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The Collection of Conidae Fleming, 1822 (Mollusca: Gastropoda) in Sarawak Natural History Museum

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ABSTRACT

This study focuses on the taxonomic study of the gastropod's family, Conidae, in the Sarawak Natural History Museum based on their collection of specimens. A total of 27 specimens were identified, encompassing 15 species, namely *Conus virgo*, *Conus miles*, *Conus hyaena*, *Conus furvus*, *Conus eburneus*, *Conus crosnieri*, *Conus amadis*, *Conus marmoreus*, *Conus geographus*, *Conus guinaicus*, *Conus lividus*, *Conus ebraeus*, *Conus patricius*, and two unidentified species. A dichotomous key is formed according to the specimens found in the museum. It is hoped that this study serves as a basis for further work on gastropods, especially the family Conidae in Sarawak.

Keywords: Mollusca, Conidae, taxonomy, specimens, museum

THE COLLECTION OF CONIDAE FLEMING, 1822 (MOLLUSCA: GASTROPODA) IN SARAWAK NATURAL HISTORY MUSEUM

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INTRODUCTION

Cone shells belong to the diverse family of Conidae Fleming, 1822 (Dutertre and Lewis, 2013). Species of the family Conidae are easily identified through their distinctive cone shaped shells and patterned body (Kohn, 1990). In living marine invertebrates, members of Conidae form among the biggest single genera and are classified into three groups depending on their feeding habits (Gao *et al.*, 2017). They are part of the marine gastropods that are carnivorous and predate on other invertebrates (Ravinesh *et al.*, 2022).

In 1886, R.V. Awdry, the Private Secretary to the Rajah established one of the earliest museums in Borneo which was situated at Kuching after he was authorised to receive contributions for the proposed museum (Sarawak Museum Department, 2021). The established building was designed in 1888 and then extended further to its present form in 1911. It was then turned into a museum to display the natural history collection (Lene, 2020). In Kuching, the Natural History Museum is home to the shell collections and is the main section in this study (Sarawak Museum Department, 2021).

Morphological characteristics can change continuously. The taxonomic classification of several members of the Conidae family is extremely vague. Labels are critical for informing the researcher of what is in a museum, which includes information about origin, identification of the contents, and age (Hester, 2018). Unfortunately, labels can fade, or the specimen might even have been wrongly identified in the first place, reducing the group's actual diversity. In this study, the identification procedure is crucial and must be completed quickly, as there is a possibility that some of the specimens might go extinct due to the rise in extinction rate or the data on the specimens being revised.

The objective of this study was to identify the Conidae species composition in Sarawak Natural History Museum's collection and to provide a dichotomous key based on the shells in the museum's collection.

Taxonomy

Taxonomy is a method of scientific classification for describing and naming organisms by grouping them into different levels of hierarchy (Henderson, 2003; Pachenik, 2010). As a basic premise in biology, generalisations about organisms are only attainable if the indefinite number of elements in science is classified. The element of taxonomy associated with giving taxa names is known as nomenclature (Ohl, 2014). According to Stevens (2003), this system, known as the Linnean hierarchy, helps us understand and categorize the diverse organisms we have on Earth. The level starts from species to genus, which then continues to family, order, class, phylum and finally kingdom. Taxonomy is also able to describe evolution that occurs over time. Figure 1 below shows the scientific classification for Conidae.