

## A New Spider Crab of the Genus *Rochinia* (Decapoda: Brachyura: Epialtidae) from the Izu Islands, Central Japan

Masatsune Takeda

Faculty of Modern Life, Teikyo Heisei University,  
2–51–4 Higashi-Ikebukuro, Toshima-ku, Tokyo, 170–8445 Japan  
e-mail takeda-m@thu.ac.jp

**Abstract** A new species of spider crab of the genus *Rochinia* A. Milne-Edwards, 1875 is described based on the specimens from the submarine banks of the Izu Islands, central Japan. The new species, *Rochinia planirostris*, appears closely related to *R. suluensis* Griffin et Tranter, 1986 from the Halmahera Sea in the Sulu Archipelago, the Philippines, at the depths of 275–469 m, and *R. moluccensis* Griffin et Tranter, 1986 from the Moluccas in the Java Sea, Indonesia, at the depths of 200–469 m, but it is distinguished from the latter two species most remarkably by having a distinct epibranchial spine on the carapace and the depressed rostrum.

**Key words:** Decapoda, Brachyura, Majioidea, Epialtidae, *Rochinia*, new species, Izu Islands, Japan.

The genus *Rochinia* A. Milne-Edwards, 1875 of the family Epialtidae (Majidae *s. l.*) was reviewed by Griffin and Tranter (1986), who considered that the genera *Sphenocarcinus* A. Milne-Edwards, 1878 and *Oxypleurodon* Miers, 1886 are synonymous with *Rochinia*. However, Tavares (1991) resurrected *Sphenocarcinus* for two American species and *Oxypleurodon* for six Indo-West Pacific species, and further established a new genus *Nasutocarcinus* for four species having a single rostrum. The validity of the genus *Goniopugettia* Sakai, 1986, which was established for two species, *Pugettia sagamiensis* Gordon, 1931 and *Goniopugettia tanakae* Sakai, 1986, has been supported by Ng *et al.* (2001, 2008), and Takeda and Komatsu (2005) was of opinion that *Pugettia brevirostris* Doflein, 1904 should be transferred to *Goniopugettia* together with the two species, although both of *P. sagamiensis* and *P. brevirostris* were once assigned to *Rochinia* by Griffin and Tranter (1986). Webber and Richer de Forges (1995) and Ng and Richer de Forges (2007) studying some new species of *Oxypleurodon* or *Rochinia* have commented both the position of Griffin and Tranter (1986) and the proposition of Tavares (1991).

The opinion of Richer de Forges (1995) is that all the species having the dorsal plates of the carapace and a bifid rostrum are *Oxypleurodon* and the genus *Sphenocarcinus* is limited to American coasts. Ng *et al.* (2008), following these authors, transferred several *Sphenocarcinus* species to *Oxypleurodon* in the annotated list of the brachyuran crabs of the world.

Among the specimens collected by Dr. H. Komatsu of the National Museum of Nature and Science, Tokyo, on board the T/V *Shinyo-maru* of the Tokyo University of Fisheries (at present Tokyo University of Marine Science and Technology) are several unidentified specimens referable to *Rochinia*. A close morphological examination of them in consultation with the literature concerned revealed that they represent a new species. In this paper they are described under the name of *Rochinia planirostris* sp. nov., which is particularly characteristic in the form of the depressed rostrum distinctly differing from the sharp spiniform rostrum in the congeners.

In the following description, the median line from the bottom of the V-shaped frontal notch to the tip of the intestinal tubercle, and the distance between the branchial regions of both sides were

measured to indicate the length and breadth of the carapace (abbreviated as cl and cb, respectively). In some specimens the length of the rostrum (rl) is measured from the tip to the posterior end of the lateral margin just in front of the anterior base of the supraorbital cave.

The type series and some additional specimens are preserved in the Showa Memorial Institute, National Museum of Nature and Science, Tokyo (NSMT-Cr S).

### Taxonomy

#### *Rochinia planirostris* sp. nov.

[New Japanese name: Hiratsunogani-modoki]

(Figs. 1–3)

*Material examined.* Holotype: NSMT-Cr S 010, male (cb 6.5×cl 8.8 mm, rl 3.3 mm), T/V *Shinyo-maru*, 2002-10 cruise, stn 35, off Izu-oshima Island, Izu Islands, 34°43.24'N, 139°16.84'E to 34°43.33'N, 139°16.85'E, 171–181 m deep, 24 October 2002, leg. H. Komatsu.

