

A New Species of the Genus *Pseudolambrus* (Crustacea, Decapoda, Brachyura, Parthenopidae) from the Ogasawara Islands, Japan

Masatsune Takeda and Hironori Komatsu

Department of Zoology, National Museum of Nature and Science,
4–1–1 Amakubo, Tsukuba, Ibaraki 305–0005, Japan
E-mails: takeda@kahaku.go.jp (MT)/ h-komatu@kahaku.go.jp (HK)

(Received 1 December 2014; accepted 20 January 2015)

Abstract A new species of the genus *Pseudolambrus* of the family Parthenopidae is described on the basis of a male obtained from the stomach contents of blacktip grouper, *Epinephelus fasciatus* (Forsskål) from Chichi-jima Island, the Ogasawara Islands. The new species named *P. incisus* is readily distinguished from all the congeners by having a protruded and incised rostrum.

Key words: *Pseudolambrus*, Parthenopidae, new species, Ogasawara Islands, Japan.

Introduction

In the first to third reports on the crabs obtained from the stomach contents of fishes from the Ogasawara Islands, Takeda and Kurata (1976, 1977, 1984) tried to identify the fragments and illustrated some interesting species obtained from the blacktip grouper, *Epinephelus fasciatus* (Forsskål) and other reef fishes. It is generally rather difficult to identify the fragmentary samples found in the stomach contents of fishes to the species level. Therefore such samples are not always immediately available for the taxonomic study, but the stomach contents of fishes may be one of the important sources to know the crab fauna of subtidal rocky shore. Despite the three reports (Takeda and Kurata, 1976, 1977, 1984), there are still additional specimens from the Ogasawara Islands in the collections of the National Museum of Nature and Science, Tsukuba.

A new species of the genus *Pseudolambrus* Paul'son, 1875, of the family Parthenopidae described in this paper is based on a male specimen obtained from the stomach contents of a blacktip grouper. While all the chelipeds and ambulatory legs are detached, most are still intact

and can be used to ascertain its identity. It is here designated as the holotype.

The family Parthenopidae is divided into two distinctive subfamilies, Parthenopinae and Daldorfinae, and has been studied at length by Tan and Ng (2007a, b) and Tan (2008, 2010) in recent years, with many new genera and new species described. The sole specimen found in the stomach contents of a blacktip grouper from the Ogasawara Islands was identified as a new species due to these important contributions.

The specimen is preserved in the collections of the National Museum of Nature and Science, Tsukuba (NSMT).

Family Parthenopidae MacLeay, 1838

Genus *Pseudolambrus* Paul'son, 1875

Pseudolambrus incisus sp. nov.

[New Japanese name: Ogasawara-hishigani]

(Figs. 1–3)

Material examined. One male (holotype, NSMT-Cr 23914), found in stomach contents of blacktip grouper, *Epinephelus fasciatus* (Forsskål) (Perciformis, Serranidae) [Japanese name: Akahata] from off Futami Bay, Chichi-

