

R. XLIII W.

R. XLII W.

R. XLI W.

R. XL W.

of field seasons of 1900, 1903, 1907, and
S. Smith, R.W. Wieland, W.V. Savicki,
Caman, and M.E. Wadsworth.

S U P E R R I O R

Elevation 602 ft.

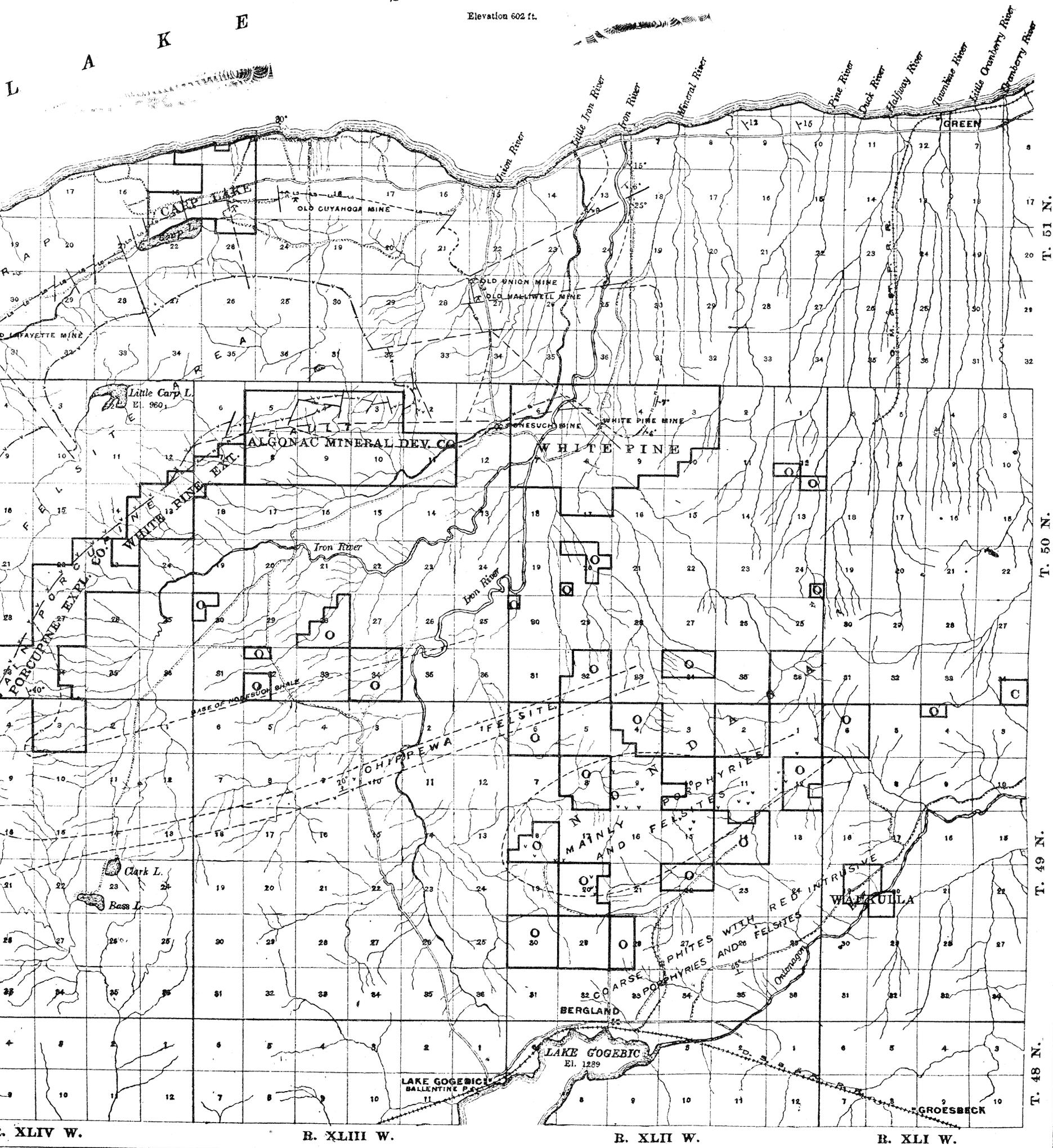


Fig. 1.

