

ABSTRACT
SPELEO BRAZIL 2001

Brasília DF, 15-22 de julho de 2001

13th International Congress of Speleology
4th Speleological Congress of Latin América and Caribbean
26th Brazilian Congress of Speleology

Hydrothermal Genesis of Metatyuyamunite, $\text{Ca}(\text{UO}_2)_2(\text{VO}_4)_2 \cdot 3\text{-}5\text{H}_2\text{O}$ in the Valea Rea Cave, Romania

Bogdan P. ONAC 1; **Joe KEARNS** 2; **P. DAMM** 3; **William B. WHITE** 4; **Sandor MATYASI** 5
1- University of Cluj, Department of Mineralogy, Kogalniceanu 1, and Speleological Institute
"Emil Racovita", Clinicilor 5, 3400 Cluj, Romania - bonac@bioge.ubbcluj.ro
2 - Materials Research Laboratory, The Pennsylvania State University, University Park PA,
16802-4801, U.S.A.
3 - Speleological Institute "Emil Racovita", Clinicilor 5, 3400 Cluj, Romania
4 - Materials Research Laboratory and Department of Geosciences, The Pennsylvania State
University, University Park PA, 16802-4801, U.S.A.
5 - Geo Prospect, Cuza Voda 9, 3638 Stei, Bihor, Romania.

Metatyuyamunite, $\text{Ca}(\text{UO}_2)_2(\text{VO}_4)_2 \cdot 3\text{-}5\text{H}_2\text{O}$, a new mineral for Romania, occurs as canary yellow sub-millimeter-size plate-like crystals in Valea Rea Cave (Bihor Mountains). This unusual mineral has precipitated on, and in between delicate needle-like aragonite crystals. X-ray diffraction, optical and scanning microscope (including EDS), and luminescence were used to identify metatyuyamunite. The X-ray diffraction pattern can be indexed with the orthorhombic cell $a = 10.77$; $b = 8.53$; $c = 17.62$ of metatyuyamunite. From a genetic point of view it seems that tyuyamunite was first precipitated from hydrothermal solutions and in a later stage it dehydrated to metatyuyamunite.