Paleoenviromental interpretation of the Dalichai Fm. in Parikhan stratigraphic section, west of Shahroud based on palynological, foraminiferal and microfacies data

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Abstract

In order to determine the Dalichai Formation paleoenviroment, with measured thicknesses of 250 m at Parikhan section, west of Shahroud, 29 samples were collected systematically. The Dalichai Formation consisting of an alternation of bluish-gray marls and limestone, disconformably overlies the Shemshak Formation and is followed gradually by the thick-beded limestones of the Lar Formation. Palynological (abundance and diversity of Dinocyst, proximate to chorat Dinocyst ratio) and Palynofacies analysis and selective preservation of organic matter combined with microfacies and foraminifera have been performed on Dalichai Formation, west of Shahroud, in order to identify depositional paleoenvironments. Based on palynofacies and microfacies studies, five palynofacies types (I, II, III, VI, IX) and five Microfacies types is a characteristic of proximal shelf settings to basin. A high percentage of terrestrial to marine palynomorphs, presence of fluorescent amorphous organic matter and proximate dinocysts such as Nannoceratopsis gracilis, Benthic foraminifera such as Ophthalmidium spp. , Miliolids. and Glomospira sp. and very low abundance of Ammonites are evidence of suboxic to anoxic condition in open marine lagoon in the lower part of Dalichai Formation. Abundance and species richness of marine palynomorph (mainly chorate dinocysts) and decrease in the brown wood and gradual upward increase in the planktonic foraminifera (Globuligerina spp.) and high dominance of radiolar and posidonia generally indicate development offshore settings in the upper part of Dalichai Formation.

***Keywords**: Paleoenviroment, Dalichai formation, Palynology, microfacies, Foraminifera*