Preliminary Geological Map of the

PORCUPINE MOUNTAINS AND VICINITY

by F.E. Wright and A.C. Lane.

1909

Including work of field seasons of 1900, 1903, 1907, and 1908 and notes of P.S. Smith, R.W. Wieland, W.V. Savicki, A.F. Benson, A.E. Scamau, and M.E. Wadsworth.

S U

Elevation 60

- Base of Nonesuch Shale Series.....
Black and grey micaceous shales and grits of about 500 to 600 feet thick; at base, a thin stratum of greenish conglomerate containing an occasional red pebble. Overlain by the Freda Sandstone Series.
 - Base of Lake Shore Trap Series.....
Fine grained traps with coarse quartzose amygdaloids from 300 to 500 feet thick; overlain by the Outer Copper Harbor Conglomerate and underlain by a red sandstone broken with epidote and calcite seams.
 - Chippewa Felsite and Porphyry.....
Above the Chippewa Felsite are a few hundred feet of traps, then about 2000 feet of the Great Copper Harbor Conglomerate and Sandstone.
 - Formation only approximately located.....
 - Faults: known....., uncertain.....
 - Roads: good....., poor.....
 - Trails.....
- Copper appears to be principally accumulated near the Base of the Nonesuch Shale and the Lake Shore Traps.

