



<http://dx.doi.org/10.11646/zootaxa.3794.2.5>

<http://zoobank.org/urn:lsid:zoobank.org:pub:59FFC65B-C476-4E63-85B8-2641DE972D19>

New records of the caridean shrimp genus *Processa* Leach, 1815 (Crustacea: Decapoda: Processidae) from Japan, with descriptions of two new species

TOMOYUKI KOMAI¹ & YOSHIHISA FUJITA^{2,3}

¹Natural History Museum and Institute, Chiba, 955-2 Aoba-cho, Chuo-ku, Chiba, 260-8682 Japan

²University Education Center, University of the Ryukyus, 1 Senbaru, Nishihara, Okinawa, 903-0213 Japan

³Marine Learning Center, 2-95-101 Miyagi, Chatan-cho, Okinawa 904-0113, Japan

Abstract

Three species of the processid shrimp genus *Processa* Leach, 1815, including two new species, are reported from shallow coastal waters in Okinawa Island, Ryukyu Islands, Japan: *P. affinis* Hayashi, 1975, *P. filipes* n. sp. and *P. hayashii* n. sp. The present specimens of *P. affinis* represent the rediscovery and range extension of this poorly known species, originally described from Indonesia. Male characteristics of *P. affinis* are documented for the first time. The two new species are referred to the *P. aequimana* Paulson, 1875 species group. *Processa filipes* n. sp. is characteristic in the greatly elongate fifth pereopod and the transverse ridge on thoracic sternite 8 consisting of soft cuticle. *Processa hayashii* n. sp. is characterized by the presence of a deep concavity on the anterolateral margin of the carapace just inferior to the antennal tooth. The number of species of *Processa* known from Japanese waters is raised from five to eight.

Key words: *Processa affinis*, *filipes*, *hayashii*, Okinawa, Ryukyu Islands

Introduction

Processa Leach, 1815 is the most species-rich genus in the caridean family Processidae, distributed in temperate to tropical waters worldwide. Within the family, *Processa* is characterized by the slender rostrum, the absence of an exopod on the first pereopod and the heteromorph condition of the first pair of pereopods (the right is chelate, whereas the left is non-chelate). Regional-based extensive studies by Nouvel & Holthuis (1957) (eastern Atlantic), Manning & Chace (1972) (western Atlantic), Hayashi (1975) (Indo-West Pacific) and Noël (1986) (Indo-West Pacific) constitute the foundation of the taxonomy of the genus. In total, 50 species are represented in the genus (De Grave & Fransen 2011; De Grave & Felder 2012), of which 20 species occur in the Indo-West Pacific (Hayashi 1975; Noël 1986; De Grave & Anker 2013). From Japanese waters, the following five species have been recorded (Hayashi 1975, 1991a, 1991b): *P. aequimana* (Paulson, 1875), *P. dimorpha* Hayashi, 1975, *P. kотиensis* (Yokoya, 1933), *P. sulcata* Hayashi, 1975 and *P. zostericola* Hayashi, 1975.

In this paper, three species of *Processa*, including two new species, are reported from Okinawa Island, Ryukyu Islands, Japan, on the basis of material collected by recent sampling for subtidal decapod crustacean fauna targeting non-coral reef environments: *P. affinis* Hayashi, 1975, *P. filipes* n. sp. and *P. hayashii* n. sp. *Processa affinis* was previously known only by the holotype from “Soela Islands” (currently Sula Islands) in Indonesia, thus the present material represents the rediscovery of this poorly known species since the original description. The two new species are referred to the *P. aequimana* species group (cf. Hayashi 1975), and characters differentiating them from closely allied congeners are discussed.

The material examined is deposited in the Natural History Museum and Institute, Chiba (CBM) and Ryukyu University Museum, Fujyu-kan (RUMF). Postorbital carapace length (cl), measured from the rostral base from the midpoint of the posterodorsal margin of the carapace, indicates specimen size.

References

- Chace, F.A. Jr. (1997) The caridean shrimps (Crustacea: Decapoda) of the *Albatross* Philippine Expedition, 1907–1910, Part 7: Families Atyidae, Eugonatonotidae, Rhynchocinetidae, Bathypalaemonellidae, Processidae, and Hippolytidae. *Smithsonian Contributions to Zoology*, 587, 1–106.
- De Grave, S. & Anker, A. (2013) New records of processid shrimps from the Indo-West and East Pacific (Crustacea: Decapoda). *Zootaxa*, 3620 (2), 224–241.
<http://dx.doi.org/10.11646/zootaxa.3640.2.6>
- De Grave, S. & Felder, D.L. (2012) The genus *Processa* in the vicinity of Carrie Bow Cay (Belize) with description of a new species (Crustacea: Decapoda: Processidae). *Zootaxa*, 3436, 41–50.
- De Grave, S. & Fransen, C.H.J.M. (2011) Carideorum Catalogus: The recent species of the dendrobranchiate, stenopodidean, procarididean and caridean shrimps (Crustacea: Decapoda). *Zoologische Mededelingen*, 85, 195–589.
- Hayashi, K. (1975) The Indo–West Pacific Processidae (Crustacea, Decapoda, Caridea). *Journal of the Shimonoseki University of Fisheries*, 24, 47–145.
- Hayashi, K. (1991a) Shrimps and lobsters from Japan (60). Family Processidae—genera *Nikoides* (2) and *Processa* (1). *Aquabiology*, 75, 268–271.
- Hayashi, K. (1991b) Shrimps and lobsters from Japan (61). Family Processidae—genus *Processa* (2). *Aquabiology*, 76, 358–361.
- Man, J.G. de (1920) The Decapoda of the Siboga Expedition. Part IV. Families Pasiphæidae, Stylodactylidae, Hoplophoridae, Nematocarcinidae, Thalassocaridae, Pandalidae, Psalidopodidae, Gnathophyllidae, Processidae, Glyphocrangonidae and Crangonidae. *Siboga Expeditie*, 39a³, 1–318, pls. 1–25.
- Man, J.G. de (1922) The Decapoda of the Siboga Expedition. Part V. On a collection of macrurous decapod Crustacea of the Siboga Expedition, chiefly Penaeidae and Alpheidae. *Siboga Expeditie*, 39a⁴, 1–51, pls. 1–4.
- Manning, R.B. & Chace, F.A. Jr. (1971) Shrimps of the family Processidae from the northwestern Atlantic Ocean (Crustacea: Decapoda: Caridea). *Smithsonian Contributions to Zoology*, 89, 1–41.
<http://dx.doi.org/10.5479/si.00810282.89>
- Noël, P. (1986) Crustacés Décapodes: Processidae de l'Indo-Pacifique. In: Crosnier, A. (Ed.), Résultats des Campagnes MUSORSTOM I et II - Philippines (1976, 1980). Vol. 2. *Mémoires du Muséum national d'Histoire naturelle, Série A (Zoologie)*, 133, pp. 261–301.
- Nouvel, H. & Holthuis, L.B. (1957) Les Processidae (Crustacea Decapoda Natantia) des eaux Européennes. *Zoologische Verhandelingen*, 32, 1–53, figures 1–217.
- Yaldwyn, J.C. (1971) Preliminary descriptions of a new genus and twelve new species of natant decapod Crustacea from New Zealand. *Records of the Dominion Museum*, 7, 85–94.