



CONTRIBUTIONS



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CONSELL COMARCAL DEL TARRAGONÈS

Bioerosive traces of boring bivalves in the Patagonian Miocene, Argentina

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The Argentinian coastal zone located at the Northeast of Patagonia is characterised by impressive rocky-shores that host excellent outcrops of latest Miocene marine beds. These beds show a lateral continuity up to 50 km and a visible thickness up to 10 m.

The lithology of these deposits corresponds to fine bioclastic sandstones and pelites, which were deposited in a shallow marine environment corresponding to a complete marine cycle (transgressive-regressive) assigned to the Tortonian (Zavala and Freije, 2000). Among the abundant bioclasts stand out the valves of *Ostrea patagonica* d'Orbigny, on which endolithic bioerosive structures produced by boring organisms are observed, and which represent the motive of this contribution.

Traces consist on club-shaped, slightly elongate borings with sizes varying between 10 and 35 mm. They appear both in the external and internal zones of the valves and usually where the shell is thicker. The internal surface of borings can be smooth or show a sculpture consisting on concentric lines or rugae. Some of them show sedimentary filling consisting on internal moulds.

These borings have been attributed to boring bivalves with a behaviour based on the search of refuge or dwelling (*Domichnia*), and could be attributed to the ichnogenus *Gastrochaenolites*, typical of the *Trypanites* Ichnofacies, characteristic of hard substrates.

According to the boring morphology (shape of the aperture, presence of a neck between the aperture and the main chamber, shape of the transversal section, acutely parabolic bottom), they could correspond to the ichnospecies *Gastrochaenolites torpedo* (Kelly and Bromley, 1984).

At present, this type of borings is made by bivalves which, by means of an acid organic secretion, bore holes to dwell inside. *Lithophaga patagonica* (d'Orbigny), that at present lives from Santa Catalina (Brazil) to Tierra del Fuego (Argentina), prefers littoral hard bottoms to form its dwelling, although it also bores calcareous hard parts of other molluscs, as in this case.

Gastrochaenolites is characteristic of shallow environments and the level with bored ostreids would be related with a quick passage between foreshore and shoreface facies registered during the transgressive systems tract.

References

Zavala, C. and Freije, H. (2000). Estratigrafía secuencial del Terciario superior marino de Patagonia. Posible relaciones con la crisis del Messiniano. *Geotemas* 2.