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Five Species of Crabs (Crustacea: Decapoda: Brachyura) from the Depths off Okino-Torishima, the Southernmost Island in Japan

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Abstract The following five crab species of four families are recorded from the depths off Okino-Torishima, the southernmost island in Japan: *Gordonopsis pacifica* sp. nov. (Homolidae), *Lamoha longirostris* (Chen, 1986) (Homolidae), *Poupinia hirsuta* Guinot, 1991 (Poupiniidae), *Cyrtomaia micronesica* Richer de Forges & Ng, 2007 (Inachidae), and *Beuroisia major* (Sakai, 1978) (Mathildellidae). *Gordonopsis pacifica* is the second species in the genus since the type species, *G. profundorum* (Alcock & Anderson, 1899) from the Indian Ocean. The records of the genera *Gordonopsis* and *Poupinia* and the family Poupiniidae are the first in Japanese waters, and *Poupinia hirsuta* is new to the carcinological fauna of Japan.

Key words: *Gordonopsis pacifica* sp. nov., *Lamoha longirostris*, *Poupinia hirsuta*, *Cyrtomaia micronesica*, *Beuroisia major*, Japan, West Pacific.

Introduction

Under the financial support of the Fisheries Agency, the Ministry of Agriculture, Forestry and Fisheries, Japan (MAFF), the fishing trials were conducted in January 2006 at the depths around Okino-Torishima, the southernmost island (20°25′31″N, 136°04′52″E, located at ca. 1,740 km south of Tokyo) in Japan, with bottom gill net, drift net, and crab and shrimp basket net to capture various types of deepwater marine animals. Okino-Torishima, an oceanic small atoll, with two islets named Kita-Kojima and Higashi-Kojima, is important to keep the Japanese Exclusive Economic Zone (EEZ).

During the survey, some unusual specimens of anomuran and branchuran crabs were found in the abundant products of alfonsino and related fishes and some pandalid shrimps. The only one specimen of the anomuran crab is referred to the genus *Paralomis* of the family Lithodidae. The detailed examination showed that it represents the new, 69th species of the genus (Takeda, 2019). The brachyuran crabs, or true crabs, were referred to two species of the family Homolidae, the monotypic representative of the family Poupiniidae, one species of the family Inachidae, and one species of the family Mathildellidae. Of these five species, the *Gordonopsis* species of the Homolidae is proved to be new to science and named *G. pacifica*, and *Poupinia hirsuta* Guinot, 1991 of the Poupiniidae is new to the carcinological fauna of Japan. The aim of the present paper is to record the occurrence of these interesting deepwater crabs in Japanese waters.

All the specimens including the holotype of the new species are preserved in the Tsukuba Research Departments, the National Museum of Nature and Science, Tokyo (NSMT). In the following descriptive notes, the carapace breadth and length are abbreviated as cb and cl, respectively.

Taxonomic Notes on the Species

Family H o m o l i d a e De Haan, 1839
Genus ***Gordonopsis*** Guinot & Richer de Forges, 1995
[New Japanese name: Gorudon-homora Zoku]
Gordonopsis pacifica sp. nov.
[New Japanese name: Gorudon-homora]
(Figs. 1B, 2–4)

Material examined. Male (cb 31.0 × cl 42.0 mm), holotype, NSMT-Cr 26053; South of Okino-Torishima I., 300–600 m deep; 13-I-2006.

Diagnosis. Closely related to the type species, *G. profundorum* (Alcock & Anderson, 1899) from India, illustrated by Alcock (1899, 1900, as *Homola*) and fully described by Guinot and Richer de Forges (1995, as *Gordonopsis*). Carapace oblong, with gently convex dorsal surface and lateral margins; dorsal surface hairy, with prominent cervical groove and a pair of large dimples. Rostral and pseudorostral tubercles not long, but prominent; pseudorostral tubercles directed forward and obliquely upward; no subhepatic tubercle. Male chelipeds stout, hairy, with long merus. Pereopods comparatively stout, slender; last pereopod dorsal in position, with subchelate dactylus and propodus; facing margins of dactylus and propodus each with several long tubercles. First gonopod short, stout, with pointed tip and long silky hairs at subterminal part.

Description of holotype. Carapace (Fig. 2) oblong, barrel-shaped, with gently convex dorsal surface and lateral margins; dorsal surface densely and uniformly covered with rather short soft hairs, divided into regions by shallow furrows and depressions. Gastric region (Figs. 2, 3A) occupies anterior one third of carapace dorsal surface, shallowly divided into three parts of subequal size, viz. lateral protogastric and median mesogastric regions; anterior extension of mesogastric region narrow, about half as long as gastric region, with parallel lateral margins; mesogastric region loomed posteriorly by median part of cervical groove; each protogastric region demarcated posterolaterally by lateral part of cervical groove and laterally by longitudinal groove along subhepatic margin. Cervical groove (Figs. 2, 3A) distinct, with more or less thickened posterior margin along whole length. Cardiac and intestinal region (Fig. 2) occupy about half as long as carapace, with weak transverse ridge at median part, converging toward carapace posterior margin. Large oblique dimple (Fig. 2) at outside of cardiac region; outer part of dimple not distinctly closed, continuous with lateral margin of carapace.

Rostral tubercle (Fig. 3A, D) narrow, extended forward, with thick lateral margins and depressed dorsal surface; pseudorostral tubercle sharp, as long and sharp as rostral tubercle, directed obliquely upward. Subhepatic margin (Figs. 2, 3A) with a conical granule. External orbital spine (Figs. 2, 3A, B, D) small, but sharp, directed obliquely upward. Antennular basal segment (Fig. 2A, C) strongly inflated, with weakly concave ventral median surface and distinctly rimmed dorsal outer margin. Antenna (Fig. 3A, C) with stout basal segments and lean flagellum; basal segments heavy, with dorsal outer margin of second segment developed to be a triangular forward extension.

Third maxilliped (Fig. 3C) distinctly pediform, remarkably hairy along inner margin.

Cheliped (Fig. 2) long, scantly covered with long silky hairs. Merus cylindrical, armed with several, short but sharp spines on upper margin in right, some in left, with some on lower margins in both sides. Carpus about half as long as merus with a longitudinal straight sulcus on upper outer surface, subequal to length of carapace; outer part of upper surface with two or three small equidistant spines along sulcus and a strong terminal spine; lower surface with a subterminal strong spine. Right chela missing; in left chela (Fig. 3E), palm hairy, heavy, compressed; in both inner and outer surfaces, upper part shallowly concave for whole length. Fingers (Fig. 3E) half as long as palm, with cutting edges meet along distal halves; both fingers with a molar tooth at proximal part of each finger.

