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# In vivo and post-mortem bioerosion traces in solitary corals from the upper Pliocene deposits of Tunisia

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The polychaete borings *Caulostrepsis taeniola, Caulostrepsis cretacea, Caulostrepsis avipes, Caulostrepsis penicillus* isp. nov., *Maeandropolydora elegans, Maeandropolydora sulcans, Sulcichnus sigillum*, the bryozoan boring *Pinaceocladichnus onubensis* and the phoronid boring *Talpina* cf. *hackberryensis* occur in coralla of the solitary scleractinian coral *Ceratotrochus* (*Edwardsotrochus*) *duodecimcostatus* in the upper Pliocene middle/lower neritic to upper bathyal fine-grained deposits of NE Tunisia. This very rich assemblage of borings is produced in vivo as suggested by (i) their occurrence close to the surface and mostly in the upper part of coralla (*Caulostrepsis* ispp., *M. elegans*), even if they are known to penetrate deeply in the substrate, or (ii) evidence of corallum deformation in response to the boring action (*Sulcichnus sulcans*). The remaining borings were probably produced post mortem; they penetrate deeply into the corallum (*M. sulcans*) or always occur shallowly in the substrate (*Talpina*) and, in addition, cross cut other borings (*Pinaceocladichnus*). The polychaete borings are dominant. The abundance of the borings is probably caused by ecological pressure from shallower zones in subtropical waters. This resulted in the colonization of hard, small-sized substrates located in relatively deep (offshore) waters. The interpretation of age and palaeoenvironment was elucidated by the analysis of benthic and planktonic foraminifers.

**Key words:** Anthozoa, palaeoecology, ichnotaxonomy; commensalism, Pliocene, Mediterranean basin.

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