

CHANGES IN PARATETHYAN MARINE MOLLUSCS AT THE EARLY/MIDDLE MIOCENE TRANSITION - DIVERSITY, PALEOGEOGRAPHY AND PALEOCLIMATE

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The transition from the Early Miocene to the Middle Miocene is a crucial point for the development of mollusc faunas (gastropods and bivalves) in the Central Paratethys. The interplay of sea level fluctuations, climatic melioration, immigrations, and blooms in autochthonous elements causes a complex pattern of faunal development. We focus on the so-called “Grund Fauna” which flourished during the Early Badenian as transition between typical late Early Miocene and typical Middle Miocene faunas. This faunal type, originally defined in Austria, is represented within the entire Central Paratethys and is strictly stratigraphically determined. It developed during the early Middle Miocene and is interpreted by us to mirror a phase of optimal climatic conditions. This is most plausible in respect to the marginal position of the Central Paratethys. As northern appendix of the early Mediterranean Sea, spanning a north-south gradient of about 4° latitude it is suggested to represent some kind of “paleo-thermometer” reflecting slight expansions or restrictions of climatic belts. Consequently, the Langhian climatic optimum seems to be reflected within Paratethyan mollusc faunas by the northward migration of Mediterranean thermophilic species during the Early Badenian.

The confusing and partly contradictory stratigraphic concepts and correlations of Paratethyan and Mediterranean reference faunas is thoroughly discussed and enlightened. This rather historical excursus seems to be necessary, as we have experienced in many discussions at international meetings the difficulties for “non-Paratethyan” stratigraphers to see through the “evolution” of the tricky regional stages.

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