Pereopods (Figs. 1B, 2) very long, hairy, some legs detached or broken; upper margin of each

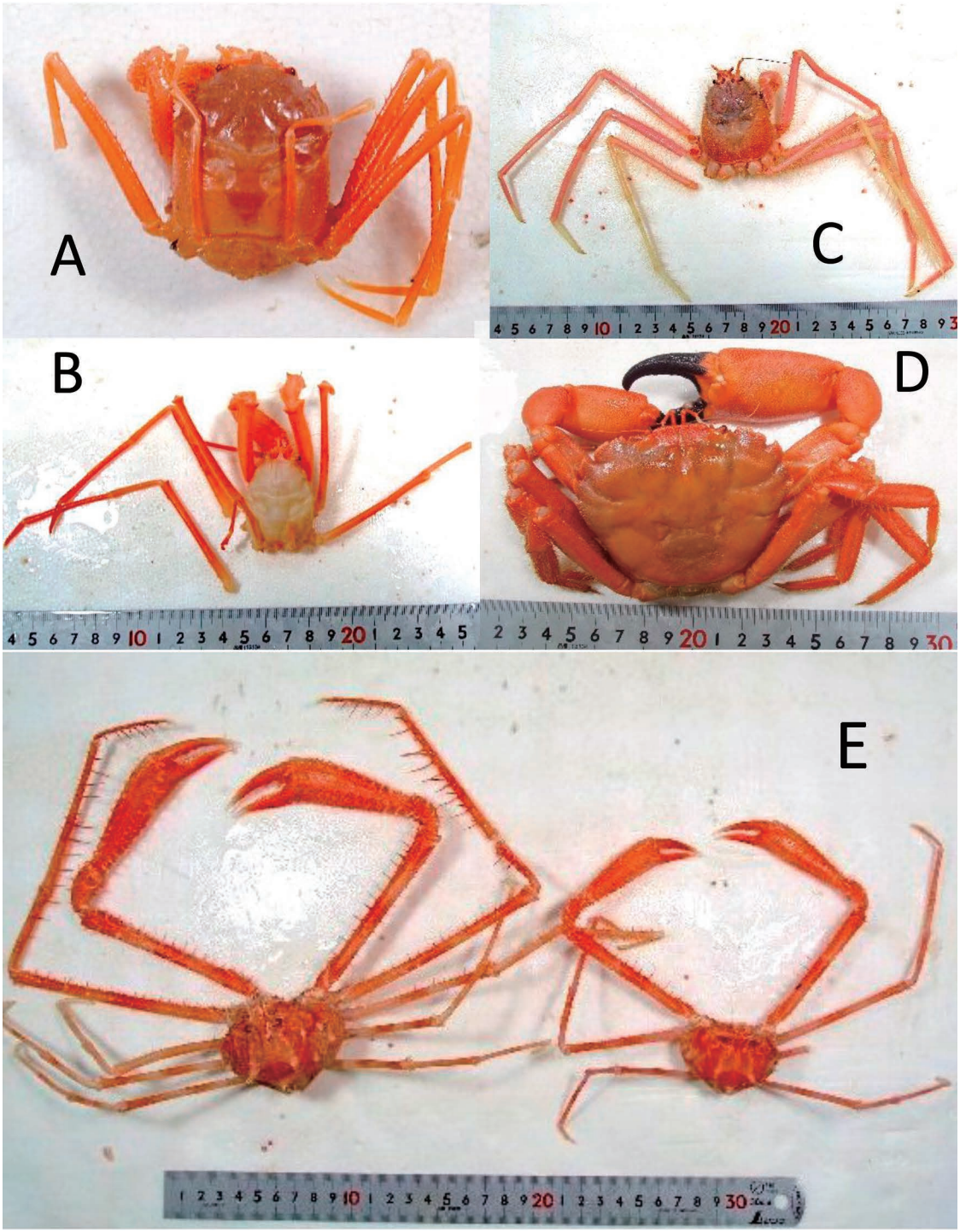

Fig. 1. Color in life taken on board. A: *Lamoha longirosteris* (Chen). B: *Gordonopsis pacifica* sp. nov. C: *Poupinia hirsuta* Guinot, 1991. D: *Beuroisia major* (Sakai, 1978). E. *Cyrtomaia micronesica* Richer de Forges and Ng, 2007.

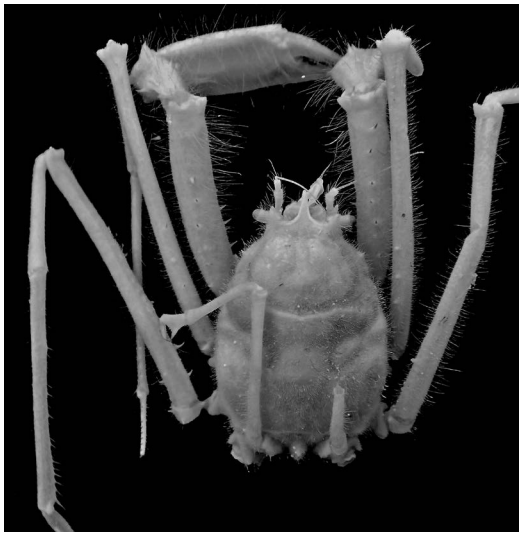

Fig. 2. *Gordonopsis pacifica* sp. nov., holotype, male (NSMT-Cr 26053; cb 31.0 × cl 42.0 mm).

merus with one to three spines at basal part, lower margin of each propodus with several slender, narrow spines, and dactyli each with more than ten spinules. Last pereopod dorsal in position as usual, slender, with subchelate propodus and dactylus; opposed margins of propodus and dactylus armed each with seven sharp tuberculate spines (Fig. 4A).

Abdomen missing, First gonopod stout, depressed, sharp at tip, as photographed and illustrated in Figs. 3F and 4B, C. Second gonopod as shown in Figs. 3F and 4D, with distal truncated surface with some spinules.

Color in life (Fig. 1B). Carapace whitish, without any speckles or blotches. Chelipeds and ambulatory legs deep orange red.

Remarks. The genus *Gordonopsis* established by Guinot and Richer de Forges (1995) to accommodate *Homola profundorum* Alcock & Anderson, 1899, is known by the monotypic representative from off Travancore coast, India, 786 m deep. The type species was described on three juvenile females, and Alcock (1899, 1900, 1901) placed this species in the subgenus *Paromola* without any additional specimens. Later, this species was reported from off East Africa (Doflein, 1904), the Maldives (Gordon, 1950), and Madagascar (Guinot and Rocher de Forges, 1981c), but these records, together with a new specimen from the Seychelles, were referred to *G.* aff. *profundorum* by Guinot and Richer de Forges (1995) who mentioned some differences in the shape and armature of the carapace and pereopods between *G. profundorum* and its unnamed congener.

