Earliest Cretaceous spherical radiolarians from the Mariana Trench

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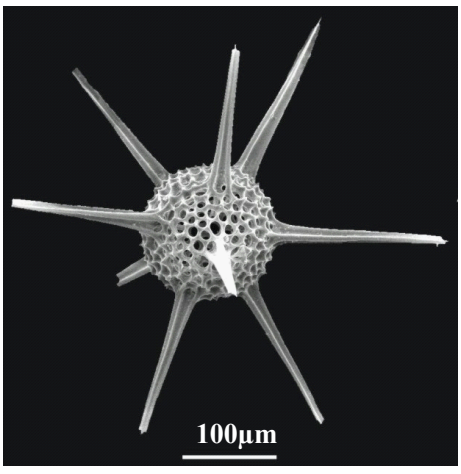
The spherical radiolarians treated in this study were recovered from the earliest Cretaceous tuffaceous claystone (181-R003) collected by Japanese submersible “Shinkai 6500” from a normal-fault scarp of a seamount east of the Mariana Trench, at a water depth of about 6,316 m. Matsuoka (1998) identified and illustrated 256 radiolarian species by SEM photos from this sample, most of which are new and still undescribed. He estimated the age of this radiolarian fauna to be earliest Cretaceous (lowest Berriasian) by the comparison with coeval radiolarian faunas and calcareous nannofossil flora.
The richness and very good preservation of the radiolarian fauna make it quite adequate and favorable for detailed studies of spherical radiolarians. Many new radiolarian taxa were described in the last few decades, but most of them were from poorly preserved faunas or, even if they are well preserved, observation of shell structures were only for external morphological characteristics. Therefore, we have quite limited information concerning the initial shell structures of them. This study describes many new species with spherical forms attributed to the Spumellaria and Entactinaria. Occurrence of the earliest Cretaceous well-preserved Spumellaria from the Mariana Trench may present significant data for the taxonomy and biostratigraphy, and in understanding of the evolution and phylogeny of the group of these radiolarians. Although Entactinaria is common during the Paleozoic, Triassic, Late Cenozoic and Recent faunas, there are only few taxa were described in the Jurassic, Cretaceous and Early Cenozoic. This group of Radiolaria is rather frequent in some fossil faunas as mentioned above, however, the taxonomical and biostratigraphical studies have not sufficiently been studied yet due to the difficulty in reorganizing the initial spicules. We describe several types of the initial spicule systems of the families Centrocubidae, Entactiniidae, Polyentactiniidae and Quinquecapsulariidae. These radiolarians provide important data, filling the gap between Triassic and Cenozoic initial spicule-bearing spherical radiolarians.



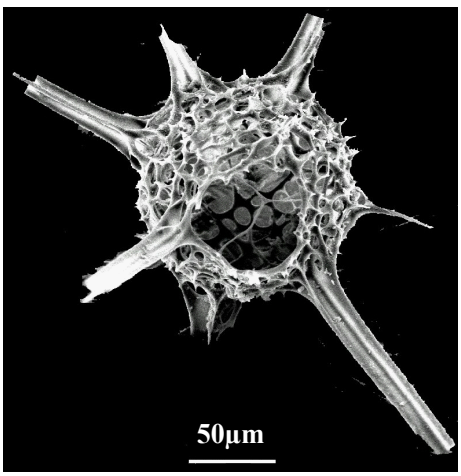


Fig. SEM photos of selected spherical radiolarians

次回のお知らせ

日時：１１月１７日（水）　１７時より

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