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A new species of the pontoniine shrimp genus *Hamopontonia* Bruce, 1970 associated with caryophyllid coral *Euphyllia glabrescens* (Chamisso & Eysenhardt, 1821) in Nhatrang Bay, Vietnam

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Abstract

Hamopontonia nhatrangensis sp. nov. (Crustacea, Decapoda, Palaemonidae, Pontoniinae) is described from Nhatrang Bay, Vietnam, in association with caryophyllid coral *Euphyllia glabrescens* (Chamisso & Eysenhardt, 1821) (Hexacorallia, Scleractinia, Caryophyllidae). The new species clearly differs from congeners by morphological features, distinctive coloration and ecologically. Renewed differential key to all known species of the genus *Hamopontonia* Bruce, 1970 is provided.

Key words: Crustacea, Decapoda, Palaemonidae, Pontoniinae, *Hamopontonia*, new species, coral-associated, Scleractinia, Caryophyllidae, *Euphyllia*, Pacific, South-China Sea, Nhatrang Bay, Vietnam

Introduction

The pontoniine shrimp genus *Hamopontonia* Bruce, 1970 (Crustacea, Decapoda, Palaemonidae, Pontoniinae) presently includes 4 valid species: *H. corallicola* Bruce, 1970 (the type species), *H. essingtoni* Bruce, 1986, *Hamopontonia fungicola* Marin, 2012 and *Hamopontonia physogyra* Marin, 2012. All species are known as associates of scleractinian corals (Hexacorallia, Scleractinia) through Indo-Pacific region.

Hamopontonia corallicola is widely distributed Indo-Pacific species known in association with different species of the poritid genus *Goniopora* de Blainville, 1830 (Hexacorallia, Scleractinia, Poritidae) and occasionally on the surface of coral of the genus *Turbinaria* Oken, 1815 (Hexacorallia, Scleractinia, Dendrophyllidae) (Bruce, 1970; Marin, 2012a). *Hamopontonia essingtoni* is known in association with pocilloporid coral *Stylophora pistillata* Esper, 1797 (Hexacorallia, Scleractinia, Pocilloporidae) from Port Essington, Northern Australia only (Bruce, 1986). *Hamopontonia fungicola* Marin, 2012 is widely distributed species associated with fungiid corals (Hexacorallia, Scleractinia, Fungiidae). Mature individuals of the species are exclusively known in association with anemone-like fungiid coral *Heliofungia actiniformis* (Quoy & Gaimard, 1833) (Fungiidae), while non-mature transparent individuals or, possibly young males, have been usually observed on the surface of large mushroom corals such as *Fungia* spp, *Herpolitha* sp. or *Ctenaspis echinata* (Pallas, 1766) (Fungiidae) (see Marin, 2012a); *Hamopontonia physogyra* Marin, 2012 is associated with the caryophyllid grape bubble coral *Physogyra lichtensteini* Milne-Edwards & Haime, 1851 (Hexacorallia, Scleractinia, Caryophyllidae) and presently known from Lizard Island, the Great Barrier Reef of Australia only (Marin, 2012a). All known species can be clearly separated ecologically (associated with different coral families) and by coloration (see Marin, 2012a). Color differentiation among highly specialized congeners is also known for other pontoniine shrimps, for example, crinoid-associated shrimps of the genus *Laomenes* AH Clark, 1919 (see Marin, 2009).

However, previous reports of *Hamopontonia* spp. indicated two associations with cnidarian hosts not mentioned above—the caryophyllid coral *Euphyllia glabrescens* (Chamisso & Eysenhardt, 1821) (Hexacorallia, Scleractinia, Caryophyllidae) (De Grave, 1998; Marin, 2012a) and the actinian *Entacmaea quadricolor* (Leuckart in Rüppel & Leuckart, 1828) (Hexacorallia, Actiniaria, Actiniidae) (Suzuki & Hayashi, 1977). It was already

coloration (see Marin, 2012a). At the same time, the coloration of the new species clearly differs from *H. physogyra* by being generally translucent with tiny small dots on the body and appendages as well as having uniformly white or pinky-white colored dorsal patches on carapace and abdomen (vs. body and appendages covered with numerous white and blue dots as well as dorsal patches consisting of white spots in the centre of the patch fringed with broad white or creamy band in *H. physogyra* (see Marin, 2012a: 55, fig. 13)). The new species also can be clearly separated by coloration from *H. fungicola* by having smaller dorsal spots on the carapace, not covering almost all dorsal surface, as well as a different pattern and smaller dorsal spots on abdominal somites II and III not almost covering the abdominal pleurae (see Marin, 2012a: fig. 7; present paper, fig. 4).

Renewed key to the species of the genus *Hamopontonia* Bruce, 1970 (after Marin, 2012a)

1. Distal margin of telson with small blunt median process between hook-like distolateral processes. Small species; with translucent body and appendages covered with numerous tiny red dots. Without large bright colored spots or patches on dorsal surface of carapace and abdominal somites. Associated with *Stylophora pistillata* (Pocilloporidae) *H. essingtoni* Bruce, 1986
- Distal margin of telson without blunt median process between hook-like distolateral processes. Large bright colored spots or patches present on dorsal surface of carapace and abdomen 2
2. Pereiopods II large, longer than carapace length, equal in size. Almost all dorsal and lateral surface of carapace and pleura of abdominal somites II–III covered with large white or creamy colored patches. Associated with fungiid corals, mainly with *Heliofungia actiniformis* (Fungidae) *H. fungicola* Marin, 2012
- Pereiopods II equal or smaller than carapace length, unequal in size. Carapace and abdominal somites with only dorsal and upper half of lateral margin covered with brightly colored patches 3
3. Rostrum relatively short, reaching to distal margin of basal antennular segment. Associated with *Euphyllia glabrescens* (Euphyllidae) *H. nhatrangensis* sp. nov.
- Rostrum long, significantly overreaching the distal margin of basal antennular segment reaching to distal margin of antennula peduncle 4
4. Rostrum with well developed deep dorsal carina. Single large dorsal circle patch presents on dorsal surface of abdominal somite III. Associated with caryophyllid coral *Physogyra lichtensteini* (Caryophyllidae) *H. physogyra*
- Rostrum with shallow dorsal carina. Dorsal surface of abdominal somites I–IV covered with brightly colored patches. Associated with poritid coral *Goniopora* spp (Poritidae) *H. corallicola*

Remarks. The Torch coral *Euphyllia glabrescens* belongs to the family Euphyllidae, not the Fungiidae, but the colonies of *E. glabrescens* and *Heliofungia actiniformis* (Quoy & Gaimard, 1833) (Hexacorallia, Scleractinia, Fungidae) are greatly similar (see Fig. 5a–c; Veron, 2000). The coloration of the tentacles of *E. glabrescens* bears a striking resemblance to the coloration of tentacles of *H. actiniformis*. At the same time, a multi-year survey (2005–2014 years) of coral reef communities in Nhatrang Bay revealed the absence of *Heliofungia actiniformis* in the Bay and adjacent localities (Latypov, 2006; Yu. Latypov, I. Marin, pers. observ.) as well as two specialized associated pontoniine shrimp species, *H. fungicola* and *Cuapetes kororensis* (Bruce, 1977), specific to *H. actiniformis*, have never been observed in the Bay.

This record increase the number of scleractinian coral-associated pontoniine shrimp species known from Nhatrang Bay, Vietnam up to 31, while *H. fungicola* should be excluded from the list (Marin & Anker, 2005; Marin, 2007b, 2008; reviews in Marin & Savinkin, 2007 and Marin, 2013).

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