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RECORD OF NON-SKELETAL BIOTA FROM THE INNER RAMP OF A BURDIGALIAN CARBONATE PLATFORM

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Many modern inner ramp environments are dominated by seagrass meadows, however the presence of ancient seagrasses in the rock record generally has to be inferred from indirect evidence based on particular biota communities and sedimentological features.

This study documents the record of non-skeletal biota from the Burdigalian inner ramp limestones of the Latium --Abruzzi carbonate ramp (BRANDANO & CORDA, 2002).
The inner ramp deposits crop out in the Monte Lungo area of the Cassino Plain (central Apennines, Italy). The most proximal facies of the inner ramp is represented by balanid floatstones overlying a bored Cretaceous substratum and is interpreted as a high-energy environment immediately below the littoral zone. Seaward, the balanid floatstone passes into structureless, poorly sorted, mud-rich skeletal packstones to floatstones interfingering with branching red algae and rhodolithic rudstone layers. Epiphytic foraminifera, larger foraminifera, echinoid remains, balanid fragments, bryozoan colonies and rounded and micritized mollusc fragments are the main components of these lithofacies. The skeletal packstone to rudstone beds pass seaward into small and scattered coral build-ups characterised by platy and encrusting *Porites*, commonly encrusted by red algae and associated with oyster beds.

In the mud-rich skeletal packstone to floatstone and in the branching red algae rudstone enigmatic bowl-like structures with tabulations can be observed relatively frequently on rock surfaces. In thin-sections these structures are built of dark, densely packed bioclastic packstones with fuzzy margins. Besides a variety of components rare sponge spicules can be observed which have been not observed in the surrounding sediment so far. These point to the hexactinellid sponge nature of these structures. Remarkable is the relatively frequent occurrence of otherwise rare foraminifera within the sponge remains. These Foraminifera belong to the family Spirillinidae and Patellinidae. The surrounding sediment is very rich in epiphytic foraminifera (e.g., cibicidids) which point to a seagrass habitat.
The studied part of the inner ramp can therefore be interpreted as a seagrass meadow with coralline algae and bryozoan. The seagrass blades were densely settlement by foraminifera and between the seagrass plants hexactinellid sponges abundantly grew. These sponges may have provided a specific microhabitat for spirillinid and patellinid Foraminifera.

Reference:

BRANDANO, M. & CORDA, L. (2002): Nutrients, sea level and tectonics: constrains for the facies architecture of a Miocene carbonate ramp in central Italy. Terra Nova, 14, 257-262.

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