

Two Species of the Family Parthenopidae (Crustacea, Decapoda, Brachyura) from the Kermadec Islands in the South Pacific

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Abstract Two species of the family Parthenopidae (Crustacea, Decapoda, Brachyura), *Platylambrus allisoni* (Garth, 1992) and *Pseudolambrus constrictus* sp. nov., are recorded from the Kermadec Islands in the South Pacific based on specimens in the collections of the Museum of New Zealand Te Papa Tongarewa. *Platylambrus allisoni*, previously known only from a male specimen from the deep sea off Easter Island, is characteristic in having the carapace ornamented with stellate granules fusing into solid, smooth, symmetrically arranged masses and ridges on the gastric, cardiac, branchial and anterolateral regions. *Pseudolambrus constrictus* is closest to *Ps. calappoides* (Adams and White, 1848), but readily distinguished from it by the different contour of its carapace which has a distinct constriction at the anterior end of the hepatic margin and the front not strongly inclined.

Key words: New species, Parthenopidae, parthenopid crabs, *Pseudolambrus*, *Platylambrus allisoni*, Kermadec Islands, New Zealand.

The bulk of brachyuran specimens from the Kermadec Islands in the collections of the Museum of New Zealand Te Papa Tongarewa were studied by Takeda and Webber (2006), and recently Komatsu and Takeda (2007) reported on three species of the family Leucosiidae. In this paper, two species of the family Parthenopidae, *Platylambrus allisoni* (Garth, 1992) and *Pseudolambrus constrictus* sp. nov., are recorded; a female specimen identified as *Pl. allisoni* is the second record since the original description, and a male specimen described as *Ps. constrictus* is the holotype of the new species. This is the first record of parthenopid crabs in the Kermadec Islands. Both specimens are deposited at the Museum of New Zealand Te Papa Tongarewa (MNZ).

In the descriptions and remarks on each species, the breadth and length of the carapace are abbreviated as CB and CL, respectively.

Genus *Platylambrus* Stimpson, 1871

Platylambrus allisoni (Garth, 1992)

(Fig. 1)

Material examined. Kermadec Is., 1800 m northwest of Raoul I. (29°13.96'S, 177°52.84' W), 567–530 m deep; 1 female (MNZ CR. 011248); 13 September 1976; R. V. *Acheron*.

Remarks. The female examined has a carapace of 12.0 mm CB and 9.6 mm CL. The specimen agrees well with the description and figures of a male from Easter Island recorded by Garth (1992) who reported on six species of *Platylambrus* from the South Pacific. The carapace is typically *Platylambrus*-shaped, but quite characteristic in having stellate granules fusing into solid, smooth, symmetrically arranged masses and ridges on the gastric, cardiac, branchial and posterolateral regions, unlike all other congeneric species.

