

Carbonate-producing organisms and sedimentation of the Golfe d'Arguin (Mauritania)

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Heterozoan or foramol carbonate productions is typical for extratropical sedimentary systems. However, under mesotrophic to eutrophic conditions, heterozoan carbonates also form in tropical settings. Such heterozoan tropical sedimentary systems are poorly known. Nevertheless, recognition of tropical heterozoan carbonates is crucial for paleoenvironmental and paleoclimate reconstructions.

Here the northern Mauritanian shelf is studied as a modern example of a eutrophic tropical carbonate depositional system (11 $\mu\text{g.L}^{-1}$ Chl-a [chlorophyll-a]). Nutrient-rich upwelling waters push onto the wide Mauritanian shelf where they warm up to 18 to $>25^{\circ}\text{C}$. This gives rise to the production of tropical heterozoan carbonates dominated by bivalves and foraminifers. In addition, the deposition is influenced by eolian input from the desertic hinterland. The resulting sediment are carbonate and mixed carbonate-siliciclastic facies, in which carbonates are characterized by a mixture of tropical and cosmopolitan biota. Thus, the attributes of the Mauritanian shelf sedimentation demonstrate the multi-dimensional ecological control of carbonate sedimentation (Michel et al., 2009, 2011a, b).

We are currently working on new samples from the inner part of the shelf (the Banc d'Arguin itself) and looking for localizing the modern carbonate production zones. Further projects are launched. We are very interested in the work done by the NIOZ on the benthos of the coastal part of the Banc d'Arguin and are looking for collaborations in fields such as invertebrate taxonomy, ecology, geochemistry, carbon cycle, ocean acidification.