PŮVODNÍ PRÁCE/ORIGINAL PAPER

Nové údaje o uranylových mineráloch z lokality Selce pri Banskej Bystrici (severné veporikum, Slovenská republika)

New data on uranyl minerals from Selce occurrence at Banská Bystrica (North Veporicum Unit, Slovak Republic)

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Abstract

This work deals with some new data on uranyl minerals from the Selce occurrence at Banská Bystrica (Slovak Republic). They were identified in Permian arkoses containing primary uranium and copper mineralization located in the Northern Veporicum Unit (Špania Dolina Formation). Boltwoodite forms extremely thin crystalline coatings (up to 0.5 mm in size), with macroscopically atypical light to dark blue or typical yellow colour. It forms irregularly arranged prismatic crystals too. Boltwoodite was identified by EPMA-WDS, its average chemical composition is: $(K_{0.77}Ca_{0.10}Fe_{0.01}Na_{0.01})_{\Sigma 0.89}(UO_2)_{1.13}[(SiO_3OH)_{1.02}(SO_4)_{0.01}]_{\Sigma 1.03}\cdot 1.5(H_2O)$. Metasaléeite forms light yellow crystalline coatings and clumps (up to 1 mm in size). Metasaléeite was identified by X-ray powder diffraction, the mainly diffraction maxima are 8.855(100), 4.427(21.2) and 2.215(2.1). Its refined unit cell parameters are: *a* 7.212(3), *c* 17.707(3) Å and *V* 921.05(1) Å^3. Uranophane forms globular aggregates (up to 0.15 mm in size), consist of fibrous, needle like crystals resp. cryptocrystalline coatings and crusts of yellow colour. Its average chemical composition is: $(Ca_{0.80}K_{0.13}Fe_{0.04}Zn_{0.01}Na_{0.01}\ Ba_{0.01}Cu_{0.01})_{\Sigma 1.01}(UO_2)_{2.04}[(SiO_3OH)_{1.87}(AsO_4)_{0.03}(PO_4)_{0.02}(SO_4)_{0.02}]_{\Sigma 1.94}\cdot 5(H_2O)$. Zeunerite was identified by EPMA-WDS, its average chemical composition is: $(Cu_{0.57}Fe_{0.12}K_{0.05}Al_{0.02}Zn_{0.01}Na_{0.01}Sr_{0.01})_{\Sigma 0.79}(UO_2)_{2.04}[(AsO_4)_{1.78}(PO_4)_{0.12}(SiO_4)_{0.09}(SO_4)_{0.01}]_{\Sigma 2.00}\cdot 12H_2O$. It forms idiomorphic to hypidiomorphic tabular crystals (up to 0.1 mm in size). Boltwoodite and metasaléeite were identified in Slovakia for the first time. The source of K and Ca for the formation of uranyl silicates was leached rockforming minerals (feldspars, micas). The source of Cu and As for the zeunerite were weathering sulphide minerals (chalcopyrite, tetrahedrite and arsenopyrite).

***Key words**: uranyl minerals, boltwoodite, metasaléeite, uranophane, zeunerite, Veporicum Unit, Slovak Republic*
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