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First Records of Meiobenthic Ectinosomatids (Crustacea: Copepoda: Harpacticoida) from Sarawak Coastal Waters, Borneo, Malaysia

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ABSTRACT

The present study was the first taxonomy work conducted to record meiobenthic Ectinosomatids along Sarawak coastal waters. The coastline of Sarawak stretched about 1035 km long and contains an extensive continental shelf area, areas of high biological productivity and a high marine coastal biodiversity. This survey yielded several specimens of ectinosomatid harpacticoid copepods. The specimens represent 3 unrecorded species (*Halophytophilus fusiformis*, *Glabrotelson psammae* and *Arenosetella kaiseri*) in Sarawak waters. These species were described, illustrated and compared with their original descriptions. Some recorded species were showed minor remarks which differed slightly from the original description. Setal formulae and detailed descriptions of all species obtained are given to aid identification for references in future.

Keywords: Harpacticoid, ectinosomatid, intertidal



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INTRODUCTION

The most recent update on the taxonomical order of the Ectinosomatidae family revealed that there are 234 species/subspecies in this family, belonging to 21 legitimate genera (Wells, 2007; Kihara and Huys, 2009). Sars named this family Ectinosomidae in 1903, but Moore changed it to Ectinosomatidae in 1978, in accordance with the International Code of Zoological Nomenclature (Moore, 1978). Except for a genus of *Pseudectinosoma* Kunz (1935), ectinosomatids are mostly found in marine environments.

The taxonomic level of ectinosomatids is still in confusion due to incomplete detailed descriptions and the absence of many species of these genera (Huys *et al.*, 1996; Clément and Moore, 2007). In Malaysia, most records of meiobenthic ectinosomatids are from West Malaysia (Zaleha, 2008). However, the distribution of harpacticoids in East Malaysia, notably in Sarawak, is still in its infancy, with no previous occurrences of *Halophytophilus* or *Glabrotelson* species. Several harpacticoids specimens were discovered during a survey done throughout Sarawak's coastal waters. For example, ectinosomatid specimens representing three previously unidentified species were described, illustrated, and compared to original descriptions.

MATERIALS AND METHODS

Harpacticoids samples for taxonomic study were collected along Sarawak coastal waters (Figure 1). Six locations were selected as representative of each locality of Sarawak region since the sampling stations point begun from Lawas and finished at Lundu. The sediment samples for harpacticoids were taken using a perspex corer with an inner diameter of 2.5 cm in a quadrat of 0.1 m x 0.1 m. The samples were then fixed with 5% buffered formalin before further processed in laboratory. Harpacticoids was extracted from sediments by Ludox isopycnic centrifugation. Then, the preserved samples were sorted out under stereo-microscope (Leica DM 2700). For identification processes, harpacticoids were dissected into seven parts including five legs, caudal rami and cephalothorax. Dissection started with soaking harpacticoids in lactic acid which process performed in the single concave slide under stereo-microscope (Leica DM 2700). Two dissecting needles that were made from 0.1 mm diameter of tungsten wire projecting about 3 cm from holder were used in dissected harpacticoids. All the dissected parts were then placed onto a glass slide mounted with lactophenol. Size measurement of harpacticoids were taken by using the descriptive terminology applied to the segmentation and setation of appendages which was recommended by Huys and Boxshall (1991). All figures were drawn with the aid of a camera lucida attached to a compound microscope (OLYMPUS, OH 81209). The drawings were then compared to the established description species by Sars (1904), Lang (1948; 1965), Coull (1977), Wells (1976), Huys *et al.* (1996), Bodin (1997) and Zaleha (2008) to identify up to species level.

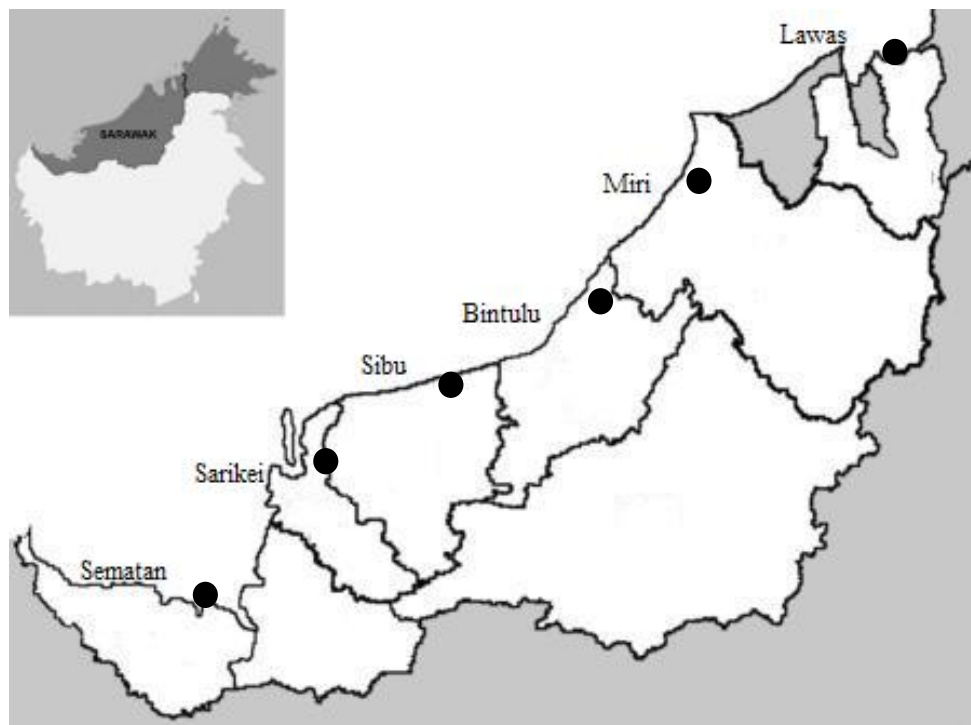


Figure 1: Locations of sampling stations along Sarawak coastal waters. The study areas covered from Lawas to Sematan.