

ULTIMATE MORPHOLOGICAL CHANGES BEFORE THE END-PERMIAN EXTINCTION: CHANGHSINGIAN SMALLER FORAMINIFERA FROM THE SOUTHERN BIOFACIES BELT IN TURKEY

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The Changhsingian of the Southern Biofacies Belt in Turkey is widely distributed in the Arabian Platform and in the Geyik Dagi and Aladag tectonic units and the Antalya Nappes of the Anatolide-Tauride Block. From non-fusulinoidean Fusulinata two distinct evolutionary trends, both belonging to the family Globivalvulinidae, occur in the Changhsingian. In the globivalvulinin trend, *Paraglobivalvulina* originated from *Globivalvulina vonderschmitti* close to the Capitanian-Wuchiapingian boundary commonly occurs in the latest Permian. Among the other descendants in this stock, *Charliella*, seems to have gone extinct at the Wuchiapingian-Changhsingian boundary and *Urushtenella* derived from *Paraglobivalvulina* occurs rarely in the Changhsingian. From the *Septoglobivalvulina-Paraglobivalvulinoides* lineage *Paraglobivalvulinoides* is rather rare and sporadic. One of the most remarkable evolutionary trends in the Southern Biofacies Belt is in the dagmaritin-type globivalvulinids. *Paradagmarita*, derived from *Crescentia* very close to the Wuchiapingian-Changhsingian boundary, comprises three distinct species (*P. monodi*, *P. flabelliformis*, *P. planispiralis*) in the Changhsingian. A new genus originated from *Paradagmarita* in the younger levels of the Changhsingian is characterized by a hook-shaped apertural flap protecting partly the apertural system. In addition, *Paradagmacrusta* derived from *Paradagmarita* close to the Wuchiapingian-Changhsingian boundary and *Louissettita* originated from *Dagmarita* in the late Wuchiapingian commonly occur in the Changhsingian.

In the Southern Biofacies Belt, although *Nodosariata* occurs abundantly, colaniellids are totally absent. *Syzraniidae*, *Protonodosariidae*, *Geinitzinidae*, *Robuloididae*, *Frondinidae* and *Pachyphloiididae* frequently occur. From robuloidids, the genus *Robuloides* is frequent and displays distinct morphological variations close to the Permian-Triassic boundary.

Several genera belonging to Miliolata, such as *Agathammina*, *Hemigordius*, *Midiella*, *Neodiscus*, *Multidiscus*, *Neodiscopsis* and *Glomomidiellopsis* occur rarely to commonly in the Changhsingian of the Southern Biofacies Belt. Among these taxa, distinct evolutionary changes occurred in the populations of *Glomomidiellopsis* (*G. uenoi*, *G. lysitifformis*). The genus *Kamurana* s.s. was probably derived from *Glomomidiellopsis* in the late Changhsingian.