Paratypes: NSMT-Cr S 014, 1 female (Allotype: cb 5.5×cl 8.0 mm, rl 2.4 mm), Kurose Bank, Izu Islands, T/V *Shinyo-maru*, 2003-10 cruise, stn 20, 33°27.3'N, 139°42.6'E to 33°27.7'N, 139°42.4'E, 200–211 m deep, 21 October 2003, leg. H. Komatsu; NSMT-Cr S 011, 1 female (cb 4.9×cl 7.5 mm), infected by rhizocephalan parasite, off Izu-oshima Island, T/V *Shinyo-maru*, 2002-10 cruise, stn 31, 34°41.15'N, 139°19.6'E to 34°41.26'N, 139°19.56'E, 161–145 m deep, 24 October 2002, leg. H. Komatsu; NSMT-Cr S 012, 2 ovig. females (cb 5.1×cl 7.1 mm, rl 2.0 mm; 4.4×6.4 mm, 1.7 mm), 3 males (cb 4.2×cl 6.5 mm, rl 1.8 mm; 4.3×6.5 mm, 2.0 mm; 4.4×6.5 mm, 1.9 mm), same data as holotype; NSMT-Cr S 043, 2 females (cb 4.5×cl 6.8 mm, 4.2×6.4 mm), infected by rhizocephalan parasite, same data as holotype; NSMT-Cr S 013, 1 young male (cb 3.5×cl 5.0 mm, rl 1.6 mm), 2 ovig. females (cb 4.5×cl 6.9 mm, rl 1.8 mm; 4.5×7.0 mm, 2.0 mm), Okinoyama Bank, Izu Islands, T/V *Shinyo-maru*, 2002-10 cruise, stn 41, 34°51.3'N,

139°40.1'E to 34°51.06'N, 139°40.34'E, 172–135 m deep, 25 October 2002, leg. H. Komatsu; NSMT-Cr S 025, 1 male (cb 4.3×cl 6.6 mm, rl 2.2 mm), Kurose Bank, Izu Islands, T/V *Shinyo-maru* 2003-10 cruise, stn 19, 33°26.8'N, 139°42.7'E to 34°27.0'N, 139°42.4'E, 170–176 m deep, 24 October 2002, leg. H. Komatsu.

Non-types: NSMT-Cr S 203, 2 ovig. females (cb 4.2, 4.6 mm), 4 young females (cb 3.4–4.0 mm), same data as holotype; NSMT-Cr S 204, 1 young female (cb 3.3 mm), same data as allotype; NSMT-Cr S 202, 1 young female (cb 3.5 mm), same data as NSMT-Cr S011.

*Description.* Holotype male. Somewhat damaged, hepatic and branchial regions of right side broken off; distal half of left lobe of rostrum also broken off; and both first and right second ambulatory legs missing.

Carapace pyriform, with swollen branchial regions and strong notch between hepatic and branchial regions at both sides; branchial region with sparse short setae at each branchial region; gastro-hepatic region smooth, convex dorsally as a whole, narrowing posteriorly toward transverse, narrow and shallow groove separating gastric and cardiac regions; anterior part of gastric region shallowly separated from frontal region between both orbits, posterolateral part of gastric region separated from branchial region shallowly at dorsal part and deeply toward notch between hepatic and branchial regions; a short, but sharp spine at each hepatic region, directed laterally and obliquely upwards. Cardiac region strongly elevated as a boss with rounded top, unarmed, but 2 humps hardly traceable side by side. Branchial region prominent, as wide and convex as each gastric region, armed with a spine which is subparallel to, and only slightly longer than, hepatic spine; a small obtuse tubercle just outside of cardiac region; posterior part behind epibranchial spine deeply sunken together with intestinal region along posterolateral and posterior margin of carapace. Intestinal region armed with small but distinctive tubercle protruding backward over posterior margin of carapace.

