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Contribution of Foraminifers in Biostratigraphy and Paleoecology Interpretations of the Basal Eocene From the Phosphatic Sra Ouertaine Basin, in the Southern Tethys(Tunisia)

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Abstract : Micropaleontological, sedimentological and statistical studies were carried out on the late Paleoceneearly Eocene succession of Sra Ouertaine and Dyr El Kef in Northern open phosphatic Basin of Tunisia. Based on the abundance and stratigraphic distribution of planktic foraminiferal species, five planktic zones have been recognized from the base to the top of the phosphatic layers. The El Acarinina sibaiyaensis Zone, the E2 Pseudohastigerina wilcoxensis Zone, the E3 Morozovella marginodentata Zone, the E4 Morozovella formosa Zones and the E5 Morozovella subbotinae Zone. The placement of Paleocene-Eocene boundary (PETM) is just below the base of the phosphatic interval. The ETM-2 event may be detectable in the analyzed biotic record of Sra Ouertaine. Based on benthic assemblages, abundances, cluster and multivariate statistical analyses, two biofacies were recognized for each section. The recognized ecozones are typical of warm and shallow water inner neritic setting (dominance of epifaunal fauna Anomalinoides, Dentalina and Cibicidoides associated with Frondicularia phosphatica, Trochamminoides globigeriniformis and Eponides elevatus). The paleoenvironment is eutrophic (presence of several bolivinitids and verneuilinids). For the Dyr El Kef section and P5 and E2 of Sra Ouertaine section, our records indicate that paleoenvironment is influenced by coastal upwelling without oxygen-deficiency, the paleodepth is estimated to be around 50 m. The paleoecosystem is diversified and balanced with a general tendency to stressed condition. While the upper part of Sra Ouertaine section is more eutrophic, influenced by coastal upwelling with oxygen-deficiency, the paleodepth is estimated to be less than 50 m and the ecosystem is unsettled.

Keywords : Tunisia, early Eocene, foraminifera, chronostratigraphy
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