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***Typtonomenaeus formosanus* gen. et sp. nov., a new sponge-associated pontoniine shrimp (Crustacea: Decapoda: Palaemonidae: Pontoniinae) from northern Taiwan**

IVAN MARIN^{1,3} & TIN-YAM CHAN²

¹A. N. Severtzov Institute of Ecology and Evolution of RAS, Moscow, Russia.

E-mail: coralliodecapoda@mail.ru, vanomarin@yahoo.com

²Institute of Marine Biology, National Taiwan Ocean University, Keelung, Taiwan, R.O.C. E-mail: tychan@mail.ntou.edu.tw

³Corresponding author

Abstract

A new genus and species of sponge-associated pontoniine shrimps (Crustacea: Decapoda: Palaemonidae: Pontoniinae) is described from northern part of Formosa Island (Taiwan). The new species can be clearly recognized by convex robust nail-like apices on dactyli of both pereopods II—a unique morphological structure among pontoniine shrimps. Morphological differences from all known sponge-associated pontoniine genera are discussed.

Key words: Crustacea, Decapoda, Caridea, Palaemonidae, Pontoniinae, new genus, new species, sponge-associate, Porifera, northern Taiwan

Introduction

Currently 22 pontoniine shrimp genera (Decapoda: Palaemonidae: Pontoniinae) are known as obligate associates of marine sponges (Porifera: Demospongiae) (see Bruce & Bauer, 1997; Bruce, 2009a, b; Anker & De Grave, 2010, Marin, 2007, 2012; key in Bruce, 2010a). Moreover, several species of extensive pontoniine genus *Periclimenes* Costa, 1844 are also known as obligate or facultative associates of marine sponges (for example, *Periclimenes incertus* Borradaile, 1915, see Chace & Bruce, 1993) as well as some pontoniine genera (for example *Typtonoides* Bruce, 2010), are probably sponge-associated (Bruce, 2010b). Sponge-associated pontoniine shrimps presently include more than 90 described species worldwide representing one of the most diverse ecological group within the subfamily Pontoniinae (about 18% of known associations of pontoniine shrimps) (Marin, 2012; unpublished). They inhabit a wide range of sponge hosts and show a huge range of morphological variations allowing them to survive in associations with sponges. The majority of specialized sponge-associated pontoniine genera are monotypic (*Anisomenaeus* Bruce, 2010, *Apopontonia* Bruce, 1976, *Exopontonia* Bruce, 1988, *Hamiger* Borradaile, 1916, *Holthuisaeus* Anker & De Grave, 2010, *Isopericlimenaeus* Marin, 2012, *Nippopontonia* Bruce & Bauer, 1997, *Onycocaridites* Bruce, 1987, *Orthopontonia* Bruce, 1982, *Onycomenes* Bruce, 2009, *Plesiomenaeus* Bruce, 2009 and *Thaumastocaris* Kemp, 1922) (according to the recent review by De Grave & Franssen, 2011; Marin, 2012) having unique morphological features within the subfamily. The monotypy of these genera can be explained by high specialisation of the respective type species as well as an inadequate study of the diversity of symbiotic species mainly because of difficulty of collection and relatively rare sampling of sponge-associated animals.

During the study of the pontoniine shrimp diversity at northern Taiwan we found a pair of unusual pontoniine shrimps associated with an unidentified brown sponge (Porifera). The examination of these specimens showed that they belong to an undescribed genus and species. The examined material is deposited in the National Taiwan Ocean University (NTOU), Keelung, Taiwan. Postorbital carapace length (pcl., in mm), the length from the posterior orbit