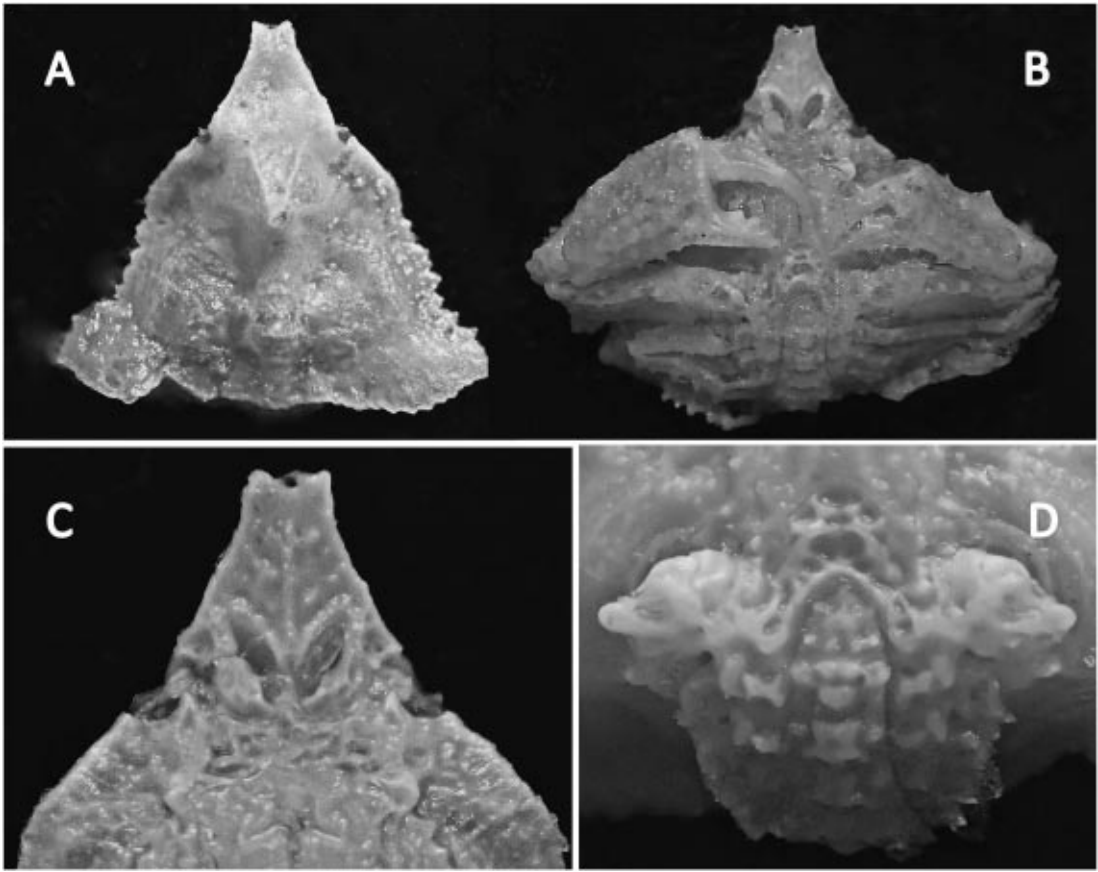


Fig. 1. *Pseudolambrus incisus* sp. nov., ♂ (holotype, NSMT-Cr 23914; 8.7 mm in carapace length, 9.5 mm in carapace breadth).

jima I., Ogasawara Is.; Aug. 25, 1985; Y. Kurata leg. Length of carapace from tip of rostrum to posterior margin of carapace, 8.7 mm, breadth of carapace, 9.5 mm.

Description of holotype. The carapace is somewhat deformed on the left epibranchial wing-like expansion; all the chelipeds and ambulatory legs are detached, dactyli of left ambulatory legs are damaged along distal halves.

Carapace (Figs. 1A, 3A) typically triangular in its general outline, slightly wider than long; dorsal surface generally depressed, weakly upturned at each epibranchial expansion, uneven, with symmetrical depressions and elevations; gastric region conical, with median erect tubercle that appears broken medially; narrow, strong ridge running anteriorly from base of gastric tubercle

to anterior part of each orbit, forming V-shape in dorsal view; frontal region depressed or rather sunken; hepatic region behind orbit distinctly depressed; entire surface of branchial region depressed or relatively sunken together with hepatic region, main part outside of cardiac region weakly convex dorsally; cardiac region rounded in dorsal view, more or less conical, with median subacute tubercle, separated from gastric tubercle by concave posterior slope of gastric tubercle.

Front (Figs. 1A–C, 3A–B) strongly developed, protruded forwards as weakly tapering lobe, lateral margins narrowly ridged, with distinctly bifid margin. Hepatic margin about one-third as long as entire anterolateral margin of carapace, oblique and nearly straight for anterior two-