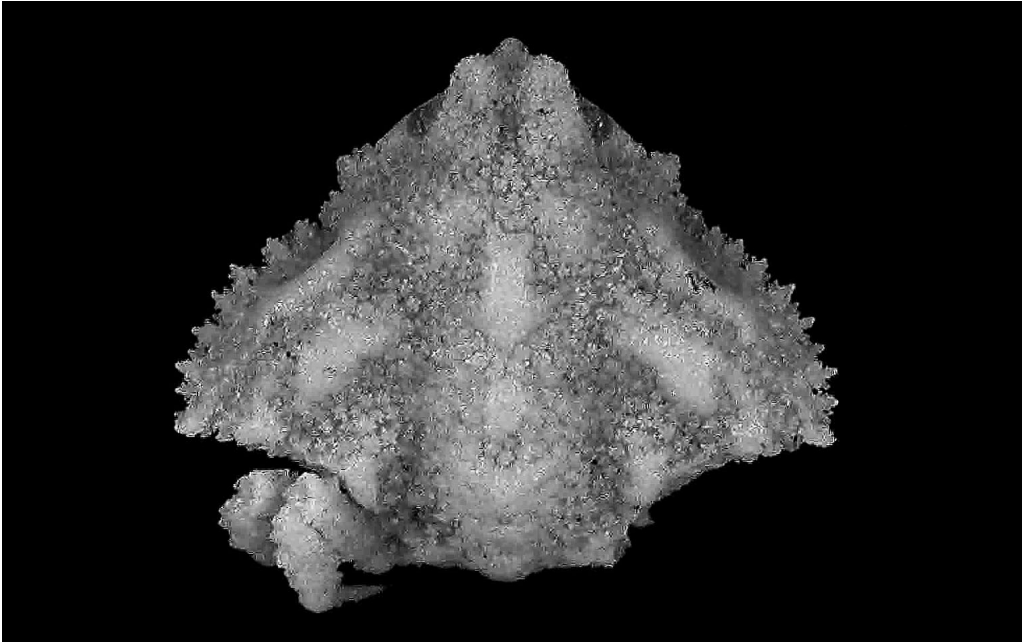


Fig. 1. *Platylambrus allisoni* (Garth), female (MNZ CR. 011248), CB12.0 mm.

Distribution. *Platylambrus allisoni* was previously known only by the holotype male taken at a depth of 591 m off Easter Island. This new record extends the known distribution of the species through more than 70° of longitude (but at similar latitude), from the eastern to the western South Pacific.

Genus *Pseudolambrus* Paul'son, 1875

Pseudolambrus constrictus sp. nov.

(Figs. 2, 3)

Material examined. Kermadec Is., between Dayrell and Chanter Islands, Herald Islets (29°15'S, 177°50.9'W), 31–45 m deep; 1 male, holotype (MNZ CR. 011247); 11 September 1976; R. V. Acheron.

Description. CB, 7.6 mm; CL, 6.8 mm. Carapace including rostrum triangular, only slightly wider than long, not convex dorsally as a whole, with a wide branchial depression at each side of cardiac region; surface of smooth appearance under unaided eye, but eroded with small depressions of variable shapes and sizes. Gastric region

prominent, convex dorsally, undivided, armed with a blunt tubercle at metagastric part; posterior slope of metagastric tubercle distinctly sunken, connected with cardiac region through a longitudinal low, saddle-like ridge. Cardiac region rounded, convex, lower than gastric region, eroded, blunt at its tip. Intestinal region not sharply demarcated from cardiac region, widening posteriorly toward posterior margin of carapace.

Front prominent, protruding obliquely downward as a triangular flattened lobe beyond orbits, with a shallow depression between orbits; tip of front thick, blunt, its median lower part compressed, with a depression, forming anterior part of antennular septum. Inner part of upper orbital margin long, granulated, only weakly concave laterally; outer part directed weakly forward outside of small notch; two short, longitudinal linear ridges on outer part of upper orbital margin, a ridge from external orbital angle, and two or three ridges on lower orbital margin; external orbital angle not distinctly formed, being confluent with anterior end of carapace margin; this anteri-

