

NEW RECORD OF *PARASESARMA RAOULI* RAHAYU AND NG, 2009 (CRUSTASEA: BRACHYURA: SESARMIDAE) FROM THE RIAU ARCHIPELAGO, INDONESIA

Ernawati Widyastuti^{1*} and Dwi Listyo Rahayu²

¹Research Center of oceanography – Indonesian Institute of Sciences (LIPI), Jl. Pasir Putih 1, Ancol Timur, Jakarta Utara, 11430, Indonesia.

²Marine Bio-industry Implementation Unit, Research Center of Oceanography – Indonesian Institute of Sciences (LIPI). P.O. Box 1124, Mataram 83000, NTB, Indonesia.

*Correspondence author: ernawidya@yahoo.com

Received: April 2016 Accepted: May 2016

ABSTRACT

A specimen of *Parasesarma raouli* (Crustacea: Brachyura: Sesarmidae) was collected from the mangrove area of Pulau Berang, Lingga, Riau Archipelago, Indonesia in Oktober 2014. This species previously was known only from Johor strait, Peninsular Malaysia. Its color in life is recorded for the first time.

Keywords: *Parasesarma raouli*, new record, taxonomy, Riau Archipelago, Indonesia

INTRODUCTION

Parasesarma De Man, 1895 is one of the largest genera in the family Sesarmidae and currently contains 34 species (Ng *et al.*, 2008; Rahayu and Ng, 2009; Davie and Pabriks, 2010; Koller *et al.*, 2010; Rahayu and Li, 2013). All its members possess an entire lateral carapace margin without teeth or lobes, a male palm that has two or three distinct pectinate crests, and the tubercles on the dorsal margin of the dactylus of the male chela are distinct and differentiated (Rahayu and Ng, 2005). *Parasesarma* species can be separated into two groups; one with relatively short ambulatory legs and the second which has relatively long ambulatory legs (Rahayu and Ng, 2009).

Of the 34 described species of *Parasesarma*, 12 are present in Indonesian waters, namely *P. plicatum* (Latreille, 1803), *P. unguatum* (H. Milne Edwards, 1853), *P. leptosoma* (Hilgendorf, 1869), *P. moluccense* (De Man, 1892), *P. batavianum* (De Man, 1890), *P. calypso* (De Man, 1895), *P. lenzii* (De Man, 1895), *P. kuekenthali* (De Man, 1902), *P. rutilimanum* (Tweedie, 1936), *P. anambas* Yeo,

Rahayu and Ng, 2004; *P. charis* Rahayu and Ng, 2005, and *P. paucitorum* Rahayu and Ng, 2009 (De Man, 1895, 1902; Yeo *et al.*, 2004; Ng *et al.*, 2008; Rahayu and Ng, 2010). *Parasesarma raouli* Rahayu and Ng, 2009, is now added to the Indonesian fauna as it is collected for the first time from Pulau Berang, Lingga, in the Riau Archipelago. This species belongs to the group of *Parasesarma* which have long ambulatory legs, and closely resembles *P. prashadi* (Chopra and Das, 1937) [India], *P. anambas* and *P. charis* in having three pectinate crests on the upper surface of the palm cheliped (Rahayu and Ng, 2009).

MATERIAL AND METHODS

The specimen was collected from Pulau Berang, Lingga, Riau Archipelago, Indonesia, in mangrove environment (Figure 1) and is deposited in the Reference Collection of Research Center of Oceanography (RCO) - Indonesian Institute of Sciences (LIPI), Jakarta, Indonesia. Measurements provided, in millimeters, are for the carapace breadth at the widest point followed

by the length. The abbreviation G1 is used for the male first gonopod.

RESULTS

Family SESARMIDAE Dana, 1851

Genus *Parasesarma* De Man, 1895

Parasesarma raouli Rahayu and Ng, 2009

(Figs. 2, 3)

Parasesarma melayuensis Serène – Yang, 1979: 51 (nomen nudum)

Parasesarma raouli Rahayu and Ng, 2009: 36, Figs. 5, 6.

Material examined: CRU 1283, male, 6.60mm x 6.17mm; 0° 0'59.62"S 104°39'35.86"E, Pulau Berang, Lingga, Riau Archipelago, coll. E. Widyastuti, 5 October 2014.

