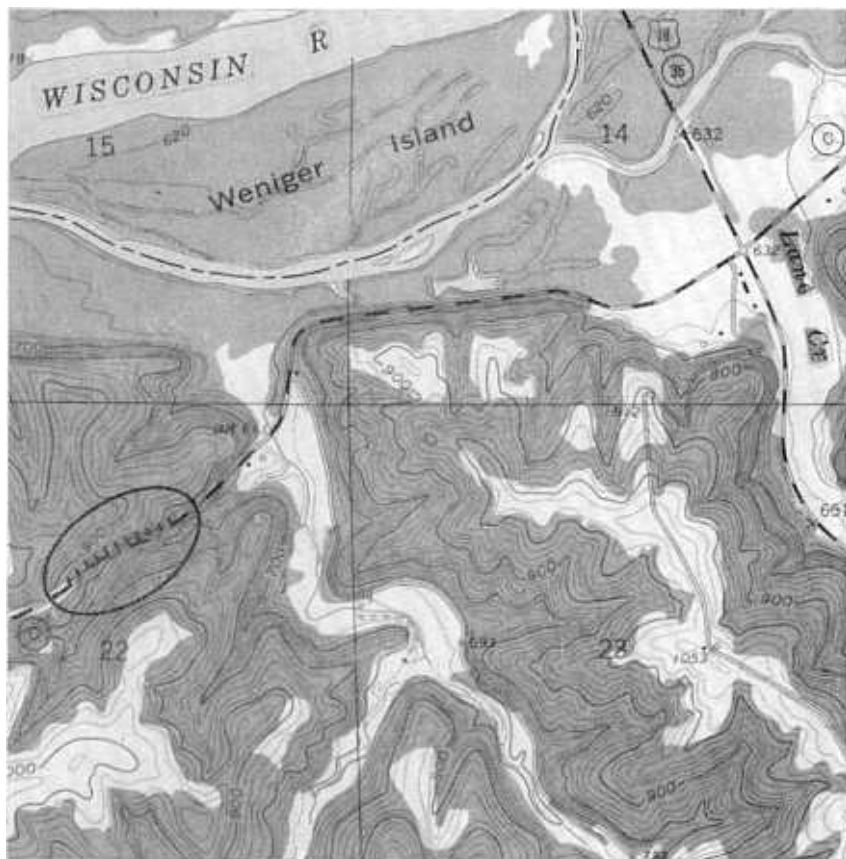


Title: Bridgeport West

Location: Exposures in roadcut at north side of County Highway "C" in the SE $\frac{1}{4}$ , NW $\frac{1}{4}$ , NE $\frac{1}{4}$ , Sec. 22, T.6N., R.6W., Grant County (Bagley 7.5-minute topographic quadrangle, 1962).



Author: M. E. Ostrom (modified from Ostrom, 1970)

Description: At this site all four lithotopes of the uppermost cycle, which has the St. Peter Sandstone in its base, are exposed as are the contact relationships of St. Peter, Glenwood and Platteville Formations.

At the Prairie du Chien Stop the erosion surface at the base of the St. Peter was especially well shown. Dapples (1955) demonstrated that this erosion surface could be traced over a broad area extending from western Tennessee to Wisconsin. A map by Ostrom shows the geology of the pre-St. Peter surface in Wisconsin and indicates that the St. Peter rests on successively older rocks as one proceeds from western Wisconsin to the vicinity of Milwaukee. It is postulated that there was pre-St. Peter uplift in the vicinity of Milwaukee and that the uplifted surface was subsequently eroded. Although data are sparse there is very good agreement between thick sections of St. Peter which are interpreted to coincide with Pre-St. Peter surface which were likely exposed by erosion. The data suggest stream drainage to the southwest away from the Milwaukee area.

Bridgeport West

ROADCUT ON COUNTY TRUNK "C"

NW $\frac{1}{4}$ , NE $\frac{1}{4}$ , Sec. 22, T. 6N., R. 6W.

Scale  
In Feet

PLATTEVILLE FM.  
McGregor Mbr.

Thin and uneven bedding. Abundant fossils. Basal contact transitional through 6' of brownish red limestone.

Pecatonica Mbr.

Thick-bedded. Abundant fossils.

Thick-bedded. Abundant fossils.

Weathered surface horizontally ridged and furrowed.

PLATTEVILLE FM.  
GLENWOOD FM.