Rostrum along its outer margin ca. 0.4 times

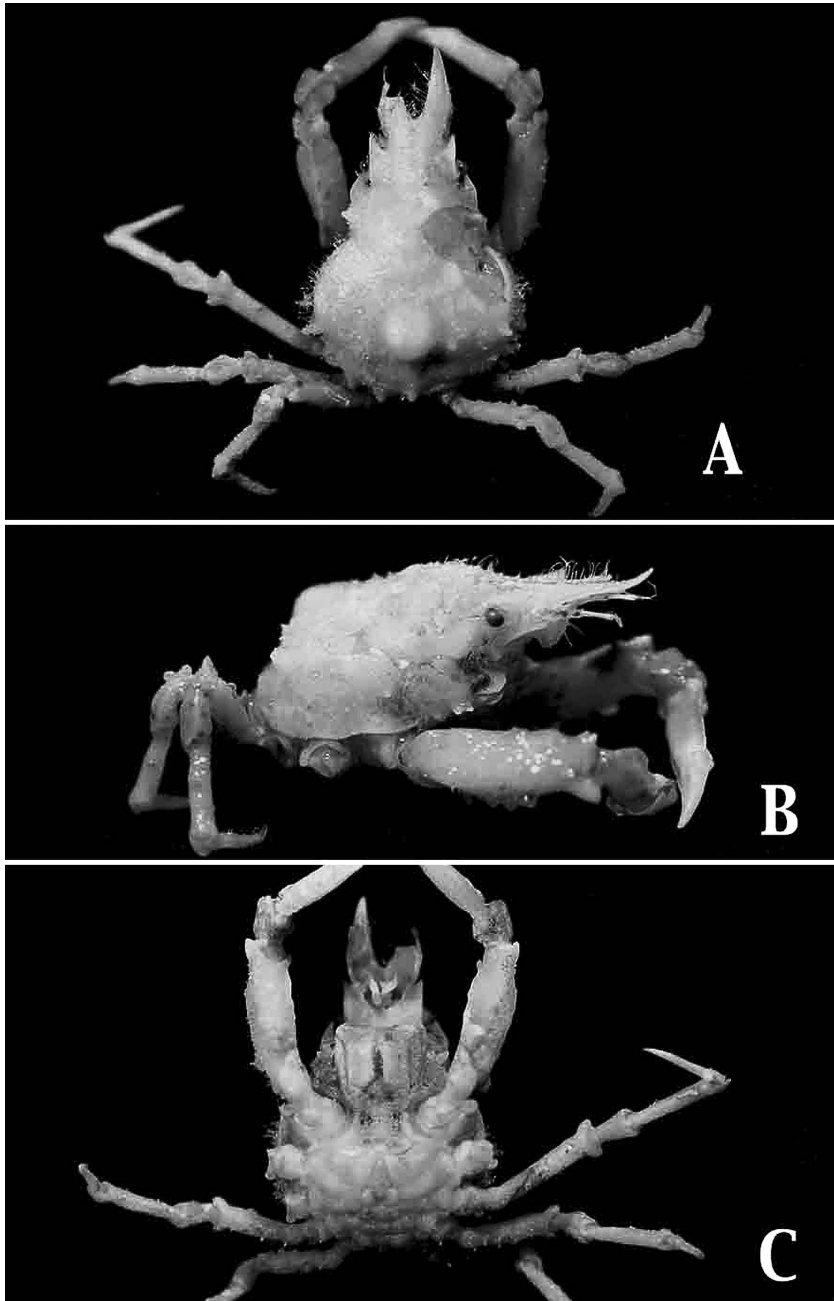


Fig. 1. *Rochinia planirostris* sp. nov., holotype, male (NSMT-Cr S 010; cb 6.5×cl 8.8 mm) in dorsal (A), lateral (B) and ventral (C) views.

as long as postorbital carapace, distinctly depressed, showing as 2 sharply pointed, tapering lobules, each with gently curved outer and straight inner margins; each lobule weakly divergent distally, leaving V-shaped hiatus; base of

rostrum constricted laterally, forming a neck in dorsal view. Supraorbital cave longitudinal, with thin, ear-like anterior angle, followed by U-shaped hole; postorbital lobe similar to supraorbital cave in dorsal view, its anterior end directed

