Pliensbachian (Early Jurassic) radiolarians from Mt. Rettenstein, Northern Calcareous Alps, Austria

Tim Cifer[1], Špela Goričan[1], Hans-Jürgen Gawlick[2], Matthias Auer[2]

[1] *ZRC SAZU, Paleontološki inštitut Ivana Rakovca, Ljubljana, Slovenia; e-mail: tim.cifer@zrc-sazu.si*
[2] *Montanuniversität Leoben, Department of Applied Geosciences and Geophysics, Leoben, Austria*

Pliensbachian radiolarians are rare in the western Tethyan realm. Up until now, only two localities with isolated samples containing well-preserved radiolarians have been described. These localities belong to the Gümüşlü Allochthon in Turkey and to the Dürrnberg Formation in the Northern Calcareous Alps in Austria. Continuous stratigraphic sections with well-preserved radiolarians are known only from Haida Gwaii (Queen Charlotte Islands) in British Columbia, Canada. The aim of our study on well-preserved and diverse assemblages from Mt. Rettenstein is to provide new data on the stratigraphic distribution of taxa and to compare low-latitude (Tethyan) and mid-latitude (Haida Gwaii) faunas. Precise radiolarian dating will contribute new data to the geology of Mt. Rettenstein.

Mt. Rettenstein is located near Salzburg, at the southern rim of the Northern Calcareous Alps. A complete succession of Lower, Middle and Upper Jurassic sediments tectonically overlies the Middle Jurassic Hallstatt Mélange. The succession starts with an approximately 60 m thick sequence of marly and slightly siliceous bedded limestones (Sinemurian-Lower Pliensbachian). These limestones become more calcareous towards the top and pass abruptly into red marls and red marly limestones of the Adnet Formation with rich ammonite fauna, which indicates late Carixian (Early Pliensbachian) to Early Toarcian ages (Meister and Böhm, 1993). Above a hiatus, the first Middle Jurassic sediments are condensed Bajocian Bositra/Protoglobigerina limestones of the Klaus Formation. They are followed by Bathonian to Oxfordian radiolarites of the Ruhpolding Radiolarite Group. The overlying unit is Kimmeridgian-Tithonian shallow-water limestones of the Plassen Formation, which starts with a thin sequence of slope facies breccias (Auer *et al*., 2009).

Five samples taken from the southern flank and one taken from the western flank of the mountain, were studied for radiolarians. Altogether, 71 species belonging to 34 genera have been identified so far. Four samples were assigned to the early Early Pliensbachian *Zartus mostleri – Pseudoristola megaglobosa* Zone, based on FADs of *Bipedis fannini* Carter, *Canoptum anulatum* Pessagno & Poisson and *Noritus lillihornensis* Pessagno & Whalen, and on LADs of *Cyclastrum scammonense* Whalen & Carter and *Cyclastrum veracruzense* Whalen & Carter. Two samples were more loosely dated and assigned to the Early Pliensbachian *Z. mostleri – P. megaglobosa* or *Hsuum mulleri – Trillus elkhornensis* Zone based on *Lantus obesus* (Yeh), *Lantus praeobesus* Carter, and *Praeconocaryomma whiteavesi* Carter. Some of the identified taxa have not been found in samples of this age yet. These are *Tozerium* Whalen & Carter, *Ares sutherlandi* Whalen & Carter, *Cuniculiformis plinius* De Wever, *Gorgansium morganense* Pessagno & Blome, *Xiphostylus simplus* Yeh, and *Empirea hasta* Whalen & Carter.

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