (5), ranging in composition from diorite to gabbro, cut the other rocks of the map-area. Characteristically, they weather a rusty reddish brown, commonly show ophitic texture, and are composed of augite and plagioclase in about equal amounts. Nearly all the dykes observed strike north 30 to 40 degrees, west or north 20 to 40 degrees east.

Several large and some small faults were recognized. Commonly they follow nearly straight topographic features, and such features elsewhere in the area probably mark other faults. The relative movement has been northward on the east side of the faults.

Quartz veins occur in the sedimentary rocks. They are lenticular in form, and where seen seldom exceed 30 feet in length or 2 feet in width. Tourmaline is associated with the quartz in many veins, indicating a high temperature of formation. Generally, the veins follow or lie parallel with bedding planes.

Bluish translucent cordierite, some of which may be of gem quality, was found in three areas: (a) about seven miles south of the east end of Ghost Lake in an area of garnetiferous biotite gneiss that extends southwestly into the Snare River map-area; (b) about 8 miles west of Wecho Lake in a small area of mixed schist, gneiss, and granitic material; and (c) 2 miles north of Rowland Lake, one quarter to one half mile east of Yellowknife River, in mixed biotite gneiss and sedimentary rocks.

Gold occurs in the southeast corner of the map-area, and a little underground work has been done on the property of Viking Yellowknife Gold Mines, Limited.

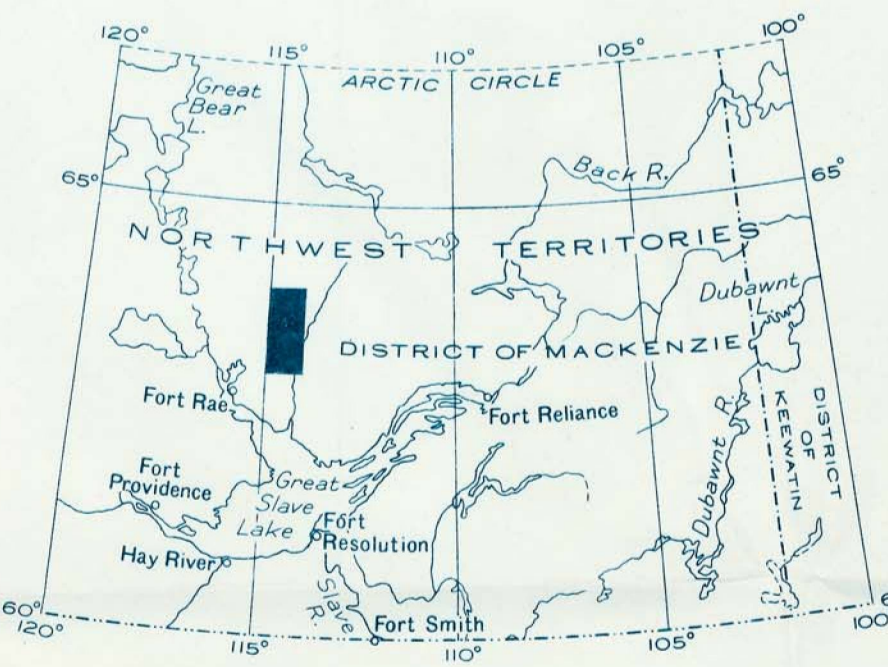
LEGEND

- PROTEROZOIC
- 5 Diorite, gabbro, diabase
  - 4 Granite, granodiorite, and allied rocks
  - 3 Mixed assemblage of granitic and metamorphic rocks, including much gneiss and schist
- ARCHEAN
- YELLOWKNIFE GROUP
- 1 Greywacke, slate, impure arkose and quartzite, phyllite
  - 2 Rusty to buff weathering knotted quartz-mica schist and hornfels, derived from, and grading into, 1
- Bedding (horizontal, inclined, vertical) + / \
- Fault (defined, approximate) ~~~~~
- Glacial striae - - - - -
- Esker ..... x Au
- Gold prospect ..... x Au

Geology by D. H. Yardley, 1948

Cartography by Geological Mapping Division, 1949  
 Base-map surveyed by Topographical Survey 1942

Approximate Magnetic Declination 39° East



PRELIMINARY MAP 49-14

WECHO RIVER  
 EAST HALF  
 DISTRICT OF MACKENZIE  
 NORTHWEST TERRITORIES

Scale 1 Inch to 2 Miles

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