

ABSTRACT
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The Dolomite Caves of Sierras Bayas, Southeastern Buenos Aires, Argentina

Silvia Patrícia BARREDO

Grupo Espeleológico Argentino (GEA). Laboratorio de Tectónica Andina. Departamento de Geología
Universidad de Buenos Aires. Pabellón II, Ciudad Universitaria, 1428, Argentina.

e-mail: sbarredo@mail.retina.ar or silvia@gl.fcen.uba.ar

By far, limestone, gypsum, basalt and clastics caves are well documented in Argentina but dolomite caves have not been clearly mentioned in the speleological literature of this country yet. The Sierras Bayas site is close to the Olavarría town in Buenos Aires, Argentina. Three depositional sequences of Precambrian age compose the Sierras Bayas epiclastic Group. In particular the lowermost shows two sedimentary facies assemblages: a sequence of quartz - arkosic sandstones and shales and other composed of stromatolitic, calcite cemented dolostones and shales; stromatolites indicating an age of 800 – 900 Ma. These rocks are presently exposed along quarries whose operations led to the discovery of well-developed caves and galleries, the focus of this work.

Four isolated caves have been topographed but, in fact, it is proposed here that they form part of a unique system composed of partially or totally communicated conduits. Up to now 83,27 m were mapped with a maximum difference in elevation of almost 7 meters. During the last decades they have been intentionally filled up with rocks and debris, probably by local miners, causing the isolating of several passages and moreover, the total burying of many of them. In spite of this a descriptive work has been held in some cavities with very significant results.

Explored cavities are subhorizontal and small: the largest of all totals 45,37 m in length with a difference in elevation of 6 meters. Concretions such as stalactites, curtains and stalagmites are barely developed and are few in numbers, they are composed of aragonite and calcite but dolomite was also found. On the contrary, other types of depositional features are dominant and comprise thick calcite/aragonite crust, botroidal like accumulations, etc. Numerous dissolutional speleothems were found including ceiling pockets of different sizes and shapes, some scallops, notches, niches and a pothole. The natural sediment fill consists mostly of medium to fine debris and collapsed breccia.

It is proposed here that these are semiactive caves, this assumption is based upon the sporadic water flow observed in some conduits of the Matilde Catriel and Mallegni cavities. Finally, it is proposed that they are polygenetic caves. Matilde Catriel displays tubular passages, has an elliptical cross section and large scallops indicating a phreatic origin although presently it is evolving under vadose conditions. La Nueva and Santa Lucia, both at shallower depths, show steep entrances, smaller dissolutional features and water trickling confirming the slow evolution in an epiphreatic environment.