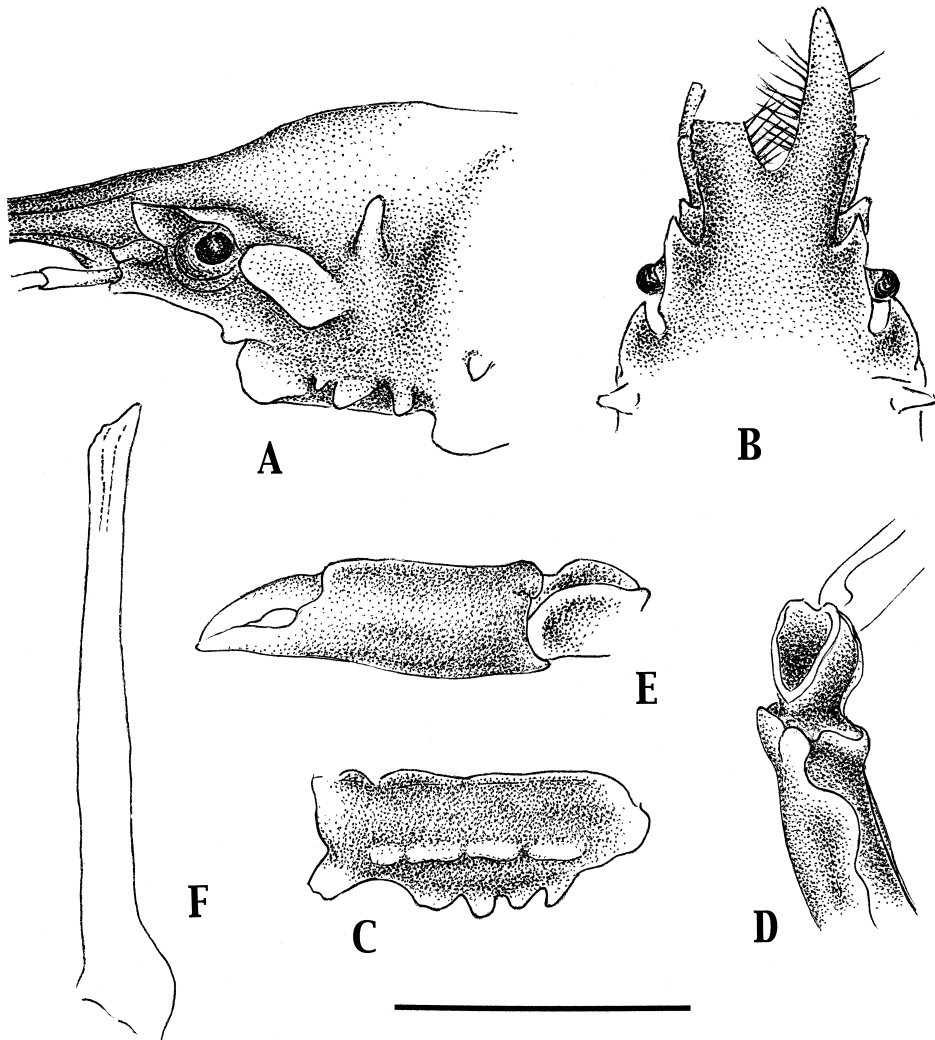


Fig. 2. *Rochinia planirostris* sp. nov., holotype, male (NSMT-Cr S 010; cb 6.5×cl 8.8 mm). A, B, frontorbital region in lateral (A) and dorsal (B) views; C, merus of left cheliped in outer view; D, carpus and distal half of merus of left cheliped in dorsal view; E, chela and carpus of left cheliped in outer view; F, first pleopod in sternal view. Scale bar: 3 mm for A; 4 mm for B–E; 1 mm for F.

obliquely inward; in lateral view its surface truncated to be flattened, elongate oval in shape with sharp margin, isolated from hepatic tubercle.

Basal antennal segment smooth, whole ventral surface shallowly concave, with thickened or slightly elevated outer and inner margins; anterolateral angle strongly produced forward as a blunt tooth, visible outside of basal constriction of front in dorsal view; a small tubercle just lateral to green gland opening.

