Japan Geoscience Union Meeting 2013
(May 19-24 2013 at Makuhari, Chiba, Japan)

MIS28-P01 Room:Convention Hall Time:May 19 18:15-19:30

Os isotope stratigraphy of ferromanganese crust in the Pacific Ocean and Philippine Sea

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We report the Os isotope stratigraphy of Fe-Mn crusts collected from the Takuyo #5 and MC10 Seamounts in northwestern Pacific Ocean and Ryusei Seamount in the Philippine Sea. Based on the depositional age of Fe-Mn crusts dated by Os isotopes together with major and trace element compositions determined by ICP-QMS analyses, we will discuss growth rate, geochemical signature and genesis of Fe-Mn crusts.

Keywords: ferromanganese crust, geochemistry, Re-Os isotope, Pacific Ocean, Philippine Sea

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Geology and radiolarian ages of the Kamiaso unit in the Mino-Seki area, Gifu Prefecture, central Japan

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The Mino terrane, one of the disrupted terranes in southwest Japan, is divided into several tectonostratigraphic units on the basis of composition, fabric and age. However, there is a problem that these data are biased, because detailed studies have been conducted only in limited areas. The Mino-Seki area of the central part in Gifu Prefecture is one of such areas. According to Wakita (1988b), this area is occupied by the Kamiaso unit that is characterized by repeating coherent chert-clastic sequences.

As a result of a detailed field work, accretionary complexes in the Mino-Seki area are divided into an upper or coherent unit and lower or melange unit, based on differences in lithology and geological structure.The upper unit is characterized by a tectonic pile composed of chert-clastic sequences that retain the oceanic plate stratigraphy. Middle to Late Triassic radiolarians were obtained from chert. The lower unit includes conglomerate, melange and alternating beds of chert and limestone unlike the upper unit. There are also differences in lithology of the chart. Black chert with weathered red surface is widely distributed along the Nagara River. These lithofacies generally are not recognized the Kamiaso unit. Chert samples yield Middle Triassic to Early Jurassic radiolarians, while siliceous mudstone samples yield Middle Jurassic radiolarians. A chert sample in alternating beds of chert and limestone yields of Late Triassic radiolarian. Igo and Koike (1975) reported late Norian conodonts from a limestone sample in alternating beds of chert and limestone.

The lower unit may be correlated to a tectonostratigraphic unit other than the Kamiaso Unit on the basis of composition, fabric and radiolarian ages.

Keywords: Mino terrane, Kamiaso unit, Mino-Seki area, chert, siliceous mudstone, radiolaria

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Benthic foraminifers on the observational buoy: Evidence of the meroplankton stage in their life

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Colonization of new habitat of benthic foraminifers is related to their diversion, survival strategies and evolutions. However their dispersal mechanisms are not well documented and still poorly understood. Here we report a new evidence of floating benthic foraminifers communities in the open ocean. They had lived on the stems of hydrozoan attaching to observational moorings in the Pacific Ocean.

Physical and biogeochemical observational mooring systems were deployed at the Station S1 (30N, 145E, water depth: 5,900m). Moored periods were from August 2011 to July 2012. Hydrozoan attaching on the mooring systems were observed on the surface of sediment trap and float at shallower depths (˜320 m) and we could not observed hydrozoan at the 550 m water sediment trap. More than 300 individuals of benthic foraminifers attached of the surface of hydrozoan body. Fourteen living benthic foraminifers were identified under the microscope. Some of them were sessile and shallow water species. It is noteworthy that some aggulutinated specimens were also identified: They made their shells by using other calcareous plankton (i.e. planktic foraminifers, coccolithophores, and calcareous dinoflagellata). Although it is known that only 5 species has meroplanktic (temporary planktic) stage in their life, there are no reports for above benthic foraminifers since now. Our finding suggests that benthic foraminifers which has meroplanktic life stage exist much further in the nature.

Keywords: Benthic foraminifera, agglutinated foraminifera, meroplankton, Hydrozoan, Pacific Ocean

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Mesozoic radiolarian biostratigraphy in pelagic sediments in the Kermanshah area, west Iran

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The ophiolite belts in Iran are important regions to elucidate paleoenvironmental reconstruction of the entire Neo-Tethys. Pelagic sequences associated with ophiolitic rocks are well exposed in the Kermanshah area, west Iran. In our field survey in 2011, we worked at several localities of the pelagic sequences. Radiolarian analysis revealed that the pelagic sequences are categorized into two groups: Upper Triassic sequence represented by the Gohareh section and Middle Jurassic-Lower Cretaceous sequence represented by the Bisetun section.

The Gohareh section is composed mainly of red bedded chert with alternating beds of chert and limestone. Some micritic limestone beds contain nodular cherts. Several samples of red chert yield moderately preserved Late Triassic radiolarians including Tritortis(?) sp. and Capnucosphaera sp. The Bisetun section consists of red and green chert. Limestone-dominated intervals are also recognized in the section. Middle Jurassic to Early Cretaceous radiolarians were obtained from red and green chert samples. Identified radiolarian zones include the Striatojaponocapsa conexa Zone (middle Bathonian-late Callovian), Kilinora spiralis Zone (Oxfordian), Hsuum maxwelli Zone (Kimmeridgian), and Pseudodictyomitra carpatica Zone (Tithonian-early Valanginian).

Gharib and De Wever (2010) reported Mesozoic radiolarians ranging in age from early Pliensbachian to Turonian in the Kermanshah area for the first time. Our research adds the occurrences of Late Triassic radiolarians from pelagic sequences together with Middle Jurassic-Early Cretaceous radiolarians. The pelagic sequences in the study area were accumulated at different depositional sites of the Neo-Tethys. Our research clarified that the depositional history of the ophiolitic belts in west Iran, part of the Neo-Tethys, can be traceable to the Late Triassic.

Keywords: Radiolaria, siliceous sediment, pelagic, Mesozoic, Kermanshah, Iran

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Lithofacies and Late Cretaceous radiolarians of pelagic sediments on the V2 lava of the Oman Ophiolite

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The Oman Ophiolite 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 commonly occur at the boundaries between these volcanic units and consist of metalliferous sediments, red shale, chert, and micritic limestone. The V2 and V3 lavas are widely distributed in the Wadi Hilti area, about 25 km west of Sohar, northern Oman Mountains. Very recently, the emplacement mechanism of the V3 lava was studied by Umino (2012). Pelagic sediments, about 50 m thick at a maximum, overlie V2 effusive rocks and are covered by the V3 lava. The sediments also occur within the V3 lava. We observed lithostratigraphies of pelagic sediments for the following sections. 073 section: This section is composed of lower dark red purple metalliferous sediments and upper red shale intercalated with micritic limestone. The total thickness of these sediments is 12 m. 254 section: This section consists of red siliceous shale (3.5 m), black siliceous shale (1 m), and brown chert (0.5 m), in stratigraphic ascending order. 029 section: we measured light gray and red micritic limestone of ca. 7 m thick. The following species have been obtained from red micrite of 029 section (Kurihara and Hara 2012): *Dictyomitra formosa* Squinabol, *Pseudotheocampe urna* (Foreman), and *Rhopalosyringium scissum* O'Dogherty. Based on O'Dogtherty (1994) and Musavu-Moussavou et al. (2007), *R. scissum* first appeared near the base of Turonian. Thus, these radiolarians are assignable to early Turonian or slightly younger age. Future detailed work for radiolarian biostratigraphy of these pelagic sediments will provide information about the age constraints for igneous activities of the V2 and V3 lavas.