Commensalism in the fossil record: Eunicid polychaete bioerosion on Pliocene solitary corals

Jordi Martinell and Rosa Domènech

Some solitary caryophylliid (Caryophyllia, Trochocyathus, and Ceratotrochus) and flabellid (Flabellum) scleractinian corals from Pliocene of Western Mediterranean exhibit long groove−shaped bioersiveal structures running along the surface of the thecae. They are epigenic structures produced by an episkeletozoan and therefore, they are described as Fixichnia. Here we propose Sulcichnus as a new ichnogenus, with three new ichnospecies (Sulcichnus maaandriformis, S. helicoidalis, and S. sigillum) to name this traces. Sulcichnus is attributed to the activity of polychaetes. Similar structures are recently produced by Lumbrineris flabellicola, a symbiotic eunicid which maintains a commensalistic relation ship with solitary corals. In the fossil record, Sulcichnus occurs associated to shallow marine environments whereas their Recent counterparts are described on deep−marine corals. We interpret this as a consequence of a change in the environmental requirements of the coral/worm pair.

Key words: Scleractinia, Polychaeta, Eunicida, palaeoecology, bioerosion, commensalism, Pliocene, Mediterranean

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