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ORIGINAL ARTICLE

The rare porcelain crab *Novorostrum decorocrus* Osawa, 1998 (Anomura: Porcellanidae) from Indonesia

Luciane Augusto de Azevedo Ferreira[1] orcid.org/0000-0003-1683-9962
Marcos Tavares[1] orcid.org/0000-0002-7186-5787

[1] Museu de Zoologia, Universidade de São Paulo, Laboratório de Carcinologia. Av. Nazareth, 481. 04263-000, São Paulo, São Paulo, Brazil.
LAAF E-mail: lucianeaaf@gmail.com
MT E-mail: mdst@usp.br

ZOOBANK: http://zoobank.org/urn:lsid:zoobank.org:pub:6E0C4218-FC4D-43E6-8B70-35C410130058

ABSTRACT

Novorostrum decorocrus Osawa, 1998, so far only known from its type locality, Iriomote Island, Ryukyu Islands, southern Japan, is herein recorded from much farther south, Ambon Island, Indonesia. Males and females of *N. decorocrus* differ from each other in some morphological traits and their morphological differences are also discussed and illustrated. The female of *N. decorocrus* is illustrated for the first time. The present record of *N. decorocrus* from Indonesia lends empirical support to a previous proposition, based on the duration of 12–14 days of the planktonic period of the zoeal phase, that the distribution range of *N. decorocrus* could possibly be wider than known at that time.

KEYWORDS

Biodiversity, new records, Indo-West Pacific, intertidal, zoeal phase.

INTRODUCTION

Osawa (1998) established the genus *Novorostrum* for *Petrolisthes indicus* De Man, 1893, a species originally described from the Flores Island, Indonesia, and subsequently found in Lombok (Indonesia), Mindanao (Philippines), Taiwan and south Japan. In the same paper, Osawa described two additional new species in *Novorostrum*, *N. decorocrus* Osawa, 1998 (Ryukyu Islands, Japan) and *N. phuketense* Osawa, 1998 (Phuket, Thailand), and merged *Petrolisthes securiger* Melin, 1939 (Ogasawara Islands, Japan; Taiwan), into the synonymy of *N. indicum*. However, the examination of Taiwanese specimens prompted Osawa and Chan (2010) to remove *N. securiger* from the synonymy of *N. indicus*. Osawa (1998) also expressed the opinion that

CORRESPONDING AUTHOR
Luciane Augusto de Azevedo Ferreira
lucianeaaf@gmail.com

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Petrolisthes ornatus Paul'son, 1875 (western Indian Ocean) might belong to *Novorostrum*. Later, however, Osawa and McLaughlin (2010) retained *P. ornatus* in *Petrolisthes* Stimpson, 1858. Therefore, *Novorostrum* currently consists of four Indo-West Pacific species, namely *N. decorocrus*, *N. indicum*, *N. phuketense*, and *N. securiger*.

In this report, *Novorostrum decorocrus*, so far only known from its type locality, Iriomote Island, Ryukyu Islands, Japan, is recorded from much farther south, Ambon, Indonesia. Considering that Osawa (1998) only described and illustrated the male holotype *of N. decorocrus* and that males and females differ from each other in some morphological traits, several illustrations of the female from Indonesia are given herein. The morphological differences between males and females are also briefly discussed and illustrated.

Material and Methods

The studied specimens are deposited in the carcinological collection of the Museu de Zoologia, Universidade de São Paulo (MZUSP).

Measurements: cl, carapace length, taken from the front to the posterior median margin of the carapace; cw, carapace width, taken at the level of its widest point, in millimeters (mm).

Taxonomic Account

Novorostrum decorocrus Osawa, 1998
(Figures 1A–D; 2A–F)

Novorostrum decorocrus Osawa, 1998: 170; Fujita and Osawa, 2005: 763 (description of larvae); Osawa and McLaughlin, 2010: 112 (list).