The new species is readily distinguished from *G. profundorum* by the different shape of the carapace as follows. 1) In the new species, the lateral margins of the carapace are so weakly and regularly convex as a whole in the dorsal view, and thus the carapace is not narrowing anteriorly and differs from *G. profundorum* in which the lateral margins of both sides are almost straight toward the pseudorostral tubercles. 2) In the new species the pseudorostral tubercles are directed forward and obliquely upward, whereas in *G. profundorum* the pseudorostral tubercles are directed obliquely outward. 3) Another remarkable difference is the presence of a small, conical subhepatic tubercle in the new species instead of a strong subhepatic tubercle in *G. profundorum*.

The new species seems to be closer to *G*. aff. *profundorum* rather than *G. profundorum* in the general shape of the carapace, but differs also in the pseudorostral and subhepatic tubercles.

It is highly probable that *G*. aff. *profundorum* is an undescribed species distinct from both of *G. profundorum* (Alcock & Anderson, 1899) and *G. pacifica* described in this paper.

Genus ***Lamoha*** Ng, 1998

Lamoha longirostris (Chen, 1986)

[Japanese name: Tsuno-homora]

(Figs. 1A, 5)

Hypsophrus [sic] *longirostris* Chen, 1986, p. 227.

Hypsophrys futuna Guinot and Richer de Forges, 1995, p. 456, figs. 61, 66a, g.

Lamoha longirostris, Ng and Chen, 1999, p. 760, figs. 1, 2.—Marumura and Kosaka, 2003, p. 22, fig. 2.—Marumura and Takeda, 2004, p. 63, figs. 1, 2.—Richer de Forges and Ng, 2008, p. 20, figs. 17, 18, 22B-D.—Garassino, 2009, p. 28.

Material examined. Female (cb 24.0 × cl

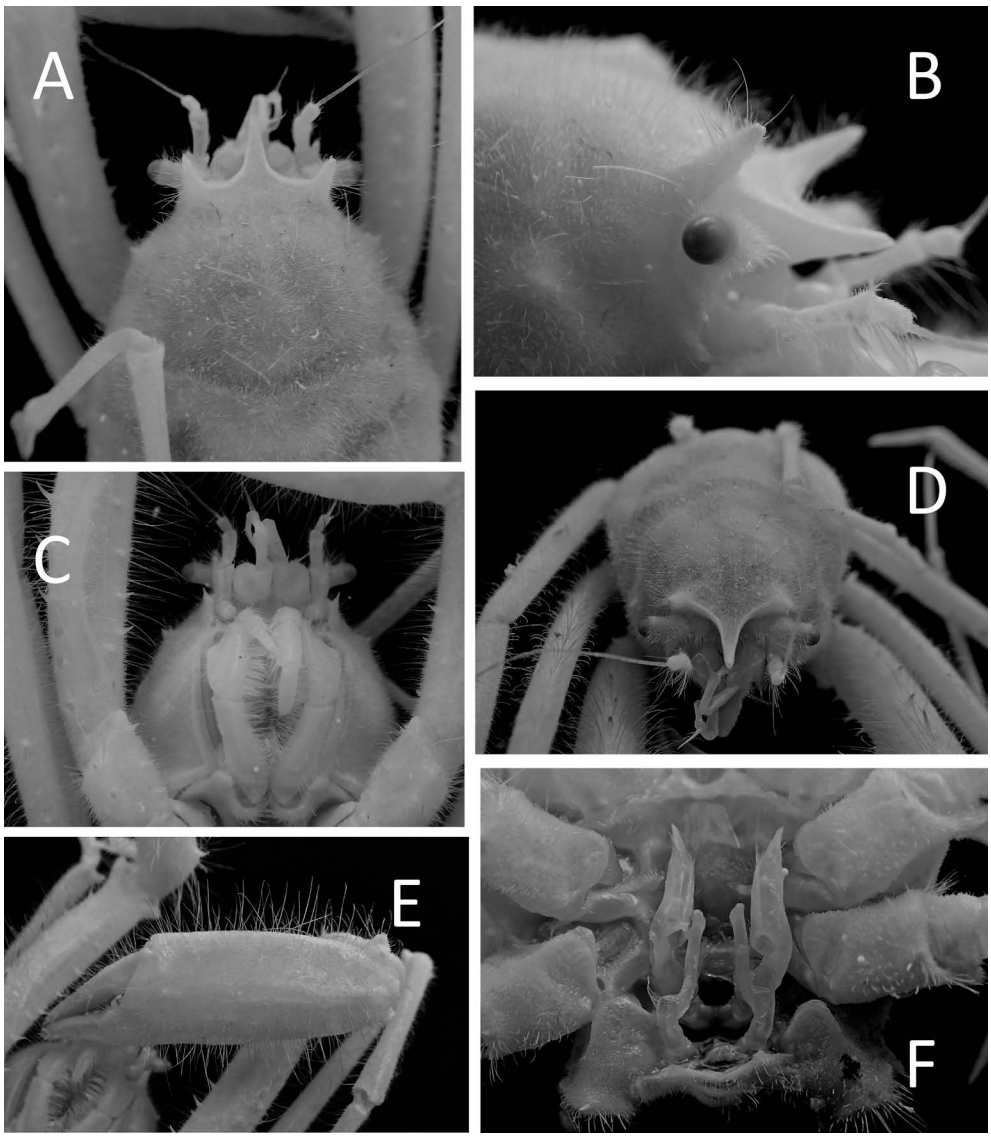

Fig. 3. *Gordonopsis pacifica* sp. nov., holotype, male (NSMT-Cr 26053; cb 31.0×cl 42.0 mm). A–D: Anterior part of carapace in different angle to show the frontorbital armature. E: Left chela in outer view. F: First and second gonopods in ventral view.

including rostrum 29.0 mm), NSMT-Cr 26054; South of Okino-Torishima I., 900–1,500 m deep; 15-I-2006.

Remarks. Ng (1998) indicated that the genus *Hypsophrys* Wood-Mason & Alcock, 1891, was preoccupied by American freshwater fish, and renamed it *Lamoha*, with nine deepwater Indo-West Pacific species. As for *L. longirostris*, to which the female specimen from Okino-Torishima was referred, Ng and Chen (1999) supplemented the insufficient original description, with the full description, fine figures and comments on the variation, and reduced *H. futuna* Guinot & Richer de Forges, 1995, to a junior synonym.