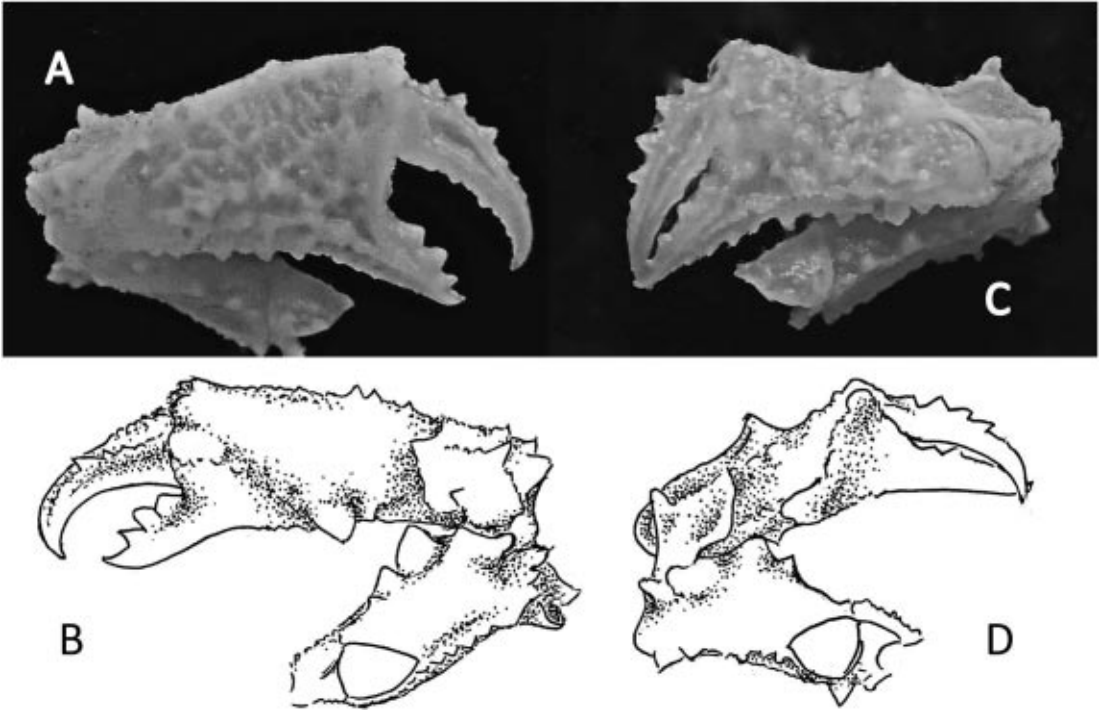


Fig. 2. *Pseudolambrus incisus* sp. nov., ♂ (holotype, NSMT-Cr 23914; 8.7 mm in carapace length, 9.5 mm in carapace breadth). Right chela in outer (A) and dorsal (B) views; Left chela in outer (C) and dorsal (D) views.

thirds, weakly convex, irregularly dentate along posterior one-third; posterior two-thirds of anterolateral margin forming serrated branchial margin, with some irregular, triangular teeth; branchial margin directed obliquely outwards medially to form wing-like, weakly upturned epibranchial expansion; most of posterolateral margin weakly convex, weakly concave near lateral angle of epibranchial expansion and posterior margin of carapace; left posterolateral margin of carapace deformed, deeply incised medially, with rounded, irregular marginal teeth; posterior margin of carapace as wide as median part of rostrum, weakly convex posteriorly for its median one-third.

Ventral surface of carapace uneven, covered with depressions, reticulations, granules and low tubercles (Fig. 1B–D). Ventral surface of rostrum with median longitudinal ridge and some oblique crests. Epistome in front of buccal frame and thoracic sternum in front of sternoabdominal

cavity, strongly reticulated with deep pits. Third maxilliped elongated; merus about half as long as ischium, with somewhat auriculated anterolateral corner; exopod with 3 equidistant tubercles on outer margin.

Abdomen (Fig. 1B, D) narrow, with 6 somites and telson, densely covered with rounded or elongated studs on surfaces and margins. Distinct long suture running from anterolateral corner of buccal frame separates hepatic and branchial margins of carapace.

First gonopod (Fig. 3I–J) as figured, stout, flattened dorsoventrally along abdominal sternum, not tapering, with hairs of variable lengths at terminal and subterminal parts. Second gonopod (Fig. 3K) about half length of first gonopod, weakly sinuate, with 4 very short setae on mesial surface of distal point.

