

EXPLANATION

PRECAMBRIAN

ys
Argillite and slate
Gray and black, generally ferruginous and interbedded with thin layers of light-colored sandstone, or shaly, or shaly with upper thin-bedded layers, or that are siliceous, tabular, and partly argillaceous.

m12
Main iron-formation
Includes a thick-bedded ferruginous, micaceous, and thin-bedded ferruginous, micaceous, that may overlap or may occur separately.

os
Sericitic argillite and siltstone
Gray, light-green, or light-brown. Locally includes lenses of quartzite near the contact with the overlying iron-formation.

Geologic contact
Dashed where exposed at irregular intervals or closely limited by adjacent strata; dotted where established by drill holes and projection of same data, omitted where position is well well defined.

Anticline
Shows trace of axial plane and bearing and plunge of axis. Dashed where approximately located.

Syncline
Shows trace of axial plane and bearing and plunge of axis. Dashed where approximately located.

Plunge of minor anticline
Dashed where approximately located.

Plunge of minor syncline
Dashed where approximately located.

Outline of pit bank
Dashed line represents bottom of bank.

Vertical drill hole
Shows rock at bottom of surface.

Drill hole
From analyses indicates that bedrock is probably iron-formation.

Abbreviations

arg	Argillite	ys	Argillite and slate
blk	Black	m12	Main iron-formation
br	Brown	os	Sericitic argillite and siltstone
ch	Chert		
dk	Dark		
fg	Ferruginous		
gr	Green		
if	Iron-formation		
qtz	Quartzite		
sch	Schist		
ser	Sericitic		
sl	Siltstone		
st	Slate		

NOTE: Quotation marks indicate the description of the rock is from mining company records. All other descriptions are the result of studies by the U.S. Geological Survey.

Base from U.S. Geological Survey Brainerd quadrangle and from maps provided by the M. A. Hanna Company. Published with permission of the operating mining companies.