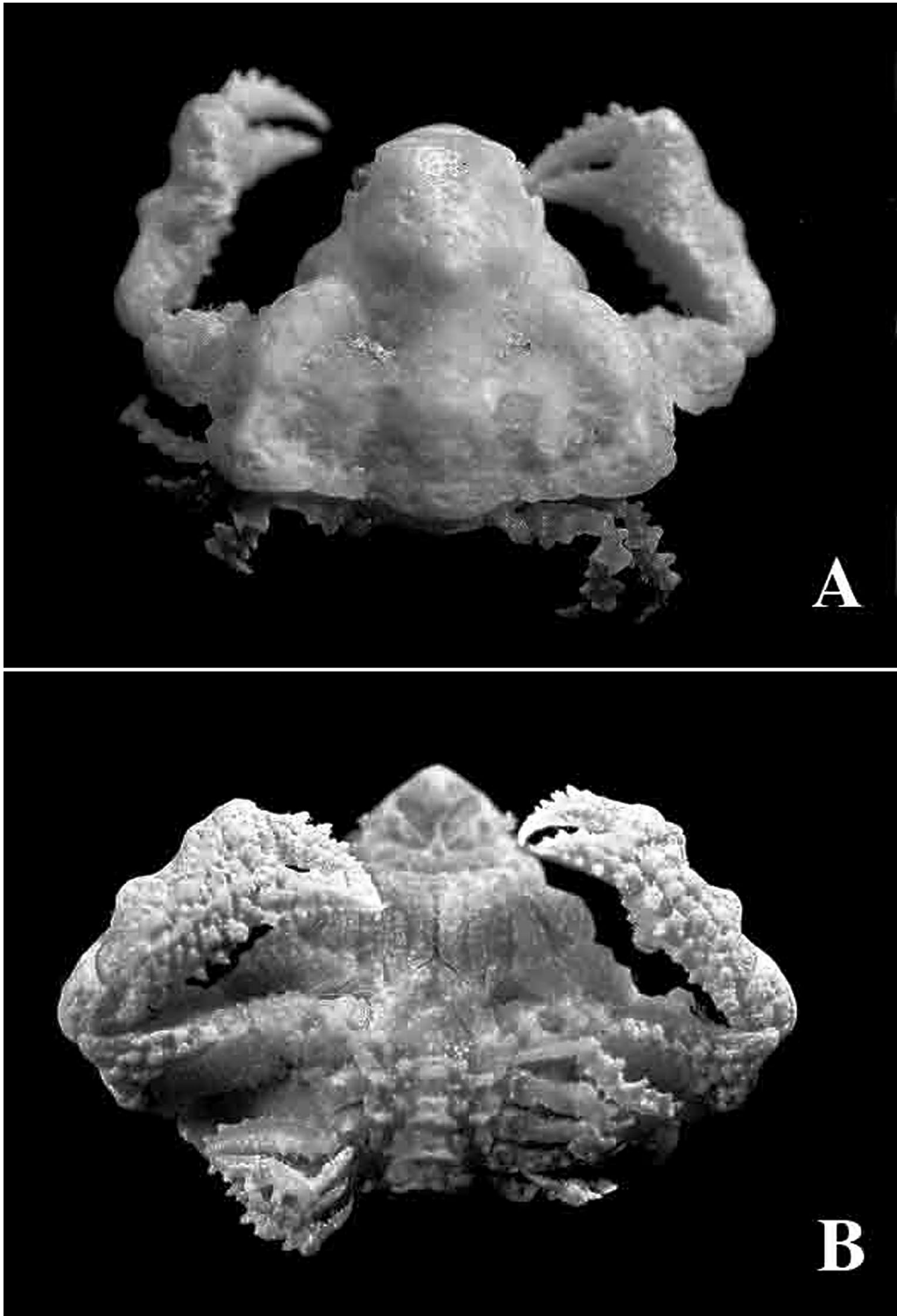


Fig. 2. *Pseudolambrus constrictus* sp. nov., holotype male (MNZ CR. 011247), CB 7.6 mm, dorsal (A) and ventral (B) views.

