

A Late Miocene (Tortonian) transitional molluscan fauna from Cessaniti (Calabria, Southern Italy): palaeobiogeographical implications

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At Cessaniti (Tyrrhenian side of Calabria, Southern Italy) a Late Tortonian-Early Messinian fossiliferous sedimentary succession recording a transgressive cycle crops out (Gramigna *et al.* 2008). At the base, dark shales, clayey-silty transitional deposits yielded well preserved rich molluscan assemblages dominated by brackish taxa of lagoonal environment, such as *Hydrobia frauenfeldi*, *Granulolabium bicinctum*, *Terebralia bidentata*, *Crassostrea gryphoides*, *Cerastoderma* and *Abra*, with littoral marine and freshwater accompanying species. The palaeobiogeographical distribution of the taxa reveals a wide spreading in the Tortonian deposits of Italy and a strong Paratethyan affinity. A few species are known in the Middle Miocene (Serravallian) of Italy, endemic elements are rare. More than 50% of the species, such as *G. bicinctum*, *Potamides theodiscus*, *Alvania perregularis*, *H. frauenfeldi* and *Stenothyrella schwartzi*, are widely distributed from Early to Late Miocene in the Central Paratethys, a large number also in the Early and Middle Miocene of the Aquitaine Basin, such as *G. bicinctum*, *T. bidentata*, *A. perregularis*, *Ringicula minor*, *Acteocina lajonkaireana*, and in the Middle and Late Miocene of the Eastern Paratethys and Turkey. A high extinction-rate among the Cessaniti species is detected at the end of the Tortonian in the Mediterranean area. In accordance with the palaeogeography of the Miocene Tethyan and Paratethyan realms (Rögl 1998 with refs; Meulenkamp and Sissingh 2003), a dispersion event of some brackish Tethyan taxa from the Paratethys during the Middle Serravallian (Early Sarmatian-Volhynian) along the East Anatolian fault zone is hypothesized. A probable further dispersion is presumed at the beginning of the Tortonian transgression when an Aegean seaway opened between Mediterranean and Eastern Paratethys.

References

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