

New distribution and implication of dispersal capability of a deep-sea chemosymbiotic squat lobster *Shinkaia crosnieri*

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Distribution range and dispersal capability are important for conservation and understanding changing ocean. A galatheid squat lobster, *Shinkaia crosnieri*, is the dominant animal harboring epibiotic symbionts, in methane-rich deep-sea chemosynthetic environments both of hydrothermal vent and methane seep in the northwestern Pacific. Here we report that a juvenile of *S. crosnieri* inhabits in methane-poor hydrothermal vent field in the northwestern Pacific, with juveniles of another squat lobster species *Munidopsis myojinensis*, which does not have symbiotic microbes. Genetic analysis inferred that the juvenile seemed to migrate from the population in methane seep sites in South China Sea, rather than those in hydrothermal vent fields in Okinawa Trough, East China Sea. The present observation indicates that the range of dispersal of *S. crosnieri* extend north to the Myojin Knoll, while the dispersal capability is not simply correlate to horizontal distance. Furthermore, the present findings may suggest that the settlement of the vent/seep specific animal with symbionts are controlled by phylogenetic constraints rather than environmental specific factors.

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