This species is seemingly most close *to L. superciliosa* (Wood-Mason & Alcock, 1891), but Guinot and Richer de Forges (1995) distinguished *L. futuna* (= *L. longirostris*) from *L.*

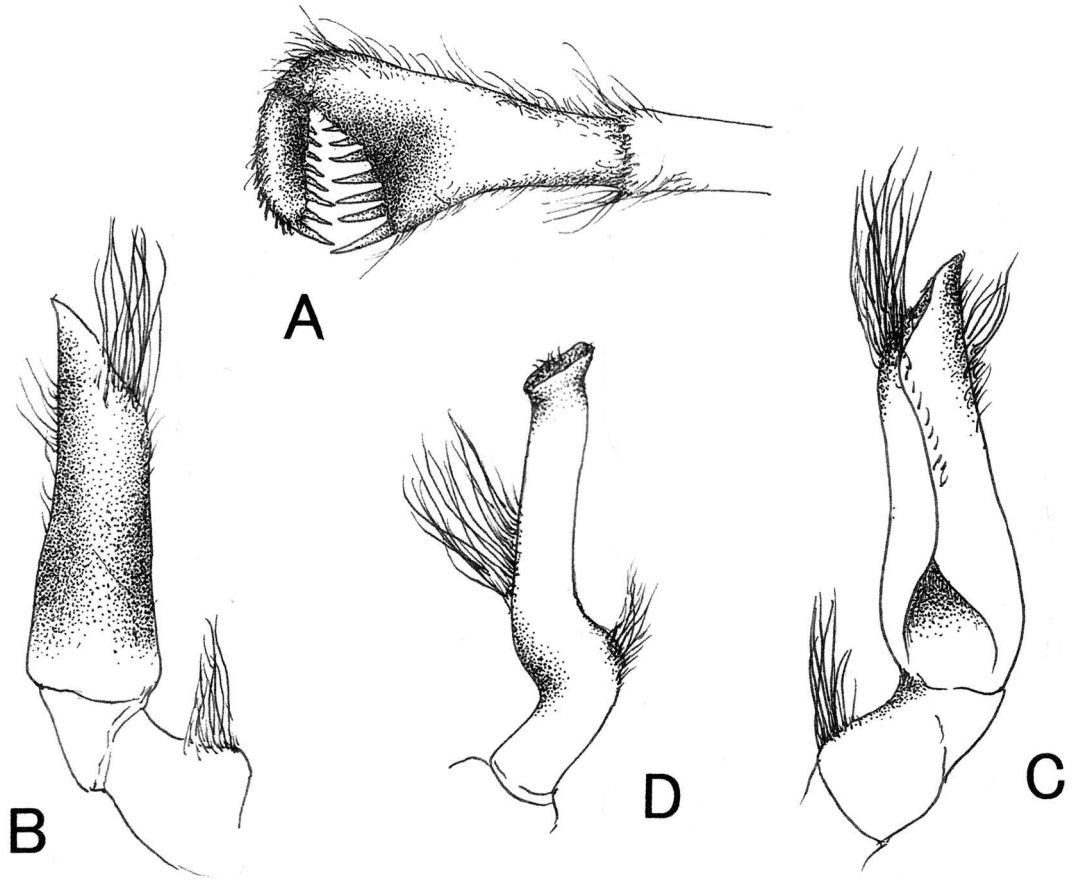

Fig. 4. *Gordonopsis pacifica* sp. nov., holotype, male (NSMT-Cr 26053; cb 31.0 × cl 42.0 mm). A: Distal two articles of fifth pereopod. B, C: Left first gonopod, in sternal and ventral views, respectively. D: Left second gonopod in ventral view.

superciliosa by the subhepatic region armed with one spine (two spines in *L. superciliosa*), the smooth protogastric region (with some short spinules in *L. superciliosa*), and the unarmed supraorbital margin (armed with a spine in *L. superciliosa*). According to Ng and Chen (1999), these distinguishing characters are reliable in the East and South China Seas specimens.

In the general appearance of the longitudinally subrectangular carapace, the long chelipeds, and the slender and depressed pereopods (Fig. 5B), this species is typically in the genus *Lamoha*, but the dorsal surface of the carapace is vaulted laterally and anteriorly, and covered with rather sparse, short setae (Fig. 5C, D). The rostrum (Fig. 5D) is well developed, simple, gently converging to the obtuse tip, with the shallowly depressed dorsal surface. The supraorbital margin is sinuous, only with low, obtuse intercalated tooth (Fig. 5D). The antennal spine is strong and directed forward, and the subhepatic spine is sharp, as long as the antennal spine and directed forward (Fig. 5B, D). In the female examined, unfortunately, the right cheliped is missing. In the left cheliped (Fig. 5A, B), the merus is crushed at the distal part; the palm is slender, widening distally, covered with many small, sharp tubercles, and longish silky hairs, and provided with a shallowly depressed patch and a black spot at the base of the immovable finger. Both fingers (Fig. 5A) are about half as long as the palm; the distal halves of both fingers are

