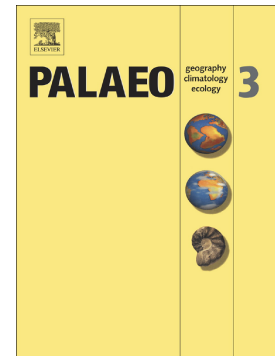


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**Massive tabulates in competition for space:
a case study from Aferdou el Mrakib (Middle Devonian, Anti-Atlas, Morocco)**

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Abstract

Aferdou el Mrakib, the largest carbonate buildup of the Moroccan Anti-Atlas, is known for its rich, Givetian fossil assemblage, largely dominated by corals. The core part of the reef was either removed by erosion, or pervasively dolomitised, with corals preserved mostly in the talus beds deposited in the fore-reef environment. This paper focuses on massive colonial tabulate corals, represented by *Heliolites porosus* and members of the genus *Favosites*, which constituted the largest tabulates of Aferdou el Mrakib and are frequently found in the reef-derived debris. The study reconstructs survival strategies of these corals based on an analysis of their morphologies, growth patterns, as well as records of interactions with other organisms. Both *H. porosus* and *Favosites* are represented predominantly by domal growth forms. As compared to the favositids, the coralla of *H. porosus* are considerably more abundant and attained notably larger sizes, with some of the colonies exceeding 1 m in diameter. Even the largest coralla were in places found toppled and in upside-down positions, indicating their downslope transportation by gravity flows, and possible periodic involvement of high energy events. *H. porosus* commonly encrusted and was encrusted by other organisms. The encrustations usually coincide with very frequent, sediment-induced growth interruption surfaces found within the coralla. The growth interruption surfaces rarely preserve the original sediment, attesting the presence of mechanisms of sediment removal by the coral. Similar surfaces occur also in the *Favosites* coralla, but they are less common and often lined by distinct sediment intercalations. Few encrustations on *Favosites* were demonstrated to have happened post-mortem, while encrustations on *H. porosus* typically formed syn-vivo, as evidenced by the coral successfully overgrowing its epibionts. *H. porosus*

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