



Paleoenvironment of the Permian rocks: a comparison between central and eastern Alborz, Iran

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The succession of Permian rocks in Alborz region is composed of siliciclastic and carbonate facies. All of the sediments were deposited in the Paleotethyan passive continental margin but they show different facies architecture and paleoenvironmental condition in various parts of the region. This study, as part of a wider project, has investigated sedimentary facies and paleoenvironment of the Permian rocks in central and eastern Alborz.

The Permian rocks in central Alborz are dominated by siliciclastic facies (Doroud Formation) in the lower, and carbonate facies (Ruteh Formation) in the upper half. Field studies and laboratory measurements resulted in recognition of 4 terrigenous and 13 carbonate facies in the succession. A siliciclastic shallow marine system was determined as depositional environment of the terrigenous facies. A homoclinal carbonate ramp, with scattered patch reefs, was determined as depositional environment of the carbonate facies. Dasycladacean green algae, ancestral red algae, hermatypic corals and bryozoans were the major bioconstructors of the ramp. The abundance of skeletal shoals respect to ooidal shoals in the ramp margin was high.

The Permian rocks in eastern Alborz are dominated by mixed siliciclastic-carbonate facies (Ruteh Formation) in the lower, and siliciclastic facies (Nesen Formation) in the upper half. The studies resulted in recognition of 5 terrigenous and 6 carbonate facies in the succession. A mixed siliciclastic-carbonate shelf with high sediment influx was determined as depositional environment of the mixed siliciclastic-carbonate facies. Occurrence of the small patch reefs with high coral diversity in this mixed shelf indicates normal marine (hyposaline) condition. Upper terrigenous facies were deposited in fluvial-flood plain system.

Difference in paleoclimate and tectonic activity of two sub-basins seems to be the major cause of the differences between the Permian facies in central and eastern Alborz.