



Maeotian / Pontian Boundary from the East Carpathian Foredeep (Dacian Basin)

A. Floroiu (1), M Stoica (1,2), W. Krijgsman (2), and I. Vasiliev (2)

(1) Department of Geology and Paleontology, Faculty of Geology and Geophysics, Bucharest University, (2) Paleomagnetic Laboratory Fort Hoofddijk, Budapestlaan 17, 3584 CD Utrecht, The Netherlands

The paleogeographical and geological evolution of the Dacian Basin (and Eastern Paratethys, in general) during the Late Maeotian and Pontian is frequently discussed on the geological literature, because at this time interval in the Mediterranean area experienced its so-called Messinian Salinity Crisis (MSC) (Floroiu et al., 2011). Many authors consider that this event had more or less dramatically effects in adjacent basins of the Paratethys including the Dacian Basin. The main effects of the connections or disconnections of Paratethys with the open seas consist in changing the bathymetry and the salinity of paratethyan basins. The marginal areas of the Dacian Basin are more sensitive to water level variations in the basin.

Our biostratigraphic results from the several sections located in the marginal area of the Dacian Basin show that the fossil ostracod assemblages from the Upper Maeotian comprise a low number of species, *Cyprideis pannonica* being the dominate one. These fossil assemblages are indicative of sub-littoral fresh- to brackish water environment, suggesting that the Upper Maeotian sediments in the east Carpathian foredeep are associated with temporary lakes on flood plain areas. During the Late Maeotian, close to the boundary with the Pontian stage, an important transgressive event can be noticed in the Dacian Basin and in all over the Eastern Paratethys basins (Krijgsman et al., 2010). We recognized in this interval few levels rich in *Congerina* (*Andrusoviconca*) *amygdaloides novorossica* shells and some benthic (agglutinated, calcareous) and planktonic foraminifers. The presence of foraminifers proved that this transgressive moment at Maeotian / Pontian boundary is accompanied by increasing of water salinity. Magnetostratigraphic results show that this flooding interval occurred synchronously in the Dacian and Black Sea basins near the paleomagnetic reversal C3An.2n(y), and is dated at 6.04 Ma (Krijgsman, et al., 2010, Stoica et al., submitted).

After the transgressive moment, the Lower Pontian (Odessian) fauna is represented by a “bloom” of ostracods species: *Pontiella* (*Zalanyiella*) *acuminata*, *P. (Serbiella) striata*, *Candona (Hastacadona) lotzyi*, *C. (H) hystera*, *C. (Zalanyiella) venusta*, *C. (CaspioCypris) alta*, *C. (C.) pontica*, *C. (Camptocypris) ossoinaensis*, *Cypria tocorjescui*, *Bakunella dorsoarcurata*, *Cytherissa* sp., *Tyrrhenocythere pannonicum*, *Leptocythere cymbula*, *L. (Amnicythere) andrusovi* and *Pontoleberis pontica*.

We conclude that the Maeotian / Pontian boundary in the Dacian Basin is marked by a transgressive moment related to briefly restore the connection between the Eastern Paratethys and Mediterranean, or alternatively with the Indian Ocean.

References

- Floroiu, A., Stoica, M., Vasiliev, I. and Krijgsman, W. 2011. Maeotian / Pontian Ostracods in the Badislava-Topolog Area (South Carpathian Foredeep-Romania). *Geo-Eco-Marina* 17/2011, 239-246.
- Krijgsman, W., Stoica, M., Vasiliev, I. and Popov, VV. 2010. Rise and fall of the Paratethys Sea during the Messinian Salinity Crisis. *Earth and Planetary Science Letters* 290 (2010), 183-191.
- Stoica, M., Lazar, I., Krijgsman, W., Vasiliev, I., Jipa, D. & Floroiu, A.. Palaeoenvironmental evolution of the East Carpathian foredeep during the late Miocene – early Pliocene (Dacian Basin; Romania). Submitted to *Global and Planetary Changes*.