PŮVODNÍ PRÁCE/ORIGINAL PAPER

Waylandit a petitjeanit, dva nové fosfáty pro lokalitu Cetoraz u Pacova (Česká republika)

Waylandite and petitjeanite, two new phosphates for locality Cetoraz near Pacov (Czech Republic)

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Abstract

Association of the supergene phosphate minerals within quartz fissures on the quartz-wolframite sample from the locality Cetoraz near Pacov, Czech Republic was studied. The most abundant supergene phosphate is waylandite, which occurs in two types. Waylandite I is Bi and Fe depleted and enriched in Ca, Pb, W, F and P with average composition $(Bi_{0.54}Ca_{0.24}Na_{0.02}Pb_{0.02})_{\sum 0.82}(Al_{2.87}Fe_{0.20})_{\sum 3.07}[(PO_4)_{2.07}(SiO_4)_{0.02}(WO_4)_{0.01}]_{\sum 2.10}(OH)_{4.88}F_{0.21}$. Waylandite II is closer to ideal formula with average composition $(Bi_{0.92}Ca_{0.11}K_{0.01})_{\sum 1.04}(Al_{2.65}Fe_{0.38})_{\sum 3.04}[(PO_4)_{1.87}(SiO_4)_{0.08}(SO_4)_{0.01}]_{\sum 1.96}(OH)_{6,23}$. Waylandite is accompanied by the less abundant petitjeanite, which is very close to its ideal formula with average composition $(Bi_{2.85}Ca_{0.11}Fe_{0.03}Al_{0.01})_{\sum 3.00}[(PO_4)_{1,92}(SiO_4)_{0.09}]_{\sum 2.01}O(OH)_{0.77}$. Remaining space in fissures is filled with the *limonite*. Unknown late Bi-Fe-W-O phase was observed as grains in tiny fissures of the limonite. Another unknown Bi-W-O phase was observed inside the tiny vugs and fissures in the quartz and wolframite. These supergene phases originated from the primary wolframite-apatite-bismuth-scheelite mineralization.

Key words: *waylandite, petitjeanite, chemical composition, greisen, Cetoraz near Pacov, Moldanubian Zone, Czech Republic*

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