Geology by R. G. Schmidt, 1954-55

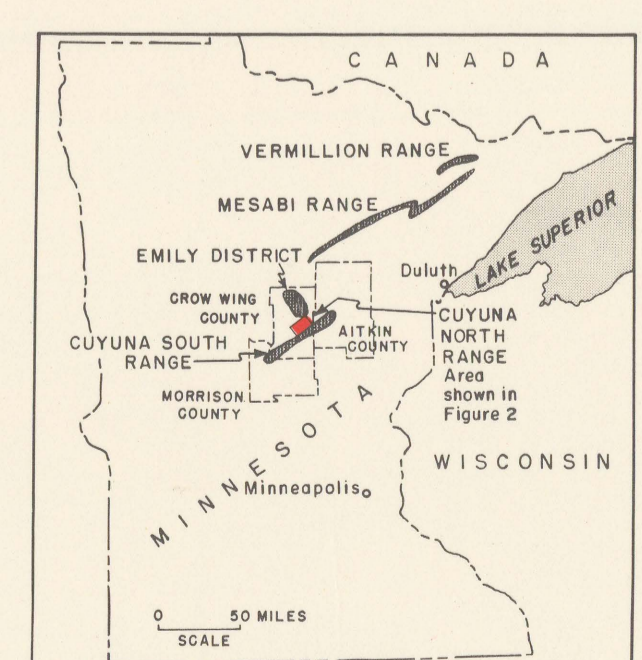


FIGURE 1. INDEX MAP OF MINNESOTA SHOWING LOCATION OF NORTH RANGE, CUYUNA DISTRICT

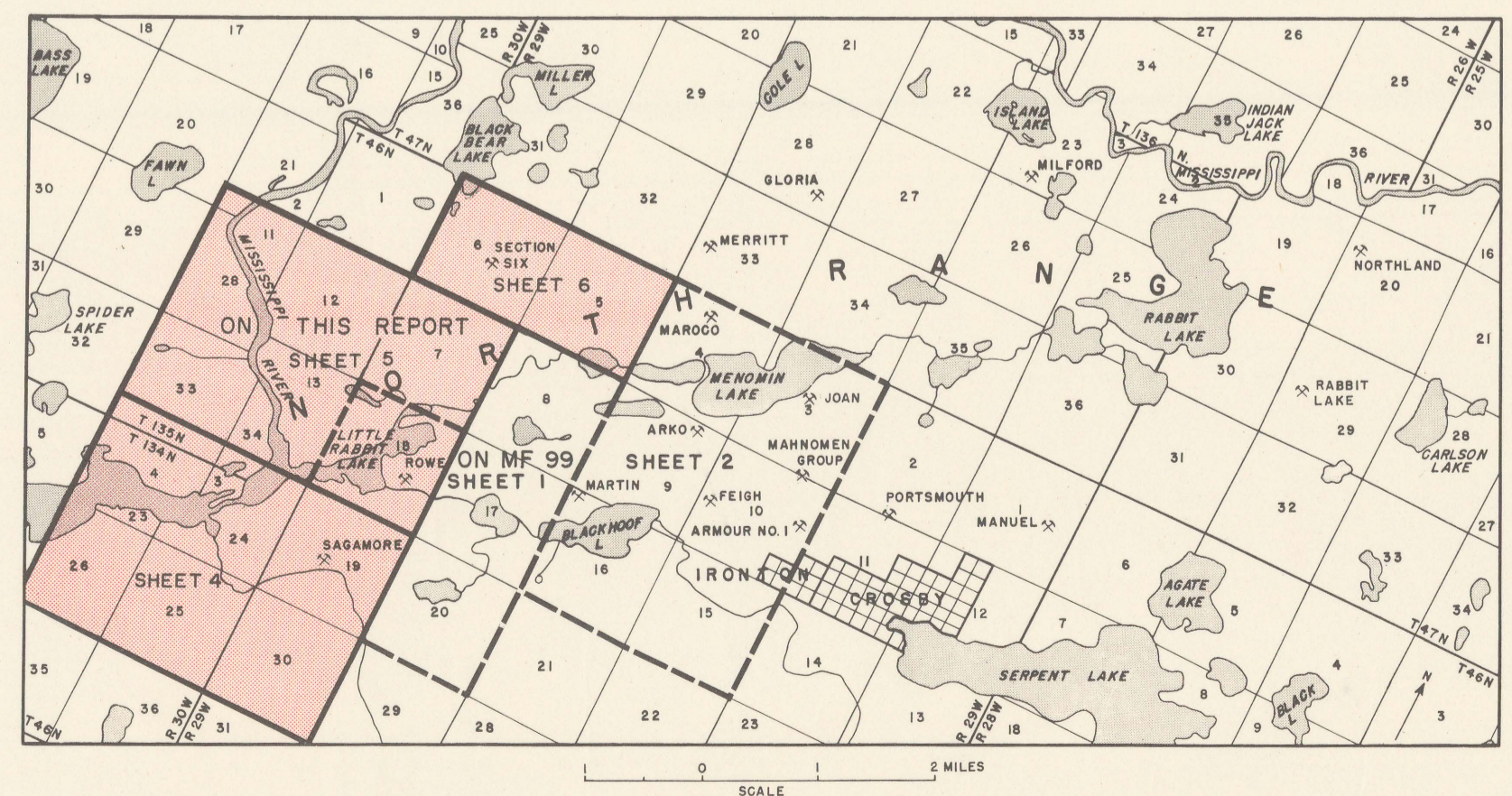
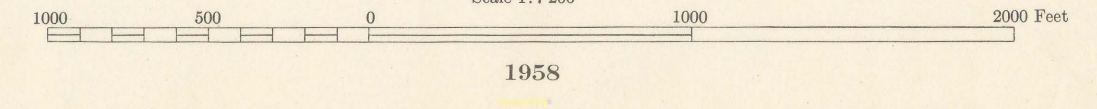


FIGURE 2. NORTH RANGE, CUYUNA DISTRICT, SHOWING LOCATION OF SHEETS COMPRISING THIS REPORT AND MF 99

SHEET 5
BEDROCK GEOLOGY OF THE SOUTHWESTERN PART OF THE NORTH RANGE, CUYUNA DISTRICT, MINNESOTA

By
R. G. Schmidt



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