ANDALUSITE

Al_2SiO_5

One of three polymorphs of Al_2SiO_5 (the other two are kyanite and sillimanite), andalusite is primarily a constituent of medium-grade metamorphic rocks derived from shales. Also, it occurs very much less commonly as a constituent of a few rare pegmatites, some quartz veins, and aluminous hydrothermal replacement deposits. It is often strongly altered to muscovite. Northern Peninsula.

Figure 35: Andalusite crystals to 3 cm, coated with muscovite in quartz, from the Champion mine, Champion, Marquette County. A. E. Seaman Mineral Museum specimen No. DM 14850, Jeffrey Scovil photograph.

Iron County: SW ¼ SE ¼ section 20, T42N, R3W, Lake Mary quadrangle: Found as 1 cm poikiloblasts in the Michigamme Slate with garnet, staurolite, sillimanite, and sericite (Bayley, 1959).

Marquette County: **1.** Lake Michigamme area: Found in slate, schist, gneiss, quartz veins, and pegmatites in crystals one to several centimeters long (Rominger, 1881). a. Beacon mine. b. On a small island at the south end of Lake Michigamme in section 4, T47N, R30W: In Michigamme Slate (Lamey, 1931). Especially large crystals are found near pegmatite veins (Lamey, 1934). c. Near south end of Lake Michigamme in SE ¼ section 20, T45N, R30W: In andalusite-staurolite gneiss (James, 1955). d. *SE ¼ section 28, T48N, R30W*: Pale lilac to reddish prismatic crystals and crystal clusters, commonly 5 cm or more across and as large as 15 to 20 cm, in feldspar-poor pegmatites (30 meter wide zone) and quartz veins cutting Michigamme Slate. Along strike, the zone of en-echelon pegmatites passes into a vein of fine-grained (10 to 30 mm) andalusite, 0.5 to 1 meter across, and this grades into a zone of andalusite crystals in the slate (Snelgrove et al., 1944). **2.** *Champion mine*: As euhedral crystals to 5 cm partially altered to muscovite in quartz. On the 36th level drift, 45 meters east of Number 7 shaft station: A body of massive andalusite in quartzite with chalcopyrite and muscovite, adjacent to a large quartz vein localized along contact between Negaunee Iron Formation and Goodrich Quartzite (Babcock, 1966a, b). **3.** Republic mine: With co-existing sillimanite in rocks adjacent to fayalitic Negaunee Iron Formation (olivine) (Haase and Klein, 1978). Also in a vein with beryl 300 paces east and 75 north of the western ¼ post of section 17, T46N, R29W.

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