The Mount Simon Formation at Eau Claire, Wisconsin

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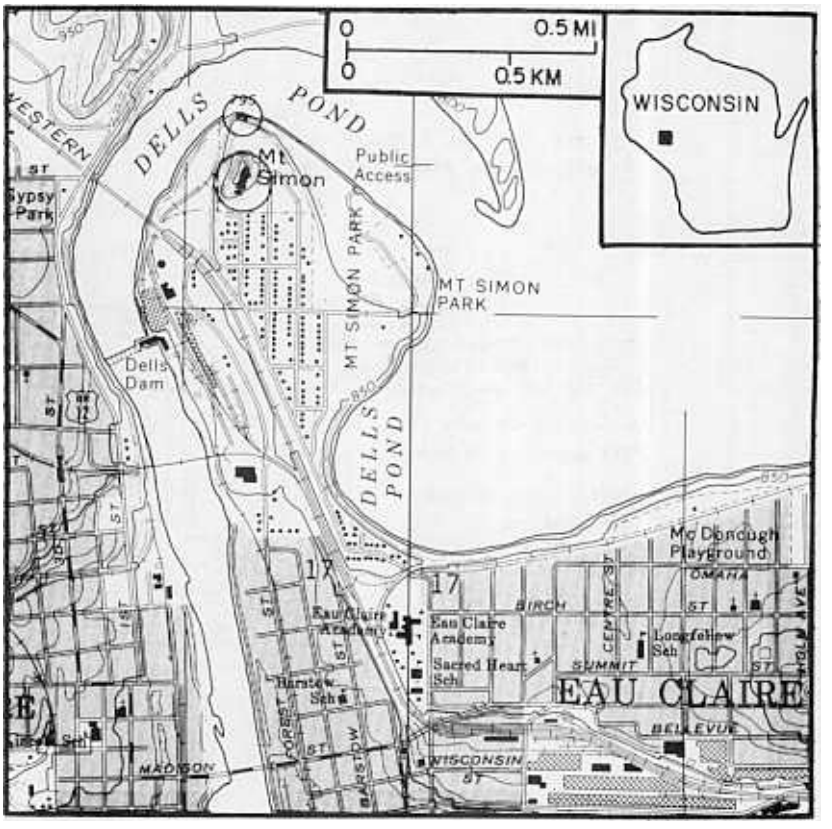


Figure 1. Map showing location of exposures discussed in text.

LOCATION

Exposure in bluff of Chippewa River and in hill called Mount Simon in City of Eau Claire (Fig. 1), in the SW¼SW¼Sec.8,T.27N.,R.9W., Eau Claire County (Elk Mound 7½-minute Quadrangle). Section includes all rock exposed from top of hill called Mount Simon northwest to base of river bluff.

SIGNIFICANCE

This is the type section of the Mount Simon Formation. The lithologic character of the Mount Simon Formation and its stratigraphic boundaries are illustrated in Figure 2.

DESCRIPTION

The Mount Simon Formation here grades upward from well-sorted, thick-bedded, coarse-grained sandstone in the lower part to finer grained, thinner bedded, transitional beds at the top. Although the section contains brachiopod shells in the upper few feet, these beds are assigned to the Mount Simon rather than the Eau Claire Formation on the basis of lithologic similarity. The Mount Simon is assigned a Dresbachian age because it is transitional with the overlying Eau Claire Formation, which has a Dresbachian fauna (the trilobites *Cedaria* and *Crepicephalus*).

Previous mineralogical analyses of the Mount Simon at this site indicate a range in feldspar content of from 2.06 to 5.0 percent (Stauffer and Thiel, 1941; Crowley and Thiel, 1940; Potter and Pryor, 1961). However, a study by Asthana (1969) shows that the range in feldspar content of samples collected at regular 5-ft (1.5 m) intervals from the exposure is from 1.4 to 40.0 percent with an average of 17.5 percent. Combined plagioclase-microcline percentages range from 0.64 to 12.7 percent.

Predominant heavy minerals in the Mount Simon Sandstone are ilmenite, leucoxene, zircon, tourmaline, and garnet (Tyler, 1936).

The overlying Eau Claire Formation, where sampled near its base at Mount Washington (type section of the Eau Claire Formation), has a minimum feldspar content of 42 percent and a combined plagioclase/microcline content of 12 percent.

