Calcareous nannoplankton from the Uppermost Triassic in Southern Alps Slovenia

Matic Rifl

Institute of Geology and Palaeontology, Albertov 6, Prague 2, 128 43, Czech Republic. rifl.matic@gmail.com

Katarína Holcová

Institute of Geology and Palaeontology, Albertov 6, Prague 2, 128 43, Czech Republic

In Slovenia, the Upper Triassic limestone outcrops represent one of the most widespread lithologies. Most of them are now exposed in the mountain faces in Southern Alps and steep hills in the External Dinarides. The Upper Triassic carbonate successions were deposited on the passive western margin of Pangea facing the Tethys Ocean. These sediments were tectonically uplifted through the convergence and subduction processes, now allowing us to get an insight into the formerly predominantly marine environments. Norian and Rhaetian beds in Slovenia lie with a conformity on Carnian rocks and they show continuous upwards transition into different settings of the Lower Jurassic. The aim of this research was a preliminary study of the uppermost Triassic calcareous nannoplankton.

During the Late Triassic, the formation of the Central Atlantic Magmatic Province propagated changes governed by relatively short-term pH oscillations which reshuffled the balance of the global oceanic biogeochemical cycles. Despite the number of scientific publications focusing on Late Triassic nannofossils, little is known about nannoplankton assemblages during their first mass extinction near the Triassic – Jurassic boundary. The Upper Norian to Rhaetian Slatnik Formation, located in the Kobla Nappe complex, is seen as a continuous basinal development from the Upper Triassic to Lower Jurassic facies. Samples were taken from the uppermost Triassic part of the Povdnar section which is composed from thin bedded to platy marlstones and marly limestones, which are interpreted as hemipelagic or partly distal turbiditic. Extraction of coccoliths from the carbonate rocks is challenging due to the diagenetic overprint. The samples were crushed in mortar and dry-sieved over a 0.02 mm sieve. The crushed sediment was frozen and then boiled in water with added dispersion agent. Finally, the calcareous nannoplankton was studied from the smear slides in 200 fields of view. With this approach, we could confirm that calcareous nannoplankton occurs more frequently in the marlstone than in marly limestones. Identified assemblage is mostly represented by recrystallized nannoliths belonging to *Prinsiosphaera triassica* (Jafar, 1983) and more rarely *Eoconusphaera zlambachensis* (Kristan-Tollman, 1988). Future research will focus on the further steps in wet sieving and sample enrichment. We will sieve the sample with a 0.0063 mm sieve and dilute to the uniform volume. For the sample enrichment we have assembled a multi-staged apparatus that enables a repeated wet vacuum powered acoustic microfiltration of particles smaller than 0.001 mm, that ends with the collection vessel. The calcareous nannoplankton will be further studied under Scanning Electron Microscope. Finally, the results of the diversity and abundance as well as facies dependancy will be compared to another upper Norian – Rhaetian section in Slovenia and Western Carpathians in Slovakia.