

## SPHALERITE



The only common zinc mineral. It is found in veins, lodes, and replacement deposits of hydrothermal origin. It also occurs in nodules and concretions in shales. Northern and Southern Peninsulas.



Figure 135: Sphalerite crystals on pyrite with calcite from the Cheney quarry near Bellevue, Eaton County. Largest crystal is 6 mm. A. E. Seaman Mineral Museum specimen No. DM 23030, Jeffrey Scovil photograph.

**Alpena County:** 1. LaFarge Corporation, Great Lakes Region (formerly National Gypsum Company, formerly Huron-Portland Cement Company) quarry, Alpena: Associates are calcite, dolomite, barite, marcasite, pyrite, and rare chalcopryrite and strontianite (Morris, 1983). 2. Paxton quarry, Paxton: With calcite, dolomite, chalcopryrite, marcasite, pyrite, and quartz (Morris, 1983).

**Baraga County:** Ohio mines, Imperial Heights (Morris, 1983): With other sulfides, hematite, goethite, graphite, grunerite, and palygorskite.

**Branch County:** Old shale quarries southeast of Coldwater: Clay-ironstone concretions in Coldwater Shale (Mississippian) also carry pyrite, galena, and siderite (Dorr and Eschman, 1970).

**Delta County:** Limestone quarry south of Bark River: Cleavages of dark brown sphalerite occur as a minor constituent in calcite veins in limestone (M. J. Elder, personal communication, 2003).

**Eaton County:** 1. Grand Ledge Face Brick Company clay pit near Grand Ledge: In siderite

nodules in Saginaw Formation (Mihelcic, 1954).

2. Cheney and Holden quarries near Bellevue: In brown, tetrahedral crystals up to nearly a centimeter with pyrite and calcite. Also reported in concretions in Bayport Limestone (Mississippian) with pyrite, marcasite, Celestine, and calcite (Dorr and Eschman, 1970).

**Gogebic County:** Copp's mine, approximately 10 km north of Marenisco. With pyrite, galena, chalcopryrite, and dolomite (Dana, 1892).

**Huron County:** 1. Fairhaven Township north of Sebewaing, Bauer's well in W ½ NE ¼ section 14 (Lane, 1900). 2. Point Aux Barques lighthouse: Sphalerite and calcite replacement of a shell (Lane, 1900).

**Iron County:** 1. Hiawatha mine: Nearly colorless post-ore sphalerite in unoxidized iron formation (James et al., 1968). 2. Bengal mine: With pyrite in a drill core in oxidized iron formation (James et al., 1968). 3. Sherwood and Buck mines: With other sulfides and pitchblende (Vickers, 1956b; James et al., 1968).

**Keweenaw County:** 1. South Cliff copper mine: In a fissure with galena and pyrite. Very rare occurrence here and absent elsewhere in the native copper deposits (Butler and Burbank, 1929). 2. Found as irregular grains in several flow tops in the Mount Bohemia area with copper sulfide mineralization. Chalcopryrite and galena are associates (Robertson, 1972).

**Marquette County:** 1. Ropes gold mine: Minor amounts in quartz-gold-tetrahedrite veins (Broderick, 1945). 2. Michigan gold mine: In quartz-gold veins (Broderick, 1945). 3. Holyoke and Sedgwick mines, in the Dead River area: In quartzose veins with galena, chalcopryrite, and pyrite. 4. Presque Isle: Sulfide veins (3 to 4, Brooks, 1873; Rominger, 1881). 5. Dead River Storage Basin: Several small mines and prospects on lead-zinc-silver veinlets. 6. NW ¼ section 33, T49N, R27W: A prospect exceptionally rich in sphalerite (Segerstrom and Raymond, 1966). 7. Section 14, T49N, R26W: A pyrite-chalcopryrite-galena-sphalerite vein (Puffet, 1974). See chalcopryrite. 8. Silver Creek-Rocking Chair Lakes area: A local constituent with other sulfides in gold-bearing quartz veins (Johnson et al., 1986). 9. Clark Creek region: A local sulfide with galena (q.v.) in vein and disseminated mineralization in

meta-basalt of the Ishpeming Greenstone Belt (Baxter et al., 1987). See arsenopyrite, chalcopyrite, pyrite, and gold. **10.** Hill's Lakes area: Uncommon, associated with galena, chalcopyrite, arsenopyrite, pyrrhotite (q.v.), and quartz in veins in altered basalt (Johnson et al., 1987).

**Ontonagon County:** **1.** White Pine mine: In calcite-filled fracture above the cupriferous zone and in the "stripey" marker bed of Nonesuch Shale (Brown, 1966, 1968). In 1970 and 1971 sphalerite with silver-bearing galena and other sulfides was discovered along tension fractures in the Copper Harbor Conglomerate just below the White Pine ore horizon (R. W. Seasor, written communication, 1977). **2.** Porcupine Mountains: In veins with quartz crystals, purple fluorite, and chalcopyrite (University of Michigan collection).

**Tuscola County:** Southwest of Cass City, section 6, T13N, R11E: Small grains and nodules in limestone outcrop on Cass River (Rominger, 1876; Davis, 1909). Dana (1892) erroneously reported this locality as section 16.

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#### **UPDATE**

**Baraga County:** **1.** Ohio mine at Imperial Heights, near Michigamme: As resinous dark greenish brown to black crystal aggregates up to ~4 mm with calcite and pyrite in cavities in limonitic iron formation. **2.** Huron River Uranium prospect: See Part IV.

**Delta County:** Bichler Gravel and Concrete Company quarry, NW ¼ section 13, T40N, R23W: As resinous, brown crystals to 2 cm with calcite, dolomite and chalcopyrite crystals in fracture seams within layers of Trenton Group limestone (G. Collegnon, personal communication, 2012).

**Houghton County:** Calumet: A single, dark brown, 2.7-cm crystal of sphalerite associated with sparse microcrystals of chalcopyrite, pyrite and marcasite was recently found embedded in a quartz- and chamosite-filled amygdule in basalt at the Calumet and Hecla No. 21 mine dump (Rosemeyer, 2011).

**Menominee County:** Aquila Resources, Inc.

Back 40 Project, sections 1 and 12, T35N, R29W: As medium to coarse grained aggregates with pyrite in massive sulfide ore with lesser amounts of chalcopyrite and galena, variable gold (q.v.) and silver, and minor pyrrhotite and arsenopyrite (Quigley and Mahin, 2008).

**Ontonagon County:** In the mid-1990s a single 2-cm crystal of brown sphalerite associated with microcrystals of pyrite and chalcopyrite was found at the Belt mine waste rock dump. Originally dismissed as probably having been left there by some passing mineral collector, the recent discovery of a virtually identical specimen *in situ* at the Calumet and Hecla No. 21 mine dump (see above) suggests that the Belt mine occurrence may be legitimate.

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