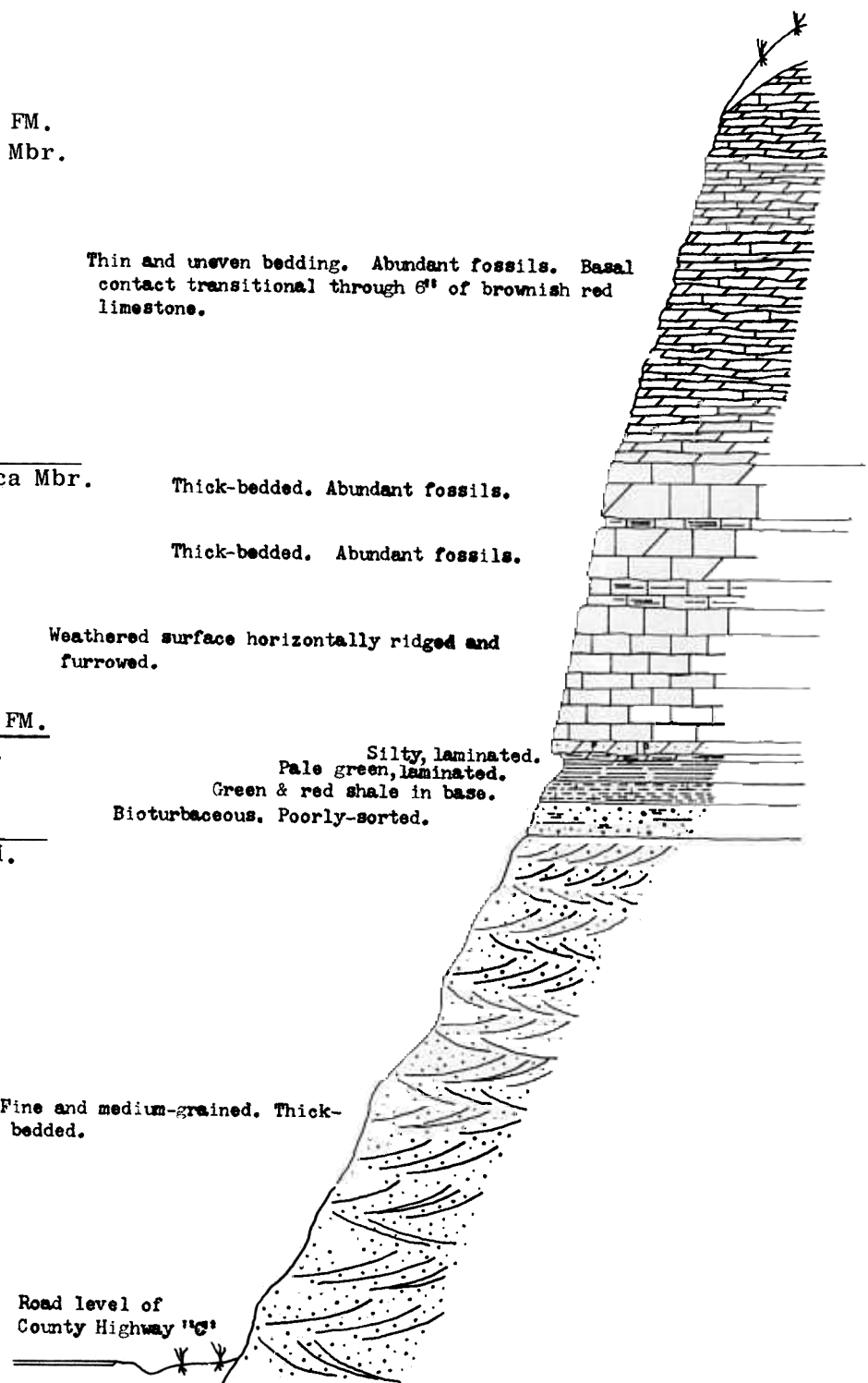
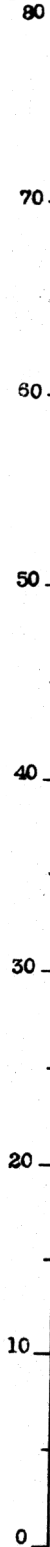
Silty, laminated.  
Pale green, laminated.  
Green & red shale in base.  
Bioturbaceous. Poorly-sorted.

