



## A new species of the hippolytid shrimp genus *Thor* Kingsley, 1878 (Crustacea: Decapoda: Caridea) from Hainan Island, China

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### Abstract

A new species of the caridean family Hippolytidae, *Thor hainanensis* sp. nov., is described and illustrated based on specimens from Hainan Island, China. The carpus of the second pereopod is six-segmented; the mandible has only the incisor process and the molar process; the third segment of antennular peduncle has one subtriangular dorsal scale. Those morphological characters easily classify this species into the genus *Thor* Kingsley, 1878. First pereopod with epipod distinguishes the present new species from the other members of the genus, because the existence of epipod among different pereopods is considered to be fixed at interspecific level and all the described species of this genus lack the epipod on the first pereopod.

**Key words:** Crustacea, Decapoda, Caridea, Hippolytidae, *Thor hainanensis*, new species, Hainan Island, China

### Introduction

The genus *Thor* Kingsley, 1878 currently includes 12 species from the world (De Grave & Fransen, 2011). Most species are intertidal or in shallow water among algae, rocks or corals.

Recently, while sorting the material of the family Hippolytidae deposited in the Marine Biological Museum of the Chinese Academy of Sciences (MBMCAS) in the Institute of Oceanology, Chinese Academy of Sciences (IOCAS), 15 female specimens and 1 male specimen of *Thor* were separated out, which represent an undescribed species. It is described and illustrated here as a new species to science.

The type specimens are deposited in the MBMCAS. Carapace length (cl) refers to the length from the level of posterior margin of the orbit to the level of midpoint of the posterior margin of the carapace; MBMxxxxxx is the registration number in the MBMCAS; coll.=collector(s).

### Systematics

#### Family Hippolytidae Bate, 1888

#### Genus *Thor* Kingsley, 1878

#### *Thor hainanensis* sp. nov.

(Figs 1–5)

**Material examined.** Holotype, ovigerous female, MBM136607, cl 1.8mm, intertidal, Sanya, Hainan Island, 5 March, 1997, coll. Xinzheng Li.

Paratypes, 1 male, MBM136405, cl 1.9mm, intertidal, Qionghai, Hainan Island, 4 April, 1992, coll. Xinzheng Li; 5 ovigerous females, MBM136387, cl 1.7–2.1mm, intertidal, Lingao, Hainan Island, 2 December, 1990, coll.

**Paratype male.** Third pereopod (Fig. 3A) prehensile, subchelate. Dactylus (Fig. 4B) with bifid tip and many closely appressed spinules on flexor margin; propodus (Fig. 4A, B) more than twice as long as dactylus, distal third of flexor margin with densely spinules; carpus less than half as long as propodus; merus slightly shorter than propodus, armed with strong spine near distal end of lateral surface. Fourth pereopod (Fig. 3B) similar to third pereopod, prehensile, subchelate; merus also armed with one distolateral spine. Second pleopod (Fig. 3C) with appendix masculine moderately stout, almost 6 times as long as wide, about 0.9 length of appendix interna, bearing about 5 long stiff setae.

**Coloration in life.** Unknown.

**Distribution.** Only known from the type locality, Hainan Island. Specimens collected from shallow intertidal coral reef pools at depths of 2–15m.

**Etymology.** The name is derived from the type locality, Hainan Island, in the South China Sea.

**Remarks.** The most important morphological character of the new species is the presence of an epipod (Fig. 5A, B) on the first pereopod. The fourth pereopod (Fig. 4C, D) of male specimen is prehensile and subchelate, also rare and unique in the genus.

Besides the epipod on the first pereopod, the new species can be easily distinguished from the known species in the genus.

The new species is very similar to *Thor cocoensis* Wicksten & Vargas, 2001. It can be distinguished from the latter by (1) the dorsal margin of rostrum armed with three teeth in *T. hainanensis*, however, *T. cocoensis* bearing only one or two dorsal teeth; (2) the tip of rostrum shows distinctly bifid in *T. hainanensis*, vs. the tip of rostrum is acute in *T. cocoensis*.

The new species distinguishes from *Thor cordelli* Wicksten, 1996, *T. dobkini* Chace, 1972, *T. floridanus* Kingsley, 1878, *T. manningi* Chace, 1972, *T. spinipes* Bruce, 1983 and *T. spinosus* Boone, 1935 by the entirely lacking of a distinct supraorbital spine or its vestige.

The telson of *Thor intermedius* Holthuis, 1947 has only one pair of very minute spinules on the posterior half of the dorsal surface; the stylocerite of *T. paschalis* (Heller, 1862) totally lacks the little tooth at basal part of outer margin (Holthuis, 1947). These morphological differences make a distinction from *T. hainanensis*.

The new species can be distinguished from *Thor marguitae* Bruce, 1978 by the rostrum with bifid tip. In ovigerous females, *T. marguitae* has a more strongly developed rostrum, with typically a trifid tip.

*Thor amboinensis* (de Man, 1888) is well-known by associated with all kinds of coelenterates and always has a distally acute simple rostrum, without any evidence of ventral teeth. Apart from the existence of epipod on the first pereopod, *T. hainanensis* can be easily distinguished from *T. amboinensis* by its smaller body and bifid tip rostrum (Holthuis, 1947; Miyake & Hayashi, 1966).

## Acknowledgments

This study is supported by the National Natural Science Foundation of China (nos. 41376163 and 30499340) and the IOCAS (no. 2012IO060105). We are grateful to the managers of the MBMCAS for their help with specimens sorting.

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