

Larval development and phototaxis of *Striatobalanus tenuis*, a deep sea barnacle

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Abstract

Larval development of many shallow water barnacle species (Crustacea: Cirripedia) has been well studied. In the deep sea, the larval development of some goose barnacles (Order Pedunculata) was briefly described but remained unknown for acorn barnacles (Order Sessilia). In addition, the presence of phototactic behaviors, which are common in larvae of shallow water species, remained controversial in the deep sea where light is limited. In a previous study, nauplius stage I larvae of deep sea barnacles, *Paralepas pedunculata* and *Verruca floridana*, showed positive phototaxis. *Striatobalanus tenuis* (Hoek, 1883) is a deep sea (300~400m) barnacle found in East and South China Sea. It inhabits on rocks, gastropod shells and crab surface and is commonly found as a bycatch of bottom trawl in Taiwan. In this study, we collected adult *S. tenuis* individuals from Kezailiao fishing port and cultivated their fertilized egg masses at 15– 16°C. The hatched larvae were fed with microalgae and water is changed once a week. Precipitation of microalgae, which may disturb larval movement, was frequently removed. Nauplius stages I~IV have been successfully observed. We will further describe morphological characters in details at different larval stages of *S. tenuis* and explore their phototactic behaviors.

Keywords- barnacle, larvae, deep sea, phototaxis,