Cretaceous and Paleogene calcareous nannofossils from northern Moldavia (Sucevita-Putna area, Romania) and the Cretaceous/Paleogene Boundary

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Detailed biostratigraphic data are presented here in order to investigate the K/P boundary from northern Moldavia (Bucovina). The sections studied for establishing Cretaceous and Paleogene calcareous nannofossil biostratigraphy are located in the Sucevita – Putna area, and in the Bercheza, Rusca and Putna valleys. Previous, preliminary data concerning a part of this area were presented by Chira *et al*. (2007).

The studied area comprises three tectonic units, from east to west: Pericarpathian, Vrancea and Tarcau, with complex geological structures. The investigated sections belong to the Hangu (Upper Cretaceous), Izvor (Paleocene - Lower Ypresian) and Straja Formations (Middle Ypresian). These formations are part of the Tarcau Nappe (Upper Cretaceous - Oligocene).

In the Sucevita Basin, previous studies on the K/P boundary have been carried out by Ionesi (1975) and Ionesi & Florea (1984, 1996). The K/P boundary was identified in the upper part of the Formation with Inoceramids (Ionesi & Florea, 1996), or upper part of the Hangu Formation in the Tarcau Nappe (Juravle, 2007).

The Izvor Formation from the Sucevita - Putna area was assigned to NP5-NP9 (Paleocene) and NP10-11 (Lower Eocene) (Ionesi & Florea, 1996). The calcareous nannofossil assemblages from the Sucevita and Bercheza valleys contain, among others: *Disco. salisburgensis*, *D. binodosus*, *D. lodoensis*, *D. distinctus*, *Chiasmo. solitus*, *Tribrach. orthostylus*, *Cocco. formosus*, *Helico. lophota*, *Chiasmo. grandis*, which indicate a Cuisian age. The assemblage with *D. binodosus*, *D. lodoensis*, *C. solitus*, *C. formosus*, *C. grandis*, *Towe. pertusus* was assigned to NP12 (middle Ypresian). The assemblage with *D. lodoensis*, *C. formosus*, *C. grandis*, *H. lophota*, *Retic. dictyoda*, *Spheno. moriformis* belong to NP12-13 (middle Ypresian). These two biozones were identified also in the samples from Rusca Valley.

Studies on the K/P boundary were performed by Melinte (2000) and Bojar *et al*. (2007) in the southern part of Moldavia, where was remarked the presence of Upper Maastrichtian/Lower Paleocene deposits, thanks to the identification of the biozones *Neph. frequens*, *Mic. prinsii*, *Biantho. sparsus* and *Cruci. primus*. The K/P deposits from northern Moldavia, and the boundaries between formations of different ages, are usually in tectonic contact.

In Bercheza Valley, in the Sucevita area, Upper Cretaceous deposits contain: *Mic. staurophora*, *Arkh.* cf. *A. maastrichtiana*, *Watz. barnesiae*, *Cribro. ehrenbergii*, *Calc. obscurus*, *Luc.* cf. *L. windii* and *L. maleformis*. The Paleogene deposits comprise: *Disco. saipanensis*, *Black. pinguis*, *Thoracosphaera* sp.

In the Sucevita area, along the Rusca Valley, the Upper Cretaceous samples contain: *Predisco. cretacea*, *M. staurophora*, *Arkh.* sp., *Micro. decoratus*, *L. maleformis*, *Rete. crenulata*, *Eiff. eximius*, *Rein. levis*, *Stauro.* sp., *Trano. orionatus*, *W. barnesiae*, *Uniplan. gothicus*, *Broin. parca constricta*. The Paleogene deposits comprise frequent *D. lodoensis*, *D. saipanensis*, *D. binodosus*, *D. elegans* and also *T. ortostylus*, *Spheno. radians*, *S. pseudoradians*, *Helico.* cf. *H. recta*, *H. bramlettei*, *Cocco. pelagicus*, *Towe. rotundus*, *Chias. gigas*, *Trans.* cf. *T. latus* and *T. pulcher*.

In the Putna Valley were found Upper Cretaceous assemblages with *Cerato. sesquipedalis*, *C. arcuatus*, *C. quasiarcuatus*, *L. maleformis*, *Arkh. cymbiformis*, *Eiff. turriseiffelii*, *M. staurophora*, *W. barnesiae*, *Zeug. scutula*. The Paleogene deposits contain: *B. sparsus*, *B. haqii*, *C. pelagicus* and *Retic. umbilica*.

In the sections from the Rusca and Bercheza valleys, generally assemblages are poorly preserved, with fragmentation and overgrowth. Better-preserved and more abundant assemblages were identified in the Putna Valley. Alternation of Upper Cretaceous and Paleogene deposits was observed, due to the tectonics of the region.

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