T. 51 N.

T. 50 N.

T. 49 N.

T. 48 N.

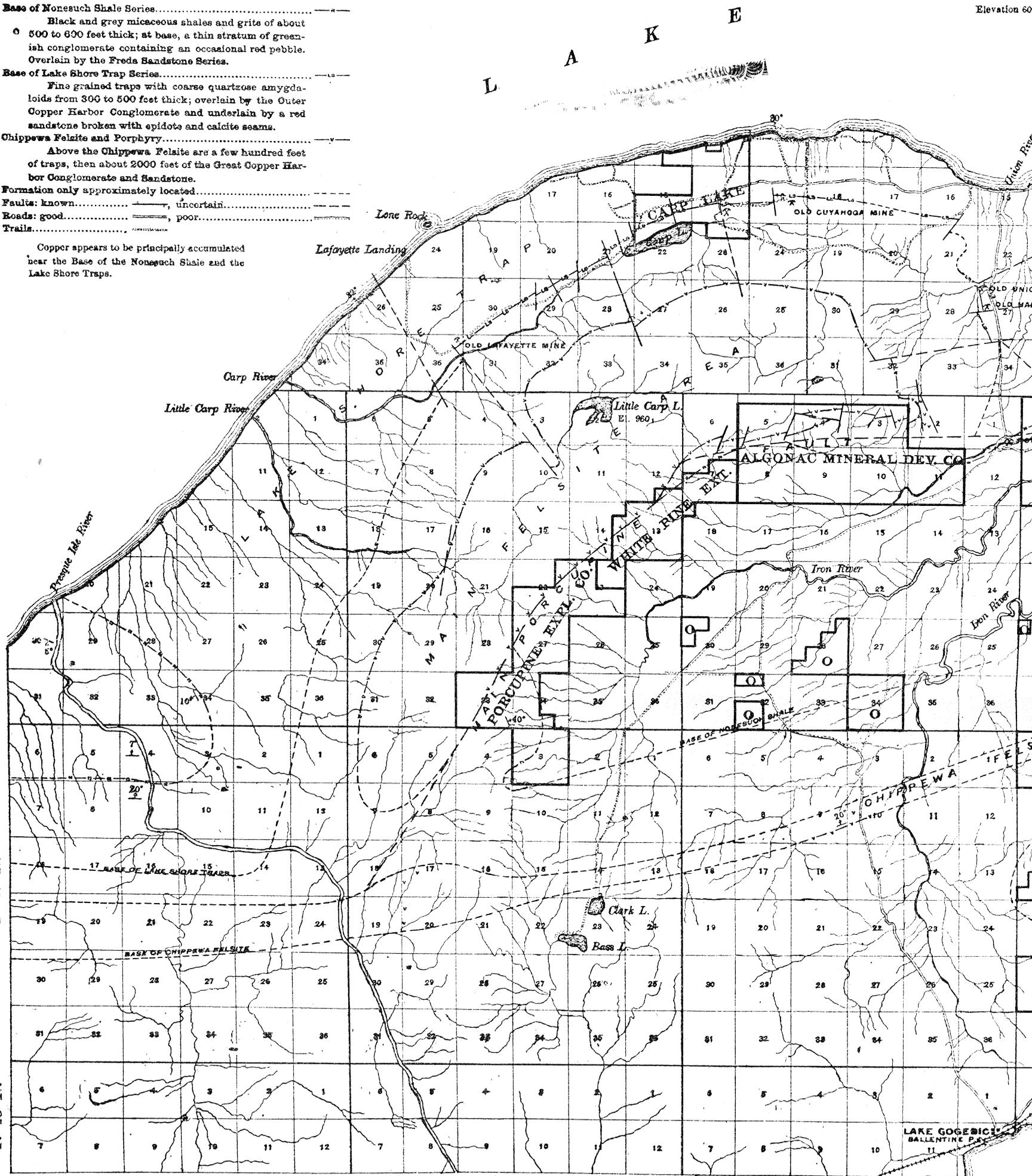
