Taphonomic effects on the benthic foraminiferal paleoecological record of the Ría de Vigo (NW Spain)

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Understanding the factors playing a role in the formation of dead assemblages is essential for an accurate interpretation of the fossil record in a particular region. The comparison of dead and live benthic foraminiferal assemblages (>63 μm) along the muddy central axis of the Ría de Vigo (NW Spain) reveals that there are major differences in the relative abundance of species. Some of them could be attributed to: 1) species-specific production patterns, 2) low preservation potential of particular species and 3) transport of allochthonous foraminifera from nearby areas. Epifaunal, thin shelled, upwelling-related species (e.g. *N. stella*, *N. turgida*, *L. scottii*, *B. translucens*) are almost absent from the surface and subsurface dead assemblages. This is probably the result of their low preservation potential rather than their opportunistic behaviour. High local bottom currents actively transport dead shells of epifaunal-attached and free-living benthic foraminiferal forms (*Cicicides spp*., *E. crispum*) and estuarine species (*A. beccarii* and *H. germanica*) to low energy settings of the ría. The study of subsurface assemblages reveals that, in the innermost areas of the ría, there is a downcore loss of calcareous and agglutinated forms (*E. scaber*) likely as a consequence of establishment of reducing conditions into the sediment.

Benthic foraminiferal assemblages in the Plio-Pleistocene restricted environment of the Kritika Member (Rhodes Island, Greece)

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An attempt for palaeoenvironmental reconstruction of the Late Pliocene-Early Pleistocene Kritika Member (Rhodes Formation) has been made based on the results of statistical analysis. A Hierarchical Cluster Analysis (Q-mode) was carried out on benthic foraminiferal assemblages in order to single out distinct groups of samples corresponding to different palaeoenvironments. In addition, components of PCA were interpreted as the main ecological parameters conditioning the assemblage composition. On this basis, five biofacies corresponding to five environmental settings were recognized: Biofacies 1 is defined by the dominance of the monospecific assemblage of *Ammonia tepida* (> 90.0%), indicating a brackish lagoon and marsh environment. Biofacies 2 also exhibits a restricted affinity characterized by higher frequencies of *H. depressula* (~60%), a very strong development of plano-convex foraminifera and small numbers of Miliolidae. These features are clear indications of brackish water lagoon evolving into shallow-marine environment with fresh water influence. Biofacies 3 is characterized by abundant Miliolidae and *Ammonia beccarii,* representing a marine coastal environment (infralittoral zone). In part, the relatively high abundance of Buliminidae and Bolivinidae indicate influence from deeper water, high food input and low oxygen levels (infralittoral/upper circalittoral environment). The predominant epiphytal assemblage of Biofacies 4, mainly represented by *C. lobatulus*, points to a more wide-spread occurrence of submarine vegetation in the littoral realm. The higher diversity of this biofacies compared to the others, indicates that the environment is stable, characterized by better conditions. Biofacies 5 is represented only in one sample and consists of *Fursenkoina acuta*, *Bolivina, Bulimina, Cassidulina,* indicative of increased amounts of organic matter and decreased oxygen concentrations, associated with the influence of fresh-water (fluvial) discharge. The micropalaeontological and lithological features of the studied section enabled us to recognize the palaeoenvironmental succession that is constituted by lagoon, marsh and marine environments, with evidence of continued interaction between continental and marine processes.