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Four new genera with their representatives and six new species of the Galatheidae in the collection of the Zoological Laboratory, Kyushu University, with redefinition of the genus *Galathea**

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The Galatheidae, Anomuran Crustacea which is said to have closest affinities with the Porcellanidae, inhabits chiefly the tropical and temperate waters from the intertidal zone to considerable depths (0-5,000 m), and now is estimated as about 300 species divided into six genera. The writer, on the material of this group preserved in the collection of the Zoological Laboratory, Kyushu University, has been engaged in a study of taxonomy and has gotten some interesting results. From the Japanese waters about 47 species, including those reported by Miyake in collaboration with the present writer, are known prior to the present disposal, to which further six new species and two newly recorded species prove to be added. Taxonomically, the genus *Galathea* which is the inhabitant in rather shallow waters and shows considerable variation among the species itself on the external features is laid under the necessity of revising the generic definition with an unexpected occurrence of a certain species from the southern Kyushu, Japan. This species shows peculiar modifications of external features, such as two rostral teeth on either side and stout legs depressed, which fact supports the conclusion that the species takes its position between *Galathea* and *Munida*. For this reason the genus *Sadayoshia* is proposed. In view

* Contributions from the Zoological Laboratory, Faculty of Agriculture, Kyushu University, No. 406.

of the shape of the rostrum the genus *Galathea* includes three groups of aberrant forms, as the writer personally is of the opinion that the proper *Galathea* bears four rostral teeth on either side. Such groups are, in due consideration of the shape of the antennule and the presence or absence of the outer orbital angle, here assigned to three new genera, i.e., *L^eiogalatea*, *Phylladiorhynchus* and *Allogalathea*.

In this paper are described such new genera and new species of the Galatheidae, while faunal works including two newly recorded species will be published later elsewhere. Additionally, in confirmation of the genera herein proposed, a redefinition of the genus *Galathea* is given.

The writer wishes to express his gratitude to Prof. Sadayoshi Miyake for his interest and valuable suggestions in the course of this study. Thanks are also due to Drs. Isabella Gordon and R. W. Ingle of the British Museum, for examining the type specimen of *Allogalathea elegans* (formerly *Galathea elegans*) from the Philippines, and to Dr. Janet Haig of the University of Southern California for her helpful informations. Furthermore, to Prof. Huzio Utinomi of the Seto Marine Biological Laboratory, and to Dr. Minoru Imajima of the National Science Museum, Tokyo, who kindly placed interesting materials at the writer's disposal, go his deepest thanks.

L^eiogalatea gen. nov.*

Diagnosis: Rostrum rather flat without lateral teeth. Carapace coarse with three spines laterally and two or three definite transverse ridges dorsally. Cervical groove distinct. Outer orbital angle not formed.

Basal antennular segment stout, with two outer terminal spines. Third maxilliped long, spinous and very setose. Ambulatory legs slender. Third thoracic sternite widened with anterolaterally produced edges. Eyestalk short, corneal region somewhat dilated distally. Abdomen non-spinose dorsally.

Epipods absent from all pereopods.

Contains a single species.

Type-species: *Galathea imperialis* Miyake et Baba, 1967.

Remarks: The generic importance that *L^eiogalatea imperialis* bears was originally pointed out by Miyake & Baba (1967). For convenience the writer again tries to enumerate the characters. The first of them is the absence of rostral teeth, which is very marked and is

* Derived from the Greek, *λειος*, smooth and *Galathea*.

not found in any other members of the genus *Galathea*. Only one alliance is *Galathea laevigatus* Balss, 1913, known from the Malay Archipelago, but it is thought inadvisable to combine it with the present genus for bearing four rudimentary rostral teeth. Secondly, the third thoracic sternite likewise represents an unique shape that is widened extremely as in *Munida*, with anterolaterally produced edges, while in *Galathea* it is roughly triangular. Thirdly, the outer orbital angle is not formed but the orbit is delimited by a denticulated crest below. On this regard, in *Galathea* it is without exceptions protected by a spiniform or pyramidal spine or is with rounded corner. Fourthly, the branchial region has only two spines marginally, while that of the genus *Galathea* bears four to six (mostly five).

^e
Leogalathea imperialis (Miyake et Baba, 1967) comb. nov.

Galathea imperialis Miyake & Baba, 1967, p. 213, figs. 1, 2—Sagami Bay.

Material examined: Holotype, ovig. ♀, BLIH 205a, paratypes, BLIH 205b, c, 2 miles off the westsouth-by-west of Joga-shima Islet, Sagami Bay, 160–230 m deep, Mar. 19, 1958.

