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Record of the end-Triassic crisis in south-western Sicily: palaeoenvironmental changes reflected by the carbonate facies architecture.

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The Sciacca-Monti Sicani area, in south-western Sicily, offers a regional example of the facies architecture in an Upper Triassic/Lower Jurassic carbonate shelf margin to slope zone. It allows us to evaluate the interplay of different controlling factors on the sedimentary dynamics of a South Tethyan basin margin across the Triassic/Jurassic boundary.

In this segment of the Maghrebian thrust and fold belt, the Triassic/Jurassic facies associations and their spatial relationships were restored by the correlation of selected sections from several structural units.

The Triassic carbonate shelf consists of thick successions of peritidal-lagoonal cycles (Sciacca Fm.). Our studies reveal that a NW-SE trending Dachstein-type reef edged the shelf of the platform towards east. This implies the contiguity of the carbonate shelf with a high-energy, open-marine environment, providing the optimum oligotrophic life conditions for sponge-coral-algae communities. A terminal complex, consisting of chaetetid-dominated boundstones, characterizes the Rhaetian topmost zone of the reef, probably because of the end-Triassic biotic crisis.

A sharp discontinuity surface on top of the uppermost Triassic platform strata (*Triasina* facies) is overprinted in places by karstic dissolution. It is interpreted as a result of a Late Rhaetian sea-level fall. A lowering of the sea-level is also supported by the presence of fine skeletal grainstones in the slope–basinal successions. This implies a downslope forced shedding of reef-derived biodetritus, favoured probably by the shifting of the active bioconstruction to the outer shelf margin/upper slope.

Around the Rhaetian–Hettangian boundary, a widespread clastic carbonate wedge was formed downslope by the cannibalization of the Upper Triassic reef. The selective source of clastics (Upper Triassic reef extraclasts) suggests, as trigger mechanisms, margin collapses coupled to an intense wave erosion of the reef limestones during the lowstand stage. Transtensional tectonics activity along the shelf edge, inducing margin retreats, is documented by local angular unconformities, so we cannot exclude the contribution of brittle deformations to the the production of clastic materials.

The aggradation of *Thaumatoporella*-mollusc bearing peritidal cycles in the shelf and of oolitic-bioclastic sands along the shelf-edge indicate the recovery of the carbonate productivity during Early Jurassic times coupled to a sea-level rise during Hettangian times. Moreover an intense shedding of carbonate sands in the adjacent slope and peribasinal areas is recorded in all the studied deep-water successions.

In the distal slope zone the observed switching of the intrabasinal carbonate supply from scarce biodetritus containing reef-derived foraminifers (e.g. *Galeanella*, *Siculocosta* and others) to abundant oolitic and skeletal sands, bearing *Aeolisaccus* sp. and *Siphovalvulina gibraltarensis*, can be used as a proxy of the Triassic/Jurassic boundary.