



Epibiotic barnacles (Crustacea: Cirripedia: Thoracica) collected by the Kumejima 2009 Expedition, with descriptions of two new species*

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Abstract

The present study reports on the epibiotic barnacles collected by the Kumejima 2009 Expedition. Six cirripede species from five genera within four families were identified: *Oxynaspis celata* Darwin, 1852, *Euscalpellum* c.f. *squamosum* Hiro, 1937, *Poecilasma obliqua* (Hoek, 1907) and *Platylepas hexastylus* (Fabricius, 1798), all of which had been recorded previously from Japanese waters, and two new taxa, *Calantica arcuata* n. sp. and *Oxynaspis ryukyuensis* n. sp. The hosts of the barnacles collected included antipatharian corals, gorgonian corals, a decapod crustacean and a sea turtle.

Introduction

Thoracican cirripedes exhibit high diversity and live in a wide range of habitats, including rocky shores, mangroves, deep-sea hydrothermal vents and cold seeps. Some are epibiotic, attaching to the outer surfaces of a variety of marine species including corals, turtles and decapod crustaceans (Darwin 1854; Anderson 1994).

The cirripede fauna of Japanese waters has been studied extensively by Utinomi/Hiro (Hiro & Utinomi were the same person, see Newman 1981) and Hiro described 26 new cirripede taxa (cf. Newman 1981). Hiro (1937b) recorded 16 continental shelf species (< 300 m depth) from the Pacific Ocean and the Japan Sea. Kumejima Island in the Ryukyus Islands (Fig. 1) is located close to the Okinawa Trough in the East China Sea, which has a different oceanographic current pattern compared to the Philippine Basin in the Pacific Ocean (Chaen *et al.* 1993; Kawabe 1993). Ryukyu waters and the Okinawa Trough house endemic marine species as they are one of the refugia during the Last Glacial Maxima (Voris 2000). For example, the sand bubbler crabs *Scopimera ryukyuensis* Wong, Chan & Shih, 2010, the soldier crabs *Mictyris guinotae* Davie, Shih & Chan, 2010, and the ocyroid crab *Tmethypocoelis choreutus* Davie & Kosuge, 1995, are endemic in Ryukyu waters.

The Kumejima 2009 Expedition conducted a series of trawling and tangle net samples in shallow and deep waters around Kumejima Island, Japan, which yielded a variety of crustaceans, antipatharians, gorgonian corals and a dead sea turtle, some of which had associated epibiotic barnacles. The present paper reports on these barnacles, which includes two undescribed stalked barnacle species of the genera *Calantica* Gray, 1825 and *Oxynaspis* Darwin, 1852. Further studies should focus on the geographical distribution of these two new species to ascertain whether they are endemic in Ryukyu waters.

The undescribed *Calantica* species in the present study has 13 capitular plates and belongs to the Group I species of *Calantica* following Newman & Jones (2011). Previous taxonomic studies on barnacles of the Oxynaspididae have received scant attention (see Zevina 1982; Ren 1983; Foster & Buckeridge 1995). Recently, Van Syoc &