Both chelipeds (Figs. 1B, 2) unequal, similar in shape, hidden under carapace when folded, right one being *ca.* 1.5 times larger than left one;

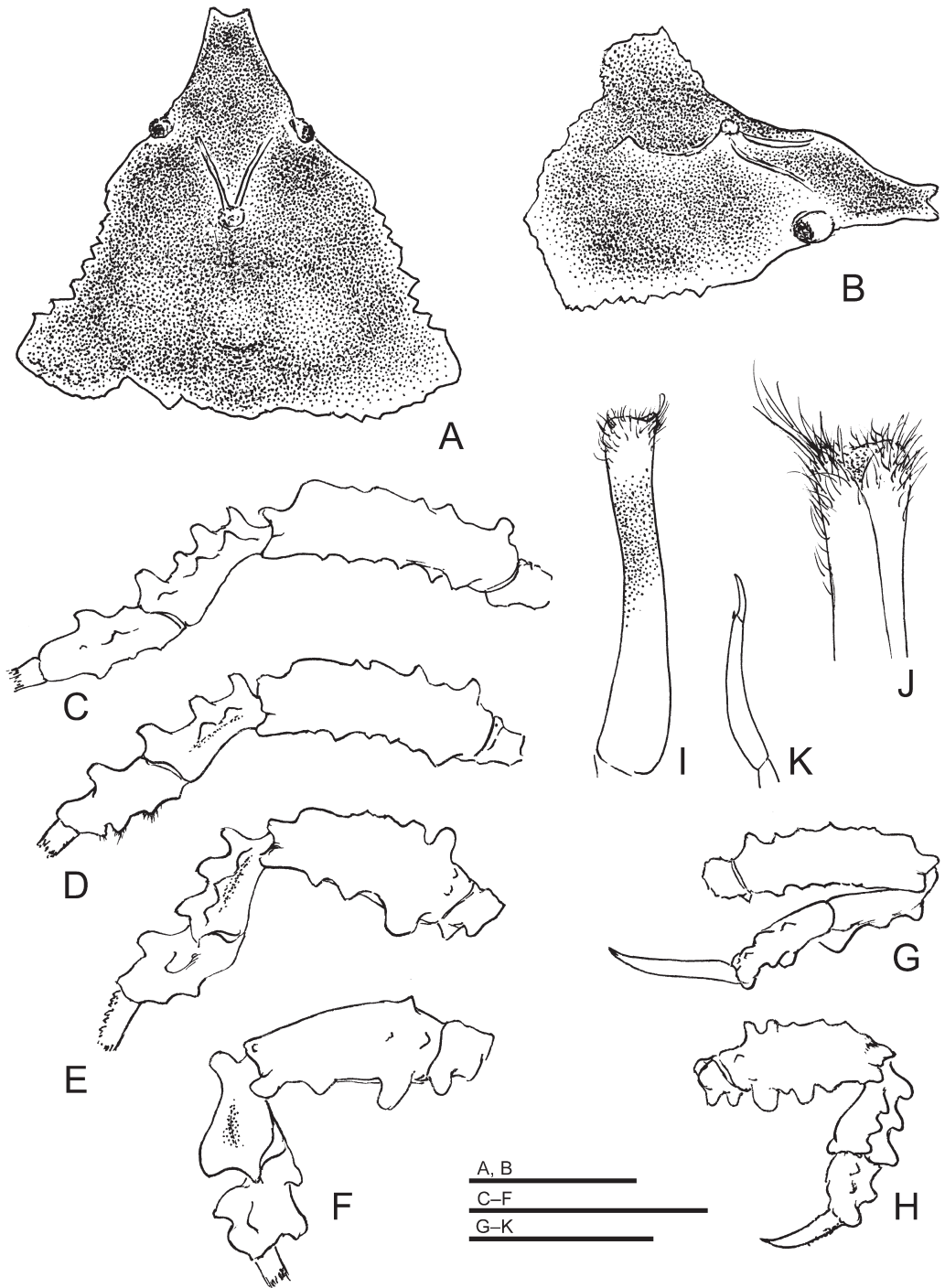


Fig. 3. *Pseudolambrus incisus* sp. nov., ♂ (holotype, NSMT-Cr 23914; 8.7 mm in carapace length, 9.5 mm in carapace breadth). A–B, Carapace in dorsal and lateral views; C–F, first to fourth ambulatory legs of left side; G–H, second and third ambulatory legs of right side; I–J, left first gonopod in sternal (I) and ventral (J) views; K, right second gonopod in ventral view. Scales — A–B=4 mm; C–F=4 mm; G–K=4 mm for G–H, 2 mm for I, K, 1 mm for J.

