

Characterization of bioerosion structures in marine Quaternary mollusks from Bahía Bustamante (Patagonia, Argentina): preliminary results

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Bioerosion structures represent several kinds of activities (boring, drilling, rasping and scraping) by different organisms on hard substrates and can be the result of mechanical, chemical or a combination of both processes. The most common substrates able to be eroded in littoral environments are bioclastic remains. Mollusk assemblages are abundant and exceptionally well preserved in the marine Quaternary deposits along Argentina. The richest and thickest skeletal accumulations (mostly bivalve and gastropod shells) occur in beach ridges which reflect littoral palaeoenvironmental parameters during the most recent high sea-level stands. These deposits comprise parautochthonous assemblages accumulated during the last transgressive-regressive Mid-Late Pleistocene to Mid-Holocene marine cycles (Marine Isotope Stages, MIS 11 to 1). From a sedimentological point of view, the marine terraces from Patagonia have two different areas. First, the central area is mainly composed of massive, clast-supported conglomerate with scarce sandy matrix interpreted as the core terrace. On the other hand, above the massive core there are well-stratified sedimentary rocks (pebble conglomerates with abundant sandy matrix), representing the foreshore and shoreface deposits. These deposits commonly show low angle planar cross stratification and trough cross stratification. All the shells analyzed in this study came from the upper part of the terraces, where the shells are more abundant and better preserved. The bioerosion trace fossils present in these deposits comprise three ethological categories Domichnia, Fixichnia and Praedichnia. Macroborings (12 ichnotaxa) and microborings have been recognized. In order of abundance, the macroborings are: *Oichnus*, *Iramena*, *Leptichnus*, *Maeandropolydora*, *Entobia*, *Caulostrepsis*, *Centrichnus*, *Renichnus*, *Pinaceocladichnus*, *Pennatichnus*, *Gastrochaenolites* and *Umbichnus*. In Pleistocene deposits, Domichnia is the most common category, with 5 ichnogenera (*Caulostrepsis*, *Entobia*, *Iramena*, *Maeandropolydora* and *Pinaceocladichnus*) distributed in 53 mollusk specimens. In Holocene deposits, Praedichnia dominates, showing 75 shells with *Oichnus*. In the modern beach, Domichnia is again the most abundant category with 82 shells hosting 8 ichnogenera (*Caulostrepsis*, *Entobia*, *Gastrochaenolites*, *Iramena*, *Maeandropolydora*, *Pennatichnus* and *Pinaceocladichnus*). The deposits of Bahía Bustamante exhibit the greatest ichnodiversity recorded in marine Quaternary deposits of Patagonia up to present, including similar ichnotaxa to those identified along the Bonaerensian littoral. This preliminary study will bring light into several topics, such as interrelationships between different organisms, predation strategies and ethology.