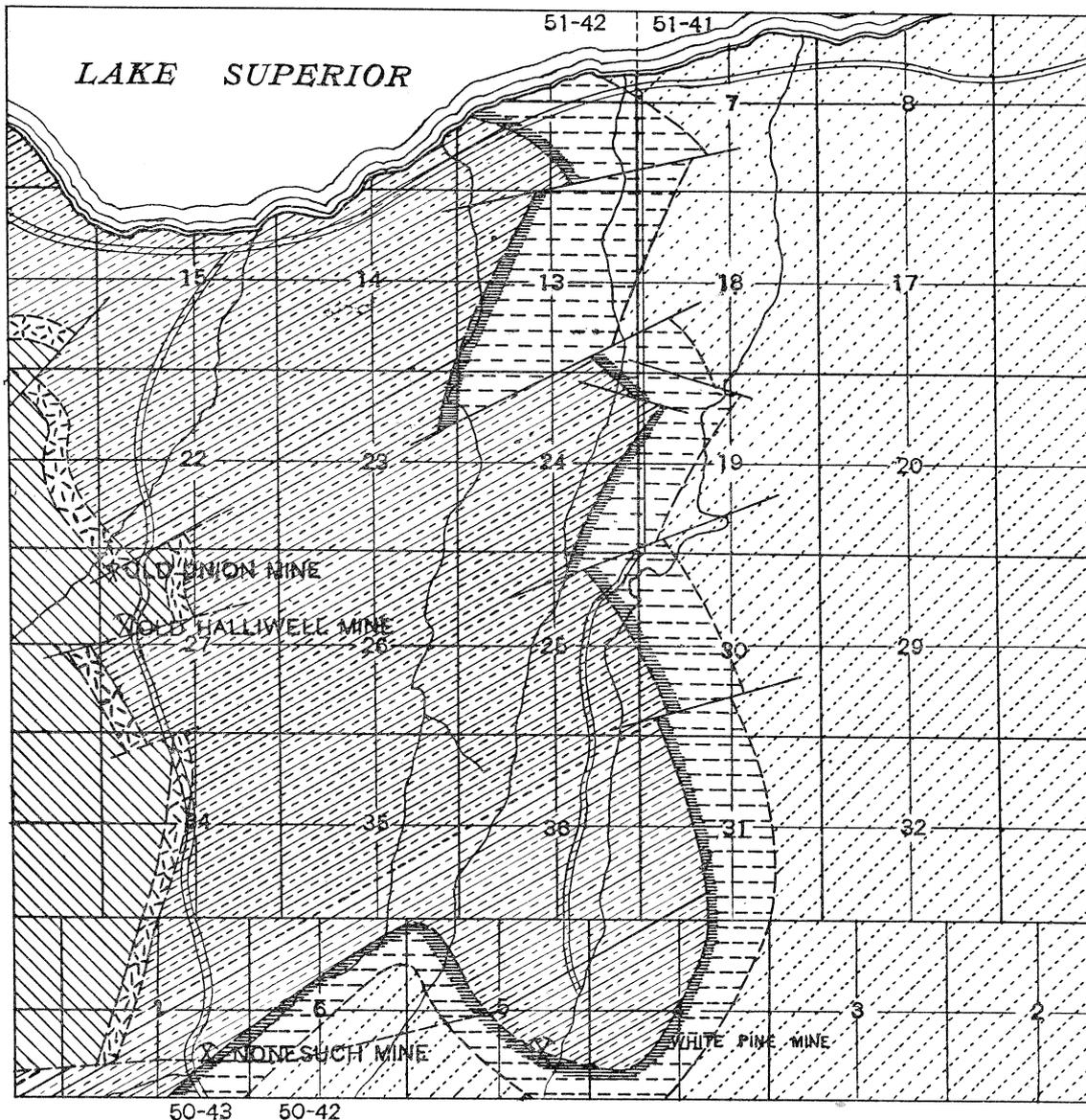


