

Dispersal and population maintenance of two hydrothermal vent shrimps, *Alvinocaris longirostris* and *Shinkaicaris leurokolos*

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Characterization of spatial distribution in deep-sea chemosynthetic communities is important to elucidate their diversification history. Shrimp, is one of the gregarious animals in several hydrothermal vent fields, in deep-sea chemosynthetic environments is mostly classified into a family Alvinocarididae currently comprising three subfamilies, Alvinocaridinae, Mirocaridinae and Rimicaridinae. In the northwestern Pacific hydrothermal vent fields, two shrimp species, *Alvinocaris longirostris* (Alvinocaridinae) and *Shinkaicaris leurokolos* (Rimicaridinae), inhabit a single hydrothermal vent field. Our recent findings showed the diversification of dispersal and population-maintenance strategies of these shrimps based on population genetic analyses and culture experiments. Population genetic structures of these shrimps showed different characteristics; *A. longirostris* showed a single star-like haplotype network with low genetic diversity even in populations inhabiting both vent and seep in East China Sea and Pacific Ocean, whereas *S. leurokolos* showed a more complicated haplotype network than *A. longirostris* with high genetic diversity in populations in vent in East China Sea. The culture experiments showed the different thermal preferences for the reproduction of these two shrimps; eggs of *A. longirostris* hatched in low temperature and those of *S. leurokolos* hatched in high temperature. These facts indicate that chemosynthetic animals have different environmental preference with different dispersal and population-maintenance strategies, and this ecological diversification leads habitat isolation in a single hydrothermal field by a single animal family. The information on ecological diversification will contribute to establish conservation strategies in deep-sea mining.