AXINITE GROUP

$(Ca)_2(Fe^{2+},Mn,Mg)Al_2BSi_4O_{15}(OH)$

An uncommon contact-metamorphic and alpine vein mineral. Northern Peninsula.

Gogebic County: *East Gogebic Range*, 13 km northwest of Marenisco, in sections 15 and 16, T47N, R44W: Occurs as rare individual crystals and as coarse, bladed, tan-colored aggregates in quartz veins filling tension fractures in greenstone (meta-basalt) of the lower Ironwood Iron Formation. Quartz, calcite, sparse epidote, magnetite, and base-metal sulfides are the associated species (U.S. Geological Survey, 1973, Professional Paper 850, page 41). Qualitative energy dispersion X-ray spectra obtained from one sample show significant amounts of Fe and Mg with minor Mn, suggesting this axinite is probably in the ferro-axinite - magnesio-axinite series.

Marquette County: **1**. SE ¼ section 26, T48N, R26W, Negaunee Quadrangle: In 7 cm quartz-calcite veins in greenstone (Mona Schist). Crystals up to 12 ×⧠11 × 3 mm with epidote and fibrous actinolite (Puffet, 1974). **2**. Similar material occurs more abundantly in sheared quartz-calcite veins at the nearby Pine Hill quarry, SW ¼ NW ¼ section 25, T48N, R26W (T. Waggoner, personal communication, 2002). Qualitative energy dispersion X-ray spectra of this axinite show it is similar in composition to that described from Gogebic County, above. **3**. Quartz-calcite veins containing pale gray-tan axinite were exposed during construction for a radio navigation transmitter at the old Marquette airport, near the center of section 29, T48N, R26W (T. Waggoner, personal communication, 2002). Qualitative energy dispersion X-ray spectra suggest Mg>Fe>Mn, which, if true, would identify this axinite as magnesio-axinite, the least common member of the series.

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