



## North West Pacific deep-sea barnacles (Cirripedia, Thoracica) collected by the TAIWAN expeditions, with descriptions of two new species

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## Abstract

Taiwan is a large island in north western Pacific waters with the sea floor connecting to two major deep-sea basins, the eastern waters facing the Pacific Ocean (to 4000 m depth) and linking to the Philippine Basin, whilst south western waters are associated with the South China Sea Basin (up to 1000 m). Previously, the biodiversity of Taiwanese deep-sea barnacles had not been studied extensively, due to a lack of deep-sea expeditions and sampling. Recently, several TAIWAN deep-sea cruises investigated the biodiversity of the deep-sea fauna of Taiwan and sampling was conducted to depths of 4000 m. The present study reports on the biodiversity of the deep-sea barnacles of Taiwan, a total of 18 species. One species was previously recorded from Taiwanese waters and 17 are new records, including two new species belong to the genera *Litoscalpellum* and *Aliverruca*.

## Key words:

## Introduction

Taiwan is a large island located in the north western Pacific, supporting a high diversity of shallow water and deep-sea habitats. The waters to the south west of Taiwan connect to the South China Sea Basin (depth to 1000 m). Eastern coasts face the Pacific Ocean, linking to the West Philippine Basin (to 4000 m) and north eastern waters open to the Okinawa Trough (Wang, 1991). The biodiversity of the deep-sea barnacles of Taiwan have received scant attention and few deep-sea species have been reported. Previous records in Taiwan were often focused on intertidal and shallow water species (e.g. Hiro, 1939a, b). In recent years, with support from the National Science Council, Taiwan, several cruises were conducted to survey the deep-sea fauna of Taiwanese waters. Sampling by the TAIWAN expeditions was conducted using benthic French beam trawls in depths to 4000 m (Tsai et al., 2009). The present study reports on 18 deep-sea species collected by the recent TAIWAN expeditions plus collections from deep-sea fishing markets. One species had been previously recorded from Taiwanese waters, two were new species and 15 new records for Taiwanese waters.

## Material and methods

The 4m French beam trawl used in the TAIWAN expeditions is abbreviated as (CP), indicated before the station number. Specimens are deposited in the National Museum of Natural Science, Taichung, Taiwan (NMNS) and the Research Museum of Biodiversity Research Center, Academia Sinica (ASIZCR), and research collections in the coastal ecology laboratory, Academia Sinica (CEL). For stalked barnacles, size (in mm) was measured as capitular length (CL), capitular width (CW) and peduncular length (PL) and for sessilian barnacles as basal rostro-carinal diameter (BD).