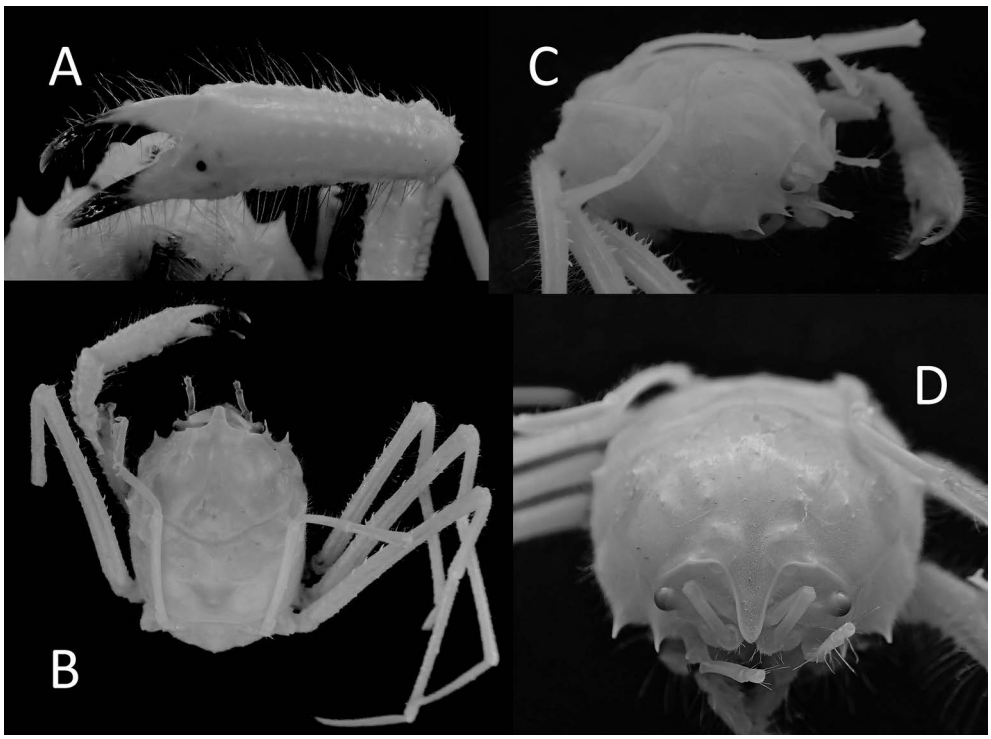

Fig. 5. *Lamoha longirostris* (Chen), female (NSMT-Cr 26054; cb 24.0 × cl 29.0 mm). A: Left chela in outer view. B–D: Carapace in different angles.

dark-colored, with the sharp tips. The pereopods (Fig. 5B) are remarkably long, and each merus is armed with about 15 spines along the basal four-fifths of upper margin. The pereopod is slender, with the subchelate dactylus, as figured by Ng and Chen (1999).

Guinot and Richer de Forges (1995) and Ng and Chen (1999) noted that *Lamoha superciliosa* and *L. longirostris* are differentiated from the other seven congeneric species by having the unbifurcated rostrum and the unarmed merus of the last pereopod.

Distribution. Marumura and Kosaka (2003) listed this species in the catalogue of the Nagai Collection of the Wakayama Prefectural Museum of Natural History, without comments as the first record from Japanese waters, but with a new Japanese name. The known locality in Japan is off Shikoku (Tosa Bay), Japan (630 m deep), and the overseas localities are the East and South China Seas (900–1,400 m), the Philippines (1,252–1,350 m) and the Solomon Islands (1,059–1,109 m) in the West Pacific, and the Wallis and Futuna Islands in the South Pacific (1,280–1,300 m).

Family P o u p i n i i d a e Guinot, 1991

[New Japanese name: Kebuka-mizuhikigani Ka]

Genus ***Poupinia*** Guinot, 1991

[New Japanese name: Kebuka-mizuhikigani Zoku]

Poupinia hirsuta Guinot, 1991

[New Japanese name: Kebuka-mizuhikigani]

(Figs. 1C, 6)

Poupinia hirsuta Guinot, 1991, p. 583, figs. 1–5, pls. 1–3.—Williams and Moffitt, 1991, p. 576, fig. 5.—Poupin, 1996, pl. 14 fig. c.

Material examined. Female (cb 39.1 × cl including rostrum 45.7 mm), NSMT-Cr 26055; South of Okino-Torishima I., 600 m deep; 13-I-2006.

Remarks. The female specimen figured in

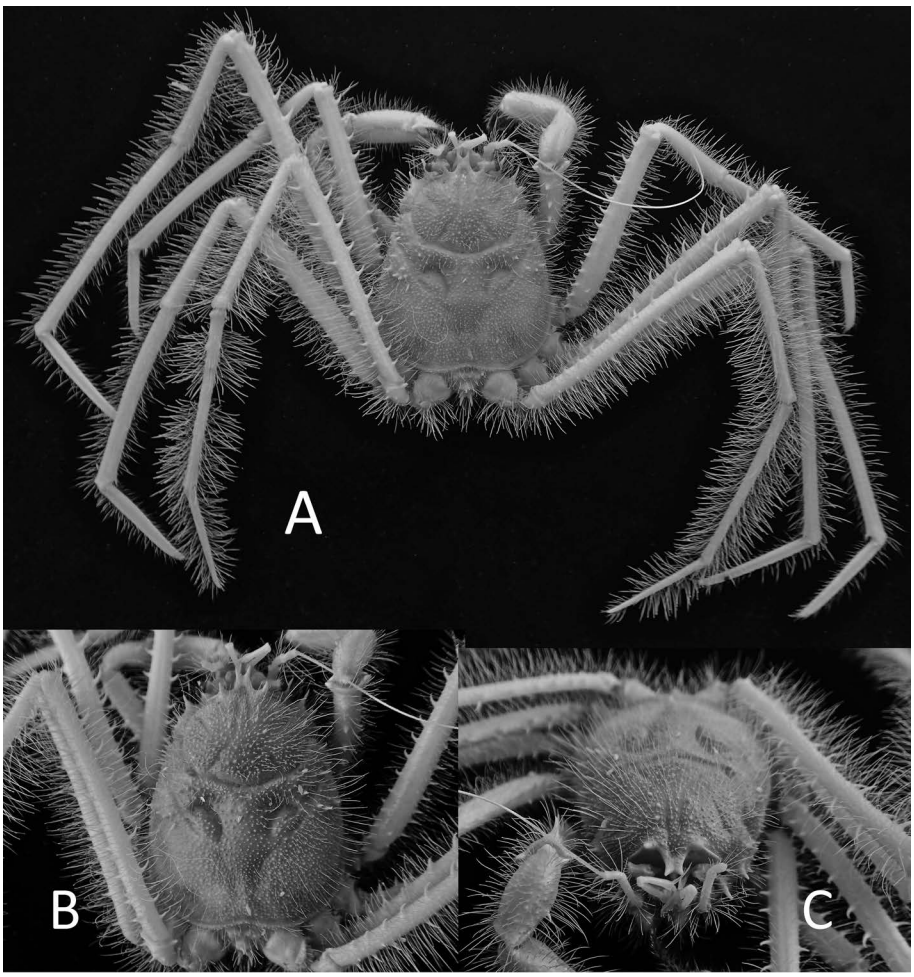

Fig. 6. *Poupinia hirsuta* Guinot, female (NSMT-Cr 26055; cb 39.1 × cl 45.7 mm).

Figs. 1, 6 agrees quite well with the original description and figures based on the male holotype and the allotype ovigerous female from the Society Islands in the South Pacific. The description of the species and the discussion for establishment of the new genus and new family are enough and thorough, but as this species is quite rare, only with a record of an additional male from the Northern Mariana Islands (Williams and Moffitt, 1991) other than a pair of the type specimens. The brief diagnostic notes on the present female specimen are to be given here.