Fig. 1.

GEOLOGIC MAP
OF AREA
BETWEEN WHITE PINE MINE AND LAKE SUPERIOR
ONTONAGON COUNTY MICH.



LEGEND

UPPER KEWEENAWAN

LOWER KEWEENAWAN

Red Sandstone



Diabase Amygdaloid
and Melaphyr



Nonesuch Series

Sandstone and Conglomerate

Dark Gray Sandstone and
Black Shale



Sandstone with thin
Seams of Conglomerate



Faults

Scale of Map - one Mile =

Fig. 2.

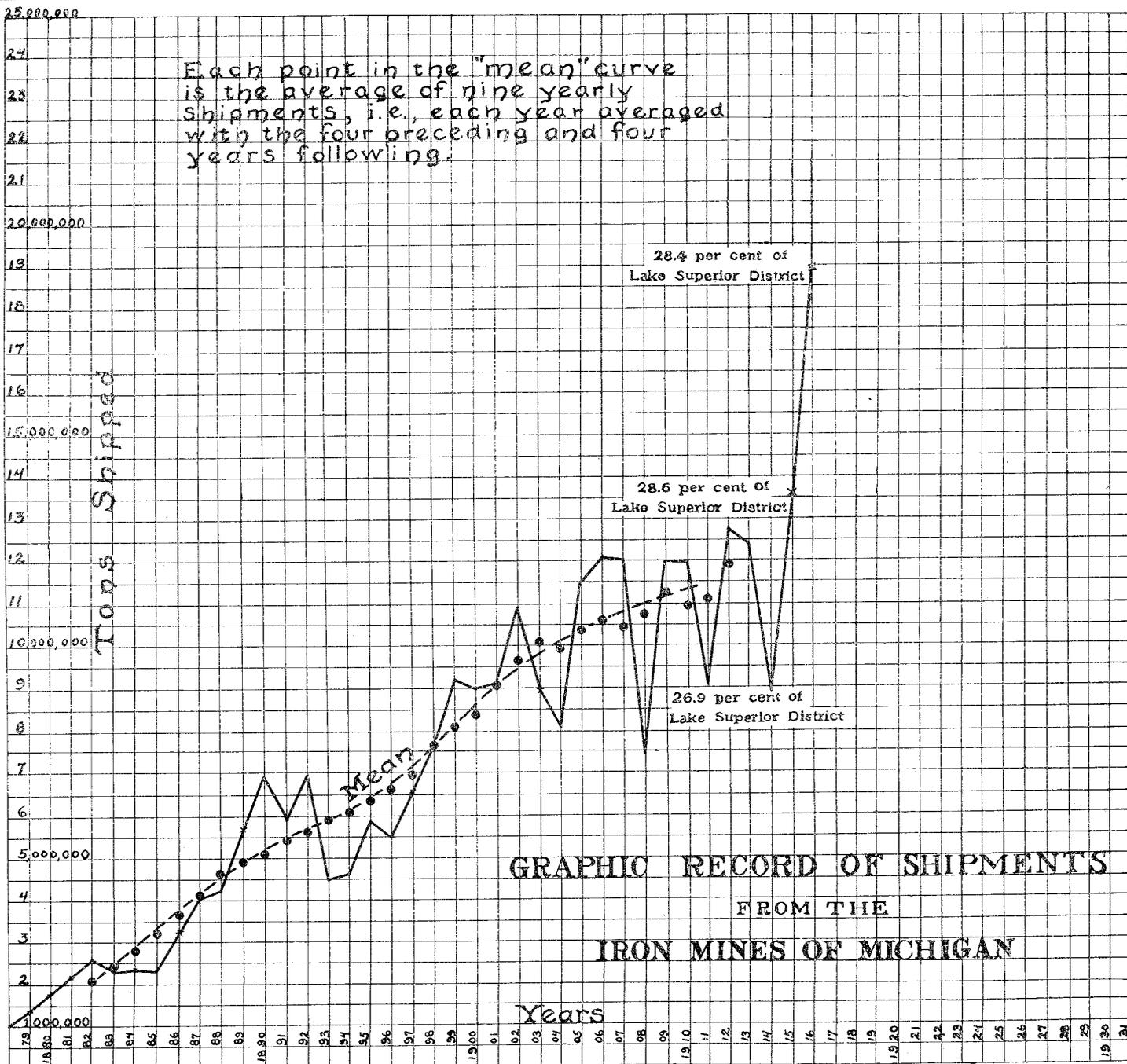


Fig. 3.



Fig. 6.—MAP SHOWING LOCATION OF MINERAL INDUSTRIES IN MICHIGAN.

HENRY R. FORD WELL.

Location: About 100 feet south of H. R. Ford machine shops, Dearborn, Wayne county. Drilled for H. R. Ford by Schrier and Kerr, well contractors, Newark and Lancaster, O. Well begun June 14, 1915; abandoned in the spring of 1916. Record by R. A. Smith from samples taken by Geo. T. Bench, Fostoria, Mich., and from driller's log. Duplicate sets of samples preserved, one set for the Michigan Geological Survey.

