ACTA PALAEONTOLOGICA POLONICA

Calcareous nannofossil communities during Late Triassic Mass Extinction and Early Jurassic recovery in the NW Tethys: evidence from Slovakia, Western Carpathians

Katarína Holcová, Matic Rifl, and Jozef Michalík
Acta Palaeontologica Polonica 69 (3), 2024: 485-500 doi:10.4202/app.01099.2023

The first calcareous nannoplankton extinction and recovery close to the Triassic/Jurassic boundary (TJB) were studied in two Tatra Mountains sections of Kardolína and Furkaska. The studied sediments were deposited in an intra-shelf depression of the Tethyan shelf (the Zliechov Basin). Rare nannofossil assemblages were discovered in both sections. Rhaetian nannofossils are characterized by the dominance of *Prinsiosphaera triassica* and by episodic increases in the abundance of small-sized coccoliths. Coccoliths belonging to *Calyculus* ? *kardolinae* sp. nov. were found on tops of the bedding planes. Triassic index species *Eoconusphaera* aff. *hallstattensis* was also recovered, it is rare though, probably due to the marginal or relatively high-latitudinal position of the area. The uppermost Triassic is characterized by a significant reduction in nannofossil abundance accompanied by the presence of organic matter in the rock, which was significant especially in the Kardolína section. The signal of the last occurrence of *Prinsiosphaera triassica* is overwritten by the reworking of Upper Triassic material into Jurassic strata within the boundary clay interval. The presence of representatives of Watznaueriaceae in the Jurassic Kopieniec Formation is surprising and might indicate hiatus in the TJB in the studied sections. We are also presenting the results of a newly developed method for the extraction of calcareous nannofossils from indurated rocks.

Key words: Calcareous nannofossils, biostratigraphy, taphonomy, Rheatian, Hettangian, Tatra Mountains.

Katarína Holcová [katarina.holcova@natur.cuni.cz; ORCID: https://orcid.org/0000-0002-8371-3510] and Matic Rifl [riflmatic@gmail.com; ORCID: https://orcid.org/0000-0003-4816-9502], Institute of Geology and Palaeontology, Faculty of Sciences, Charles University, Albertov 6, Praha 2, Czech Republic. Jozef Michalík [michalikuvz@gmail.com ; ORCID: https://orcid.org/0000-0003-2541-0666] Earth Science Institute, Slovak Academy of Science, Dúbravská 9, P.O. Box 109, 84005 Bratislava, Slovakia.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (for details please see creativecommons.org), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Full text (3,476.1 kB) |
Supplementary file (134.1 kB)