

## POWELLITE

CaMoO4

The molybdenum analog of scheelite, with which it forms a solid solution series. It is most commonly found in hydrothermal veins and pyrometasomatic replacement deposits, but is also present in some hydrothermally mineralized flood basalts (e.g., Deccan flows in India and Portage Lake Volcanics of the Keweenaw Peninsula). In ultraviolet light, powellite usually fluoresces yellow in contrast to scheelite, which fluoresces blue-white. Northern Peninsula.



Figure 107: Powellite crystal from the Tamarack mine, Calumet, Houghton County. 2.5 x 4.5 cm.  
A. E. Seaman Mineral Museum specimen No. JTR 1777, Jeffrey Scovil photograph.

**Houghton County:** 1. South Hecla mine, Number 8 shaft, 14th level: Crystals and masses. Very rare. Pale bluish-green with darker green patches. Some specimens show an irregular polysynthetic structure with some of the aggregates terminating in distinct pyramids (Koenig and Hubbard, 1893). Pale bluish-green translucent crystals from 0.5 to 1 cm in length are reported. A rounded mass 2 cm in diameter, whose 3 mm-thick surface layer was black and opaque, was also found. Fresh material was a deep Prussian blue in transmitted light. It is associated with epidote and native copper. Palache (1899) noted the following

crystal forms: {111}, {106}, {133}, {3·11·11}, {1·11·11}. Chemical analyses (Koenig and Hubbard, 1893) show up to 4 mole-percent scheelite. 2. South Hecla mine, 40th level between shafts 6 and 7: Found in nests in calcite vein in both boulders and matrix of the Calumet and Hecla Conglomerate (Lane, 1911). 3. *Tamarack mine*: As crystals on native copper in epidote-copper rock (Lane, 1911). 4. Isle Royale mine: A few striated crystals (Lane, 1911; Pough, 1937). 5. *Red Jacket mine, 65th level*: Dark brown pyramidal crystals up to 9 cm across (specimen JTR 1779, A. E. Seaman Mineral Museum, Michigan Technological University). An SEM investigation of one sample showed the dark brown color is due to inclusions of titanite and iron oxide that are concentrated near the rims of the crystals.

**Marquette County:** 1. West Ropes gold mine near Ishpeming: In small amounts as lenticles 1 cm long (Snelgrove et al., 1944). 2. Champion mine: With manganese-bearing garnet, manganan cummingtonite, and anhydrite (Babcock, 1966a, b). This material was originally called scheelite. 3. Michigan mine, NE ¼ section 35, T48N, R28W: As massive, colorless-to-pale yellow grains finely disseminated in quartz with molybdenite. Good specimens showing typical creamy yellow fluorescence have been collected from an exploration trench in the eastern part of the deposit (NE ¼ NE ¼ section 35; M. P. Basal, personal communication, 1999).

**Ontonagon County:** Minnesota mine: In bright yellow, euhedral crystals up to 3 mm, associated with calcite, quartz, and copper. Analyses show no detectable tungsten (Wilson and Dyl, 1992).

**FROM:** Robinson, G.W., 2004 *Mineralogy of Michigan* by E.W. Heinrich updated and revised: published by A.E. Seaman Mineral Museum, Houghton, MI, 252p.

## UPDATE

**Gogebic County:** Uranium prospect a short distance from the "Paulding Lights" north of Watersmeet: As colorless grains in amphibole gneiss. Verified by energy dispersion X-ray spectrometry.

**UPDATE FROM:** Robinson, G.W., and Carlson, S.M., 2013, *Mineralogy of Michigan* Update: published online by A.E. Seaman Mineral Museum, Houghton, MI, 46p.

