MONTMORILLONITE

$(Na,Ca)_{0-3}(Al,Mg)_2Si_4O_{10}(OH)_2 \bullet n\ H_2O$

A member of the smectite group of clay minerals. Dioctahedral and trioctahedral polytypes are known. Montmorillonite is formed both as a low-temperature hydrothermal species and as the result of weathering. "Fuller's earth" is a mixture of montmorillonite and other clay minerals; "bentonite" is a rock consisting mainly of montmorillonite. Northern and Southern Peninsulas.

Baraga County: Several localities in older glacial deposits (Ruotsala et al., 1966).

Calhoun, Cass, Jackson, and Wayne Counties: "K-bentonite" (potassian montmorillonite) occurs in Black River Group sediments across the lower Michigan Basin (Kolata et al., 1996).

Delta County: Bony Falls on the Escanaba River: "K-bentonite" (potassian montmorillonite) occurs in two 2-to-3 cm thick layers in argillaceous limestone (Black River Group); also between Escanaba and Cornell in the Mohawkian Trenton Group (Kolata et al., 1996).

Emmet County: Near Petoskey: "Fuller's earth" (Brown, 1924).

Gogebic County: **1.** Wakefield iron pit: Trioctahedral montmorillonite in a shear zone on the border of a metadiabase sill (Bailey and Tyler, 1966). **2.** In an altered dike (locality not specified) as the dioctahedral type (Bailey and Tyler, 1966). **3.** Geneva mine, Ironwood: With hematite, goethite, and muscovite (Morris, 1983).

Houghton County: Several localities in older glacial deposits (Ruotsala et al., 1966).

Marquette County: **1.** Tracy mine near Palmer: Trioctahedral montmorillonite from three occurrences in ore, one in oxidized iron formation, and one unspecified occurrence (Bailey and Tyler, 1960). **2.** Locality unspecified: Dioctahedral type in oxidized iron formation (Bailey and Tyler, 1960). **3.** Section 28, T47N, R26W: In feldspathic altered Palmer Gneiss (Gair and Simmons, 1968).

Ontonagon County: **1.** White Pine: Veinlets in the Nonesuch Shale (Ensign et al., 1968). **2.** Several localities in older glacial deposits (Ruotsala et al., 1966).

Wexford County: Harrietta, sections 6 and 7, T22N, R11W: "Fuller's earth," possibly deposited in a glacial lake bed (Brown, 1924).

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