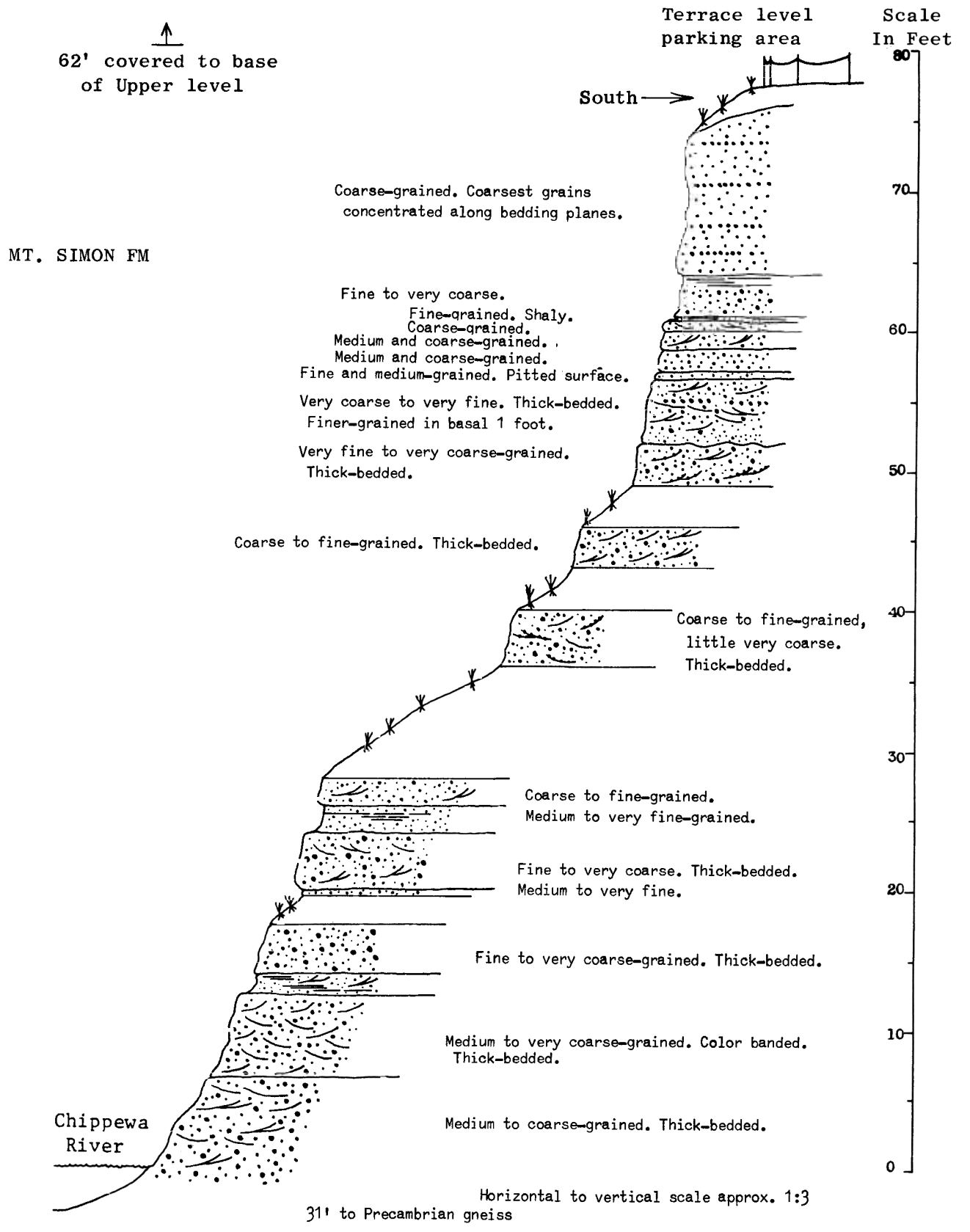
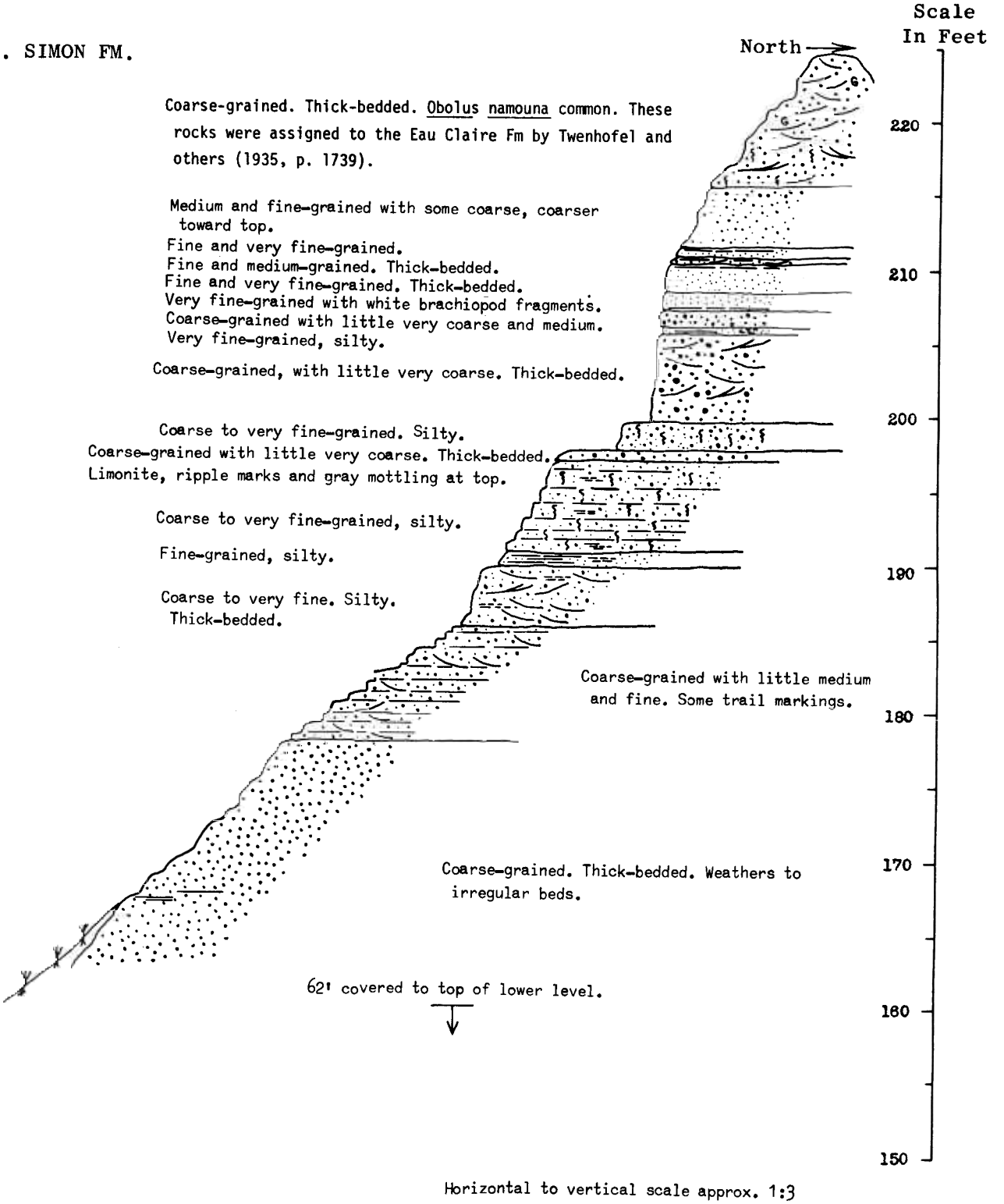


Figure 2. Stratigraphy of Mount Simon Formation in its type section.

MT. SIMON FM.



Horizontal to vertical scale approx. 1:3

The only other mineralogical information available on the Eau Claire Formation is an analysis by Potter and Pryor (1961) that indicates 12.5 percent feldspar in outcrops near Merrillan in northwestern Jackson County. Other analyses from scattered outcrops of the Eau Claire show variable amounts of tourmaline, zircon, ilmenite, magnetite, and garnet.

Of particular interest at this exposure are the transitional beds, which are also well exposed at the Rest Haven Gardens Town Road exposure south of the Eau Claire city limits (Ostrom, 1966, 1970). These beds have been recognized at many outcrops in this vicinity, but have not been traced to other areas due to lack of outcrops of this part of the section.

The transition beds are believed to have formed in a near-shore marine environment located seaward of the beach. The transition beds are characterized by a wide range in grain size from clay to very coarse sand and granules, well-defined bedding, different lithology from bed to bed, uniform lithology of individual beds, and by vertical burrows that are confined to certain beds.

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