

化学合成生物群集の進化生態に基づく 熱水活動史の推定

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Estimation of History of Hydrothermal Activities Based on Evolutionary Ecology of Chemosynthesis-based Communities

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Abstract

In deep-sea reducing environments, such as hydrothermal vent fields and cold seep areas, biological communities with huge biomass are often observed. Such communities associated with bacterial chemosynthesis, which are composed of species endemic to these environments, are founded with hydrothermal activities and succeed with changes of activities. Over a longer timescale, genetic deviations among local populations and speciation occur during the course of a series of activities and finally new faunal groups diverged. We attempt to estimate the ages of various hydrothermal phenomena on various timescales from 10 to 10^7 years on the basis of the evolutionary ecology of animals endemic to hydrothermal vents as part of the "Taiga project". In this paper, we introduce communities in hydrothermal vent fields and describe the principals of methodologies for age estimation, which we are now planning, and the expected results.

Key words : chemosynthesis-based communities, succession, molecular phylogeny, hydrothermal activity, age estimation

キーワード : 化学合成生物群集, 遷移, 分子系統学, 熱水活動, 年代推定

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