American Mineralogist, Volume 90, pages 1203–1208, 2005

First reported sedimentary occurrence of berlinite ($AlPO_4$) in phosphate-bearing sediments from Cioclovina Cave, Romania—Comment

Ștefan Marincea* and Delia-Georgeta Dumitraș

Department RIMTI, Geological Institute of Romania, 1 Caransebeș Street, RO-012271, Bucharest, Romania

Abstract

In a recent work, Onac and White (2003) reported on berlinite, but also chlorellestadite and churchite, from the Bivouac Room, Cioclovina Cave, Romania. Our analyses of materials collected from this site failed to identify berlinite, chlorellestadite, or churchite. Due to the nature of the samples collected from the bat guano deposit at Cioclovina, many possible sources of confusion can occur. For example, separates from a mixture of taranakite, quartz, and minor illite could give the same analytical results as those reported by Onac and White (2003) for "berlinite". For this reason, we consider that the occurrence of berlinite at Cioclovina, as well as the occurrence of other exotic species such as chlorellestadite or churchite, is not well enough substantiated and their report must be regarded with caution. Arguments to support this point of view are problems identified with the analytical techniques (EMPA, XRD), the failure of the experimental synthesis of berlinite in "dry" conditions at atmospheric pressure, and the geochemical context from Cioclovina.