Radiolarian biostratigraphy and microfacies of Upper Triassic radiolarites from the Central and Western Serbia

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The age and provenance of Triassic radiolarites in the Serbia is crucial to understand the Triassic-Jurassic geodynamic history and palaeogeography of the Inner Dinarides. This study focuses on Late Triassic radiolarian assemblages from Rogojevac and Bukovi localities. The sections are located in the central Serbia (Rogojevac locality) and western Serbia (Bukovi locality) and represent the easternmost and one of the westernmost site with Triassic radiolarites in Serbia.

The studied radiolarites at the Rogojevac locality (open pit mine), about 17 km NW of Kragujevac (44°01’31″N; 20°46’30″E) are considered as parts of the Upper Jurassic ophiolitic mélange (former “Diabase-Chert Formation”; Brković et al., 1978). The age of these radiolarites was believed to be Late Jurassic, but direct age data were not available. The folded radiolarite succession from the Rogojevac locality consist of approximately 50 m thick dm-bedded reddish and mostly strongly recrystallized radiolarites with white-yellowish volcanic ash intercalations. We studied radiolarite samples for their microfacies characteristics and their biostratigraphic age. Three radiolarian samples (RG 1, RG 6 and RG 8) yielded determinable and moderately preserved radiolarian assemblages. All samples are dominated by *Capnuchosphaera* and numerous multicyrtid nassellarians. In sample RG 1 rare specimens of *Capnodoce* occur. The examined radiolarian assemblages show that the radiolarite succession in the Rogojevac quarry was formed during the latest Carnian and Early Norian. Pure radiolarites of this age are only known to be formed on the ocean floor; they are part of the sedimentary cover sequence on top of the Neo-Tethys ophiolites. These results confirm that the radiolarites of the Rogojevac locality are part of the obducted Neo-Tethys ophiolites in Middle-Late Jurassic times.

Radiolarian assemblages of the same age were discovered in a block of radiolarites in the ophiolitic mѐlange on the north-west slopes of Divčibare Mt. (locality Bukovi). Poorly preserved, but relatively rich radiolarian assemblages were extracted from the small, approximately 2 m thick bedded reddish radiolarite block. Four radiolarian samples (SCG 101, SCG 102, SCG 103 and SCG 104) yielded moderately to badly preserved radiolarian assemblages. All samples are dominated by multicyrtid nassellarians. The samples SCG 102 and SCG 103 are characterized by the presence of the *Xiphothecella rugosa* (Bragin).

Identical Upper Triassic radiolarites are widespread known as blocks in the ophiolitic mélanges below the Dinaridic ophiolite nappe and derive there undoubtly from the sedimentary cover of Neo-Tethys ocean floor (e.g., Gawlick et al., 2016). We attribute the Upper Carnian to Lower Norian radiolarites therefore as part of the overthrust/obducted Neo-Tethys Ocean during Middle to early Late Jurassic times with subsequent eastward gliding during unroofing since the Tithonian.

References

Brković T., Radovanović Z., Pavlović Z. 1978. Basic Geological Map of the SFRY 1:100 000. Explanatory booklet for the Sheet Kragujevac. Savezni geološki zavod, Beograd (in Serbian).

Gawlick H.-J., Missoni S., Suzuki H., Sudar M., Lein R., Jovanović D. 2016. Triassic radiolarite and carbonate components from the Jurassic ophiolitic mélange (Dinaridic Ophiolite Belt). Swiss Journal of Geosciences, 109 (3): 473–494.

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