

ASSEMBLAGES OF SOLITARY RUGOSANS FROM THE DEVONIAN VENTING SYSTEMS OF HAMAR LAGHDAD (ANTI-ATLAS, MOROCCO)

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Unique assemblages of small, solitary, rugose corals have been discovered within the Devonian deep-sea hydrothermal venting systems of the Hamar Laghdad (Anti-Atlas, Morocco). Hamar Laghdad area is situated about 20km south of Erfoud and forms an elevated ramp-dipping south, where more than 50 conical buildups of hydrothermal origin (Belka 1998) are perfectly exhumed. Mostly, they belong to so called Kess-Kess Formation of the Emsian (Dalejan) age, but a part of them situated on the eastern side of Hamar Laghdad belong to the Givetian. Mud mound facies are composed mostly of skeletal wackestone and mudstone riddled by stromatactis cavities and packstone intercalations (Brachert et al. 1992). Biotic components of the mud mound facies consist mostly of tabulate corals (auloporids, thamonoporids and favositids), which are more or less regularly spaced. Within the main mound body rugose corals occur sporadically or even they are absent but their numerous assemblages flourished around vents nowadays mostly filled with younger sediment. They form the „coral meadows” growing around the outlets of venting channels irregularly forked within the mounds. The taxa living around vents do not differ in the general anatomy and structure of the skeleton from small undissepimented corals living in typical deep environments not touched by venting activity. But most of them are represented by new (probably endemic) genera. Although, the Emsian (monospecific) and Givetian (polyspecific) rugose assemblages differ in taxonomy they reveal a similar phenomenon concerning with growth pattern. Strikingly, most of all (78% in Emsian and 63% in Givetian mounds) individual skeletons grew within the empty calices of extinct individuals. The phenomenon called here „calice-in-calice” growth is related to selective survival of coral larvae i.e. it is postulated that the larvae, which settle within the calices of extinct individuals were more successful in their development. They probably use empty calices as shelters against the physical (hot or poisoning fluids) or biological (predators) factors. The presence of numerous ostracod carapaces within the empty calices of extinct rugosans allows reconstructing a part of trophic relation between corals and ostracods, which lived around hydrothermal vents.

References

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