

Tertiary Larger Foraminifera: Evolution, Biostratigraphy, Palaeoecology and Palaeobiogeography

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Tertiary Larger Foraminifera are major faunal contributors in Tethyan shallow-marine sediments and they are widely applied in the interpretation of paleoenvironment, -ecology and -biogeography. They are also widely used in the establishment of biostratigraphic framework of Tethyan deposits, owing to their mode of evolution, mainly studied in the last decades. Nevertheless, the data produced in the last century, derived mainly from Europe, were limited, thus not allowing high-resolution biostratigraphic applications. During the last few decades enormous taxonomic data have been derived to establish a biostratigraphic framework for Western Tethyan shallow-marine deposits that resulted in the establishment 20 shallow benthic (SBZ) zones based on Nummulitidae, Alveolinidae and Orthophragmines. This Zonation, lately, has been improved by the establishment of sub-zones in Bartonian and Priabonian based on the study of *Heterostegina* and *Spiroclypeus* from a wide geographic region in Western Tethys. Moreover, the zonation of orthophragmines has been updated in Late Paleocene-Priabonian interval mainly based on the study of shallow-marine sections in Turkey. This has resulted in a more precise correlation of orthophragmines zones in its correlation of Nummulitid Zonation as well.

The very diverse larger foraminiferal fauna (especially in the Eocene) occupied different paleoenvironments thus it serves as an excellent tool for facial reconstruction. In the last decades significant progress has also been made in this field. Finally, larger foraminifera having been lived in three major provinces are suitable also for paleobiogeographic reconstructions.