Bioturbation in the Southern Ocean: its paleontological and sedimentological implications

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Deep-sea floor is the largest single marine ecosystem on Earth and contains abundant benthic fauna living on and in the seafloor sediment such as gastropods, bivalves, polychaetes, echinoderms, and crustaceans. The benthic fauna are important in the seafloor environments, because they mix sediments, disrupt microstratigraphy, and influence the biogeochemistry of seafloor sediment. The process of biomixing of sediment is known as bioturbation. The seafloor of the Southern Ocean is characterized by abundant food supply from the surface waters thereby expected to be intensively disturbed by bioturbation. Hence, investigating characteristics of bioturbation in this area is essential for further understanding on organism-sediment interactions, and is also important for sedimentology and paleontology. In this presentation, we review previous biological and ichnological studies on the deep-sea settings in the Southern Ocean, and show preliminary result of our ongoing research project on bioturbation and biogeochemical cycles under different settings in the area, on the basis of sediment cores collected during the R/V *Hakuho-maru* cruise KH-19-6 leg4.

Keywords: Benthos, bioturbation, sediment

