

Oral Presentation

Influences of Holocene environmental changes on submarine cave ostracode community and species diversity

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Submarine cave is a unique ecosystem where some “living fossil” species have been discovered, probably due to its dark and isolated nature. However, the long-term community history of organisms living in submarine cave remains poorly understood. Here, fossil ostracode faunal and diversity changes during the past 7,000 years are examined with the use of 2 sediment cores obtained from Daidokutsu submarine cave in Okinawa, Japan. Ostracode fauna in these cores is dominated by shallow marine reef species (e.g. *Loxoconcha japonica*, *Xestoleberis* spp., *Paranesidea* spp., and *Cytherella* spp.), besides, it includes some typical submarine cave species (e.g. *Kasella ryukyuensis*, *Cardobairdia* sp., *Microcythere* spp., and *Bythocypris* sp.). TempOral Presentation changes in relative abundances of typical submarine cave species and shallow marine reef species reflect changes in connectivity between cave and the outside shallow marine reef environment during the Holocene. Based on multi-dimensional scaling and cluster analysis, the faunal composition changes in the cores can be divided into 3 stages, which are possibly in the sequence of 1) cave environment connected with open ocean, 2) transitional stage, to 3) cave environment with limited exchange with open ocean. These results suggest that Daidokutsu cave has gradually changed from a relatively open cave to current dark and enclosed cave, and such dark and enclosed cave environment has only had a history of around 1000 years.