

## A revision of the fishes from the Bonarelli Level (uppermost Cenomanian) of northeastern Italy

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The uppermost Cenomanian ichthyofauna from northeastern Italy, known since the 19<sup>th</sup> century, comes from the so-called Bonarelli Level (BL). This important marker bed is the lithological expression of the OAE2 event and consists of a black shale horizon (ranging from 30 cm to ca. 3 m in thickness) draping the hemipelagic rocks of the Scaglia Variegata Alpina Formation in the Southern Alps. The BL ichthyofauna from this area is practically unknown to the international scientific community. BASSANI (1880, 1882) first reported fossil fish remains from the BL, recovered near the village of Crespano (Treviso, Veneto), and consisting of three actinopterygian specimens. Most of the BL ichthyofauna was recovered from three main localities (Cinto Euganeo, Carcoselle quarry, Valdagno tunnel excavations) in northeastern Italy since the second half of the 20<sup>th</sup> century, and additional material derives from a number of minor localities. In particular, a relatively diverse fish assemblage was discovered at Cinto Euganeo. Excavations were undertaken at this locality in 1974 and 1975, and the fossils were subsequently described by SORBINI (1976).

Overall, the ichthyofauna includes mainly bony fishes, with lesser numbers of chondrichthyans (only several small isolated teeth referable to Lamniformes and Ptychodontidae, e.g., *Cretoxyrhina*, *Cretolamna*, *Squalicorax* and *Ptychodus*). The specimens are generally poorly preserved, with the exception of a few partially complete individuals of *Tselfatia formosa*. Some other fragmentary vertebrate remains (turtles and a reptile tooth) were recovered from the Carcoselle quarry and Valdagno tunnel excavations. Bony fish remains comprise mainly predatory teleosts, such as *Protosphyraena*, *Pachyrhizodus*, *Enchodus*, *Rharbichthys* and *Rhynchoder cetis*. Other ray-finned fish genera present in the association are the formerly mentioned *Tselfatia*, plus *Thrissops*, *Holcolepis*, *Protelops*, *Ichthyotringa*, *Paravinciguerrria*, *Protostomias*, *Clupavus* and *Omosoma*. Some pycnodontiforms (*Palaeobalistum*, *Coelodus* and *Nursallia*?) are also present. Considering the whole assemblage, the BL ichthyofauna from northeastern Italy is homogeneous and consistent with the coeval ones from Morocco, Sicily and Dinarides (ARAMBOURG, 1954; BASSANI, 1882; LEONARDI, 1965; SORBINI, 1976). What can be interpreted as meso-bathypelagic taxa are quite abundant, with rarer neritic fishes (Pycnodontiformes). The whole BL fish fauna from northeastern Italy is badly in need of a detailed revision, which is presently underway in the framework of a multidisciplinary project aimed at revising the stratigraphy and paleontology of Cretaceous *Fossil-Lagerstätten* from northeastern Italy.

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