

琉球大学学術リポジトリ

ナガフクロムシ（甲殻亜門, 蔓脚下綱, 根頭上目）の分類学的研究と宿主ヤドカリ選択の地理的変異

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論文要旨

論文題目

Taxonomical studies of peltogastrids (Crustacea, Cirripedia, Rhizocephala) and their geographical variation of the choice of the host hermit crabs

(ナガフクロムシ (甲殻亜門, 蔓脚下綱, 根頭上目) の分類学的研究と宿主ヤドカリ選択の地理的変異)

The superorder Rhizocephala (Crustacea: Cirripedia) comprises a group of uniquely specialized parasites that infest a range of other crustaceans such as decapods, isopods, cumaceans, and barnacles. The adult rhizocephalan consists of an external reproductive body (externa) that connects through a stalk to rootlets (interna) inside the host. The external morphology is extraordinarily simplified, lacking appendages, segmentation, and almost all organs normally expected in a crustacean. Since rhizocephalans have few taxonomic features in external morphology, histological examination is usually indispensable for the species identification. Of the 260 described species of Rhizocephala, whereas 170 species are primarily known from crabs, only 26 species is recorded for Peltogastridae that parasitize hermit crabs. The species parasitizing hermit crabs can be found only when the hard shell is removed from the host. These species are, therefore, inconspicuous in the field, even if they may be commonly distributed in shallow waters. In order to elucidate the species diversity and their host specificity in peltogastrids, I investigated the rhizocephalans on hermit crabs inhabiting shallow water from Taiwan to Boso Peninsula Japan along the Kuroshio Current.

Three species of Peltogastridae were described as new species from Okinawa Island and mainland Japan: they are *Dipterosaccus shiinoi* Yoshida, Hirose, and Hirose, 2013, *Ommatogaster nana* Yoshida and Osawa in Yoshida, Osawa, Hirose, and Hirose, 2011, and *Peltogaster postica* Yoshida and Osawa in Yoshida, Osawa, Hirose, and Hirose, 2011. The genus *Ommatogaster* was established for *O. nana* based on the position of the visceral mass and the stalk of the externa and the presence of a nauplius eye in the larvae. Although rhizocephalan taxonomy is essentially based on histological sections of externa, I found that the morphology of the mantle aperture exhibits significant differences between *Dipterosaccus indicus* and *D. shiinoi*, and between *Peltogaster paguri* and *P. postica*. Additionally, I identified the peltogastrid on *Pagurus filholi* as *Peltogaster postica* in Shirahama and Sanriku where “*Peltogaster paguri*” was recorded by Shiino (1943) and Nagasawa et al. (1996), respectively. *Peltogaster paguri* was originally described from northeastern Atlantic, while this species has been widely reported from Japanese shallow water. In the present survey, I did not collect *Peltogaster paguri* but found *Peltogaster postica* on the presumable host hermit crabs. I suppose that the Japanese *Peltogaster paguri* in shallow water is a misidentification of *Peltogaster postica*.

I surveyed the species combinations of peltogastrid rhizocephalans and host hermit crabs. Host species is not always the primary factor affecting host choice, and rhizocephalans may choose a host that inhabits the parasite's preferred environment within range of potential host species. I suggest that the variation of the host choice in peltogastrid species is an example of local adaptation in marine systems.

氏名 吉田 隆太