

First record of marine wood borer (Mollusca: Teredinidae) *Dicyathifer mannii* Wright (1866) in Sabah, Malaysia, with detailed measurement metrics

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Abstract

The present study describes the new record of *Dicyathifer mannii* under the family Teredinidae Rafinesque, 1815. Sampling was conducted in the mangrove area of Kuala Penyu and sample was collected from dead wood debris. The pallets of *Dicyathifer* is half-conical in shape and 8mm in length. The cone measured 3.9mm in length and 3.6mm in width. The cavity is 1.2mm deep; the curve of the opening on the cone is about 98% of the depth of the cone. Inside the cone cavity, from the center, a ridge with rib-like feature runs down the length of the cavity. Only one species of *Dicyathifer* is recorded and the present species is the first new record described in Malaysia with some additional measurement metrics for future taxonomic identification purposes.

Keywords: Teredinidae, *Dicyathifer*, Measurements, Sabah, Description

Introduction

The first occurrence of *Dicyathifer* was reported by Wright E.P. in 1866 and the species identified was *Dicyathifer mannii*. In 1936, another new species, *Dicyathifer caroli*, was described by Iredale which was later determined to be synonym of *D. mannii* in 2010. Distribution of *D. mannii* had been documented worldwide: Australia (Felbeck, 1990; Brearley et al., 2003; MacIntosh et al., 2012), India (Nair, 1992), Singapore (Tan and Woo, 2010), Indonesia (Mushlich and Rulliaty, 2010), United Kingdom (Shipway, 2013), and Malaysia (Yahya and Lai, 2004).

Several studies related to shipworms conducted in Malaysia, mostly covered the distribution and ecological aspects. Tan (1970) and Chong (1979) discovered that *Teredo* and *Bankia* were the two most common genera found in marine and brackish waters of Malaysia, while Singh and Sasekumar (1994) focused on the distribution of wood borers in Lumut, Perak, followed by Yahya and Lai (2004) in Blunpei Bay Mangrove Area, Sarawak. Lately, the research scope shifted towards the resistance of five different mangrove tree species to marine wood borer attacks (Roszaini and Salmiah, 2014).

Although several ecological studies have been conducted in Malaysia, yet the database on the morphological descriptions of the species for taxonomic identifications in the region is still limited. Although the pallet of the specimen is similar in most species belonging to the same genus but it still shows slight differences as

mentioned in the work of Turner (1966). No detailed measurement metric was mentioned in some of the previous studies causing problems on the morphological comparison between the species. Due to the limited literature and proper taxonomic metrics on the existing species of marine wood borer in the region, it placed researchers in a dilemmatic situation in the species identification. Hence, the present study was undertaken to describe the new record of *D. mannii* under the family Teredinidae Rafinesque, 1815 in Sabah with some detailed measurements on the pallet. This will help in providing the standard measurement metrics for future taxonomic studies.

Materials and Methods

Specimen was collected from dead wood debris found in the mangrove area of Kuala Penyu, Sabah (5°31'49.70"N, 115°41'20.11"E) on 10 March 2019 (Figure 1). Collection of the specimen was carried out by splitting the wood bit by bit and extracting it from the exposed wood of *Rhizophora* sp. The sample was fixed in 10% formalin. The pallets and shells were digested in 10% Hydrogen Peroxide to dissolve any residual organic matter so as to clearly observe the features. The specimen was sorted by examining the shape and features of the pallet. The pallets were then examined under a stereo microscope (Olympus SZ61) with camera attachment (Xcam Alpha 61) and the measurements were carried out using computer software (analySIS getIT and MeasureIT). The measurement metrics are described in Table I. Drawings were produced using computer software