The carapace (Fig. 6A, B) is longitudinally subquadrate in outline, weakly widening posteriorly, and convex laterally; the dorsal surface is covered with stiff longish hairs, but its areolation is not disguised; the linear cervical groove, with both lateral parts curving forward is distinct; the mesogastric region is distinctly demarcated at each side by linear longitudinal furrow, the anterior half of the mesogastric region is extended to the dorsal surface of the rostrum as an anterior outgrowth of the mesogastric region; the posterior half of the mesogastric region is equilateral triangle in shape, with the posterior width occupying the median one third of the cervical groove. A pair of large dimples lies in the middle of the dorsal surface behind the cervical groove obliquely in front of the cardiac region; the lateral margin of each dimple is extended as the

branchiocardiac groove anterolaterally parallel to the cervical groove, posterointernally as the posterolateral marginal groove of the cardiac region and posteriorly as the lateral marginal groove of the intestinal region. The front is depressed and bifid to be sharp spiniform tips. The pseudorostral spine is sharp and as long as the frontal spiniform tip. The anterolateral margin of the carapace in front of the cervical margin is armed with a spine and following some spinules, and the outer half of the dorsal surface between the cervical and branchiocardiac grooves is armed with several spinules. The anterior part of the branchial region behind the branchiocardiac groove is also armed with some spinules. The chelipeds and pereopods (Fig. 6A) are densely covered with long, stiff hairs. The female cheliped is not inflated, and all the pereopods including the last pair are remarkably long and slender; the meri are armed with ten or more equidistant spines along both margins.

The systematic values of the family Poupiniidae, the genus *Poupinia* and the species *P. hirsuta* established by Guinot (1991) in the superfamily Homoloidea are deeply discussed not only by the original author, but also by Williams and Moffitt (1991). The most striking character is that the last pereopod is long and normal like the other pereopods, without the subchelate propodus and dactylus.

Distribution. Previously known from Raiatea Island in the Society Islands, 440 m deep, and Arakane Reef in the Northern Mariana Islands, 366–421 m deep. The occurrence of *Poupinia hirsta*, monotypic representative of the genus *Poupinia*, is the first in Japanese waters, and the record of the family Poupiniidae is also new to Japan.

Family I n a c h i d a e MacLeay, 1838

Genus ***Cyrtomaia*** Miers, 1886

Cyrtomaia micronesica Richer de Forges & Ng, 2007

[New Japanese name: Minami-Ousutongani]

(Figs. 1E, 7)

Cyrtomaia micronesica Richer de Forges and Ng, 2007, p. 62, figs. 1–4, 5B, D.—Komai and Tsuchida, 2014, p. 307, figs. 22–25, 26A–E.

Material examined. Male (cb 63.8 × cl 59.7 mm), NSMT-Cr 26056; South of Okino-Torishima I., 300–600 m deep; 11-I-2006.

Additional material examined. Male (cb 38.0 × cl 36.2 mm), NSMT-26057; East of Hahajima I., Ogasawara Is., coll. Tokyo Metropolitan Ogasawara Fisheries Center, 9-VIII-2001.

Remarks. In the male examined, unfortunately, the rostral and pseudorostral spines are broken off at the median part, the right protogastric spine is broken off at distal one third or more, and the left protogastric spine is broken off at basal part. Judging from the length of the remained right protogastric spine (Fig. 7), it is apparent that in this species the protogastric spine is very long, gently convex dorsally, weakly directed obliquely outward. The general shape and armature agree with those of *Cyrtomaia micronesica* described by Richer de Forges and Ng (2007) (holotype male, paratype two males and one female from off Guam and Palau in the Micronesia), and two males from the Nikko Seamount recorded by Komai and Tsuchida (2014) at the south of the Ogasawara Islands.

The strongly convex carapace is typical for the *Cyrtomaia* species, with symmetrically arranged tubercles and spines (Fig. 7). The dorsal surface of the carapace is seemingly smooth, with microscopical granules. As noted above, there is no long spine other than a pair of the protogastreic spine; there is no anterior gastric tubercle, but the median gastric tubercle is distinct and tipped with a small, sharp tubercle; the cardiac region is raised and tipped with two tubercles side by side, being followed posteriorly by the unarmed intestinal region; the epibranchial tubercle is absent, and the anterior and posterior branchial tubercles are obtusely demarcated. The supraorbital margin has no preocular spine, and is armed with a small, but distinct intercalated tubercle and a rather spiniform postocular tubercle directed obliquely outward. The hepatic margin is obtusely angulated, and tipped with a small

