

オマーンオフィオライトにおける後期白亜紀遠洋性堆積物の岩相層序と放射虫化石年代

Lithostratigraphy and radiolarian age of Late Cretaceous pelagic sedimentary rocks within the Oman Ophiolite

栗原 敏之^{1*}, 原 康祐¹

Toshiyuki Kurihara^{1*}, Kousuke Hara¹

¹ 新潟大学大学院自然科学研究科

¹ Graduate School of Science and Technology, Niigata University

Radiolarites and micritic limestone within the northern Oman Ophiolite contain essentially continuous pelagic sedimentary records of the central Tethyan Ocean from Cenomanian to Coniacian or Santonian (Tippit et al., 1981; Hara and Kurihara, 2012). We are now reinvestigating the lithostratigraphy and radiolarian biostratigraphy of Late Cretaceous pelagic sedimentary rocks distributed in the Wadi Jizzi and surrounding areas, 40 km west of Sohar, northern Oman. We here present lithofacies of the pelagic sediments and radiolarian faunal change from late Cenomanian to Turonian.

Pelagic sediments associated with metalliferous sediments (umber) in the ophiolite are overlying basaltic extrusive rocks. Based on the geochemical feature, 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). We investigated the stratigraphic distribution of radiolarians in pelagic sedimentary sequences overlying the V1 lava at Suhaylah section. The sequence of the analyzed section consists of lower metalliferous and siliceous rocks (umber and red mudstone with chert intercalations) and upper micritic limestone. In these lithologies, numerous radiolarian tests are loosely packed within the matrix, and well-preserved specimens can be extracted by a combined HF-HCl etching technique. In this section, a profound faunal change was detected; *Thanarla pulchra* and *Guttacapsa biacuta* were recovered from lower chert, indicating late Cenomanian in age, and *Rhopalosyringium scissum* and *Dictyomitra formosa* occur abundantly in upper chert and micrite. *R. scissum* first appeared near the base of Turonian (Musavu-Moussavou et al., 2007). Radiolarian occurrences indicate that the Cenomanian/Turonian boundary is present in the lower siliceous sequence. At Lasail and South Zabyan sections, pelagic sedimentary sequences overlying the V2 lava are well developed. The sequence at Lasail section consists of highly altered metalliferous sediments, red mudstone with chert intercalations, and micritic limestone, in stratigraphic ascending order. Hara and Kurihara (this volume) presents the result of detailed lithologic observation and radiolarian biostratigraphy of this section, and reports the occurrence of *Dictyomitra koslovae*, indicating late Coniacian to Santonian. In the Hilti area, we also have observed several good sections of chert and micrite overlying the V2 lava (Kurihara and Hara, 2012). A preliminary biostratigraphic result of this area has been presented by Kurihara and Hara (2012), and additional detailed lithostratigraphic descriptions are presented by Hara et al. (this volume).

At this time, we have obtained late Cenomanian to Coniacian (or Santonian) radiolarians from several sections of different tectonic settings deduced from the volcanostratigraphy and geochemistry of basaltic extrusive rocks. Time scale given by the radiolarian biostratigraphy shows potential usefulness to give age constraints for change in the tectonic setting of basaltic rocks. In addition, faunal transition of radiolarians will provide information on marine environmental changes in the central Tethys during Late Cretaceous.