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On the "*Hippolyte commensalis* Kemp, 1925" species complex (Decapoda, Caridea, Hippolytidae), with the designation of a new genus and description of two new species from the Indo-West Pacific

IVAN MARIN[1,2], JUNJI OKUNO[3] & TIN-YAM CHAN[1]

[1]*Institute of Marine Biology, National Taiwan Ocean University, Keelung, Taiwan R.O.C.*
E-mail: coralliodecapoda@mail.ru; vanomarin@yahoo.com; tychan@mail.ntou.edu.tw
[2]*A. N. Severtzov Institute of Ecology and Evolution of RAS, Moscow, Russia*
[3]*Coastal Branch of Natural History Museum and Institute, Chiba, 123 Yoshio, Katsuura, Chiba 299–5242, Japan.*
E-mail: okuno@chiba-muse.or.jp

Abstract

Only one species of hippolytid shrimp, namely *Hippolyte commensalis* Kemp, 1925, was previously known to be associated with alcyonacean soft corals (Octocorallia, Alcyonacea) in the Indo-West Pacific. Recent collections revealed that at least three distinct hippolytid species are associated with alcyonacean soft corals. Moreover, these alcyonacean-associated hippolytids differ considerably from all other species of the genus *Hippolyte* Leach, 1814 in having a smooth rostrum bearing a single subapical ventral tooth, reduced styliform incisor process of the mandible, the basal antennular segment without ventromedial tooth, and the ambulatory pereiopods lacking or with only relatively small distoventral spines. A new genus, *Alcyonohippolyte* **gen. nov.**, is thus established for *Hippolyte commensalis* Kemp, 1925 and two new species. *Alcyonohippolyte dossena* **sp. nov.** (the type species of the new genus) mainly differs from the congeners in having a humpbacked carapace. *Alcyonohippolyte maculata* **sp. nov.** closely resembles *A. commensalis* but clearly differs in having a furry carapace and distinct coloration, as well as in association with different alcyonacean host. An identification key is provided as well as information on the live coloration and host for all species of *Alcyonohippolyte* **gen. nov.**

Key words: Crustacea, Decapoda, Hippolytidae, *Hippolyte*, new genus, new species, Indo-West Pacific

Introduction

The hippolytid shrimp genus *Hippolyte* Leach, 1814 currently contains 31 extant species (De Grave *et al.* 2009). In the taxonomic revision of the Atlantic species of the genus, d'Udekem d'Acoz (1996) suggested that the taxonomy of species occurring in the Indo-West Pacific is poorly understood. Subsequently, d'Udekem d'Acoz (1999, 2001) re-described 2 Indo-West Pacific species, *Hippolyte ventricosa* H. Milne Edwards, 1837 and *H. australiensis* (Stimpson, 1860), in details. However, there are still many taxonomic problems in this genus. One of these problematic species is *Hippolyte commensalis* Kemp, 1925, known in association with alcyonarian soft corals and likely representing a complex of several species (d'Udekem d'Acoz 1996). For example, some decapod crustacean guide books on southern Japanese waters showed 2 color forms of *H. commensalis* that are associated with different alcyonacean hosts (e.g., Minemizu 2000; Kawamoto & Okuno 2003).

Three distinct species associated with alcyonacean hosts were recognized from a series of hippolytid specimens gathered by the authors in various regions of the western Pacific. Moreover, these species differ from the other species of the genus *Hippolyte* in some significant morphological characters and very likely represents a natural group adapted to the associations with alcyonacean corals. Thus, a new hippolytid genus, *Alcyonohippolyte* **gen. nov.**, is established for the "*H. commensalis*" species complex and 2 new species, *A. dossena* sp. nov and *A. maculata* **sp. nov.** are described herein. Redescription of *A. commensalis* (Kemp, 1925) comb. nov. is also provided.

Total length (tl., in mm, the length from the tip of rostrum to the distal part of the telson) and postorbital carapace length (pcl, in mm, the dorsal length form the orbits to the posterior part of the carapace) are used as standard

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