
Isolated Platform and Reef Growth in the Hawasina Ocean: The Late Triassic Jabal Kawr of Oman

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In the realm of the Hawasina Ocean (Neo-Tethys), carbonate production of isolated platforms was discontinuous and interrupted by a large gap. The Neo-Tethyan platforms drowned shortly after the end-Guadalupian mass extinction and did not recover before the Late Triassic.

Correlation of the Triassic sections at Jabal Kawr in the Oman Mountains points to a change in platform architecture and is characterized by lateral facies variations. The architectural style evolved during Carnian/Norian time from a carbonate bank to a platform rimmed by reefs. The start of the carbonate sedimentation is characterized by an initial phase with volcanoclastic interruptions, followed by a bank stage with a shallow subtidal to peritidal interior and oolite shoals at the margin. In the Norian vertical accumulation caused an increase of the platform height and developed a relief along the margins progressively increased through the aggrading reef stage. The possibility that a reef rim existed and was later removed by erosion is suggested by the Sint reef and olistoliths of similar reef limestones in the surrounding areas. The reef clasts contain a diverse fauna with scleractinian corals, sponges and several different encrusting organisms. These clasts could have been derived from diverse platform margin reefs that were partly eroded from the margin.

From the perspective of carbonate platforms, recovery in the Neo-Tethys was extremely retarded after the Permian-Triassic mass extinction. Carbonate production of isolated platforms ceased for about 30 million years, a period exceeding the recovery of most marine ecosystems.
