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Mineralogie křemenných žil ložiska cínových rud Hřebečná u Abertam v Krušných horách (Česká republika)

Mineralogy of quartz veins of the tin deposit Hřebečná near Abertamy in Krušné hory Mountains (Czech Republic)

Jiří Sejkora[1)]*, Petr Pauliš[1,2)], Michal Urban[3)], Zdeněk Dolníček[1)], Jana Ulmanová[1)] a Ondřej Pour[4)]

[1)]Mineralogicko-petrologické oddělení, Národní muzeum, Cirkusová 1740, 193 00 Praha 9 - Horní Počernice;
**e-mail: jiri.sejkora@nm.cz*
[2)]Smíškova 564, 284 01 Kutná Hora
[3)]Velké Kunratické 20, 148 00 Praha 4
[4)]Česká geologická služba, Geologická 6, 152 00 Praha 5

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Abstract

An extraordinary rich mineral assemblage (more than 35 determined mineral species) has been discovered in quartz greisen mineralization found at dump material of the abandoned Mauritius mine. This mine is situated about 1 km N of the Hřebečná village, 16 km N of Karlovy Vary, Krušné hory Mountains, Czech Republic. The studied mineralization with its textural and mineralogical character differs significantly from the usual fine-grained greisens mined in this area. The primary mineralization is represented by coarse-grained quartz and fluorapatite with sporadic zircon, monazite-(Ce), xenotime-(Y) and very rare cassiterite. Besides common sulphides (arsenopyrite, chalcopyrite, pyrite, sphalerite, tetrahedrite-group minerals), Bi-sulphosalts (aikinite, bismuthinite, berryite, cuprobismutite, emplectite, wittichenite) were determined. Members of the tetrahedrite group also contain increased amounts of Bi - in addition to Bi-rich tennantite-(Zn) and tennantite-(Fe), microscopic zones represented by the not approved Bi-dominant analogue of tennantite („*annivite-(Zn)*“) were also found. The primary mineralization was intensively affected by supergene processes. Chalcopyrite and sphalerite are replaced by Cu sulphides - especially anilite and digenite, and more rarely by geerite, spionkopite and covellite. Some of the fluorapatite grains in the vein quartz were decomposed and mrázekite, mixite, libethenite, pseudomalachite, hydroxylpyromorphite, metatorbernite as well as rare dzhalindite crystallized in the resulting cavities. However, the most abundant supergene phases are the minerals of the alunite supergroup - crandallite, goyazite, plumbogummite, svanbergite and waylandite. The detailed descriptions, X-ray powder diffraction data, refined unit-cell parameters and quantitative chemical composition of individual studied mineral phases are presented.

Key words: *sulphides, Bi-sulphosalts, Bi-rich tennantite, supergene minerals, mrázekite, alunite supergroup minerals, Hřebečná near Abertamy, Krušné hory Mts., Czech Republic*

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