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Benthic foraminiferal assemblages: a clue to the palaeoecology and palaeoenvironment of the Pliensbachian- Toarcian transition of Peniche (Lusitanian Basin, Portugal)

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The Lower Jurassic of the Peniche region (Lusitanian Basin, Portugal) constitutes one of the most worldwide references concerning the stratigraphy of the Lower Toarcian. In fact, the Peniche Section is the unique candidate to the Toarcian Global Boundary Stratotype Section and Point and records some important evidences about the palaeoenvironmental perturbations associated to the Toarcian Oceanic Anoxic Event (T-OAE) (e.g. Hesselbo et al., 2007). Despite the large number of micropaleontological studies developed in this section (e.g. ostracods, calcareous nannofossils), any relevant study of benthic foraminifera has been presented, even to the whole basin scale. Thus, based on a detailed stratigraphic analysis that includes 39 marly samples of the Emaciatum (= Spinatum) – Levisoni (= Serpentinum) ammonite zone interval (around 37 m thick), the aim of this work is the study of the foraminiferal assemblages from the Pliensbachian-Toarcian boundary and across the T-OAE. The results and main conclusions of this preliminary study show three different stages: 1) The uppermost Pliensbachian (Emaciatum Zone) is characterized by foraminiferal assemblages with high diversity and abundance (foram/g) dominated by *Marginulina*, *Lenticulina*, *Dentalina* and *Ammobaculites*, suggesting well-oxygenation and nutrient availability. 2) The beginning of the Toarcian (Polymorphum Zone) evidences a drastic decrease of the diversity and abundance of the foraminiferal assemblages. 3) This trend continues in the Levisoni Zone with decreasing diversity and abundance (some barren samples are recorded), but opportunistic forms such as *Epistomina* and *Lenticulina*, occasionally proliferate. This evolution suggests a clear perturbation in the palaeocological conditions at the sea-bottom during the Early Toarcian, feature that is observed in other basins (see Reolid et al., 2012). The fluctuations of foraminiferal assemblages recorded across the studied interval seems to correlate with the previous sequence stratigraphic interpretation of the series (e.g. Duarte, 2007) and the proliferation of opportunistic forms in some levels could be a reflex of the turbiditic sedimentation that took place in this area during this period (Wright & Wilson, 1984), which promotes the oxygenation of the sea-bottom.

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