CZENOZOIC	System	Series	Feet	Section.	Feet	Formation, member	Lithologic description	
	QUATERNARY	Pleistocene		125			Wisconsin drift	Clay with thin gravel beds.
DEVONIAN		<i>Great unconformity</i>	100				Gravel (2-3 ft.) with fresh water.	
	Middle Devonian		200		75	Dundee (Onondaga) limestone	Light to dark gray and buff limestone with cherty and fossiliferous horizons. Violent effervescence with cold dilute hydrochloric acid. Cave from 135-140 feet with a large flow of artesian water—fresh but more or less sulphuretted and sulphated. Head could not be lowered with a 10-inch bailer.	
TRIASSIC		<i>Disconformity</i>			15		Light to dark buff bituminous crystalline limestone with sandy streaks.	
					10		Gray argillaceous and bituminous dolomite with brown bituminous laminations. Strong odor of petroleum	
					35		Dark brown and light gray to buff dolomite, argillaceous and with black bituminous streaks; some white anhydrite and selenite.	
		Upper		300	30	Upper Monroe or Detroit River Series	Light to dark bluish gray and buff dolomite, argillaceous and streaked and mottled with blue. Anhydrite 270-275 ft.	
					25		Dark brown granular dolomite resembling brown sugar and dark gray fine grained dolomite with much bituminous matter. Streaks of anhydrite.	
						80		Light to dark bituminous dolomite, shaly in places. Streaks of pure white anhydrite.
		Silurian		400		80		Light grayish buff argillaceous and brown "sugary" dolomite; considerable anhydrite and selenite.
			<i>Disconformity</i>			80		Gray to dark grayish buff, dark brown and black bituminous dolomite, cherty and argillaceous in places. Considerable anhydrite, especially from 490-495 feet.
				500		10		Dark buff and very sandy porous dolomite; bituminous.
			or			50	Sylvania sandstone or Middle Monroe	Grayish to pure white sandstone—a glass sand.
		<i>Disconformity</i>			15	Grayish white dolomitic sandstone.		
					10	Very dolomitic, gray sandstone and very sandy dolomite.		
			600		5	Pure white sandstone at the top and mixed sandy dolomite and sandstone below.		
					15		White sandstone grading down into gray sandstone.	
					20			
		Monroan	700		45	Lower Monroe	Gray to dark gray dense grained dolomite with much chert and some anhydrite.	
					30		Light to dark buff and gray dolomite—argillaceous in places.	
					5		Light to very light gray and buff fine grained dolomite—porous and oolitic and with much chert and some anhydrite.	
					20		Dark buff bituminous and laminated dolomite.	
					10		Gray to light gray and buff dolomite and oolite.	
					15		Bluish gray argillaceous dolomite with bluish mottlings and streaks.	
			800		20	or Put-in-Bay dolomite	Light grayish buff dolomite.	
					35		Light buff gray dolomite, mottled and streaked with shaly dolomite below.	
					10		Very light to light grayish buff dolomite with much argillaceous matter and anhydrite.	
		and			30	Bass Island series	Blue and buff dolomite at the top and anhydrite at the bottom.	
					20			Dark buff gray and black dolomite, very argillaceous and bituminous in places. Oolite below 855 feet.
			900				Light buff gray anhydrite and dolomite.	
					35		Grayish buff to dark gray, very argillaceous dolomite and blue shale with celestite and anhydrite.	
					15		Red shaly ferruginous dolomite and soft gray and red shale.	
					35		Chiefly dark gray shale and shaly dolomite.	
		<i>Disconformity</i>			15		White salt, red at the top and clouded with dolomitic slime below.	
					35		White salt.	
					5		Streaks of gray shale and buff dolomite.	
					25		Chiefly white salt with streaks of gray shale and dolomite.	
					5			
			1100		65		Gray shale at the top and white salt below with streaks of gray shale.	
					10		Gray shale with white and red salt.	
					10		White salt with some rusty red salt.	
					15		Buff dolomite, anhydrite, gray shale and shaly dolomite with some salt.	
					25		White salt with some shale at the top.	
					5		Light buff dolomite.	
			1200		35		White salt with streaks of dolomite and anhydrite.	
					30		Light to dark buff dolomite, anhydrite, salt, and shale.	
					25		White salt, with gray shale, at the top.	
					5		Gray to dark gray shale and shaly dolomite.	
			1300		55		White salt with gray shale and dolomite at top and bottom.	