Distribution: Known only from the Sagami Bay, Japan.

Phylladorhynchus gen. nov.*

Diagnosis: Rostrum flat and leaflet-like with one large lateral tooth at base and a small one near apex of each side. Carapace rather smooth and armed with gastric spines. Branchial region with about five spines marginally. Outer orbital angle pyramidal.

Basal antennular segment not elongated, with four or five terminal spines. Third maxilliped moderately setose, merus short and spinose externally, ischium triangular in cross section. Chelipeds spinose and of moderate length. Ambulatory legs likewise spinose. Third thoracic sternite triangular or oblong. Eyestalk short, corneal region somewhat dilated distally. Abdomen non-spinose dorsally.

Epipods absent from all pereopods.

Contains three species.

Type-species: *Galathea pusilla* Henderson, 1885.

Remarks: The leaflet-like rostrum is peculiar to this new genus, which, in addition, has a well-developed tooth on each side proximally and a minute spine or notch distally. The basal antennular segment

* Derived from the Greek, *φυλλάδιον*, leaflet, and *ροῦχος*, rostrum.

is stout, with four or five distal spines, which is very close to that of *Sadayoshia* herein newly proposed but the latter is more elongated than the former. Owing to the above-mentioned characters the genus is ventured to erect. None of the members referable to this taxon have been known from the Atlantic, but three of the Indo-Pacific species are here combined with this genus. For convenience of ready reference is given the key to the species transferred into *Phylladorhynchus*.

Key to the species of *Phylladorhynchus*

1. Gastric region with two spines..... *serrirostris*
— Gastric region with four or more spines..... 2
2. Gastric region with four spines; merus of third maxilliped very short, with an outer distal marginal and an inner distal marginal spine; third thoracic sternite of rectangular shape *pusillus*
— Gastric region with five spines; merus of third maxilliped rather long, with one outer marginal and two inner marginal spines; third thoracic sternite of triangular shape *ikedai*

Phylladorhynchus serrirostris (Melin, 1939) comb. nov.

Galathea serrirostris Melin, 1939, p. 72, figs. 43-47—Bonin Is.; Miyake & Baba, 1965, p. 590, figs. 5, 6—Bonin Is.;—1966, p. 67, fig. 8—Amami-oshima I.

Material examined: Off Mage-jima Islet, west of Tanega-shima I., southern Japan, 35-40 m deep, June 3, 1967, Kagoshima Univ. coll.—1 ovig. ♀, ZLKU 14253.

Measurements: The ovigerous female here examined is 5.3 mm in carapace length.

Distribution: This species has hitherto been known only from the Bonin Islands and Amami-oshima Island, one of the Ryukyus. Horizontally, it occurs from tidemarks on coral reefs to a depth of 130 m.

Phylladorhynchus pusillus (Henderson, 1885) comb. nov.

Galathea pusilla Henderson, 1885, p. 407—New South Wales coast;—1888, p. 121, pl. 12, figs. 1, 1a, b—New South Wales coast; Grant & McCulloch, 1906, p. 49, pl. 4, figs. 5, 5a (in part)—Port Curtis, Queensland; Borradaile, 1916, p. 92—Three Kings Is.; off North Cape; McNeill, 1926, p. 305—Capricorn Group, Queensland; Miyake, 1965, p. 635, fig. 1044; Miyake & Baba, 1967b, p. 234, fig. 6—East China Sea.

Galathea integra Benedict, 1902, p. 248—off Honshu, Japan; Laurie, 1926, p. 135—Indian Ocean; Yokoya, 1933, p. 55—Sea of Japan from Tsugaru Strait southwards to Noto Pen.; Pacific coast of Japan from Tosa Bay southwards to

off Omaezaki; east of Kagoshima; off Tanega-shima I.; Miyake, 1947, p. 732, fig. 2117.

Material examined: South of Kamegi, Sagami Bay, 200–270 m deep, Feb. 11, 1963.—1 ♂, BLIH 495.

Maruyama-dashi, off Nagai, Sagami Bay, 218 m deep, July 19, 1952.—2 ovig. ♀♀, 1 ♀, BLIH 61.

East of Ashizuri-zaki, Tosa Bay, ca. 300 m deep, Nov. 13–14, 1965, K. Sakai leg.—1 ♀, ZLKU 14112.

Measurements: Male 8.0 mm, ovigerous females 4.7–4.1 mm and non-ovigerous females 3.7–3.6 mm in carapace length.