Diagnosis: carapace broader than long, greatest width between prominent epibranchial angles; lateral margins slightly convergent posteriorly; surface relatively smooth; regions well defined; short setae on lateral margin (Figure 2A); front deflexed downward (Figure 2B). Chelipeds (Figure 2D) with upper surface of palm bearing

3 transverse, crests; primary (distalmost) crest composed of 16 tall, broad pectinate teeth; secondary crest with 13 broader, widely spaced, pectinate teeth; third crest much shorter than preceding crests, with 6 lower, more widely spaced, pectinate teeth; cutting edge of fixed finger 0.3 times length of chela; dorsal surface of dactyl with 24 symmetrical, rounded, tubercles, small and closely spaced proximally, becoming larger, more clearly separated distally (Figure 2D). Ambulatory legs long, slender, third pair longest, merus 2.6 times as long as wide (Figure 2A). Male abdomen moderately broad (Figure 2C); somite 6 with slightly convex lateral margin, almost twice as long as wide, telson semicircular, evenly rounded. G1 (Figure 3) relatively slender, straight; apical process bent to form an angle of 45%, corneous part long, tapering, ending in truncated tip (Figure 3C); setae long, simple, originating at the base of the apical process.

Color in life: Carapace dark brown with some yellow specks on the protogastric region. Chelipeds light brown with orangish brown dactylus and fixed finger. Meri of ambulatory

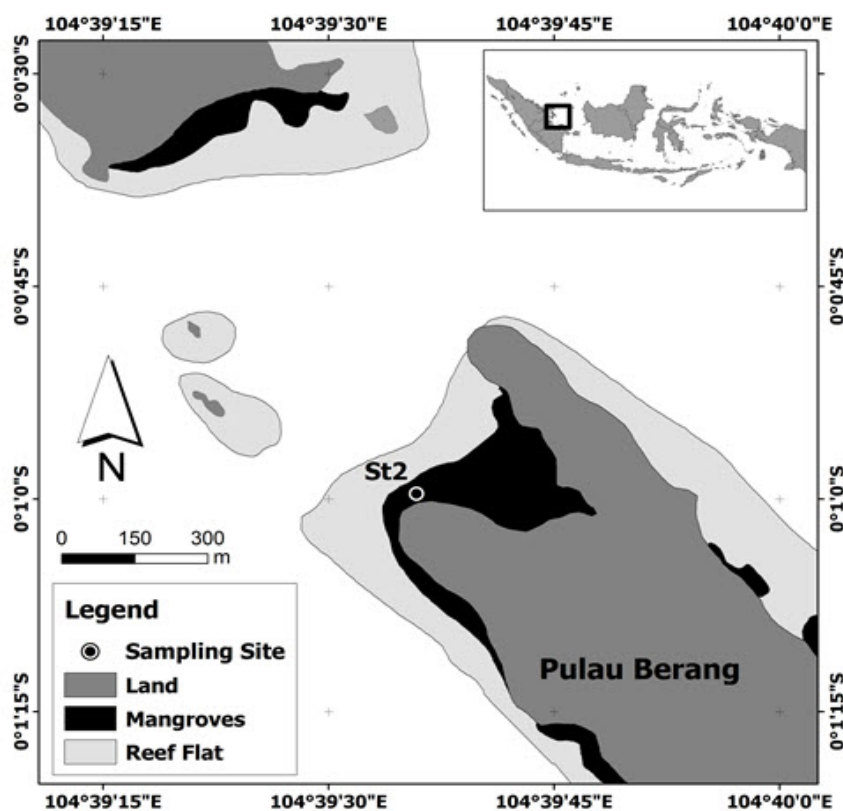


Figure 1. Map of the sampling area in Pulau Berang, Lingga, Riau Archipelago, Indonesia.