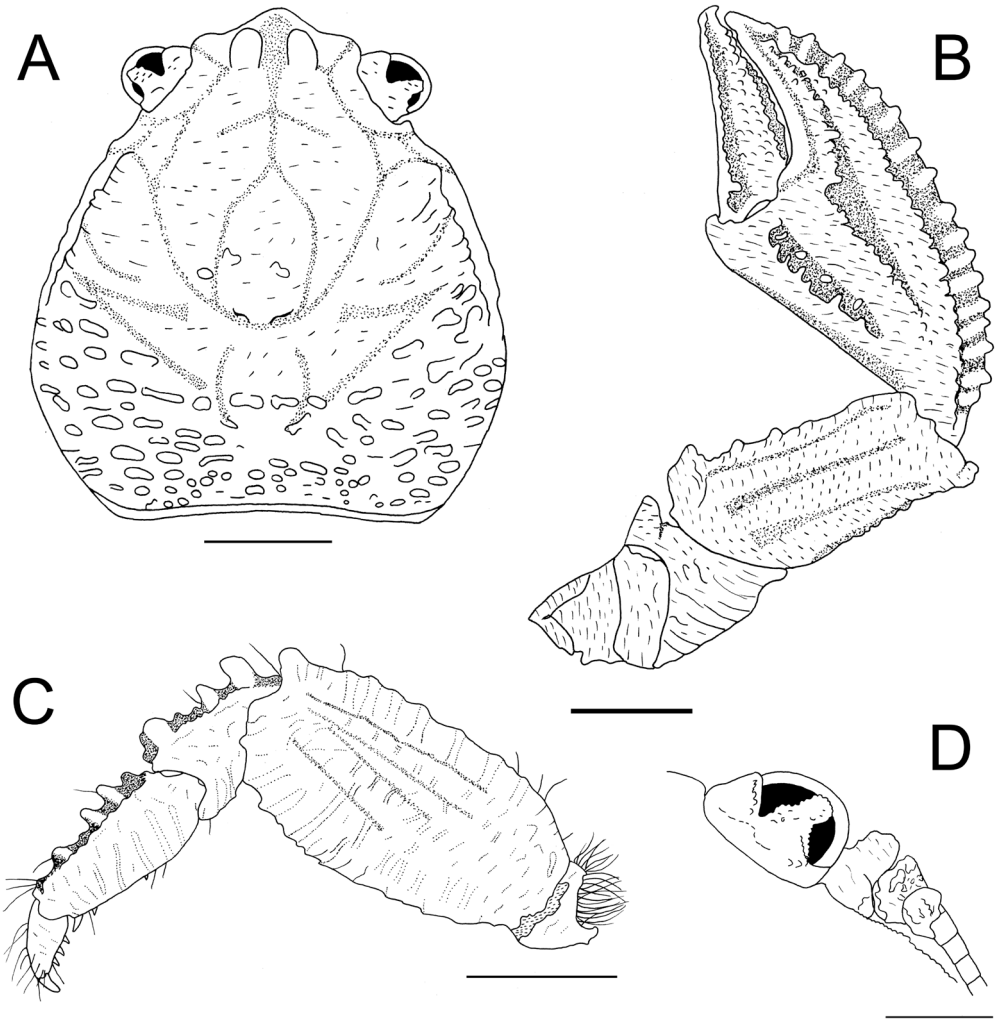

Figure 1. *Novorostrum decorocrus* Osawa, 1998, ovigerous female, cl 4.3 mm, cw 4.3 mm (MZUSP 40089). A, Carapace, dorsal view. B, Right cheliped, dorsal view. C, Left second ambulatory leg, lateral view. D, Right ocular peduncle, cornea and antenna, dorsal view. Scale bars: (A–C) = 1 mm, (D) = 0.5 mm.