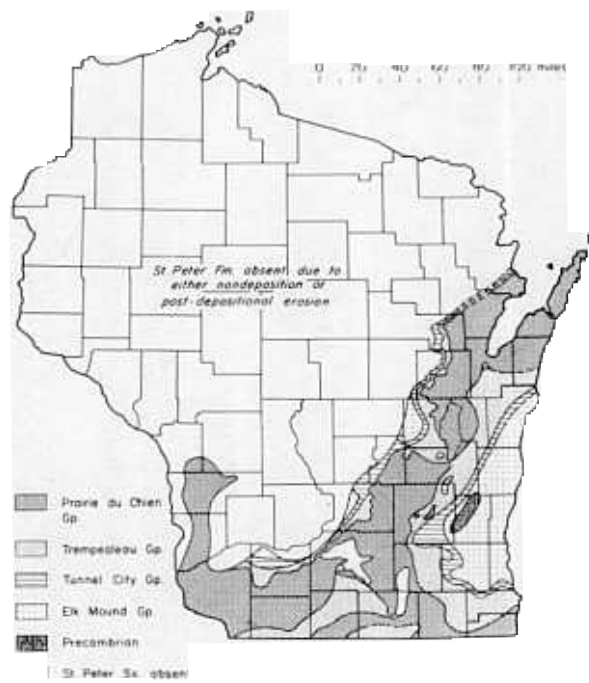
ST. PETER FM.

Fine and medium-grained. Thick-bedded.

Road level of  
County Highway "C"

North →





Paleogeology of the pre-St. Peter erosion surface in southern and eastern Wisconsin.

The thick-bedded quartzarenite is represented by the St. Peter Sandstone and the reworked poorly-sorted quartzarenite by the lower 2 feet of the Glenwood Formation. The reworked quartzarenite is transitional through about 1.4 feet of siltstone and shale into the shale lithotope and this is in sharp contact with the base of the overlying carbonate lithotope which is the Platteville Formation.

The Glenwood Formation in Wisconsin thins to the east toward the Wisconsin Arch from a maximum thickness of about 13 feet in the vicinity of Beetown to less than a foot near New Glarus. A study by Ostrom (1969) showed that as one proceeds eastward the upper or shale unit thins to disappearance and the underlying poorly-sorted reworked quartzarenite is in direct contact with the overlying carbonate lithotope. Traced further to the east, in the vicinity of New Glarus south of Madison, the reworked quartzarenite thins to less than 1 foot.

The contact of the Glenwood Formation with the Platteville Formation is one of apparent unconformity. This relationship is attributed to lateral variations in environmental conditions at the time of formation rather than to post-Glenwood erosion because there is no evidence except the apparent regional truncation described above that would indicate the Glenwood was eroded.

This limit of the New Richmond Sandstone is along a line trending southwestward from about Danville, in east-central Illinois, toward Cape Girardeau, Missouri (Workman and Bell, 1949).

The New Richmond developed in the littoral zone during the succeeding cycle. It is succeeded by poorly known or defined deposits of the nondepositional and depositional shelf zones similar to those of the preceding Jordan cycle, and is overlain by deposits of the carbonate zone, the Shakopee Dolomite, developed further seaward. In more seaward areas to the south the Shakopee Dolomite is continuous with the Oneota Dolomite of the preceding Jordan cycle and consists almost entirely of carbonate. Northward, as for example, near Utica in north-central Illinois, the Shakopee overlies the New Richmond and has a variable lithology which consists of dolomite containing layers of quartzarenite, shale, and discontinuous thin beds of oolitic chert. The dolomite beds range up to 10 feet in thickness, are seldom more than 3 feet thick, and are commonly very fine-grained, and their upper surfaces may be ripple marked and mudcracked. The sandstone beds may be cross-bedded and commonly contain pebbles and cobbles derived from the underlying dolomite bed in their lower part. Beds of shale reach a known maximum thickness of 6 inches. The variable lithologic character of the Shakopee in this area is interpreted to indicate frequent environmental changes and "...fluctuation of conditions of sedimentation characteristic of shallow water deposition" (Cady, 1919). It is postulated that the Shakopee Formation accumulated in a very shallow environment situated shoreward from an area of algal headlands. This zone is considered to have been a broad, flat, and shallow lagoon or shoaling area subjected to the influence of the land on one side and the algal headlands and reefs on the other, while at the same time being influenced by other factors affecting the carbonate deposition.

The Shakopee Dolomite and older strata were eroded in northerly areas in Wisconsin during pre-St. Peter regression to an indefinite northeast-trending strandline through western Kentucky (Dapples, 1955). The geology of the eroded surface is shown in the accompanying diagram (Ostrom, 1964). The surface is one of prominent relief.

Significance: This is an opportunity to examine all four lithotapes of the St. Peter cycle and their contact relationships.

How do the lithotapes exposed here compare to those seen at the Viroque/Readstown stop? What are the differences between this cycle and the Galesville cycle seen at the Bruce School, Galesville, Duerch Peak, and Mt. Zion stops? What is the environmental and historical significance of these differences?

References: Dapples, 1955; Ostrom, 1964 and 1970.