Biodiversity and host-usage of coral-associated barnacles in the West Pacific: spanning from the tropics to the marginal coral communities in Jeju Island, Korea

by

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Abstract

Coral-inhabiting barnacles (Thoracica: Pyrgomatidae) are obligatory symbionts of scleractinian and fire corals. They are important suspension feeders in the coral reef systems and have close relationships with their coral hosts. In the present study, we have conducted extensive SCUBA diving samplings in Jeju Island in Korea, Kochi in Japan, Taiwan, Hong Kong, Malaysia and Papua New Guinea to collect coral barnacles (all have DNA barcode sequenced) and with its coral hosts identified. We attempt to study the biogeography of the coral barnacle species and the latitudinal variation in its coral host usage in the Indo-Pacific region. A total of 3833 individuals of coral barnacles (covered 32 barnacle species) had their DNA barcode sequenced and host identified. Most of the barnacles in the genus Cantellius Nobia, Darwiniella and Galkinia have wide distribution, being presences in Korea, Japan, Taiwan, Hong Kong, Malaysia and Papua New Guinea. However, Cantellius hoegi, Neotrevathana elongatum sp. nov. have narrower distribution, being only found in Taiwan. Comparing the host-usage of the wide spread species, there are latitudinal variation in host-usage in C. euspinulosum and C. arcuatus. In Jeju island, C. arcuata only inhabit Montipora millepora, whilst it can be found in 7 coral species in Taiwan. In Japan, > 90% of C. euspinulosum is found on Montipora coral, whilst > 90% of C. euspinulosum are present on Porites in Taiwan. In Papua New Guinea, C. euspinulosum is collected from Porites, Goniastrea, Montipora and Psammocora. All these coral hosts are present in all sampling locations, suggesting such host change pattern is not related to host availability. There are some species are specialist through the Indo-Pacific, including Darwiniella which are commonly found on Cyphastrea corals and Cantellius septimus are associated with Montipora.

Date : 28 April 2017 (Friday)

Time : 4:00 p.m.

Venue : Padma and Hari Harilela Lecture Theater (LT-C)

(Host faculty: Dr. Karen Chan)

All are Welcome!!