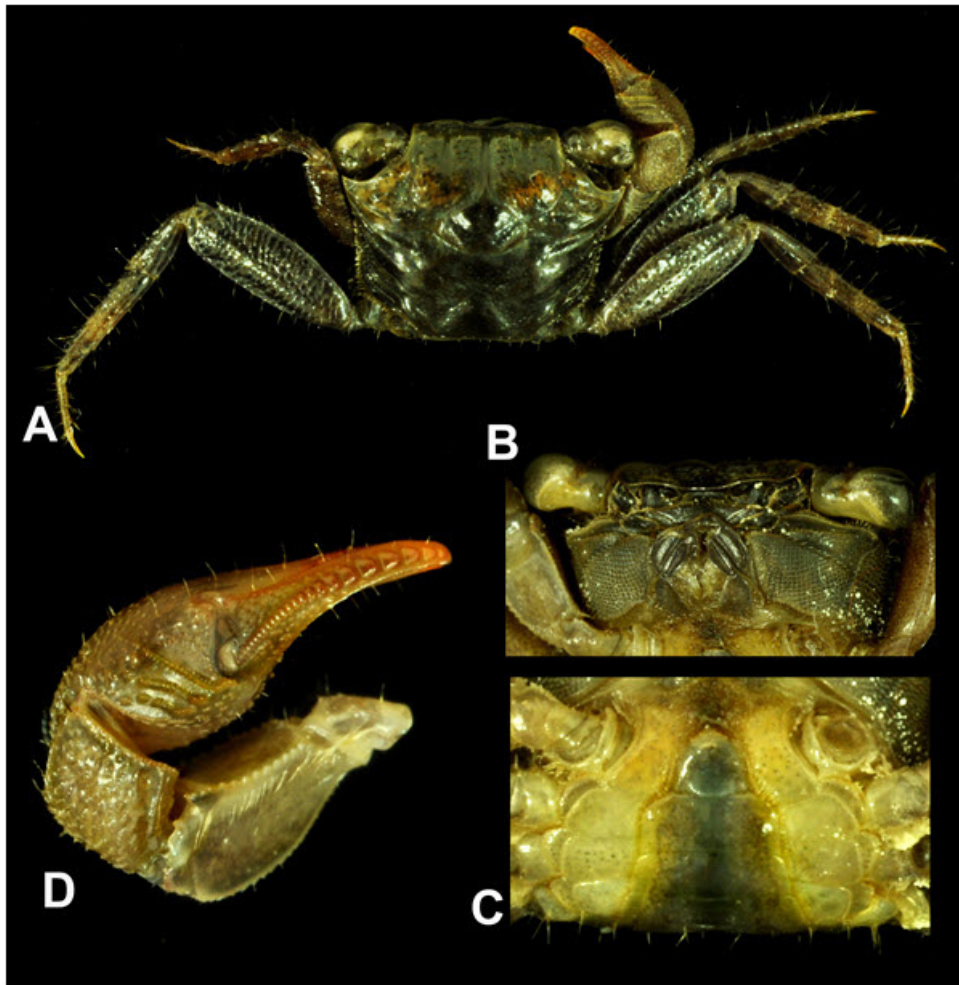


Figure 2. *Parasesarma raouli* Rahayu and Ng, 2009. Male (6.60mm x 6.17mm): A, dorsal view of carapace and legs; B, front of cephalothorax and third maxillipeds; C, abdomen; D, outer view of right cheliped.



Figure 3. *Parasesarma raouli* Rahayu and Ng, 2009, right G1. A, B, entire length of right G1. C, tip of right G1.

legs dark brown, light brown on carpi, propodi and dactyls.

Distribution: *Parasesarma raouli* was described from Sungei Melayu, Johor Strait, Johor, Peninsular Malaysia; and now recorded from Pulau Berang, Lingga, Riau Archipelago, Indonesia.

REMARKS

The specimen from Pulau Berang agrees well with the description and figure of the holotype of *P. raouli* from Johor Strait, Peninsular Malaysia. There are small differences in the number of pectinate crest and the relative proportion of the merus of the third ambulatory legs. In the holotype of *P. raouli*, the number of pectinate teeth on the first, second, and third crests are 15-17, 12-15, and 6 respectively, and the merus of the third ambulatory leg is 2.8 as long as wide; while in the present specimen from Pulau Berang, the number of pectinate teeth on the crests are 16, 13 and 6 respectively, and the merus of the third leg is 2.6 times as long as wide. These differences are probably related to the size as the specimen from Berang being smaller than the holotype.

