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Microbiostratigraphy of Permian deposits in central Iran

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East-Central Iran has excellent exposures of Pennsylvanian and Permian rocks in North Gondwana terranes and Tethyan terranes. Permian strata in the Kalmard area known as the Khan Formation, are mainly composed of middle Early Permian siliciclastic-carbonate sequences with high siliciclastic components. The Permian strata in the nearby Shotori and Shirgesht areas are named Jamal Formation. The major part of the Jamal Formation in Shotori and Shirgesht areas consist of carbonate deposits. Fusulinid faunas in lower and middle parts of the Jamal Formation in Shotoriarea show a Kubergandian-Early Midian (Roadian-Early Capitanian)age. No identifiable fusulinids were found in the upper part of this Formation, and only a small percentage of Permian smaller foraminiferas were present in the second section within Shotori area, indicating that the upper part of Jamal Formation is Early Dzhulfian (early Wuchiapingian) in age. The best stratigraphic section of Jamal Formation is exposed at Bagh-e-Vang Mountain in the Shirgesht area. The basal part of the Jamal Formation is named Bagh-e-Vang Member. Comprehensive study of fusulinids and smaller foraminifera in the Bagh-e-Vang section indicates a Yakhtashian-Bolorian (Artinskian-Kungurian) age for the Bagh-e-Vang Member and a Kubergandian-early Dzhulfian (Roadian-early Wuchiapingian) age for the rest of the section. Global paleoclimate changes and sea level fluctuations related to the major Gondwana glaciation and deglaciation events in Pennsylvanian and Permian time are represented by proxy in cyclic carbonate deposits
in north and central Iran. Two different paleolatitudinal positions for Permian deposition within the Kalmard and Tabas blocks (Peri-Gondwana and Peri-Tethys terranes) are documented by fusulind occurrences. Our main focus is on Peri-Tethyan Kungurian (latest Early Permian) through early Wuchiapingian (early Late Permian) carbonate ramp deposits with higher and intermediate order sequences (2nd and 3rd), parasequences, and Peri-Gondwanan Sakmarian (middle Early Permian) mixed siliciclastic-carbonate sediments. The Kalmard
area was more affected by sea level fluctuations related to the major glacial episodes of Gondwana glaciation. After deposition of the Permian Khan Formation in the Kalmard area Late Sakmarian regression in Gondwana as well as the tectonic uplift had a long lived effect on Kalmard area and caused this area to remain subarial uniti Early Triassic time. Sea level changes in Permian sediments in Tabas area (Jamal Formation) correspond to global sea level fluctuations generated by waxing and waning of Gonwana glaciations but we have to
consider the influence of tectonic control on Permian basins in both Kalmard and Tabas blocks.