Salinan

Salina

Lower Salina

Guelph limestone
(Engadine dolomite (?)
Lockport absent)

Cataract
formation

Cabot Head (?)
shale

Manitoulin (?)
limestone

Queenston shale

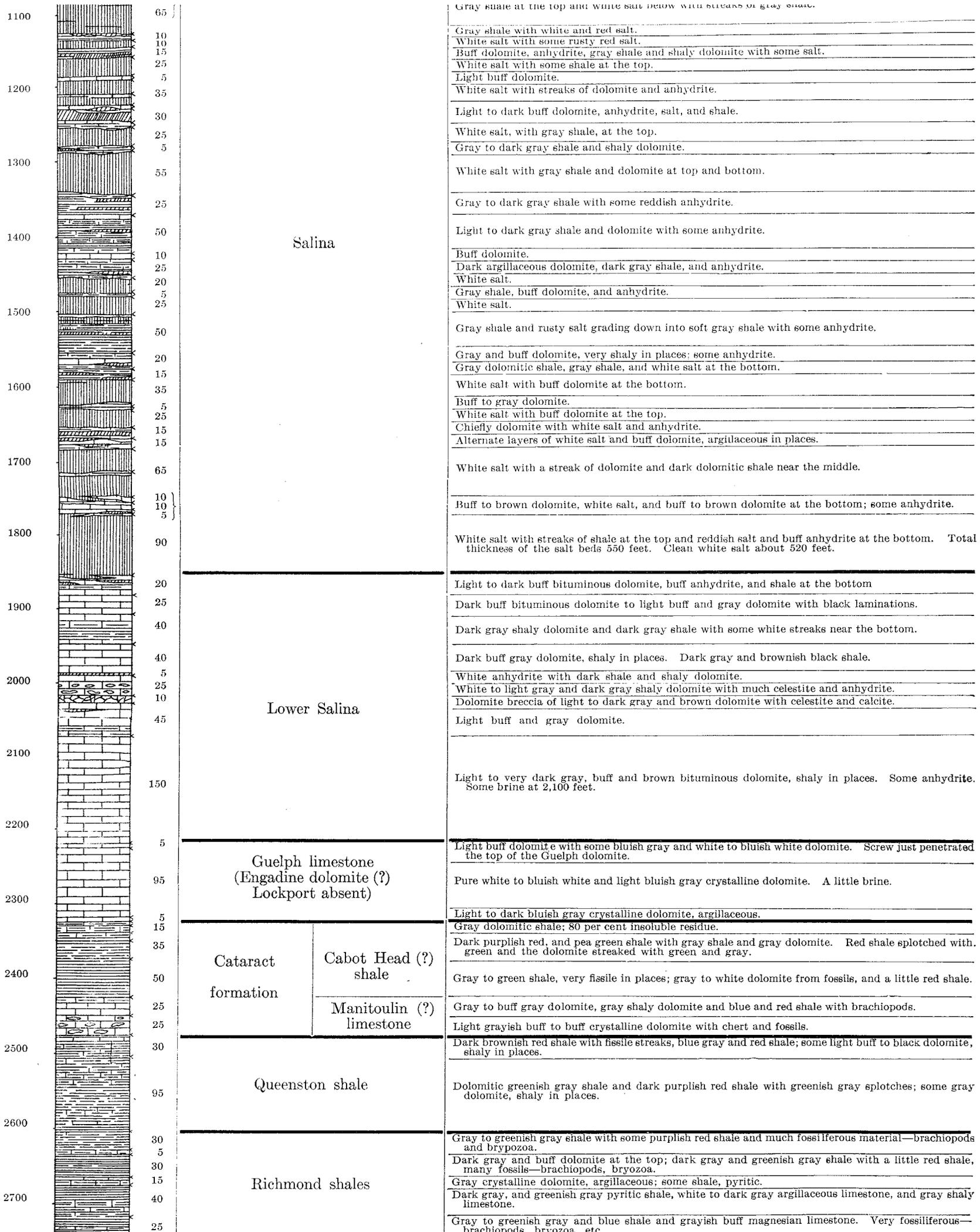
Richmond shales

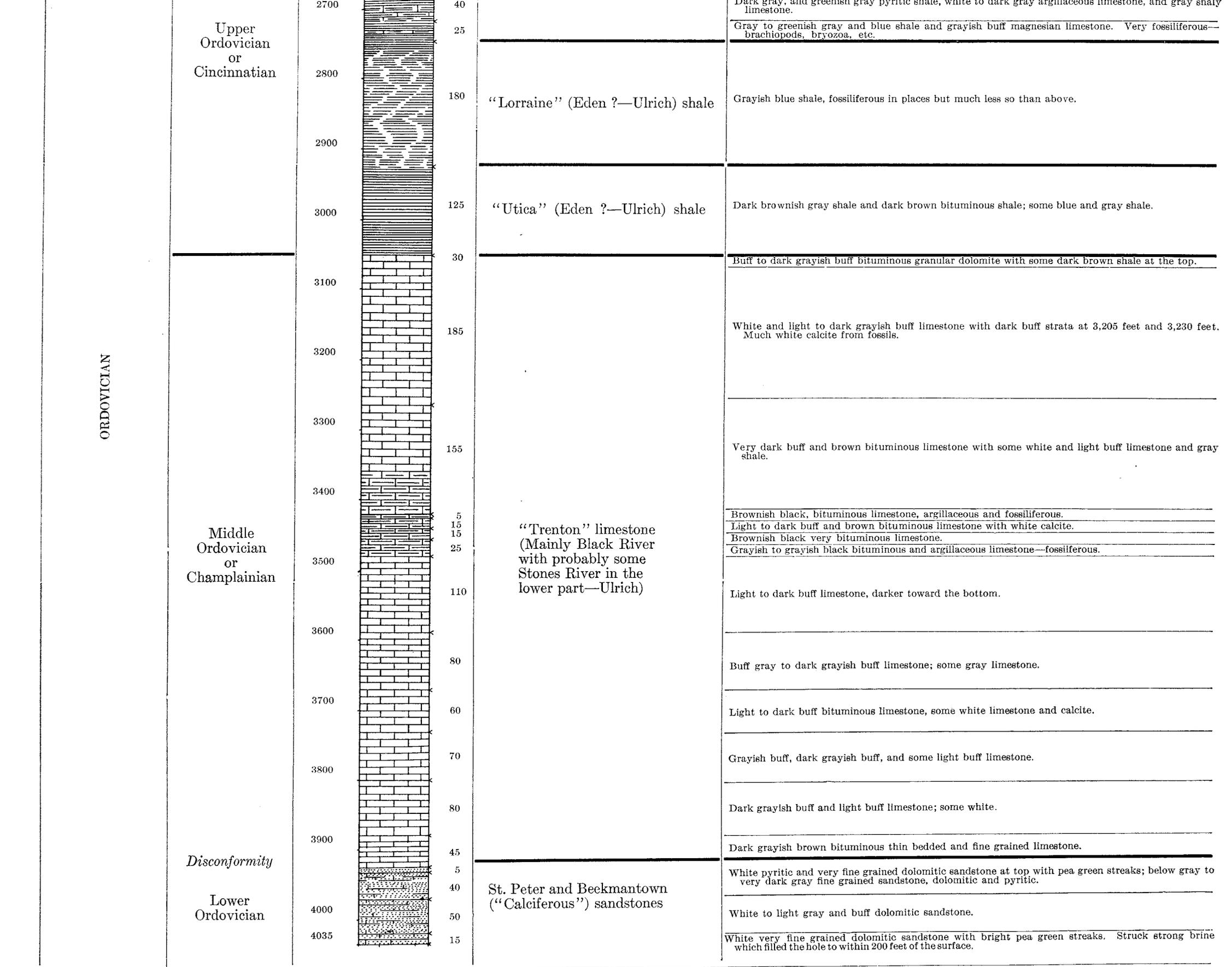
Disconformity

Middle
Silurian or
Niagaran

Lower
Silurian or
Oswegan

Upper





The drill wedged in a "cavity" at 4,035 feet, breaking the cable a short distance above the tools. The tools could not be recovered and the well was abandoned. Casing: 14-inch drive pipe to 125 feet, 10-inch casing to the Lower Monroe, and 8-inch to the top of the Trenton.

Fig. 7.