Variability, ecology and paleoecology of the species *Cycloforina cristata* (Millett)

Simina Dumitrița Dumitriu
„Alexandru Ioan Cuza University" Iasi, Romania (siminadumitriu@yahoo.com)

In this research we have carried out of micropaleontological studies in the Rădăuți area (Suceava County) where we have identified 25 specimens of *Cycloforina cristata* (Millett), species which has not been mentioned in Sarmatian deposits from Moldavian Platform (Northeast România, Fig. 1).

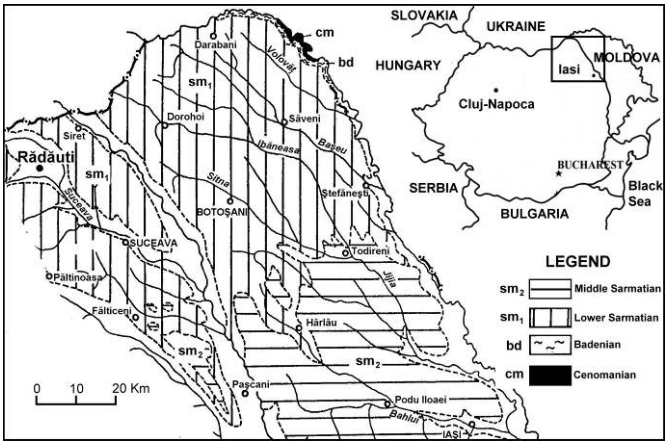

Fig. 1: Geological map of the studied area (after Ionesi *et al*., 2005)

Until now, this species has been mentioned in a small number in Sarmatian deposits from Zrecze, Poland (5 specimens, Łuczkowska, 1974), Făget Depression (Popescu, 1995) and from the southern part of the Vienna Basin (5 specimens, Schütz *et al.*, 2007). The authors have attributing this species to the genus *Cycloforina*. In the studied sediments, this taxon is very rare. Millett (1898) identified one specimen (the holotype) in the Malay Archipelago, classified it into genus *Miliolina.* Later, this foraminifer was found by Seiglie (5 specimens, 1966, 1967 fide Culver & Buzas, 1982) in the shelf sediments from Araya – Los Testigos, (Caribbean Sea), Seibold (1975) in the nearshore area of Cochin (southwest India), Rao *et al*. (15 specimens, 2005) in the Bay of Bengal and Suresh *et al*. (2013) identified this species in the estuary sediments from Chennai. The last two locations are situated on the southeast coast of India. All the authors which have identified this species in the recent sediments attribute it to the genus *Quinqueloculina.*

The relatively large number of the specimens found allowed us to study the variability of this species. It's not noticeable major differences regarding the dimensions of the specimens found instead the morphology of the test presents an extremely large variability. Some specimens have strongly, quasi – evenly serrated edges, while the others have weak or unequally distributed spines (Fig. 2). Based on the comparison with the recent specimens found by Rao *et al.* (2005) we could declare that the recent and Miocene specimens are quite similar.

In this study we discuss some aspects regarding the ecology of the recent specimens based, on the data published in the literature. References about live specimens, doesn't exist, only informations about the conditions where the empty test of this foraminifers were found.

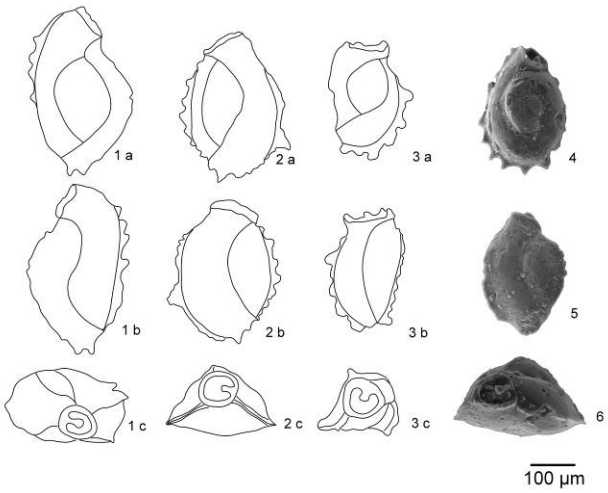

Fig. 2: Morphological variability of *Cycloforina cristata* (Millett): 1a, 2a, 3a, 4 – front side; 1b, 2b, 3b, 5 – back side; 1c, 2c, 3c, 6 – apertural view.

Most of them have been identified in sandy deposits from the shelf, lagoon or estuary area, with normal or lower water salinities.

Regarding the paleoecology of the species *C. cristata,* we take into consideration the fact that the most of the fossil specimens were found in clay deposits, in a faunistic association (*Inaequicostata inopinata* (Grischkevich), *Mohrensternia inflata* (Hoernes), *Cycloforina karreri karreri* (Reuss), *Elphidiella serena* (Venglinski), *Elphidium reginum* (d'Orbigny)) typical for the Early Sarmatian.

We discuss some issues regarding the water salinity of the basin were this foraminifers may have lived, based on the data existing in the literature (Papp, 1956; Ionesi, 1968; Ionesi *et al*., 2005; Piller & Harzhaauser, 2005; Studencka & Jasionowski, 2011).

Culver, S. F., Buzas, M. A. (1982): Smithsonian contributions to the marine sciences, 14: 382 p.
Ionesi, B. (1968): The stratigraphy of the Miocene deposits platform between Siret Valley and Moldova Valley, Ed Romanian Academy, Bucharest, 557 p. (in Romanian)
Ionesi, L., Ionesi, B., Rosca, V., Lungu, A., Ionesi, V. (2005): Middle and Upper Sarmatian on Moldavian Platform, Ed Romanian Academy, Bucharest, 557 p. (in Romanian)
Łuczkowska, E. (1974): Acta Paleont Pol, II: 3–160.
Millett, F. W. (1898): F R M S Roy Micro Soc J, II: 257 – 269.
Papp, A. (1956): Mitt Geol Ges, Wien, 47: 112 p.
Piller, E. W., Harzhauser, M. (2005): Terra Nova, 17: 450–455.
Popescu, G. (1995): Rom J Paleont, 76: 85–89.
Rao, R. N., Nandhakumar, S., Moorthy, G. M. (2005): JEMMM, 2: 60–67.
Schütz, K., Harzhauser, M., Rögl, F., Corić, S., Galović, I. (2007): Jb Geolog B A, 449–488.
Seibold, I. (1975): Spanish Mag Micropaleont, 7: 175–213.
Suresh Gandhi, M., Solai, A., Kalaivanan, R. (2013): IJSERT, 2965-2977.
Studencka, B., Jasionowoski, M. (2011): Acta Geol Pol, 61: 79–114.