

Calcareous nannofossils of the Valanginian/Hauterivian boundary interval in the Romanian Carpathians

Eliza Anton

National Institute of Marine Geology and Geo-Ecology (GeoEcoMar), Bucharest, Romania; antoneliza@geocomar.ro

Mihaela Melinte-Dobrinescu

National Institute of Marine Geology and Geo-Ecology (GeoEcoMar), Bucharest, Romania; University of Bucharest, Faculty of Geology and Geophysics, Bucharest, Romania; melinte@geocomar.ro

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We studied the Cretaceous calcareous nannofossils in a succession of 15 m-thick dark gray to black marlstones, interbedded with centimeter- to decimeter-thick calcareous sandstones, that crop out in the Romanian Carpathian bend area. Forty-five samples were investigated qualitatively and semiquantitatively. The calcareous nannofossil assemblages were assigned to the NC4 nannofossil zone of Roth (1983), including Subzones NC4a and NC4b of Bralower et al. (1995), which were separated on the basis of the first occurrence (FO) of *Lithraphidites bollii*.

The calcareous nannofossil preservation is moderate to good, which is supported by the abundance of *Watznaueria barnesiae* that reaches up to 28% of the total assemblage. Nannoconids are the second most abundant nannofossil taxa (up to 20%), and they show significant species diversity that includes *Nannoconus bermudezii*, *N. bonetii*, *N. bronni-mannii*, and *N. steinmannii*. In addition to *W. barnesiae* and the nannoconids, commonly identified taxa are *Micrantholithus hoschulzii*, *M. obtusus*, *Retecapsa* spp., *Cretarhabdus* spp., *Conusphaera* spp., *Biscutum constans*, *Discorhabdus ignotus*, *Manivitella pemmatoidea*, *Staurolithites stradneri*, *Cruciellopsis cuvillieri*, *Cyclagelosphaera brezae*, *C. margerelii*, *C. deflandrei*, *Zeugrhabdotus embergeri*, and *Haqius circumradiatus*. In the studied section, several nannofossil events were encountered that are listed in stratigraphic succession: last occurrences (LO) of *Rucinolithus wisei*, *R. pinnatus*, and *Eiffellithus windii*, FOs of *Diloma galiciense*, *L. bollii*, and *Tegulalithus septentrionalis*. The calcareous nannofossil assemblages in the studied succession exhibit similarities with the La Charce section, Vocontian Basin, SE France, which is the Global Boundary Stratotype Section and Point (GSSP) for the base of the Hauterivian Stage (Mutterlose et al., 2021), where the last four above-mentioned events were found in the lowermost Hauterivian, whereas the LO of *R. wisei*, followed by the LO of *R. pinnatus*, occur in the uppermost Valanginian.

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