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Miocene ostracod fauna in Croatia

Valentina Hajek-Tadesse

The result of paleontological analysis of the ostracod assemblages from Miocene deposits in Croatia documented the dynamic evolution of ostracod fauna in geological short time (from ~17.5 my to ~5.3 my). The regional Miocene geological events are closely associated with the ostracod fauna distribution. The openings or closings of sea straits, transgressions, regressions, as well as climatic changes, had deep impact on composition of the ostracod association, preservation state of the valves, frequency of particular genera and species, and the occurrence of polymorphous changes on ostracod valves.

During the Miocene the central and northern regions of Croatia were situated on the southern and south-western margins of Central Paratethys. Formation of sedimentary basin in North Croatia started in the Early Miocene.

The present study gives a short description of the long-term investigation and results of Miocene ostracod (freshwater, brackish and marine) fauna from Croatia. In general, ostracod fauna has proven to be a valid tool for the investigation of local and global realms. The study of the Miocene ostracod fauna led to several results considering Miocene biostratigraphy, palaeobiogeography and palaeoecology.

Ostracod Biozone for the Miocene (Jiriček 1983; Jiriček & Riha 1991), is more applicable for Middle and Upper Miocene deposits. Biozonation of Lower Miocene deposits is somewhat difficult to define due to lack off valuable ostracod biostratigraphical markers. Besides already accepted Miocene ostracod zone markers for the regions of central Paratethys in Croatia, it is also possible to distinguish local auxiliary zone markers that can be used to facilitate biozonation deposits to be investigated. Apart from zone markers it is should be also mentioned that the discovery of "new-entry" species from the Tethys, which were not frequent in Paratethys, shows free connections between Tethys and Paratethys areas (Hajek-Tadesse & Prtoljan 2011).

The ostracod assemblages have played a specific role in the detail reconstruction of environment. Based on the generally accepted palaeoecology of selected genera, it is possible to identify the following ostracode faunas: freshwater, brackish and marine for Lower Miocene (Hajek-Tadesse et al. 2009); shallow-water marine, shallow-water brackish-marine, shallow-water reef, deep-water marine and freshwater (Bakrač et al. 2010; Hajek-Tadesse & Prtoljan 2011) for Middle Miocene and brackish for Upper Miocene.

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Authors address:
Valentina Hajek-Tadesse
Croatian Geological Survey, Sachsova 2, 10000 Zagreb, Croatia
valentina.tadesse@hgi-cgs.hr