Výskyt schröckingeritu na fluoritovém ložisku Vrchoslav v Krušných horách (Česká republika)

The occurrence of schröckingerite at the Vrchoslav fluorite deposit in the Krušné hory Mountains (Czech Republic)

MARTIN ŠTEVKO[1)], PETER BAČÍK[1)], DANIEL OZDÍN[1)], MIROSLAV ZEMAN[2)] A JOSEF JONÁŠ[3)]

[1)] Katedra mineralógie a petrológie, Prírodovedecká fakulta, Univerzita Komenského v Bratislave, Mlynská dolina G, 842 15 Bratislava
[2)] Štrauchova 1043, 506 01 Jičín
[3)] Dolní 177, 417 41 Krupka

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Abstract

Schröckingerite was found in the abandoned 5. květen adit of the Vrchoslav hydrothermal fluorite deposit, the Krušné hory Mountains, northern Bohemia, Czech Republic. It forms green-yellow globular to irregular crystalline aggregates with pearly luster up to 3 mm in diameter on the fragments of rocks and walls of adit. Schröckingerite aggregates are formed by small thin tabular crystals up to 0.07 mm with obviously parallel orientation. Rarely in association with schröckingerite there also were bright orange powdery aggregates of natrozippeite observed. The unit-cell parameters of schröckingerite refined from powder X-ray data are: a = 9.6279(9) Å, b = 9.6303(9) Å, c = 14.3868(11) Å, α = 91.360(9)°, β = 92.292(10)°, γ = 120.191(6)° and V = 1150.59(6) Å^3. In the infrared spectrum of schröckingerite, the bands of $(CO_3)^{2-}$, $(SO_4)^{2-}$ and $(UO_2)^{2+}$ groups as well as molecular H_2O were identified. The <U-O> bond-lengths with values of 1.762 Å, 1.778 Å and 1.769 Å depending on the empirical formula used were calculated from the wavenumber of uranyl bands. Schröckingerite was formed as a sub-recent supergene phase in relatively dry environment from the solutions produced by weathering of the primary U phases (uraninite) associated probably with Nb-Ta minerals in granite and rare pyrite and their interaction with calcite and wall rocks.

Key words: *schröckingerite, uranyl, X-ray powder data, IR absorption spectra, Vrchoslav fluorite deposit, Czech Republic*