

# PALAEOECOLOGY AND BIOSTRATIGRAPHY

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Undoubtedly, the fauna (ostracodes and mollusks) of the Upper Neogene from the Dacian basin is well known for its empirical sense and the biostratigraphy (exclusively focused on mollusks) is clear and generally without major ambiguities. However many “biostratigraphical events”, either boundaries or fauna changes, have no plausible explanations. This paper offers detailed descriptions of three sequences overlapping the Meotian-Pontian boundary and its interpretations.

*Key words:* ostracodes, mollusks, biostratigraphy, Meotian, Pontian, boundary, palaeoecology.

## WHAT IS THE FAUNA-CYCLE?

Biostratigraphy is an open science; it is neither complete nor irreversible and just perfectible. Every stage always needs to be confirmed according to the knowledge of its fauna. The Paratethys ecosystem and its stages are good examples for the great role of paleoecology fauna control. We have focused in this paper on one ecological biosequence, the final of the Meotian time interval in the Dacian basin. Every end of the Upper Neogene stages from the Paratethys brackish-water ecosystem (Sarmatian, Meotian and Pontian-Dacian) is similar to the other, being either fresh-water or oligohaline alternative facies, with little and just accidentally normal faunas (where normal means all common and dominant species within one stage, within its own specific ecological circumstances). Each of them has symmetrical trajectory of fauna evolution, of course with lots of local or regional “accidents” that often complicate the biostratigraphical “normality” of the scheme. The case of the Upper Sarmatian time interval after the “small *Maetrae* limestone” follows a fresh-water episode stopped by the Meotian mesohaline transgression. The oligohaline fauna-levels of the Upper Meotian from the Bizdidel Valley (near Pucioasa town), Prigoria Valley (near Prigoria village) Vacii Valley (Sangeru village), Panatau Valley (tributary to Buzau Valley) end the Meotian Cycle of fauna development. The new Pontian and Dacian faunas can be regarded as a fauna with similar sources and roots and similar ways of development. All of them were stopped by the Romanian fresh-water episode (with one short time-interval with oligohaline fauna similar to the Apscheronian fauna elements).

Undoubtedly, the invasion of the Meotian fauna interrupted “normality” of fauna evolution, bringing in the game other “exotic” taxa. If the Sarmatian fauna (with its higher salinity and gradual development and diversification of *Limnocardiiids*, see OLTEANU, 1999) had been followed in natural continuity by the new Pontian fauna (also