Remarks: Recently Tirmizi (1966) recorded this species from the Red Sea and considered Melin's species (*P. serrirostris*) a synonym of *P. pusillus*. As far as the Japanese material is concerned, however, the writer does not agree with her and hesitates to put her record under the synonymy of the present species. Our main attention has been paid to the shape of the third thoracic sternite and the number of gastric spines. As a result, the specific differences were already pointed out between *Phylladorhynchus pusillus* and *P. serrirostris* as seen in the key given above as well as in the paper by Miyake & Baba (1965).

Distribution: This species is often taken in the Japanese waters from Tsugaru Strait southwards to the East China Sea, and is also known from the Indian Ocean, New South Wales coast, Queensland and New Zealand waters. The lattermost locality is, in addition to the previous records, confirmed by the examination of many specimens collected by the writer himself from the Chatham Rise, which are no doubt referable to this species and will be reported in near future. Horizontal distribution is between 30 and 307 m in depth.

Phylladorhynchus ikedai (Miyake et Baba, 1965) comb. nov.

Galathea ikedai Miyake & Baba, 1965, p. 588, figs. 3, 4—Bonin Is.

Material examined: Holotype, ovig. ♀, ZLKU 4886, near Mukojima I., Bonin Is., July 18–19, 1938, H. Ikeda leg.

Distribution: Taken only from the type locality, the Bonin Islands.

Allogalathea gen. nov.*

Diagnosis: Rostrum elongated and carinated ventrally, with five

* Derived from the Greek, *αλλος*, other, and *Galathea*.

to nine lateral teeth of small size. Carapace with many transverse ridges fringed with fine but coarse setae. Branchial region with six or seven spines marginally. Orbit small, its outer angle spinulate.

Basal antennular segment short, stout with three terminal spines. Third maxilliped stout, its ischium of triangular shape in cross section. Chelipeds rather depressed, squamiferous, spinose and setose. Ambulatory legs likewise squamiferous and very setose marginally. Third thoracic sternite roughly triangular. Eystalk of moderate length, corneal region slightly dilated distally. Abdominal segments unarmed dorsally.

Epipods present on first or first three pairs of pereopods.

Telson rather short. Usually associated on crinoids.

Type-species: *Galathea elegans* Adams et White, 1848.

Remarks: The peculiarity or generic value of the group in question to be separable from *Galathea* proper was first mentioned by Stimpson (1907). There have been proposed a number of specific names as different species such as *deflexifrons* Haswell, *longirostris* Dana, *grandirostris* Stimpson and *longirostris* Yokoya. However, most of the workers have all synonymized them with *elegans*, the presence or absence of epipods on pereopods having been out of attention in their considerations. A careful examination of the material in the writer's hands proved that the Japanese specimens all possessed epipods on the first pereopods only but the Palau Islands material on the first three pairs of pereopods (ZLKU 14129, 1♂, 1♀, unpublished data). From the personal communications from Drs. I. Gordon and R. W. Ingle of the British Museum, the type from the Philippines proved to have epipods on the first pereopods only. This fact falls in with the Japanese material but not with the Palaus. As regards the epipods there are few informations but Melin (1939) and Barnard (1950). Therefore it follows as a consequence that even the availability of *deflexifrons* Haswell and *longirostris* Dana, which have both been thought conspecific to *elegans*, has to be reconsidered. Similarly, it is desired here not to include in the synonymy of *elegans* or to reexamine the species previously described as *elegans* which lack the mention of epipods.

Allogalathea elegans (Adams et White, 1848)

(Fig. 1)

Galathea elegans White, 1847, p. 66 (*nomen nudum*).

Galathea elegans Adams & White, 1848, pl. 12, fig. 7—Philippine; Borneo; Balss, 1913b, p. 4, figs. 2, 3—Sagami Bay; Miyake, 1938, p. 37, tab. 2, figs. A-C,

fig. 1, A-C—Kii Pen., Japan; Melin, 1939, p. 77, figs. 48-53—Bonin Islands; Miyake, 1947, p. 733, fig. 2188; Barnard, 1947, p. 379—South Africa;—1950, p. 487, fig. 91, i-k—South Africa; Utinomi, 1956, p. 63, pl. 32, fig. 4; Miyake, 1965, p. 635, fig. 1045; Miyake & Baba, 1967b, p. 228, fig. 3—East China Sea. *Galathea longirostris* Yokoya, 1936, p. 136, fig. 6—Misaki, Sagami Bay.

