



# Bioerosion in the Miocene Reefs of the northwest Red Sea, Egypt

ZAKI A. ABDEL-FATTAH AND EHAB M. ASSAL

## LETHAIA

Abdel-Fattah, Z. A., Assal, E. M. 2015: Bioerosion in the Miocene Reefs of the northwest Red Sea, Egypt. Lethaia, Doi: 10.1111/let.12157.



Macroborings provide detailed information on the bioerosion, accretion and palaeoenvironment of both modern and fossil reefs. Dolomitized reefal carbonates in the Um Mahara Formation exhibit an outstanding example of spatially distributed, well-preserved bioerosion structures in tropical to subtropical syn-rift Miocene reefs. Ten ichnospecies belonging to five ichnogenera are identified; three belonging to the bivalve-boring ichnogenus *Gastrochaenolites*, three attributed to the sponge-boring ichnogenus *Entobia*, and four ichnospecies assigned to three worm-boring ichnogenera *Trypanites*, *Maeandropolydora* and *Caulostrepsis*. The distribution of the reported borings is strongly linked to the palaeo-reef zones. Two distinctive ichnological boring assemblages are recognized. The *Gastrochaenolites*-dominated assemblage reflects shallower-marine conditions, under water depths of a few metres, mostly in back-reef to patch-reef zones of a back-reef lagoon. The *Entobia*-dominated assemblage signifies relatively deeper marine conditions, mostly in reef core of the fringing Miocene reefs. These ichnological assemblages are attributed herein to the *Entobia* sub-ichnofacies of the *Trypanites* ichnofacies. This ichnofacies indicates boring in hard carbonate substrates (such as corals, rhodoliths, carbonate cements and hardgrounds) during periods of non-sedimentation or reduced sediment input. □ Egypt, Miocene reefs, Red Sea, Um Mahara Formation.

Zaki A. Abdel-Fattah [zabdelfattah@gmail.com], and Ehab M. Assal [ehab.assal@gmail.com], Geology Department, Faculty of Science, Damietta University, New Damietta City 34517 Damietta, Egypt; manuscript received on 9/03/2015; manuscript accepted on 12/08/2015.