

Cretaceous/Paleogene boundary in north-eastern Romania

Carmen Mariana CHIRA¹, Ramona BALC², Claudia CETEAN¹, Doru Toader JURAVLE³, Sorin FILIPESCU¹, Alin IGRITAN¹, Florin FLOREA⁴ & Mirela Violetta POPA¹

¹Babes-Bolyai University, Department of Geology, 1 Kogălniceanu St., 400084, Cluj-Napoca, Romania; ²Babes-Bolyai University, Department of Life and Earth Sciences, 30 Fantanele St., Cluj-Napoca, 400294, Romania; ³Al. I. Cuza University, Faculty of Geography and Geology, 20 B-dul Carol I Iasi; ⁴Geomold, Campulung Moldovenesc, Romania; mcchira @bioge.ubbcluj.ro

Two sections from north-eastern Moldavia from the four investigated until now, are especially representative for the K/Pg boundary: Putna Valley in Putna area and Seaca Valley in Frasin area. Bercheza and Rusca valleys sections from Sucevita area were not so conclusive, due to the tectonics of the region. The lithology consists of an interlayering of clays, marls and sandstones, which represent a typical flysch facies.

Calcareous nannofossils and foraminifera assemblages from the turbidites of the Putna Valley section (Hangu and Izvor formations) were investigated in order to identify the Cretaceous/Paleogene boundary. This seems to be the only continuous section in this area, outcropping over about 160 meters. The abundant late Cretaceous and Paleogene calcareous nannofossil assemblages along the first part of the section are followed by a barren interval in nannofossils, then, again the Paleogene forms and sometimes reworked late Cretaceous taxa. The Cretaceous biozones with *Micula prinsii*, *M. murus* and *Nephrolithus frequens* are present. The first part of the Paleogene contains frequent calcispheres – especially *Operculinella operculata* and *Markalius inversus*, *Ericsonia* ssp., *Cruciplacolithus primus*. As concerning the agglutinated foraminifera, the first occurrence of *Rzehakina fissistomata* and the last occurrence of *Caudammina gigantea* have been used as markers for the Cretaceous - Paleogene boundary in lower bathyal settings, where planktonic foraminifera are scarce or absent (Chira et al., in press).

The entire section from Seaca Valley comprises about 680 meters (Chira et al., 2008). The tectonic of the region determines that Upper Cretaceous and Paleogene deposits alternate. The Hangu Formation contains rich Upper Cretaceous assemblages, generally better preserved as those from Putna Valley section, where coccoliths frequently present overgrowths. The Upper Cretaceous assemblage from the lower part of the section indicates the presence of the CC25-26 Biozones (after Sissingh, 1977). It follows an interval barren in nannofossils or with few taxa. The calcareous nannofossil assemblages contain rarely reworked Cretaceous taxa and few Lower Paleogene taxa: *Cyclagelosphaera alta*, *Biantolithus sparsus*, *Operculinella operculata*. Frequent Lower Paleocene forms are present especially in the upper part of the section from Seaca Valley: *Cruciplacolithus primus*, *C. tenuis*, *Prinsius martinii*, *Markalius apertus*, *Ericsonia subpervusa*, *Cyclagelosphaera alta*, *Coccolithus pelagicus*, *Zeughrabdotus sigmoides*, *Neocrepidolithus fossus*, which belong to NP1 (after Martini, 1971). Reworked Cretaceous taxa are also present.

The samples from the uppermost part of the section contain again relatively rare calcareous nannofossils. Lower Paleogene taxa are present, together with more Cretaceous taxa.

Chira, C., Balc, R., Florea, F., Igritan, A., (2008): Calcareous nannofossils from the K/T boundary in northern Moldavia, Romania: Sucevita Basin – Frasin area. Contributions to the Scientific Session "Ion Popescu Voitești", Cluj-Napoca (Eds. Bucur, I.I. & Filipescu, S.), 19-21.

Chira, C., Balc, R., Cetean, C., Juravle, T.D., Filipescu, S., Igritan, A., Florea, F., Popa, M.V. (2009): Calcareous nannofossils and foraminifera across the Cretaceous - Paleogene boundary in Putna area (Romania) (in press).

Martini, E. (1971): Standard Tertiary and Quaternary calcareous nannoplankton zonation. In Farinacci, A. (Ed.), Proc. 2nd Int. Conf. Planktonic Microfossils Roma: Rome (Ed. Tecnosci.), 2: 739-785.

Sissingh, W. (1977): Biostratigraphy of Cretaceous calcareous nannoplankton. Geol. Mijnb, 56, 37-65.

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Autor(en)/Author(s): Chira Carmen Mariana, Balc Ramona, Cetean Claudia, Juravle Doru Toader, Filipescu Sorin, Igritan Alin, Florea Florin, Popa Mirela Violetta

Artikel/Article: [Cretaceous/Paleogene boundary in north-eastern Romania 8](#)