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A revision of the Neogene Cancellariid Gastropods of the Paratethys Sea

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Abstract

We present the first synoptic revision of the cancellariid gastropods of the Miocene Paratethys Sea. This huge epicontinental sea experienced outstanding phases of invasions and endemic evolution, which resulted in a total diversity of at least 53 cancellariid species. The maximum diversity of 43 species was established during the early Middle Miocene (Langhian), corresponding to the mid-Miocene Climatic Optimum. This speciation and diversification event is suspected to be potentially still traceable in molecular clock analysis and should be considered in future investigations. The turn-over rate at species level was considerable, resulting in short species longevity. Most species were already extinct by Pliocene times and only a single species seems to have survived until the Early Pleistocene. None of these Miocene Paratethyan cancellariid species survive today in modern circum-Mediterranean assemblages. Extant species referred to the Miocene Admetinae genus *Cancellicula* are clearly not congeneric and have to be placed in a separate genus.

Steiningeriella **nov. gen.** is described as new genus and *Ovilia breitenbergerorum* **nov. sp.** as new species. *Petitina* **nov. nom.** is introduced as replacement name for the preoccupied *Inermia*. New combinations are: *Bonellitia hoernesii* (Kittl, 1887) **nov. comb.**, *Pseudobabylonella nysti* (Hörnes, 1854) **nov. comb.**, *Calcarata vindobonensis* (Hilber, 1892) **nov. comb.**, *Contortia callosa* (Hörnes, 1854) **nov. comb.**, *Contortia fenestrata* (Eichwald, 1830) **nov. comb.**, *Contortia saccoi* Hoernes & Auinger, 1890 **nov. comb.**, *Contortia tortoniana* (Sacco, 1894) **nov. comb.**, *Merica crenata* (Hörnes, 1856) **nov. comb.**, *Merica succineiformis* (Boettger, 1906) **nov. comb.**, *Ovilia excassidea* (Sacco, 1894) **nov. comb.**, *Petitina inermis* (Pusch, 1837) **nov. comb.**, *Petitina angulata* (Sieber, 1936) **nov. comb.**, *Perplicaria mioquadrata* (Sacco, 1894) **nov. comb.**, *Scalptia dertocosticillata* (Sacco, 1894) **nov. comb.**, *Scalptia dertoparva* (Sacco, 1894) **nov. comb.**, *Scalptia polonica* (Pusch, 1837) **nov. comb.**, *Scalptia michelinii* (Bellardi, 1841) **nov. comb.**, *Scalptia neugeboreni* (Hörnes, 1856) **nov. comb.**, *Scalptia scrobiculata* (Hörnes, 1854) **nov. comb.**, *Solatia exwestiana* (Sacco, 1894) **nov. comb.**, *Steiningeriella hebertiana* (Hörnes, 1856) **nov. comb.** and *Trigonostoma exampullaceum* (Sacco, 1894) **nov. comb.**

Key words: Cancellarioidea, Miocene, Europe, Paratethys, Proto-Mediterranean Sea