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Lithioforit a kryptomelan/hollandit z Kladské ve Slavkovském lese (Česká republika)

Lithiophorite and cryptomelane/hollandite from Kladská in Slavkovský les Mts. (Czech Republic)

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Abstract

The mineral association of lithiophorite, cryptomelane/hollandite and hematite in quartz gangue was found in the material from the exploratory trenches in the forest track „U Kutaček“, 4 km NW of Kladská in the cadastre of the town of Lázně Kynžvart (Slavkovský les Mts., Czech Republic). Lithiophorite occurs as massive aggregates up to several cm in size, with a reniform or hemispherical surface. It is opaque, black, sometimes with a greenish or purplish tints. It is trigonal, space group *R*-3*m*, with the unit-cell parameters refined from X-ray powder diffraction data: *a* 2.9158(5), *c* 28.266(7) Å and *V* 208.11(7) Å^3. Its chemical analyses (mean of 26 points) correspond to the empirical formula $(Al_{0.66}Li_{0.27}Cu_{0.03}Co_{0.03}Zn_{0.01})_{\Sigma 1.00}(Mn_{0.98}Si_{0.02})_{\Sigma 1.00}O_2(OH)_{2.06}$ on the basis of 2 cations *apfu.* Barium-rich (up to 0.24 *apfu* Ba) cryptomelane forms aggregates up to several cm in size, with a reniform or hemispherical surface. It is opaque, black, sometimes with a greenish or purplish tints. It is tetragonal, space group *I*4/*m*, with the unit-cell parameters refined from X-ray powder diffraction data: *a* 9.828(2), *c* 2.8497(9) Å and *V* 275.26(13) Å^3. Its aggregates are distinctly zonal due to variable Ba and Al contents; thin zones corresponding to hollandite and not yet approved phases *alumocryptomelane* and *alumohollandite* were observed. In the material with Mn-minerals, abundant coatings and spherical aggregates of hematite were observed. Hematite is trigonal, space group *R*-3*c*, with the unit-cell parameters refined from X-ray powder diffraction data: *a* 5.0369(2), *c* 13.7571(7) Å and *V* 302.26(2) Å^3.

Key words: *lithiophorite, Ba-rich cryptomelane, hollandite, powder X-ray diffraction data, unit-cell parameters, chemical composition, Kladská, Czech Republic*

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