surfaces of merus, carpus and palm rough, with tubercles and reticulations of irregular sizes and patterns; merus short, triangular in cross section, with double-rimmed outer margin; distal and subdistal parts of outer and inner margins armed with strong triangular lobate teeth; carpus small, rough with some tubercles, armed with subacute tubercle at inner angle; palm relatively compressed laterally, becomes higher distally towards fingers, with some obtuse tubercles along lower margin; inner surface with oblique ridge from distal part of upper margin to median part of inner surface, ending in strong blunt tubercle; in smaller left chela, upper margin of palm with distinct tubercle at basal one-third, but unarmed in larger right chela; immovable finger armed with 3 and 4 conical teeth on cutting edges of larger and smaller chelae, respectively; teeth of cutting edges of movable finger smaller, irregular in both chelae; outer surface of movable finger ornamented with longitudinal depression along entire length in smaller chela, along basal half in larger chela; in each immovable finger of both chelae median longitudinal ridge formed with longitudinal furrow along lower margin; upper margin of movable finger armed with 3 or 4 sharp conical teeth; tips of both fingers sharply pointed, strongly curved, tips crossed when closed.

Ambulatory legs (Fig. 3C–H) tightly folded under epibranchial wing-like expansion of carapace, diminish their lengths from first to fourth pair; meri, carpi and propodi armed with many elongated tubercles of variable heights, shape and sizes; upper surfaces of meri smooth, without tubercles, upper surfaces of carpi each armed with 2 or 3 tubercles arranged in a line; dactyli slender, nearly as long as propodi.

Etymology. The specific name is referred to the incised distal margin of the front, which is characteristic of the new species.

Remarks. Ng *et al.* (2008) enumerated 15 species in the genus *Pseudolambrus*, and listed *P. ozakii* Sakai, 1969 as a junior synonym of *P. lobatus* (Flipse, 1930). Takeda and Webber (2007) described a new species, *P. constrictus*

from the Kermadec Islands, while Tan (2008, 2010) added *P. bato* and *P. guinotae* from the Philippines and New Caledonia, respectively. As a result, at present, the genus *Pseudolambrus* is known by 18 species from the Indo-West Pacific.

Among the known *Pseudolambrus* species, the present new species is close to *P. harpax* (Adams and White, 1848), *P. confragosus* (Calman, 1900), *P. bispinosus* (Rathbun, 1902), *P. bidentatus* (Flipse, 1930), *P. lobatus* (Flipse, 1930), and *P. bicornis* (Flipse, 1930) in having a generally triangular carapace and a V-shaped ridge running from the mesogastric tubercle toward the anterior part of the supraorbital margins of both sides.

In the new species, the hepatic margin of the carapace is confluent with the external orbital angle, oblique and almost straight along the anterior two-thirds, and is weakly convex for its posterior one-third. With regards to the orbit and hepatic margin of the carapace, the above six species related to the new species are separated into the following two groups based on the original description and figure of each species; 1) *Pseudolambrus confragosus*, *P. bispinosus* and *P. bidentatus*, in which the hepatic margin is distinctly separated from the external orbital angle, and 2) *Pseudolambrus harpax*, *P. lobatus* and *P. bicornis*, in which the hepatic margin is confluent with the external orbital angle. The new species belongs to the latter group, but the contour of the carapace is almost equilateral triangle, with the posterolaterally directed epibranchial expansion, contrary to the three species in the same group, in which the carapace is comparatively but apparently narrower, with the epibranchial expansion directed posteriorly.

Otherwise, the strongly armed ambulatory legs are characteristic of the new species, because in the other species the anterior margins of the ambulatory meri, carpi and propodi are armed with some irregular low teeth different from some tuberculated high teeth in the new species.

The protruded front of the new species is quite different from the short, stout and deflexed rostrum of the congeneric species but *Pseudolambrus guinotae* Tan, 2010, described on the basis

of one male from New Caledonia. The protruded front and the branched ridges of the ventral surface of the front are the shared features. However, the distal margin of the front is truncated in *P. guinotae* (Tan, 2010, fig. 1), but is distinctly incised in the new species (Figs. 1A–C, 3A–B). The contour of the carapace is broadly pentagonal, without the gastric tubercle in *P. guinotae*, but nearly triangular, with the gastric tubercle in the new species. The difference in the contour of the carapace is emphasized by the truncated and granulated lateral margin of the carapace with some deep slit-like incisions and the obtuse epi-branchial expansion in *P. guinotae*, and the sharply serrated lateral margin of the carapace with many V-shaped notches and the sharp epi-branchial expansion in the new species.

