Biostratigraphy, microfacies and palaeoecology of the Asmari formation in Makhmal Kuh section, Lurestan Province, western Iran

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Abstract

The Asmari formation is a thick carbonate sequence in the Zagros Foreland basin that was deposited during the Oligo–Miocene. In order to conduct biostratigraphic studies, microfacies and to interpret the depositional environment, the Makhmal Kuh section in the Lurestan province located in west of Zagros was investigated. The section is 85 m thick, consisting of alternating layers of thick limestone interbedded with thin-layer limestone. Based on biostratigraphic studies, 12 genera belonging to 7 families of foraminifera were identified in the studied section. In this section, two fossil assemblages and 12 microfacies were identified based on the Rupelian-Aquitanian foraminifera distribution patterns. The fauna assemblages conform to the world standard zones. The study of microfacies indicates two different sedimentary sub-environments including lagoon and open sea in the studied section. These depositional sub-environments of the Asmari Formation are compatible with the inner, middle and outer ramp parts, formed under a Mesophotic, Oligophotic and Aphotic conditions in a homoclinal ramp.

Keywords: Aquitanian, Rupelian, Sedimentary environment, Zagros, Asmari formation, Lurestan.