

Baraboo Quartzite at Skillet Creek, Wisconsin

B. A. Brown, Wisconsin Geological and Natural History Survey, 3817 Mineral Point Road, Madison, Wisconsin 53705

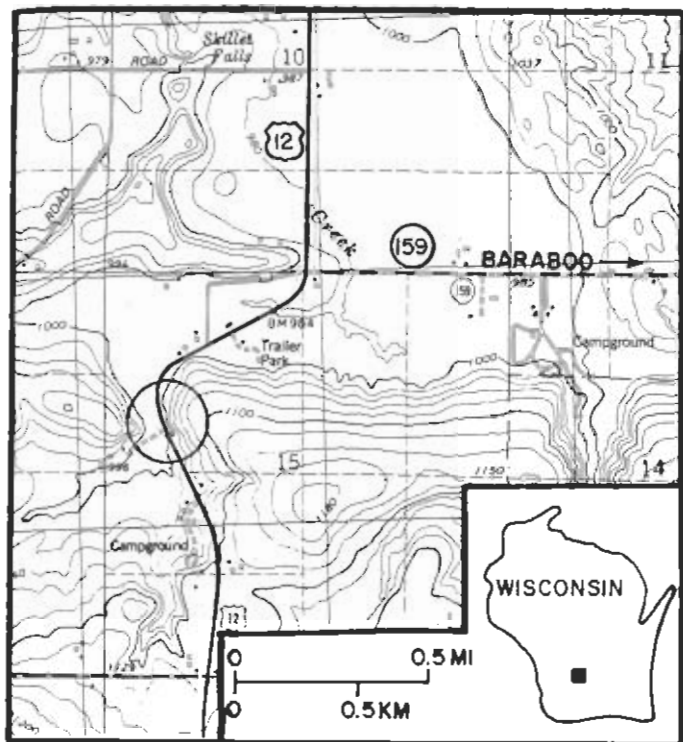


Figure 1. Location map.

LOCATION

The exposure is on the east side of U.S. 12, 0.3 mi (0.5 km) south of the junction with Wisconsin 159, SW $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 15, T. 11N., R. 6E., North Freedom 7 $\frac{1}{2}$ -minute Quadrangle (Fig. 1). **Caution:** Traffic on U.S. 12 is heavy, and there is a blind curve just north of the outcrop.

SIGNIFICANCE

This outcrop provides an opportunity to examine both the quartzite and phyllite facies of the Baraboo Quartzite. This is a classic exposure that exhibits important sedimentary and tectonic structures typical of the Baraboo interval rocks of Wisconsin (Greenberg and Brown, 1983, 1984; Brown, 1986).

DESCRIPTION

Pink quartzite, dipping 15° north, is exposed at the southern end of the outcrop. Good examples of sedimentary structures typical of the Baraboo Quartzite, including cross-bedding (Fig. 2) and ripple marks, are present at this exposure. Dalziel and Dott (1970) refer to this exposure as an excellent example of the paleocurrent indicators that suggest a southward sediment trans-



Figure 2. Cross-bedding in Baraboo Quartzite, lower part of exposure near road. Lens cap is 2 in (5 cm) in diameter.



Figure 3. Boudinaged and folded beds of quartzite interlayered with phyllite, upper part of exposure, above massive quartzite. Long dimension is approximately 6.5 ft (2 m).

port direction at Baraboo. Locally, cross-bedding in individual sets of laminae shows contortion, particularly oversteepening, which Dalziel and Dott attributed to syndepositional deformation.

At the north end of the exposure and on top of the cliff, argillaceous beds up to 6.5 ft (2 m) in thickness occur interbedded with thin (1.5 ft or less; 0.5 m) beds of quartzite, (Fig. 3). The thin quartzite beds within the less competent phyllite provide some spectacular examples of boudinage and parasitic folding. The S₁

cleavage, related to the formation of the Baraboo syncline, is nearly parallel to bedding in the phyllite at this location. Later crenulation cleavages and small-scale conjugate kinks cut the S_1 foliation at high angles. Late veins of white quartz cut the thin quartzite beds at a high angle to bedding. In thin section (Fig. 4), crenulation in the phyllite is quite apparent. Mineralogy is quartz, muscovite, and sometimes pyrophyllite, indicating a maximum of upper greenschist facies metamorphism. Recent road construction has uncovered additional exposures about 300 ft (90 m) to the north, around the curve of U.S. 12. This cut exposes the dip slope of the quartzite and contains some excellent tectonic structures, particularly refracted cleavage, in both the quartzite and phyllite.

This is an exemplary teaching outcrop and field trip stop. Please keep hammering and destructive sampling to a minimum.

REFERENCES CITED

- Brown, B. A., 1986, The Baraboo interval in Wisconsin: *Geoscience Wisconsin*, v. 10, p. 1-18.
- Dalziel, I.W.D., and Dott, R. H., Jr., 1970, Geology of the Baraboo district, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular 14, 164 p.
- Greenberg, J. K., and Brown, B. A., 1983, Middle Proterozoic to Cambrian rocks in Wisconsin; Anorogenic sedimentary and igneous activity: Wisconsin Geological and Natural History Survey Field Trip Guidebook 8, 50 p.
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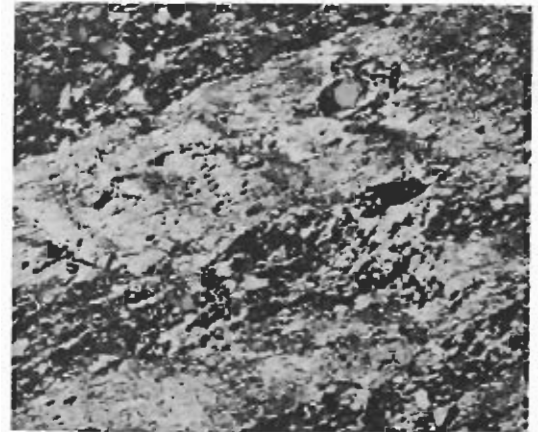


Figure 4. Photomicrograph of crenulated phyllite. Note crenulations at high angle to phyllitic foliation. Field of view is about 8 mm in long dimension.