



Palaeoenvironmental reconstructions of the Dalichai Formation at the Balu section, northern Semnan, based on palynomorphs

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The Dalichai Formation at Balu section in Payambaran area, northern Semnan, was studied by using palynomorphs and organic matter contents in order to determine its Palaeoenvironmental conditions. A total of 55 samples were collected and treated for palynological studies. The formation at this section is consisting of mainly shale, calcareous shale and limestone. Palynologically productive samples contain spore, pollen grains, dinoflagellate cysts, foraminiferal linings, acritarchs, wood debris (plant tissue) and Amorphous Organic Matters (AOM). The high abundance of the AOM indicates a shallow, low oxygen levels and relatively quiet environment. Palynofacies data such as proportion of blade-shape to equal dimensional opaque palynomacerals; the percentage of AOM to marine palynomorphs was determined indicating accumulation of Dalichai Formation in a shallow, low oxygenated condition with a slow rate of accumulation. However, occurrence of marine elements testifies intermittent marine incursions. The sharp increases in abundance of chorate dinoflagellate cysts in two parts of the section indicate short-term marine incursions in these parts.