

Late Cretaceous pelagic sedimentary rocks on the extrusive rocks of the Oman Ophiolite and their radiolarian age

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The Oman ophiolite, a member of the Tethyan ophiolites, crops out over 600 km long and up to 150 km wide in the Oman Mountains. The ophiolite suite consists of mantle peridotites, gabbros, a sheeted dyke complex, and extrusive lavas overlain by pelagic sediments. The basaltic rocks have been subdivided into three volcanic units: the V1 lava with the N-MORB signature, the V2 lava formed by intra-oceanic volcanism, and the V3 lava generated by intra-plate seamount magmatism (Ernewein et al., 1998). Pelagic sediments with metalliferous sediments (umber) commonly occur at the boundaries between these volcanic units. We are now reinvestigating radiolarian biostratigraphy of the pelagic sediments, and here we present newly-obtained Turonian radiolarians from micritic limestone overlying the V2 lava.

Radiolarian study for the micritic limestone was conducted in "South of Wadi Hilti" section, located in an area about 40 km west of Sohar. At this section, the radiolarian-bearing micrites with a total thickness of 6 m conformably overlie the uppermost part of the V2 lava. In this section, basaltic rocks of the V3 lava thrust over the micrite. The micritic limestone is thinly bedded (3 to 5 cm thick) and light brown in color in the lower part and red in the upper part. Numerous radiolarian shells can be observed in the muddy matrix of micrite but they are commonly calcified. Total 11 samples were collected from this section for radiolarian biostratigraphic analyses. Well-preserved radiolarians were recovered from two samples of red micrite. From these samples, we recovered *Dictyomitra formosa* Squinabol, *Pseudotheocampe tina* (Foreman), *Amphipyndax stocki* (Campbell and Clark), *Mylocercion* sp., and *Rhopalosyringium scissum* O'Dogherty. According to O'Dogherty (1994), the first appearances of *P. tina* and *R. scissum* are near the base of Turonian. Thus, these radiolarians are assignable to early Turonian or slightly younger age.

Very recently, the details of volcanostratigraphy and geochemical features for the upper part of the V2 lava including boninite are becoming clearer (S. Miyashita, pers. comm.). Compilation of the present result, in combination with the volcanostratigraphy and future reinvestigation of radiolarian biostratigraphy across a much wider area, will provide essential information on age constraints and formation process of the Oman ophiolite.

Keywords: Oman Ophiolite, Late Cretaceous, radiolarians, pelagic sedimentary rocks