MINERALS OF THE CARPATHIANS: FIRST UPDATE

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This abstract presents an update to the *Minerals of the Carpathians* book (SZAKÁLL, 2002). The entries listed below largely consist of new species of minerals described from various caves in Romania and few other minerals that are in course of publication (both from caves and old mining galleries). Chemical and mineralogical characterization of these minerals was undertaken by XRD, XRF, energy-dispersive, atomic absorption, and infrared spectrometry, thermal and electron-microprobe analyses, optical and scanning electron microscope observations. The specimens are deposited in the Mineralogical Museum of the "Babeş-Bolyai" University and at the "Emil Racoviţă" Institute of Speleology in Cluj-Napoca and Bucharest, Romania.

Minerals discovered before 2002

Monohydrocalcite - $CaCO_3 \cdot H_2O$, was reported to occurs in the composition of white hydrated moonmilk in Humpleu and Lucia Mică caves (Bihor Mts.) (ONAC & GHERGARI, 1993).

Darapskite - $Na_3(SO_4)(NO_3) \cdot H_2O$ and *nitratine* - $NaNO_3$ were found closely associated within the sediments accumulated on the floor of Şălitrari Cave (Cerna Mts.) (DIACONU & LASCU, 1999).

Mineral species described in caves and old mine galleries from the Romanian Carpathians in 2002

Berlinite - $AlPO_4$ was found as grayish or colorless fine crystals growing along cracks in well-cemented clay or impregnating the body of this clay in Cioclovina Cave, Şureanu Mts. (ONAC *et al.*, 2002).

Burbankite - $(Na,Ca)_3(Sr,Ba,Ce)_3(CO_3)_5$ appears as a thin crust composed of sub-millimeter yellow grayish anhedral crystals. This rare anhydrous carbonate was found in association with colorless or milky white needle-like brushite and gypsum crystals in Cioclovina Cave (ONAC *et al.*, 2002).

Cesanite - $Na_3Ca_2(SO_4)_3(OH)$ was found closely associated with hydroxylapatite in ochre to red-brown crusts along the walls in Măgurici Cave (Someş Plateau) (ONAC & VEREŞ, 2003).

Collinsite - $Ca_2(Mg,Fe^{2+})(PO_4)_2 \cdot 2H_2O$ appears as translucent millimeter thin-walled balloons lining dissolution cavities within a thick hydroxylapatite crusts collected from Cioclovina Cave (ONAC *et al.*, 2002).

Foggite - $CaAl(PO_4)(OH)_2 \cdot H_2O$ was identified within a black earthy-mass aggregates collected from below brown-reddish crandallite-rich clays in Cioclovina Cave (ONAC *et al.*, 2002).

Francoanellite - $H_6(K, Na)_3(Al, Fe^{3+})_5(PO_4)_8 \cdot 13H_2O$ forms soft and unctuous to the touch, white nodular aggregates (3 to 50 mm in diameter) and earthy masses in the lower part of the fresh guano that that overlies the argillaceous floor deposits from Măgurici Cave (ONAC & VEREŞ, 2003).

Glaukosphaerite - $(Cu,Ni)_2(CO_3)(OH)_2$ occurs in Water Cave from Codreanu mine (Băiţa) as thin coatings of deep green color in association with malachite and rosasite.

Jokokuite - $Mn^{2+}SO_4 \cdot 5H_2O$ forms pale pink, rosette-like aggregates (2-3 cm in length) intimately associated with rozenite. The jokokuite crystals have vitreous luster and show no cleavage (ONAC *et al.*, unpublished).

Lansfordite - $MgCO_3 \cdot 5H_2O$ was first described as a cave mineral from Valea Rea Cave (Bihor Mts.) were it appears as white fine powdery masses associated with hydromagnesite (ONAC & FEIER, 2003).

Leucophosphite - $KFe_2^{3+}(PO_4)_2(OH) \cdot 2H_2O$ forms thin pale yellowish-brown crusts (less than 1 mm thick) within white taranakite veins in a section below the Bivouac Room, Cioclovina Cave (ONAC *et al.*, 2002).

Norsethite - $BaMg(CO_3)_2$ appears as well crystallized white nodular aggregates on the walls of two skarn-hosted caves (Crystal and Surprise) in the Băiţa metallogenic district (ONAC, 2002).

Phosphammite - $(NH_4)_2HPO_4$ occurs as sparse, colorless, and transparent anhedral crystals (0.5 mm in size) in the tower part of the guano deposit hosted by the Măgurici Cave (ONAC & VEREŞ, 2003).

Tinsleyite - $KAl_2(PO_4)(OH) \cdot 2H_2O$ appears in small quantities, as composite aggregates, early diagenetic mineral in the bat guano deposit from Cioclovina Cave (MARINCEA *et al.*, 2002).

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