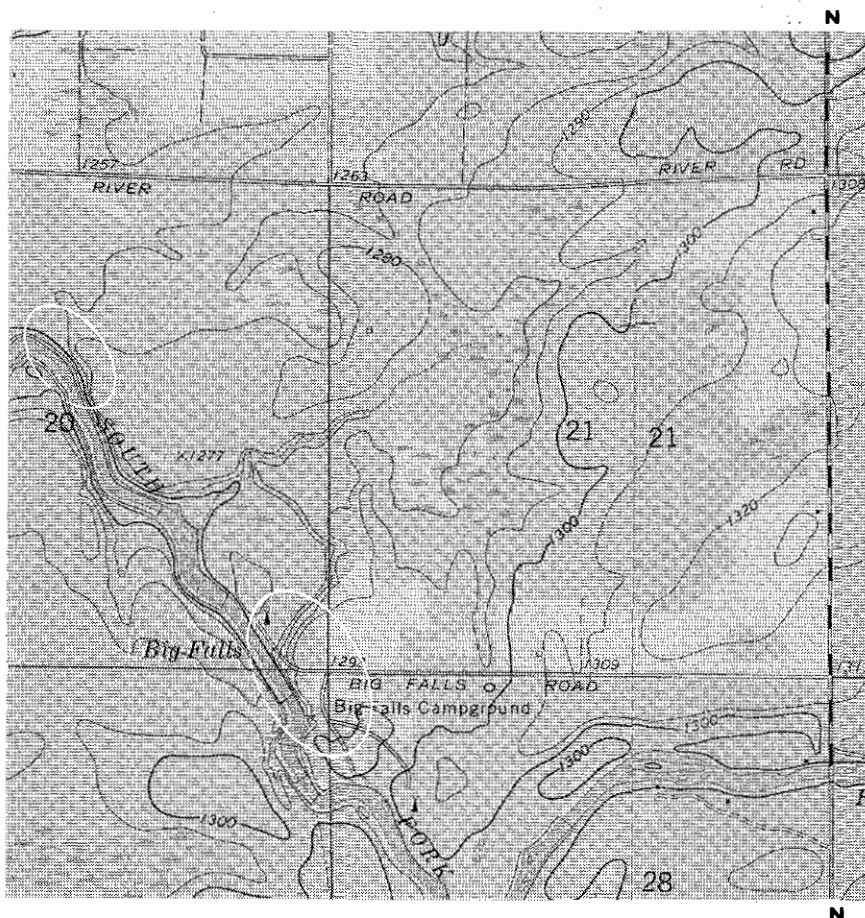


Title: Jump River at Big Falls County Park

Location: Along the Jump River in NE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 29, and SE $\frac{1}{4}$, Sec. 20, T.34N., R.2W., Price County. (Jump River Fire Tower, Topographic Quadrangle, 1970).



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Description: The main rock type exposed here is a weakly foliated quartz monzonite of presumed Middle Precambrian age. Foliation strikes approximately east-west and dips vertically. Late stage aplite dikes along with minor pegmatite and vein quartz cut the main quartz monzonite body.

Downstream from the main park area the rock has been extensively sheared to flaser gneiss and mylonite. The main cataclastic foliation is oriented approximately east-west with a vertical dip and is about one-half mile wide. Within the cataclastic zone are smaller mylonitic zones that strike N.30°E. and about 40°SE.

Pyritic tuffaceous andesitic(?) greenstone crops out at the major bend in the river approximately three-quarters of a mile downstream from the park. Good preservation of primary textures suggests the rocks have undergone only greenschist or lower amphibolite facies metamorphism. A number of exposures of mafic rocks are present along the river between the tuffaceous greenstone and quartz monzonite. They appear to be somewhat metamorphosed and sheared.

Discussion: This exposure is along a major structural feature in Wisconsin, the "Jump River lineament" (Myers, 1974). The lineament is expressed topographically and on both the Bouguer anomaly gravity map (Ervin and Hammer, 1974), and the aeromagnetic map (Zietz, Karl, and Ostrom, 1978). Where exposed, the lineament consists of cataclastic rocks. North of the lineament of the rocks are dominantly volcanic rocks in the greenschist and/or lower amphibole facies with numerous more or less foliated granitic plutons. This forms a major east-west volcanic belt of Middle Precambrian rocks across Wisconsin from the Michigan border westward to the Keweenaw overlap (Sims, Cannon, and Mudrey, 1978). (Note that the "Jump River Fault" of Sims, Cannon, and Mudrey (1978) does not coincide with the "Jump River lineament" of Myers (1974).)

South of the lineament, gneisses, amphibolites, schists and migmatites are the predominant rock types for nearly 30 miles. Relatively unmetamorphosed volcanic and plutonic rocks are common in Marathon County and are in fault contact with the gneisses (LaBerge, 1977). Little or no work has been done on the high-grade rocks; however, they appear to be mainly amphibolite grade with few, if any, primary features preserved. Cummings and Myers (1978) and Myers (1977) have studied similar rocks in the Eau Claire area that are evidently part of this terrane, and they concluded that the rocks are at least in part Early Precambrian. Probable Middle Precambrian granitic rocks intrude the higher-grade rocks, and isolated patches of low-grade metavolcanic and metasedimentary rocks are present in places (Myers, 1978a, b). The low grade metamorphic rocks are probably Middle Precambrian in age, but no age determinations are available on the higher grade rocks. Thus, we do not know whether the high-grade rocks represent an Early Precambrian basement on which simply more highly metamorphosed Middle Precambrian rocks. The "horst-graben" pattern in Central Wisconsin is suggestive of basin and range structure. The implications of this structure, as well as its timing, has important bearing on our interpretation of the tectonic development of the Animikie Basin. As indicated here, the emplacement of at least some of the granitic plutons occurred prior to final displacement along the fault zones. If this is a Penokean age pluton, the faulting must be either late Penokean or post-Penokean in age.

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