Pterygostomial region smooth, armed with two blunt, compressed tubercles along lateral margin of buccal flame; anterolateral part of buccal flame thin, raised, isolated from deeply sunken epistome.

Chelipeds moderately long, not heavy. Merus long, subequal in length to breadth of carapace; upper margin remarkably developed as a thin plate over entire length, unarmed, curved toward median part of distal margin of merus, leaving

shallow depression in lateral view and a deep cavity between upper side of articulation with carpus in dorsal view; outer surface provided with longitudinal, blunt, but distinct ridge over entire length; inner lower margin with four thin lobes on proximal two-thirds; outer lower margin thick, weakly sinuate, but unarmed, with strong distal tubercle at lower side of articulation with carpus. Upper surface of carpus concave, sur-

rounded by raised, thin, more or less V-shaped crest; inner margin crested, making facet with inner branch of crest of upper surface. Palm not inflated, weakly tapering toward fingers in outer view, both margins sharply crested; fingers weakly incurved distally, leaving narrow hiatus in basal one third.

Ambulatory legs slender, with each segment like simple rod. Each merus with 1 or 2 indistinct

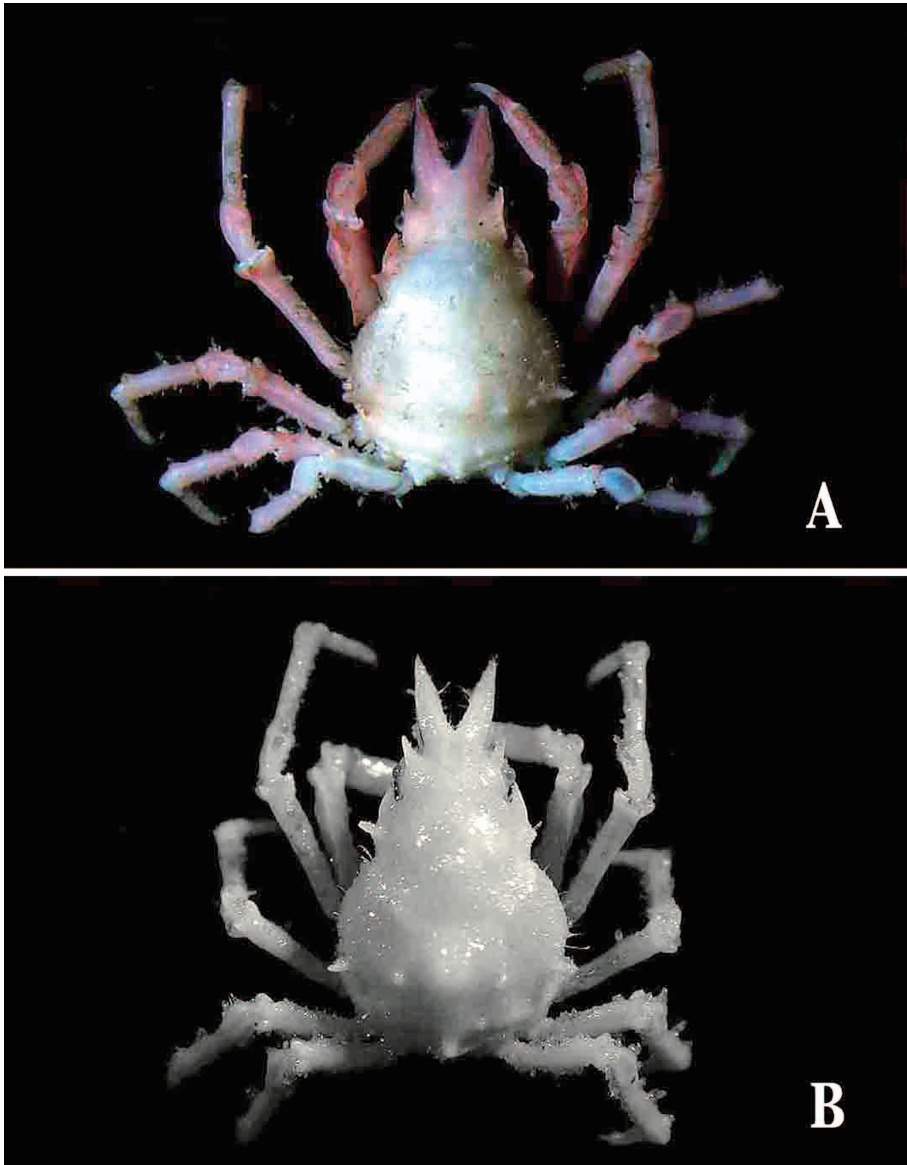


Fig. 3. *Rochinia planirostoris* sp. nov. A, paratype, male (NSMT-Cr S 025; cb 4.3×cl 6.6 mm); B, allotype, female (NSMT-Cr S 014; cb 5.5×cl 8.0 mm).



knobs on upper margin, and 3 tubercles at anterior, upper and posterior portions at articulation with carpus. Upper surface of each carpus shallowly concave in form of a spindle surrounded by thick ridge; carpus thickening distally, dorsodistal margin produced distally, partially overhanging basal portion of dactylus.

Abdominal segments separated, roughened with vesiculous granules and shallow depressions as a furrow along each lateral margin.

First pleopod slender, obliquely truncated at tip, without special ornamentation or outgrowth.

*Notes on paratypes.* Allotype female. The carapace including the depressed rostrum well agrees with that of the holotype, but as sexual differences commonly seen in majioid crabs, the carapace is shorter and thicker, with a short neck at the base of rostrum. The chelipeds are similar to those of the holotype male, but distinctly slim.

*Other paratypes.* All the paratype males are smaller than the holotype male. All the specimens are similar in size and seem to be matured because of the well-developed first pleopods. The chelipeds are, however, slender and not much different from the female chelipeds. The paratype females are also smaller than, but very close to, the non-ovigerous allotype. The eggs are big, 10–15 in number and completely concealed inside the expanded abdomen.