Diagnosis: Rostrum more than half as long as carapace, with five to nine lateral teeth. Carapace with many striae, without gastric spines, its lateral margin with one to three spines on hepatic and six or seven spines on branchial region. Basal antennular segment with three terminal spines. Merus of third maxilliped with two or three inner marginal and one outer distal marginal spines. Chelipeds stout, setose and spinose, with non-gapped fingers. Ambulatory legs setose, squamiferous and weak in armature, its dactylus with four or five unguiculi, the distal of them large. Epipods present on first pair of pereopods.

Description: The rostrum is more than half as long as the carapace. It is pubescent dorsally, carinated ventrally, and has five to nine marginal spines of small size. The outer orbital angle is spinulated or sometimes smooth. Eyes are small in comparison with the rostrum, the orbit is not developed but small.

The carapace is strigose, expanded at middle, and as long as broad. It has no gastric spines but the lateral margin with one to three spines on the hepatic region, of which one is the developed anterolateral spine and the other two are minute and sometimes lacking, and it also bears six or seven branchial marginal spines.

The basal segment of the antennule bears three terminal spines, the innermost being slender and the others stout. The first segment of the antenna has a short spine, and the third an inner distal marginal spine.

The ischium of the third maxilliped is shorter than the merus, its inner toothed ridge having about 20 denticles. The merus is armed with two or three inner marginal spines and an outer distal marginal spine which is sometimes very minute.

The chelipeds are stout, squamiferous, covered with fine setae and spinous, the spines are not stout but small. They are about as long as the carapace when measured from the tip of the rostrum to the tip of the finger. The arm is especially spinous dorsally. The wrist is smooth on the outer margin and spinulose on both the dorsal surface and the inner margin, the anterior second of the inner marginal spines being the largest. The palm is longer than the finger, with spinules dorsally and marginally. The fingers are not gapped, and the cutting edge with tubercular teeth. The margin of the immovable finger is spinulated on the entire length. That of the movable finger bears

some spinules proximally which are sometimes missing, and two prominent spines distally. The tips of the fingers are stoutly spined and curved inwards to cross each other.

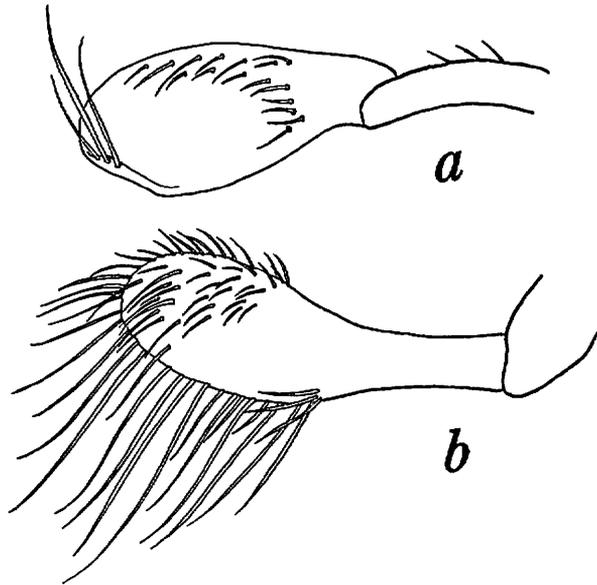


Fig. 1. First two pleopods of male of *Allogalatea elegans*, *a*, left first pleopod, dorsal view, $\times 73$; *b*, left second pleopod, ventral view, $\times 73$.

The ambulatory legs are setose, squamiferous and weak in armature. In the first pair the merus bears about eight outer marginal spines and an inner distal marginal spine. The carpus has three to five outer marginal spines, but none on the dorsal surface. The propodus is rudimentary in the armature of the inner margin. The dactylus has the inner margin with four or five unguiculi, the distal one being the largest. The second and the third pairs are similar to the first but reduced in armature.

Epipods are present on the first pair of the pereopods.

First two pleopods are as represented in Fig. 1.

Colour: When alive, the animals have four patterns of colour on the carapace and abdomen, such as (1) uniformly dark red, (2) blackish purple with narrow yellowish stripes, (3) alternate longitudinal stripes of blackish purple and yellow and (4) purplish with a broad yellow stripe at median line. These markings remain visible for considerable period in alcohol. The cheliped is wholly dark purplish, the fingers being yellow. The ambulatory legs are the same to the cheliped, but

yellowish on the outer margin of the merus, whole carpus, distal portion of the propodus and whole dactylus.

Material examined: Off Oshima, