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PŮVODNÍ PRÁCE/ORIGINAL PAPER

Andradit a datolit z Košťálova u Semil (Liberecký kraj, Česká republika)

Andradite and datolite from Košťálov near Semily (Liberec Region, Czech Republic)

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Abstract

Andradite and datolite were newly discovered in the Košťálov quarry near Semily (Czech Republic). Both minerals form an irregular filling of a thin veinlet rimmed by recrystallised albite and diopside in altered basaltic andesite. Transparent honey-brown andradite occurring in crystals up to 1.5 mm in size and their subparallel aggregates is relatively pure, containing 93 - 99 mol. % Adr, in the narrow outer zone with increased content of grossular component in the range of 13 - 27 mol. %. Crystalline datolite with empirical formula $\text{Ca}_{1.00}\text{B}_{1.03}(\text{SiO}_2)_{2/0.97}\text{OH}_{0.99}\text{F}_{0.01}$ is clearly younger than andradite and older than calcite. The minerals were identified by electron microprobe analysis, supplemented for datolite by Raman spectroscopy and powder X-ray diffraction. Hydrothermal solutions with temperatures between about 160 and 400 °C are thought to have formed the studied mineral assemblage.

Key words: garnet, andradite, datolite, chemical composition, Raman spectroscopy, PXRD study, basaltic andesite, Košťálov, Czech Republic

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