

**The Exhibition, Research and Education of *Lamellibrachia satsuma*
in the Kagoshima City Aquarium**

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Vestimentiferan tubeworms (Annelida: Polychaete) inhabit sulfide-rich environments like deep-sea hydrothermal vents or seeps, and harbor sulfur-oxidizing symbiotic bacteria intracellularly. This kind of animal is called chemosynthesis-based animals. The vestimentiferan tubeworm *Lamellibrachia satsuma* has been discovered at depth 82 m in Kagoshima Bay in 1993 as the first species of Vestimentiferan tubeworms in Japan.

Lamellibrachia satsuma has been exhibited for over 20 years since the Kagoshima City Aquarium opened in 1997. *L. satsuma* has been kept in an aquaria and sodium sulfide solution was supplied for chemosynthesis. This species was found to settle on whale bones that were experimentally deployed beside *L. satsuma* habitats in Kagoshima Bay in 2010. It is suggested that hydrogen sulfide which is generated by degradation of oil contained in whale bone, attracted larvae of *L. satsuma* and supported chemosynthesis. Since 2013, we have been trying to rear the *L. satsuma* collected by this method. This method helps to maintain the original population of *L. satsuma* in Kagoshima Bay, because of the method collects the new population on the whale bone.

The *L. satsuma* habitat in Kagoshima Bay is the shallowest area where vestimentiferan tubeworms inhabit in the world. For the reason, Kagoshima bay and *L. satsuma* are a good for studies of vestimentiferan tubeworms. We have been revealed population characteristics of *L. satsuma* in Kagoshima Bay. This study showed that the individuals of *L. satsuma* in Kagoshima Bay use various-origin sulfide which is generated from volcanic activity and degradation of sediments by bacteria even in the same colony. Furthermore, we have been shown the relative age composition in and among the colonies of *L. satsuma* by using concentration of lipofuscin which is a kind of protein.

The educational projects and special exhibition of the *L. satsuma* have been also conducted in the Kagoshima City Aquarium.