

Welcome back!? The return of the LBF *Amphistegina* to the Mediterranean: Implications for the local diversity in Corfu (Greece)

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Larger benthic foraminifera (LBF) of the genus *Amphistegina* were widespread in the Mediterranean Sea during Miocene and Pliocene times. After a hiatus, they have successfully returned to the area – probably via the Suez Canal – and have expanded their distribution ranges throughout the Eastern and Central Mediterranean. *Amphistegina lobifera* is the most prolific species and its current northwestern range limit lies in Tunisia, the Pelagian Islands (Italy) and Albania. Locally, high abundances have been reported, affecting biodiversity and assemblage compositions. Therefore, the species was named among the most significant invaders (Stulpinaite et al. 2020).

We analyzed foraminifera from Corfu Island in the Central Mediterranean, where amphisteginids have been absent during the Pleistocene (Rögl et al. 1998). We evaluated the effect of *A. lobifera* on the diversity of all foraminifera and specific groups in particular.

Our findings suggest that *A. lobifera* does affect the local diversity. We found negative correlations with sessile epiphytes and small miliolids. Both groups occupy comparable habitats as *A. lobifera* and might be outcompeted by the latter, which is probably further facilitated by ongoing ocean warming. Comparisons with Pleistocene material (Rögl et al. 1998) suggest that epiphytes and small miliolids dominated the assemblages prior to the arrival of *Amphistegina*. Other LBF (*Peneroplis*, *Sorites*) initially showed a positive correlation with the presence of *A. lobifera* (until the latter reached more than 20%). This suggests that other warm-affiliated taxa also benefit from warmer ocean temperatures.

We expect that *A. lobifera* and other warm-adapted taxa might play an increased role in shaping the future biodiversity and assemblage compositions in this area. This would facilitate the prognosed tropicalization of the Mediterranean Sea (Bianchi et al. 2013).

References

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