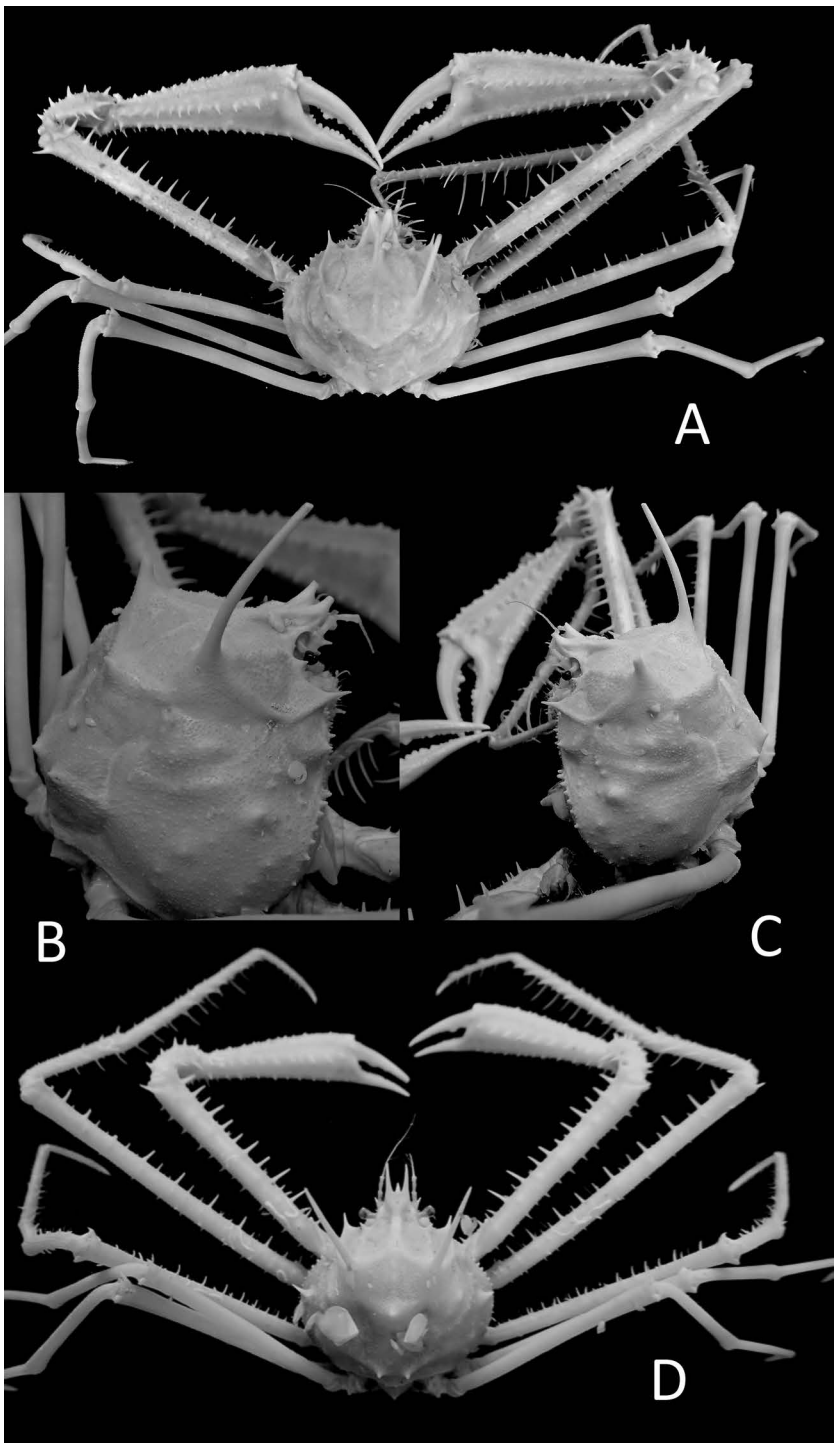

Fig. 7. *Cyrtomaia micronesica* Richer de Forges and Ng. A–C: Male (NSMT-Cr 26056; cb 63.8 × cl 59.7 mm). D: Male (NSMT-26057; cb 38.0 × cl 36.2 mm) from Ogasawara Is., with some stalked barnacles on the carapace, chelipeds and ambulatory legs.

tubercle.

The chelipeds (Fig. 7A) are long and subequal to each other in the size and shape. The merus is slender and armed with short and long, sharp spines throughout the whole length of the inner margin; the short and long spines are basically arranged alternately. The palm is heavy and becomes higher distally; the distal end of the palm is about twice as high as at basal part; both margins and the inner surface is armed each with a longitudinal low of spinules. Both fingers are about half as long as the palm, irregularly toothed on the cutting edges, leaving a narrow gape between both fingers.

The stout palm markedly becoming higher distally in this Okino-Torishima specimen is different from the slender palm of the Micronesian specimens, but agrees with one of the Nikko Seamount specimens recorded by Komai and Tsuchida (2014) who examined two male specimens from the same locality having two types of the chelipeds, and thus considered the size difference as developmental variation.

This species is seemingly very close to *Cyrtomaia cornuta* Richer de Forges & Guinot, 1988. In the original description (Richer de Forges and Ng, 2007) of *C. micronesica*, some differences from *C. cornuta* are enumerated as for the size (relatively smaller in *C. micronesica*), granulation of the carapace (more granular in *C. micronesica*), the epigastric spines (more slender in *C. micronesica*), the palm of the male cheliped (relatively slender and proportionately smaller in *C. micronesica*), the cardiac region (two blunt tubercles in *C. mcronesica* againt two strong spines in *C. cornuta*), the first abdominal somite (with a low tubercle in *C. micronesica* against a sharp spine in *C. cornuta*), the third and fifth pereopods (proportionally longer in *C. micronesica*), the spines of the basal antennal article (proportionally much shorter in *C. micronesica*), and the first male gonopod (less sinuous, with more acute tip in *C. micronesica*). Most of these differences seem to be not always decisive on the validity and are exposed to variation.

In this study an additional male (cb 63.8 mm; Fig. 7D) from the Ogasawara Islands was examined. It is slightly smaller, with the sharper tubercles and spines of the carapace, than a male (cb 38.0 mm; Fig. 7A) from Okino-Torishima Island, but without doubt both specimens belong to the same species. Both chelae of the smaller male are rather slender as seen in Fig. 7D, but the palms widening distally belong to the same pattern as the larger male (Fig. 7A).

Komai and Tsuchida (2014) recorded two males referable to *C. micronesica* from the Nikko Seamounts in the Mariana Arc, with the detailed, persuasive comparison with the original description of *C. micronesica*. As for the comparison with *C. cornuta*, however, they mentioned only that the length of the cheliped increases with growth in *C. micronesica*, and that the distal part of the male first gonopod is actually flattened and forms a rounded apex (Komai and Tsuchida, 2014: Fig. 26E). In the two males examined at present, the apex of the male first gonopod is not decidedly rounded, but nearly truncated just like the original figure (Richer de Forges and Ng, 2007: Fig. 5C) of *C. cornuta*. Komai and Tsuchida (2014) mentioned that the explanation of the distal part of the male first gonopod of *C. micronesica* may be misleading. As far as the description and figures of the other characters concerned, the validity of *C. micronesica* is uncertain, and the conclusion is that *C. micronesica* is synonymous with *C. cornuta*. However, as the type specimens of both species were not examined in this study, *C. micronesica* is tentatively retained for the West Pacific population. In due time, the direct comparison of the specimens from the West and South Pacific by the original authors of both species will make clear the taxonomic position of *C. micronesica*.

Distribution. *Cyrtomaia micronesica* has been previously recorded from Guam and Palau in the Micronesia, 210–600 m deep, and the Nikko Seamount in the south of the Ogasawara Islands, 553–637 m deep. The known localities of *C. cornuta* are New Caledonia and Norfork Island in the South Pacific, 270–535 m.

Family M a t h i l d e l l i d a e
Karasawa & Kato, 2003
[New Japanese name: Nokogiri-enkougani Ka]
Genus ***Beuroisia*** Guinot & Richer de Forges, 1981
[New Japanese name: Oo-nokogiri-enkougani Zoku]
Beuroisia major (Sakai, 1978)
[Japanese name: Oo-nokogiri-enkougani]

(Figs. 1D, 8)

Neopliumnoplax [sic] *major* Sakai, 1978, p. 8, *Neopilumnoplax major*, p. 31, figs. 16–17, pl. 2 fig. A.
Beuroisia major, Guinot and Richer de Forges, 1981a, pl. 4 figs. 4–5, pl. 5 figs. 2–3; 1981b, p. 244, figs. 5A–B, 7H.—Ikeda, 1998, p. 142.

Material examined. Two males (cb 80.0 × cl 60.1 mm; cb 69.1 × cl 44.6 mm), NSMT-Cr 26058; South of Okino-Torishima I., 600 m deep; 11-I-2006.