The specimen was found crawling on the base of a mangrove tree in an environment dominated by *Sonneratia alba* on a sand substrate. Apparently, *P. raouli* is a rare species, the type series contain 22 specimens and never been recorded again until this one specimen from Riau.

ACKNOWLEDGEMENTS

The authors would like to thank Ms. Anna Manuputty as coordinator of the coral reef monitoring project in the Lingga, Riau Archipelago, and all personnel involved in helping to collect the sample. Thanks also due to Dharmawan, E.W. from Research Center of Oceanography, LIPI, for his assistance in the field and the drawing of the map.

REFERENCES

- Davie, P.J.F. & L. Pabriks. (2010). A new species of *Parasesarma* (Crustacea: Brachyura: Sesarmidae) from the mangrove of Western Australia. *Zootaxa*, 2564: 62-68.
- Man, J.G. De. (1890). Carcinological studies in the Leiden Museum, No. 4. *Notes from the Leiden Museum*, 12(13): 49-126, pls. 3-6.
- Man, J.G. De. (1895). Bericht über die von Herrn Schiffscaptan Storm zur Atejeh, an den westlichen Küsten von Malakka, Borneo und Celebes sowie in der Java-See gesammelten Decapoden und Stomatopoden. *Zoologische Jahrbücher, Abteilung für Systematik. Geographie und Biologie der Tiere* 8: 485-609, pls. 12-14.
- Man, J.G. De. (1902). Die von Herrn Professor Kukenthal In Indischen Archipel gesammelten Dekapoden und Stomatopoden. In: W. Kukenthal, Ergebnisse einer zoologischen Forschungsreise in den Molukken und Borneo. *Abhandlungen Der Senckenbergischen Naturforschenden Gesellschaft*, 25: 467-929.
- Koller, P.H., C. Liu & C.D. Schubart. (2010). A new semiterrestrial species of *Parasesarma* De Man, 1895, from Taiwan (Decapoda, Brachyura, Sesarmidae). In: Fransen, C.H.J.M., S. De Grave & P.K.L. Ng (eds.), Studies on Malacostraca: Lipke Bijdeley Holthuis Memorial Volume. *Crustaceana Monographs*, 14: 357-368.
- Ng, P.K.L., Guinot, D. & Davie, P.J.F. (2008). Systema Brachyurorum: Part I. An annotated checklist of extant brachyuran crabs of the world. *Raffles B. Zool.*, Supplement 17: 1-286.
- Rahayu, D.L. & Li, J. (2013). A new species of the genus *Parasesarma* (Crustacea: Brachyura: Sesarmidae) from Taiwan and the Philippines, and redescription of *P. jamelense* (Rathbun, 1914). *Raffles B. Zool.*, 61(2): 633-639.

- Rahayu, D.L. & Ng, P.K.L. (2005). On two new species of the genera *Haberma* & *Parasesarma* (Crustacea: Decapoda: Brachyura: Sesarmidae) from Papua, Indonesia. *Zoologische Mededelingen*, 79-2(8), 22.vii: 167-178, figs. 1-6.
- Rahayu, D.L. & Ng, P.K.L. (2009). Two new species of *Parasesarma* De Man, 1895 from Southeast Asia (Crustacea: Decapoda: Brachyura: Sesarmidae). *Zootaxa*, 1980: 29-40.
- Rahayu, D.L. & Ng, P.K.L. (2010). Revision of the *Parasesarma plicatum* (Latreille, 1803) species-group (Crustacea: Decapoda: Brachyura: Sesarmidae). *Zootaxa* 2327: 1-22.
- Yang, C.M. (1979). *A list of Brachyura in the Zoological Reference Collection of the Department of Zoology*. Guide no. 14, Department of Zoology, University of Singapore, 60 pp. (mimeographed).
- Yeo, D.C.J., D.L. Rahayu & P.K.L. Ng. (2004). Brachyura (Crustacea) of the Anambas Expedition 2002. In: Ng, P.K.L., D. Wowor & D.C.J. Yeo (eds.), *Scientific results of the Anambas Expedition 2002. Raffles B. Zool., Supplement No.11*: 79-88.