# WISCONSIN GEOLOGICAL SURVEY.

T. C. CHAMBERLIN, CHIEF GEOLOGIST.

PLATE No. XXVIII.

# MAP OF
# THE MENOMINEE IRON REGION
including
## PINE RIVER DISTRICT OCONTO COUNTY
and in part the
## STURGEON RIVER DISTRICT MICHIGAN


by

T. B. BROOKS.

C. E. WRIGHT, Assistant.


1879.

*See accompanying Report Vol. III Part VII*

Scale: 2½ths. inch to 1 Mile = 2000 Steps.


F. H. Brotherton and Fred J. Knight, Topographical Assistants.

Geo. A. Fay and Robert Mc. Kinlay " " in 1878.


*For greater detail see Plates I to IX and text. For broad generalizations see following map. The COLORS and SMALL LETTERS (except in the case of the Silurian and Laurentian rocks) indicate the general lithological character of the Huronian (Iron-bearing) series.*

*The Roman numerals on the left designate the beds, (in ascending order) in which each rock is most abundant. Unless otherwise expressed, the uncolored areas in Wisconsin present no outcrops, being covered by drift.*

- A — **LOWER SILURIAN**, caps the highest hills in Michigan, increasing to the east until it becomes the surface rock. Seen only at two points in Wisconsin.
- B — **KEEWEENAWIAN**, (Copper-bearing Series) wanting.
- C — **HURONIAN** (Iron-bearing Series) All the uncolored area is believed to be Huronian, mostly covered with drift which conceals the rocks.

Ferruginous:
- VI, XV, XVIII? a — MAGNETITE, usually associated with Hematite and not abundant.
- VI, XV, XVIII? b — HEMATITE, red to purple, friable to hard, sometimes earthy, usually schistose.
- XV. VI. c — LIMONITE, probably abundant, usually associated with Hematite.
- VI. XV. d — Quartzose FLAG ORES and Ferruginous Quartzose and Argillaceous Schists, usually hematitic. Very abundant, believed to constitute by far the greater part of the ore rocks.

Quartzose:
- II. XIV. e — QUARTZITE, gray, massive to semi-schistose, graduates into
- XIV. XVIII, XIX. f — QUARTZ SCHIST, which is often
- XIV. g — Conglomeritic (often specular)
- IX? h — SANDSTONE, graduating into Quartz Schist.

Limestone:
- V. i — MARBLE, usually magnesian (dolomitic), often siliceous and banded
- V j — DOLOMITE.

Hornblendic:
- XVII l — HORNBLENDE ROCK, graduating into Diorite, less abundant than
- XIX-XVII. m — HORNBLENDE SCHIST, black, often associated with Actinolite Schist.
- XIX n — MICACEOUS HORNBLENDE SCHIST, graduating into Mica Schist.

*Note. Outcrops too small to admit of coloring are designated by the small letters.*

Granitoid:
- XVI? XVII. XVIII. o — ACTINOLITE SCHIST.
- XV. XVII XVIII. p — MAGNETIC ACTINOLITE SCHIST, Has been called Anthophyllite Schist.
- XVI XVII. XVIII. q — "GREENSTONE," (variety undetermined) GABBRO is marked qq
- XVI. r — DIORITE, associated with, closely resembling and probably graduating into:
- XVII s — DIABASE; Graduates through Kersantite? and Greenstone Schist into a variety of
- XVIII. XVI? t — CHLORITIC SCHIST. Another variety graduates into:
- XV. XI? IX? u — CLAY SLATE and ARGILLACEOUS SCHIST.
- XV. v — CHLORITIC CLAY SLATE.
- XV. w — FERRUGINOUS CLAY SLATE, often associated with
- XV. XVIII? x — ARGILLACEOUS CARBONACEOUS SHALE or SLATE sometimes graphitic
- VII XVI? y — HYDRO-MICACEOUS SCHIST. Soft and unctuous feeling often called "Talcy"
- XVII. XV. z — SERICITE GNEISS and SCHIST, has been called Protogine Gneiss and Talc Schist.
- XIX. XVIII? aa — MICA SCHIST, other than hydrated, mostly Biotite
- XIX bb — STAUROLITIFEROUS MICA SCHIST.
- XIX XVII? XX. cc — GNEISS; mostly Biotite "Augen" rare
- XX. XIX? dd — HORNBLENDE-GNEISS.
- I ee — CONGLOMERITIC GNEISS, rare
- XX ff — GRANITE
- XX? hh — PORPHYRITE (at Peninee Falls)
- D — **LAURENTIAN**, rocks not separated but mostly Granites, Gneiss, Hornblende and Mica Schists.

## EXPLANATIONS

Strike of bedding of rocks, dip unknown
Strike and dip of bedding of rocks
Strike of bedding, dip vertical or nearly so — or —
Bedding contorted or bent, dip shown by arrow
Rock massive, strike and dip cannot be made out
Anticlinal axis, or when inclined
Synclinal axis or when inclined
Iron locations where work has been done or mines opened
Town and Range lines ____ Section lines
Trails ____ Portage trail or winter sled road
Wagon Road ____ Railroad ____ Projected Railroad
Indian Wigwam ____ Trappers Cabin
Logging Camp ____ Dwelling House
Magnetic Signs: No local attraction; Moderate local attraction; Strong

*Strong attraction is often induced by disseminated magnetite in rocks and may not indicate workable ores*

*The colors are extended beyond actual outcrops (marked by appropriate signs) only where there is little doubt as to the character of the underlying rock. The further hypothetical extension of the concealed beds under the drift is shown by dotted lines thus: ____*

*The topography was chiefly compiled from U.S. Land Office maps, usually inaccurate in Wisconsin. So far as possible, corrections were made by re-surveys, especially along the rivers forming the State boundary.*

*In Wisconsin the lakes not re-surveyed are only outlined.*

## GEOLOGICAL SECTIONS looking W.N.W.

Scale | Horizontal: 1 Mile to 1½ inches-twice that of map.
Vertical: Approximately relative.

PINE and PAINT RIVER Section

COMMONWEALTH MINE Section

QUINNESEC Section

STURGEON RIVER Section

*The surface rocks in the east are Lower Silurian, the ground being level with considerable swamp. The numerous boulder-clay ridges trend N.N.E. and S.S.W.*

Fred J. Knight, Draughtsman.

The Michigan Lithog. Co.