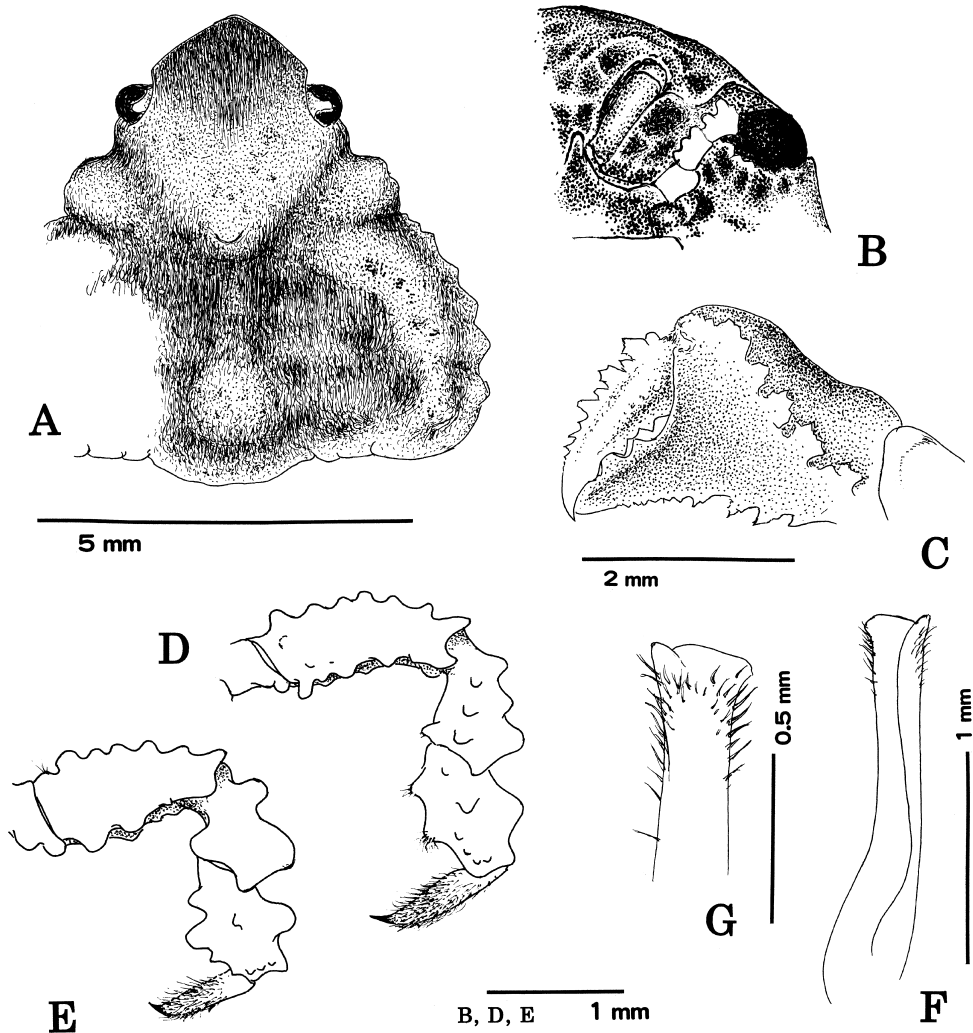


Fig. 3. *Pseudolambrus constrictus* sp. nov., holotype male (MNZ CR. 011247). Carapace (A), left frontorbital region (B) in ventral view, right chela (C) in dorsal view, right third (D) and fourth (E) ambulatory legs in dorsal view, left first pleopod (F) in ventral view, distal part of the same (G) in sternal view.

or part of carapace margin behind external orbital angle almost longitudinal, weakly convex outward, as long as distance between internal and external orbital angles. Anterior slope of hepatic margin of carapace retreating obliquely outward at an angle of ca. 130 degrees with carapace margin behind external orbital angle; posterior slope obliquely convergent, making smoothly convex hepatic margin; hepatic region sunken as a whole, weakly convex dorsally, narrowing toward bridge between gastric and cardiac regions.

Branchial region distinctly depressed inside a thick, prominent submarginal ridge that is eroded on its dorsal surface; branchial margin of carapace much lower than its submarginal ridge, serrated by serial triangular teeth, isolated anteriorly from hepatic margin by a notch, continuing to posterior margin of carapace as a wide, weakly convex posterolateral lobe. Median third of posterior margin of carapace weakly convex posteriorly, eroded, as wide as distance between upper orbital margins; posterior margin of carapace lat-

eral to median third divided into three lobes; median lobe twice as wide as inner lobe, one third as wide as posterolateral lobe.

Chelipeds not long, unequal in size, right cheliped larger. Merus concealed for its proximal half beneath carapace, distal half curving more forward and outward, with flattened inner surface; median part of anterior margin excavated, together with depressions at inner margin of carpus and upper part of proximal half of palm, forming a large concavity; three lobular, triangular teeth fitting to form lower margin of the large concavity, when the cheliped is flexed; posterior margin of merus serrated with several teeth along its proximal two thirds, and distal third with two lobes. Outer surface of carpus and upper surface of palm smooth, but outer upper surface of palm ornamented with rough reticulation of linear ridges, short furrows and depressions; lower half of outer surface of palm roughened with clusters of granules; lower margin of palm armed with sharp teeth. Immobile finger armed with three prominent cutting teeth, a longitudinal ridge with some granules on outer surface, and some sharp teeth on basal half of lower margin. Movable finger subequal in length to upper margin of palm, armed with two rows of clusters of granules on outer surface, and with three high, granulated teeth with smaller teeth between them on margins. Outer upper surface of palm with two humps, proximal one being larger; inner upper margin of palm armed with five prominent teeth with small marginal granules; inner surfaces of teeth flattened, smooth, not separated from inner surface of palm. Inner surfaces of palm and basal halves of both fingers smooth, studded with scattered granules of good size.

