



Some examples of palaeokarst in Sardinia

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The Lower Cambrian limestones and dolostones of Iglesiente (Southwest Sardinia, Italy) are known to host important active and fossil karst phenomena. Besides active and still accessible cave systems, often characterised by important speleothem formations and rare cave minerals (e.g. hydrozincite, hemimorphite etc.) palaeokarsts have been encountered in underground excavations or in quarries. Several of the important mineral deposits are in fact infillings of great karst cavities, such as at Barega or Mount San Giovanni.

During various geological surveying campaigns several different palaeokarst deposits have been recognised and studied. Among these some deserve further attention and are here described in detail.

On the top of Mount San Giovanni (Gonnesa), a short mine drift at 300 m a.s.l. has intercepted a decametre-sized cavity filled with pyroclastic sediments. Other similar but smaller cavities have been discovered on the western slope of the mountain. These are composed of rhyolitic ignimbrites and epiclastites of unknown age. These volcanoclastics may be related to the volcanism that characterised this part of the Island during Oligo-Miocene, or, in alternative, may be products of the Permian volcanic cycle. In any case, their preservation on the top of the mountain testifies the extremely low denudation rates of these carbonates at least in this part of Sardinia.

Some 40 metres higher, in the same area, another sinkhole filled with red detritic sandy sediments has been exposed on a quarry face. Also these sediments may be of Oligocene or Permian-Triassic age and are probably genetically connected to the aforementioned palaeokarsts.

Of completely different nature is the palaeokarst discovered in a limestone quarry at San Luigi (Buggerru), 15 km North of Mount San Giovanni. Here several pockets and fractures are filled with fine and laminated yellowish-brownish sands. The almost vertical layering of these sediments is concordant with the closeby contact between Lower Cambrian ceroid limestones and dolostones. This would indicate their sedimentation before their dislocation occurred in Middle Ordovician ("Sardinian Phase", Auct.). If this is true, these karst sediments are the among the oldest found in Iglesiente.

Further detailed investigations on these palaeokarsts are under way and will give further insight into the karst evolution of this complicated area.