*Non-type.* Two ovigerous females (NSMT-Cr S 203) having the distal halves of the rostrum broken off are removed from the type designation, although it is possible to know the characteristics of the new species including the depressed rostrum. Otherwise, most of the young, subadult females are excluded from the paratypes. In these specimens the abdomen is not fully developed as to cover the whole thoracic sternum. The general formation of the carapace, chelipeds and ambulatory legs are very close to those of the adult forms except for some indistinct small, symmetrically arranged tubercles on the branchial regions.

*Remarks.* As a result of series of the revisionary studies, the genus *Rochinia* consists of 34 species (24 Indo-West Pacific, three East Pacific,

six West Atlantic and one East Atlantic) up to date. The new species, *R. planirostris*, appears most closely related to *R. suluensis* Griffin et Tranter, 1986, from the Halmahera Sea in the Sulu Archipelago, the Philippines, at the depths of 275–469 m deep, and in lesser degree to *R. moluccensis* Griffin et Tranter, 1986, from the Moluccas in the Java Sea, Indonesia, at the depths of 200–469 m. In these two West Pacific species, the hepatic region is armed with a distinct spine like in the new species, but the epi-branchial spine is small and almost rudimentary, in contrast to the prominent spine longer than the hepatic one in the new species. The postorbital lobe is confluent with the anterior margin of the hepatic spine in *R. molluccensis*, but separated from the hepatic spine in *R. suluensis* and the new species. The rostrum is about one third as long as postrostral carapace length in *R. moluccensis* and about half in *R. suluensis*, but distinctly spiniform and divergent in these two species. In the new species the rostrum is about one third, depressed and more or less lobular in shape differing from the spiniform rostrum not only in these two species but also in all the known species of the genus *Rochinia*.

#### Acknowledgments

I wish to tender my cordial thanks to Dr. Hironori Komatsu who provided me with the specimens collected by him on board the T/V *Shinyomaru* in relation to the special project (Takeda *et al.*, 2006) for the inventorial investigation of the Sagami Sea supported by the National Museum of Nature and Science, Tokyo. My thanks are also due to the editor, Dr. Tomoyuki Komai of the Natural History Museum and Institute, Chiba, and two anonymous referees for brushing up the contents of this paper.

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Manuscript received 26 July 2008; revised 17 September 2008; accepted 15 October 2008.

Associate editor: T. Komai