Ambulatory legs comparatively stout, flattened. Meri somewhat narrower distally, with tricarinate margins, one carina anteriorly and two posteriorly; each anterior margin armed with several granules of good size, or rather tubercles, with obtuse tips; in first two pairs of legs granules on both anterior and posterior margins small; in last two pairs of legs proximal two teeth on each posterior upper margin prominent, and

distinctly lobular in last pair. In first three pairs of legs each carpus armed with three teeth on anterior margin and three teeth on upper surface; distal tooth of each anterior margin large and distinctly lobulate; in last pair of legs upper surface of merus smooth, flattened, with a small lobe and a prominent lobe at proximal and distal ends, respectively; distal end of lower margin lobate. Each propodus of first three ambulatory legs armed with a prominent lobe on median part of anterior margin, and with two tubercles tipped with setae on posterior margin; each upper surface provided with one large tubercle and one small tubercle on proximal half, three or four small teeth in a longitudinal line on distal half; in last pair of legs, posterior margin of propodus armed with three tubercles, median one of which is much larger than others and distinctly lobate; upper surface with a small tubercle at median part.

Abdomen narrow, seven-segmented. First segment short, almost obscured under posterior margin of carapace; second segment with a transverse, granulated ridge, abdomen bending at this segment; third to fifth segments roughened with granules, each provided with a transverse, granulated ridge; main part of sixth segment occupied by a transverse, short, high ridge; terminal segment flattened, with only scattered sharp granules of variable sizes.

Male first pleopod well developed, stout, flattened for its whole length, subtruncate at its distal end which is surrounded by setae. Second pleopod sharply pointed at its tip, about half as long as first pleopod.

Etymology. The name refers to the distinctive and characteristic constriction in the carapace between the anterior and posterior ends of the hepatic margin of the carapace.

Remarks. The new species is closest to *Pseudolambrus calappoides* (Adams and White, 1848) which is widely distributed in the Indo-West Pacific from Japan to the Red Sea (Paulson, 1875; Alcock, 1895; Sakai, 1976; Dai and Yang, 1991). During the present study, a female (12.4 mm CB×9.7 mm CL) and a juvenile

(7.7 mm CB×6.4 mm CL) of *P. calappoides* from 50–70 m deep off Wakayama Prefecture on the Pacific coast of central Japan (NSMT-Cr 6929) were examined for direct comparison.

In *P. calappoides* the general outline of the carapace is rounded-triangular in dorsal view, and, in this respect, similar to that of the new species, but there are some distinctive differences. 1) In *P. calappoides*, the anterolateral margin of the carapace is without a constriction behind the orbit. The hepatic margin appears continuous with the infraorbital margin, without a distinct notch, whereas, in the new species, the hepatic and infraorbital margins are discontinuous and separated by a deep angle which creates a conspicuous constriction behind the orbit in dorsal view, 2) In *P. calappoides*, the front is almost perpendicular, its tip is armed with a pair of small, side-by-side tubercles, and the dorsal surface of the front is provided with a wide depression that narrows posteriorly toward the gastric region, between the orbits. In the new species, on the other hand, the rostrum is weakly deflexed, obtusely angled at its tip, which is without distinct tubercles, and the rostrum is also flattened dorsally and has only a shallow depression between the orbits, 3) In *P. calappoides*, the metagastric part of the gastric region and the cardiac region are each armed with a blunt tubercle. In *P. constrictus*, there is no marked tubercle on the cardiac region, but a blunt tubercle is present on the metagastric part, 4) In *P. calappoides*, the branchial region is without a distinct submarginal ridge but is raised for its outer two thirds with the dorsal surface inclined slowly toward the outer margin. The inner one third of the branchial region is depressed and lower than both the cardiac region and the outer two thirds of the branchial region. In *P. constrictus*, however, the whole surface of the branchial region is depressed, proximal to a strongly raised submarginal ridge.

Pseudolambrus tuberculatus Flipse, 1930, from the Sulu Archipelago, is also similar to the new species in the triangular appearance of its carapace, and especially the flattened front, but

again, there is no postorbital constriction, and a distinct hepatic margin cannot be detected. In addition, the upper margins of the palms and movable fingers in *P. tuberculatus* are not dentate, and both margins of the ambulatory legs are not lobate.

Acknowledgements

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