Acknowledgments

The holotype specimen described in this paper was obtained by the former director of the Ogasawara Fisheries Center, Mr. Yoji Kurata, to whom our cordial thanks are tendered. Dr. Peter K. L. Ng of the National University of Singapore was kind enough to revise the manuscript.

References

- Adams, A. and A. White 1848, 1849. Crustacea. In Adams, A. (ed.): The zoology of the voyage of the H.M.S. Samarang; under the command of Captain Sir Edward Belcher, C.B., F.R.A.S., F.G.S. during the years 1843–1846. pp. i–viii+1–32, pls. 1–6 (1848)/pp. 33–66, pls. 7–13 (1849). Reeve, Benham & Reeve, London.
- Calman, W. T. 1900. On a collection of Brachyura from Torres Straits. The Transactions of the Linnean Society of London, 2nd Series, Zoology, 8: 1–50, pls. 1–3.
- Flipse, H. J. 1930. Oxyrhyncha: Parthenopidae. Die Decapoda Brachyura der Siboga-Expedition, VI. Siboga-Expeditie, 39c2: 1–96.
- Miers, E. J. 1879. On the classification of the maioid Crustacea or Oxyrhyncha, with a syonopsis of the families, subfamilies, and genera. Journal of the Linnean Society, Zoology, London, 14: 634–673, pls. 12–13.
- Ng, P. K. L., D. Guinot and P. J. F. Davie 2008. Systema Brachyurorum: Part I. An annotated checklist of extant brachyuran crabs of the world. Raffles Bulletin of Zoology, 17: 1–286.
- Paul'son, O. 1875. Studies on Crustacea of the Red Sea with notes regarding other area. Part 1. Podophthalmata and Edriophthalmata (Cumacea). 164 pp., 21 pls. (Israel Programme for Scientific Translations, Jerusalem.) [English translation of original Russian edition, 1961.]
- Rathbun, M. J. 1902. Crabs from the Maldive Islands. Bulletin of the Museum of Comparative Zoölogy at Harbard College, 39: 123–138, pl. 1.
- Sakai, T. 1969. Two new genera and twenty-two new species of crabs from Japan. Proceedings of the Biological Society of Washington, 82: 243–280.
- Takeda, M. and Y. Kurata 1976. Crabs of the Ogasawara Islands. II. First report on the species obtained from stomachs of fishes. Researches on Crustacea, 7: 116–137.
- Takeda, M. and Y. Kurata 1977. Crabs of the Ogasawara Islands. VI. Second report on the species obtained from stomachs of fishes. Memoirs of the National Science Museum, (10): 141–145. (In Japanese with English summary.)
- Takeda, M. and Y. Kurata 1984. Crabs of the Ogasawara Islands. VII. Third report on the species obtained from stomachs of fishes. Bulletin of the National Science Museum, Series A (Zoology), 10: 195–202.
- Tan, S. H. 2008. A new species of *Pseudolambrus* (Crustacea: Brachyura: Parthenopidae: Parthenopinae) from Panglao, Bohol, the Philippines. Zootaxa, 1731: 63–68.
- Tan, S. H. 2010. A new species of *Pseudolambrus* (Brachyura, Parthenopidae) from New Caledonia. In Castro, P., P. J. F. Davie, P. K. L. Ng and B. Richer de Forges (eds): Studies on Brachyura: A Homage to Danièle Guinot. Crustaceana Monographs, 11: 329–333. Brill, Leiden.
- Tan, S. H. and P. K. L. Ng 2007a. Descriptions of new genera from the subfamily Parthenopinae (Crustacea: Decapoda: Brachyura: Parthenopidae). Raffles Bulletin of Zoology, Supplement 16: 95–119.
- Tan, S. H. and P. K. L. Ng 2007b. Review of the subfamily Daldorfinae Ng & Rodriguez, 1986 (Crustacea: Decapoda: Brachyura: Parthenopidae). Raffles Bulletin of Zoology, Supplement 16: 121–167.