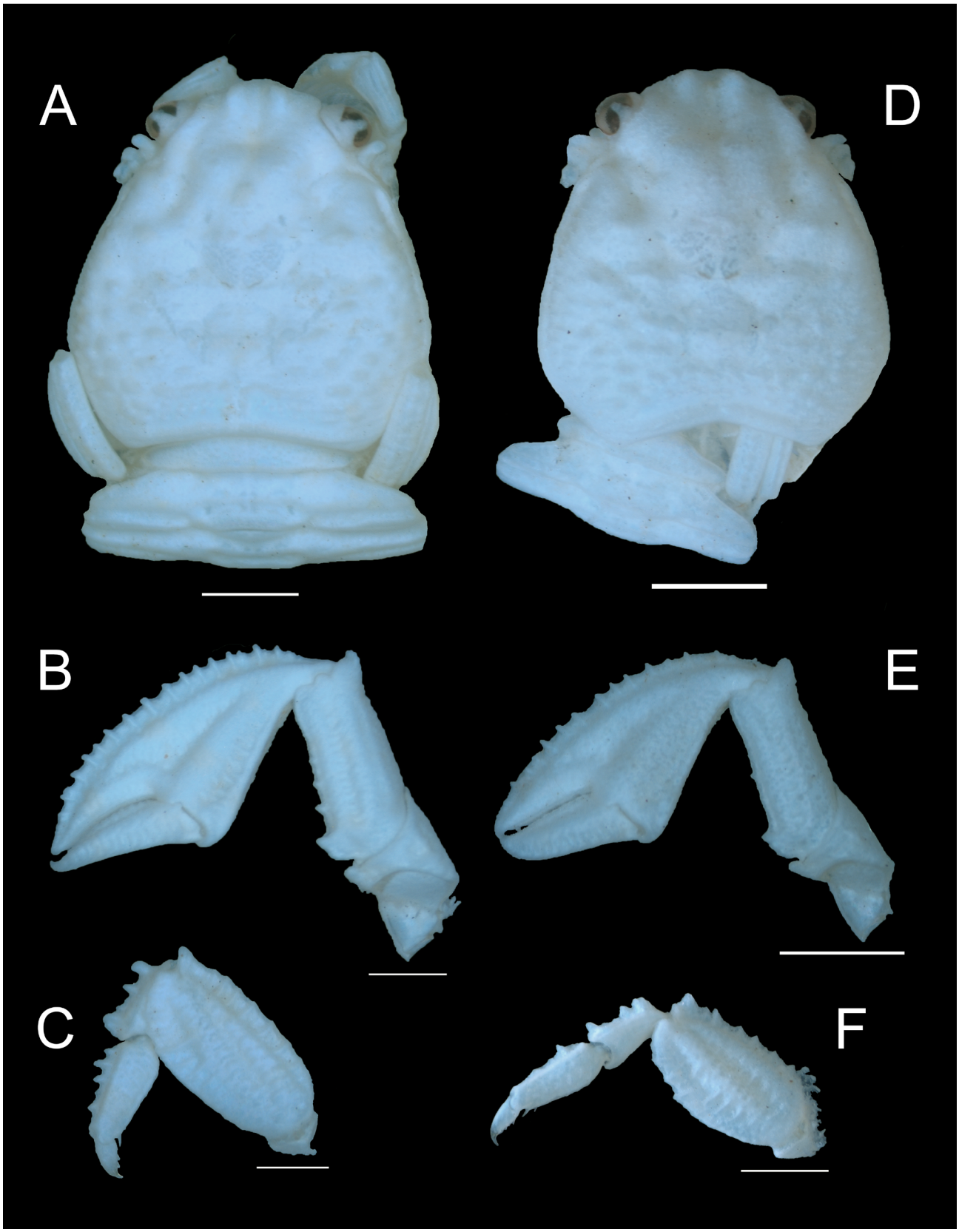

Figure 2. *Novorostrum decorocrus* Osawa, 1998. A–C, Female, cl 4.3 mm, cw 4.3 mm (MZUSP 40089). D–E, Male, cl 3.0 mm, cw 3.0 mm (MZUSP 40088). (A, D) Cephalothorax, abdomen, and P5, dorsal view. (B, E) Right cheliped, dorsal view. (C, F) Left second ambulatory leg, lateral view. Scale bars = 1 mm.

Material examined. 1 male cl 3.0 mm, cw 3.0 mm, MZUSP (40088), Tial, Ambon, Indonesia, 9 September 1991, intertidal zone, D. L. Rahayu coll. and don.; 1 ovigerous female cl 4.3 mm, cw 4.3 mm (MZUSP 40089), same data.

Distribution. Japan (Iriomote Island, Ryukyu Islands) and Indonesia (Tial, Ambon Island) (Osawa, 1998; present study).

Remarks. The Indonesian specimens agree well with *Novorostrum decorocrus* from the Ryukyu Islands as described and illustrated by Osawa (1998): (i) cheliped propodus bluntly toothed along the extensor margin, and with a weak crenulated longitudinal ridge adjacent to the extensor margin on the dorsal surface (Figs. 1B; 2B, E); (ii) cheliped carpus with several, small, acute or blunt teeth on the dorsal flexor margin (Figs. 1B; 2B, E); and (iii) propodus and carpus of P2–P4 (ambulatory legs) bluntly toothed on the extensor margins (Figs. 1C; 2C, F). In these respects, *N. decorocrus* differs markedly from *N. indicum*, *N. securiger*, and *N. phuketense*, whose chelipeds have no teeth along the extensor margins of the propodi, as well as no small teeth on the dorsal flexor margins exclusive of a broad, blunt proximal lobe; and the propodus and carpus of P2–P4 lack blunt teeth on the extensor margins (Osawa, 1998; Osawa and Chan, 2010). *Novorostrum decorocrus* further differs from *N. indicum* in having the carapace subtrapezoidal in dorsal view (Figs. 1A; 2A, D), rather than broadly subtriangular with narrower front.

Female and male (MZUSP 40089, 40088) of *N. decorocrus* differ from each other in that the cheliped palm of the female has more distinct longitudinal ridges and concavities along the dorsal midline than that of the male, as also noticed by Osawa (1998). In addition, the female differs from the male in having the carapace surface more strongly uneven with deeper longitudinal grooves, the front more strongly trilobate, with the median lobe more distinctly produced than the lateral lobes (Figs. 1A; 2A), and the ambulatory legs with more pronounced rugae and tubercles on the lateral surfaces (Figs. 1C; 2C).

Fujita and Osawa (2005) estimated 12–14 days as the planktonic period of the zoeal phase of *N. decorocrus* under laboratory conditions, at a water temperature of 28.0°C–28.5°C, and offered for consideration that the distribution range of *N. decorocrus* could possibly be wider than known at that time. The present record of *N. decorocrus* from much farther south (Ambon Island, Indonesia) than its type locality in southern Japan, provides empirical support to Fujita and Osawa's (2005) proposition.

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