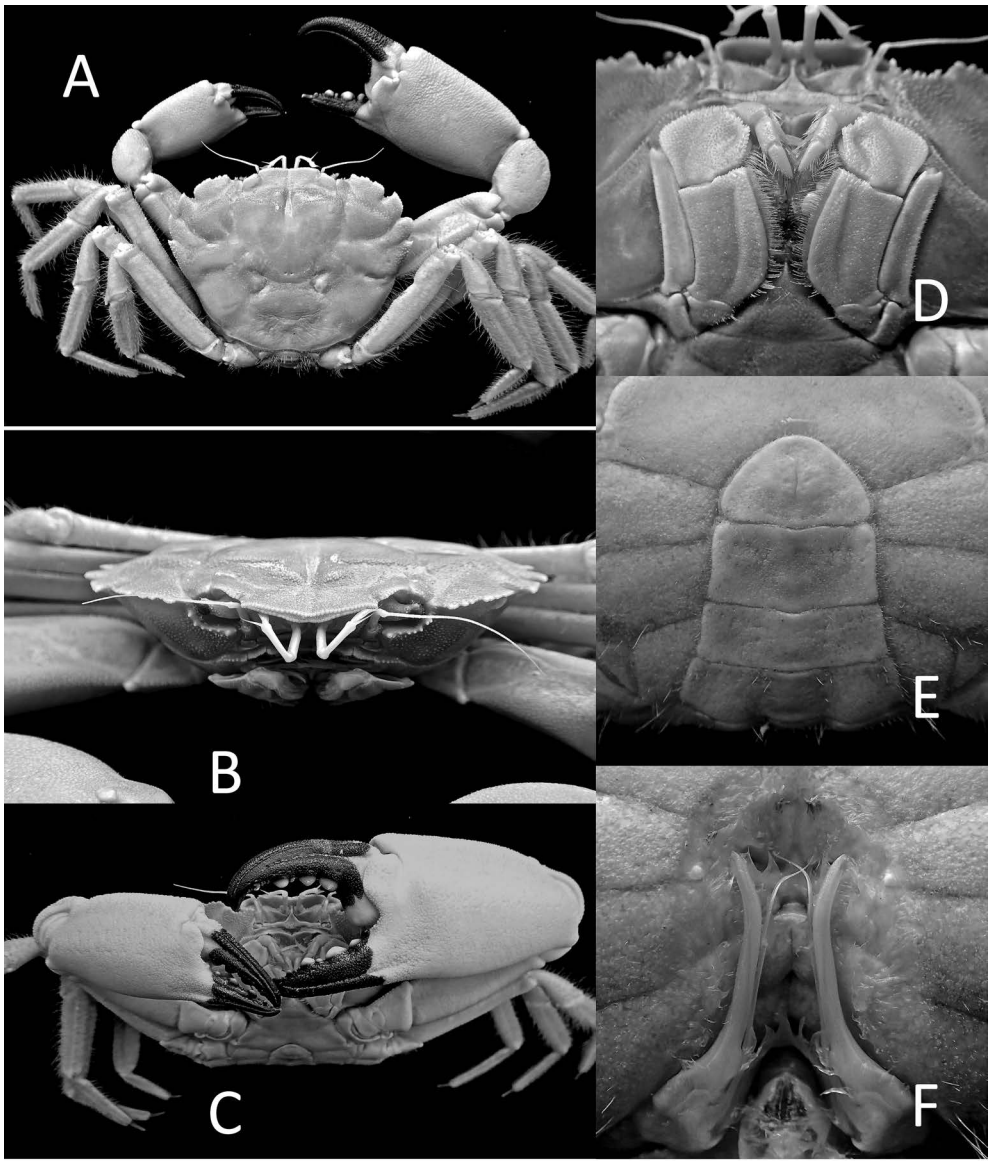

Fig. 8. *Beuroisia major* (Sakai). Male (NSMT-Cr 26058; cb 80.0 × cl 60.1 mm). A, B: Dorsal and frontal views, respectively. C: Chelae. D: Third maxillipeds. E: Abdomen. F: First and second gonopods *in situ*.

Remarks. The specimens agree well with the precedent descriptions and figures (Sakai, 1978; Guinot and Richer de Forges, 1981b), and readily distinguished from two congeneric species, *B. duhameli* and *B. manquenei*, both of which were described by Guinot and Richer de Forges (1981b) from Madagascar and îles Saint-Paul in the western Indian Ocean, 620–635 m deep, and the Tuamotu Islands in the southeastern Pacific Ocean, 350 m deep. Guinot and Richer de Forges (1981b) distinguished forma *duhameli* and forma *tomentosa* in *B. duhameli*, but these names are nomenclaturally not available in accordance with Article 15.2 of the International Code of Zoological Nomenclature (International Commission on Zoological Nomenclature, 1999).

In the original description of this species based on two type specimens (holotype male and allotype ovigerous female) from the Kinmei Seamount in the Emperor Seamount Chain, the carapace size of the male is cb 87 mm and cl 64 mm. This species is much larger than two known species from the western Indian Ocean and the southeastern Pacific Ocean. The carapace is strongly flattened (Fig. 8B), with the dorsal surface being separated into regions by wide and shallow furrows. The anterolateral margin of the carapace (Fig. 8A) is cut into four strong teeth; the first is confluent with the external orbital angle, truncated, irregularly and minutely serrulated along the border, isolated from the second tooth by a deep V-shaped notch; next two teeth are subequal to each other, directed forward with convex outwards and forward directed sharp tips; last tooth is smaller than the precedents, with a sharp tip directed obliquely forward. In the smaller male at hand, the left cheliped is missing, but in the larger male the chelipeds are quite unequal (Fig. 8A, C), with the right being massive. In the original description, the chelipeds were noted as heterochely in both sexes. The third maxilliped (Fig. 8D) is long; the ischium is smooth, with a longitudinal, slightly oblique furrow from the inner one third of the anterior margin to the inner one third of posterior margin; the merus is quadrate and marked with marginal depression. The male abdomen (Fig. 8E) is seven-segmented; the telson is obtuse at tip and as long as the sixth abdominal somite. The first gonopod (Fig. 8F) is stout, simple and straight for its basal two thirds, with an obtuse tip. The second gonopod (Fig. 8F) is as long as the first gonopod, curved distally, but not coiled.

Distribution. Originally reported from the Kinmei Seamount in the Emperor Seamount Chain (35°22′N, 171°26′E, 300–320 m deep), and later from Sagami Bay, 180–230 m deep.

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