PRELIMINARY GEOLOGIC MAP OF THE SOUTHERN PART OF THE THREE LAKES 7 1/2 MINUTE QUADRANGLE BARAGA COUNTY, MICHIGAN

by

John S. Klasner

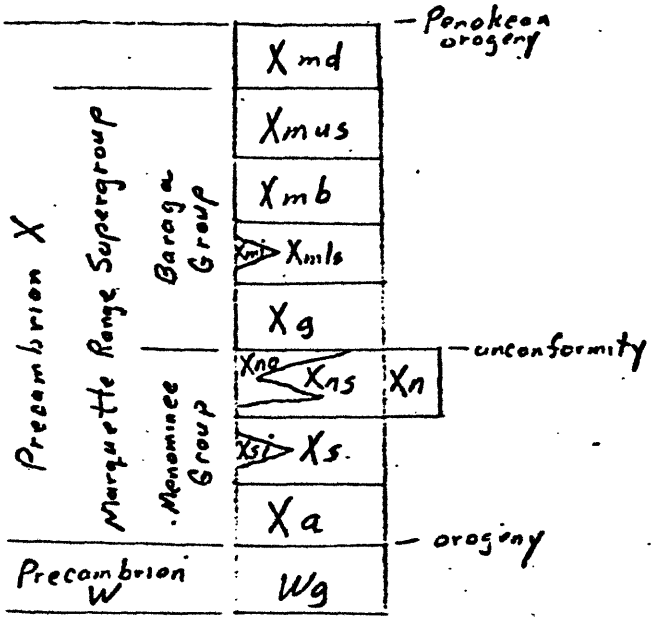
W. F. Cannon

U.S. Geological Survey open-file map

Prepared in cooperation with

Geological Survey Division, Michigan Department of Natural Resources

Correlation of map units.



Description of map units

Xmd — Metadiabase (Precambrian X)- mostly coarse to very coarse grained metamorphosed diabase and gabbro. Commonly has hornblende pseudomorphs of pyroxene as much as 2 cm long. Finer grained and commonly garnetiferous near margins or in thinner dikes and sills. Locally largely altered to chlorite.

Xmus — Michigamme Formation- upper slate member (Precambrian X) Basal unit a few hundred feet thick of black graphitic pyritic slate and lesser dark green siltstone and slate, overlain by very thick sequence of metagraywacke and schist in 6" to 1' beds, in places with graded bedding. Many beds are staurolite-rich and less commonly andalusite-rich. Calc-silicate concretions from a few inches to a foot or more long are common.

Xmb — Michigamme Formation-Bijiki Iron-formation member (Precambrian X). Generally weakly magnetic grunerite-magnetite chert iron-formation. Much is weathered within a few hundred feet of the surface so that magnetite and grunerite and largely converted to massive earthy hematite or limonite and locally solution of silica has formed high grade residual ore now largely mined out.

Xmls — Michigamme Formation- lower slate member (Precambrian X). Very poorly exposed unit of black graphitic pyritic slate, gray quartzite, in part pyritic, and a weakly magnetic iron-formation (X mi) traced magnetically from the east where it is known to be similar to the Bijiki.

Xg

Goodrich Quarzite (Precambrian X). Ferruginous quartzite and conglomerate. Conglomerate forms thin and apparently discontinuous unit at base and consists of pebble size chert and quartz fragments in a ferruginous quartzitite matrix. Quartzite is generally thick bedded and grades upward to finer grained rocks near the base of the Michigamme Formation.

Negaunee Iron-formation (Precambrian X). (Units are mapped according to dominant lithologic type, but interbedding of units on a scale too small to map is common.)

Xno

Xno- Jaspilite- interbedded pink, red, or maroon jasper and specular hematite. Most is wavy bedded or contains discontinuous beds or lenses of jasper, much of which is granular. Hematite beds generally contain minor magnetite.

Xns

Xns- Grunerite-magnetite-chert iron-formation- interbeds of gray chert and grunerite-magnetite mixtures. Grunerite is commonly randomly oriented or in rosettes of radiating acicular grains.

Xn

Xn- Undifferentiated iron-formation- iron-formation inferred in areas of no exposure by projection or magnetic measurements.

Xsi Xs

Siamo Slate (Precambrian X). Only exposures are near top of unit where it is laminated quartzose siltstone and argillite, locally with prominant cleavage. The Siamo is believed to underly a wide low area between ridges of Precambrian W granite on the north and metadiabase on the south but is of unknown nature in that area.

Xsi- A strongly magnetic magnetite-grunerite-cherty iron formation known from one outcrop, several test pits and many large boulders is believed to be a medial member of the Siamo near the west edge of the quadrangle.

Xa

Ajibik Quartzite (Precambrian X). Poorly exposed unit believed to be largely white vitreous quartzite because of abundant boulders of this material in areas near base of Precambrian X section. Outcrops are limited to a basal unit in Sec. 23 and 24, T. 48 N., R. 31 W. where it is a polymictic basal conglomerate with lithic sedimentary clasts as much as a few inches in diameter in a very poorly sorted quartzose matrix with disseminated pyrite. The conglomerate is separated from underlying Precambrian W granitic rocks by 5-10 feet of greenich gray massive to sheared fine grained micaceous material, possibly sheared regolith, with disseminated pyrite and minor black tourmaline. Conglomerate is radioactive giving geiger counter readings of 2000-3000 counts per second greater than adjacent granitic rocks.

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W9

Granitic rocks, (Precambrian W). Massive to foliated, pink to gray granitic rocks, mostly medium to coarse grained.

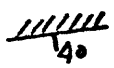
Map Symbols


Area of abundant outcrop

Strike and dip of bedding


Strike of vertical bedding

Strike and dip of overturned bedding.



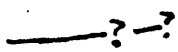
Strike and dip of bedding showing stratigraphic top direction determined from cross beds

Strike and dip of cleavage, schistosity, or foliation


Strike of vertical cleavage, schistosity, or foliation

Bearing and plunge of fold axis

Contact


Fault, querried where inferred


Mine shaft


Mineral prospect


Margin of surface mine or caved ground


Diamond drill hole: vertical, inclined


Crest of positive magnetic anomaly from ground magnetic traverse

BARAGA STATE FOREST

Deer Lake

Thumb Lake

Nellepan Lake

Ruth Lake

George Lake

Beaufort Lake

Petticoat Lake

Heart Lake

Fire Lake

Spruce Creek

T. 49 N.

T. 48 N.

T. 47 N.

R. 32 W.

R. 31 W.

(WITCH LAKE NE)

(WITCH LAKE 7.5' QUADRANGLE)

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1951 1952 Field check 1956

Polyconic projection. 1927 North American datum
10,000-foot grid based on Michigan coordinate system, west zone
1000-meter Universal Transverse Mercator grid ticks
zone 16, shown in blue

Unchecked elevations are shown in red

SCALE 1:24000

1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 KILOMETER

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

TRUE NORTH
MAGNETIC NORTH

APPROXIMATE MEAN DECLINATION, 1956

MICHIGAN

QUADRANGLE LOCATION

ROAD CLASSIFICATION

Heavy duty ——— Light duty

Unimproved dirt

U. S. Route ○ State Route

THREE LAKES, MICH.

SW/4 MICHIGAMME [illegible]

N 46 30' — W 87 [illegible]

1956

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OPEN FILE MAP
This map is preliminary and has not been edited for conformity with Geological Survey standards or nomenclature.

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