CHALCOPYRITE
CuFeS₂

A widespread and common copper ore mineral occurring in veins, disseminations, or as replacement deposits. Northern Peninsula.


Baraga County: Ohio mines (Webster and Imperial mines), Imperial Heights near Michigamme: Associates are apatite, goethite, grunerite, graphite, palygorskite, carbonates, and other sulfides (Morris, 1983; DeMark, 2000). Crystals on calcite rhombohedra.


Goebec County: 1. Eureka mine near Ramsay, sections 12 and 13, T47N, R46W: With pyrite and gold in quartz veins at contact between granite and the Palms slate (Dickey and Young, 1938). 2. Copp’s mine 10 km north of Marenisco: With galena, sphalerite, pyrite, and dolomite (Dana, 1892). 3. Roadside exposure on south side of County Road 206 and Two Mile Creek, about 13 km northwest of Watersmeet: Disseminated 15 mm grains in white, vitreous quartzite interlayered with tremolite (q.v.) and dolomitic marbles (Sunday Quartzite and Bad River Dolomite of the Chocolay Group?) (Cannon, 1980). Malachite is common along subsurface fractures.


Houghton County: 1. Baltic mine: Sparingly in the copper sulfide veins (chalcostite). 2. Isle Royale mine: Similar occurrence (Lane, 1911; Butler and Burbank, 1929; Broderick, 1931) (chalcostite). 3. Also occurs as disseminated microcrystals in some pegmatoid lenses of thicker basalt flows and as minute crystals in unaltered normal trap rock.
Iron County: 1. Hiawatha iron mine: Euhedral crystals of tetrahedral aspect as large as 1 mm projecting into vugs and associated with quartz, pyrite, and specularite. Also occurs in iron formation as a post-ore mineral. 2. Buck mine: Similar occurrence (James et al., 1968).


also includes chalcopyrite, pyrrhotite, pentlandite (major); pyrite, cubanite (minor); mackinawite, marcasite, bornite, and covellite (trace). The sulfides are in grain composites up to 3 mm across, with most less than 0.1 mm in diameter. They occur as fractured, irregularly shaped grains, interstitial to silicates, and preferentially associated with magnetite. Some sulfides form spheroids or globules within pyroxene crystals. Cubanite and pentlandite generally occur with chalcopyrite or pyrrhotite. Intergrowths are present: 1) laths of magnetite in chalcopyrite, 2) fine lamellae of chalcopyrite in cubanite, and 3) intergrowths of magnetite-chalcopyrite (Klasner et al., 1979). See olivine, augite, enstatite, and pyrrhotite. 22. Clark Creek Region: Northern part of county in Ishpeming Greenstone belt. In veinlets of quartz-carbonate-sulfides and as disseminated grains in altered meta-basalt. The sulfides include pyrite, chalcopyrite, arsenopyrite (q.v.), and pyrrhotite, with local galena and sphalerite (Baxter et al., 1987). 23. Hill’s Lakes area: Associated with pyrite, and locally sphalerite-galena-arsenopyrite-pyrrhotite (q.v.) together with quartz veins in altered basalt (Johnson et al., 1987). 24. Silver Lead mine, SE ¼ SE ¼ section 30, T46N, R24W, on the bank of Silver Lead Creek approximately 20 meters from its crossing with Marquette Co. Rd. 460: With galena and pyrite in quartz veins. 25. Republic iron mine at Republic: A rare accessory mineral with dolomite and calcite in cavities in brecciated specular hematite ore. 26. Volunteer mine, near Palmer: As disphenoidal crystals to 2 mm with quartz, lining fracture surfaces in iron formation.

**Ontonagon County:** 1. White Pine mine, White Pine: Disseminated grains and in pyritic veinlets in the barren zone of the Nonesuch Shale. Also found in the Cu-Fe transition zone associated with bornite and digenite, in part pseudomorphous after pyrite (Carpenter, 1963; Brown, 1966, 1968; Brown and Trammell, 1966). A very minor microscopic constituent (in two polished sections) in veinlets in the chloritic facies of the Copper Harbor Conglomerate (Hamilton, 1967). Also as small bright crystals with calcite, galena, or sphalerite, and as botryoidal encrustations on barite (Rosemeyer, 1999). 2. T49 and 50N, R42 and 43W: In veinlets in quartz porphyry in Onondaga drill cores (Butler and Burbank, 1929). 3. Porcupine Mountains: In veins with quartz crystals, purple fluorite, and sphalerite (University of Michigan Collection).


**UPDATE**

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(see Part IV, Menominee County)