

SIDERITE



Widespread in Michigan iron formations, particularly as siderite-chert rock. Such rocks form part of the slaty members of the Ironwood Formation (Gogebic range) and part of the lower half of the Negaunee Iron Formation (Marquette range). They comprise the predominant part of the iron formation in the Iron River-Crystal Falls district (James, 1954). Both the siderite and chert are usually very fine-grained in these rocks, with grains commonly only 20 to 30 microns across. Where siderite forms granules, these units may measure up to a millimeter across (Laberge, 1964). Rarely, siderite may contain some manganese (manganoan siderite, also known by the obsolete terms “mangano-siderite” and “oligonite”). Siderite also occurs in Michigan as clay-ironstone concretions in shale. Northern and Southern Peninsulas.



Figure 127: Manganoan siderite crystals (probably from the Lucy mine, Negaunee), Marquette County. 2.5 x 9 cm. A. E. Seaman Mineral Museum specimen No. JTR 697, Jeffrey Scovil photograph.

Alpena County: Alpena: Small rhombs with fine ankerite crystals (q.v.) and as drusy vug coatings in siderite concretions.

Branch County: Shale quarries southeast of Coldwater: Clay-ironstone concretions (“kidney

rock”) in Coldwater Shale (Mississippian). The concretions also contain pyrite, galena, and sphalerite (Dana, 1892; Dorr and Eschman, 1970).

Charlevoix County: Old Antrim Shale quarry, section 3, T33N, R7W: Large calcite and siderite concretions.

Dickinson County: 1. Menominee iron range generally: Very fine-grained material interlayered with chert in unoxidized iron formation. Locally, it occurs as small crystals lining vugs (Brower, 1968).

2. Pewabic mine, Iron Mountain: As cinnamon-brown twinned rhombohedral crystals to 2 mm associated with calcite and minor “adularia,” lining fracture surfaces in iron formation. 3. West Vulcan mine: As brown rhombohedral microcrystals with calcite and quartz in cavities in brecciated hematite.

Eaton County: Grand Ledge Face Brick Company clay pit at Grand Ledge: Nodules in Saginaw Formation (W. C. Kelly, personal communication).

Genesee County: Section 22, T8N, R5E: As concretions in a coal measure clay quarried for brick manufacture.

Gogebic County: Gogebic iron range generally: Usually in very fine-grained layers with chert and iron oxides, locally coarse and massive (Hotchkiss, 1919). Individual rhombs range from less than a micron to 3 mm, with many near 0.05 mm (Mann, 1953).

Houghton County: Reported with red calcite from the Isle Royale mine (Lane, 1911). Unverified.

Huron County: Sebewaing township, Bauer well in section 8: Nodule with pyrite and sphalerite (Lane, 1900).

Iron County: 1. Iron River-Crystal Falls district generally: Abundant in very fine-grained form with chert in unoxidized iron formation (James and Dutton, 1951; Pettijohn, 1952). 2. Tobin mine: Found in the 300-foot crosscut mainly in sideritic iron formation (K. Spiroff, personal communication). 3. Spies mine: Spherulites of siderite in Riverton Iron Formation (James et al., 1968). 4. Bengal (Cannon) mine, Stambaugh: Variety manganoan siderite occurs in Youngs ore

body in the Riverton Iron Formation (Kustra, 1961).

Marquette County: 1. Volunteer mine, Palmer: Crystals in vugs in hematite. 2. *Negaunee mine*: Botryoidal vuggy aggregates of tan rhombohedral crystals. 3. Barnum mine: Very fine-grained masses. 4. Athens mine: Crystals (Spiroff, 1940). 5. Beacon mine: In quartz veinlets (Mandarino, 1950). 6. "Near Marquette": In milky quartz veinlets cutting slate (Whitney, 1859). 7. *Champion mine*: a) Coarse cleavage masses with cleavage faces 7.5 cm across; b) massive pyrite-magnetite-siderite layer a meter thick in Negaunee Iron Formation; c) manganoan siderite (38% MnCO_3) in quartz vein with tourmaline and pyrite (b and c from 36th level east of Number 7 shaft station) (Babcock, 1966a, b). 8. Southeast of Negaunee, east of County Road 480 in a railroad cut: Massive fine-grained siderite (Negaunee Iron Formation) cut by quartz veinlets containing 6 mm siderite rhombs. 9. Mather B mine, Negaunee. 10. Michigamme mine. 11. Phoenix pit, Champion (10, 11, Morris, 1983). 12. Silver Creek gold prospect: Veinlets of siderite cut gold- and sulfide-bearing quartz veins (Johnson et al., 1986). 13. *McComber (Lucy) mine*, Negaunee: discoidal rhombs of manganoan siderite to 2 cm.

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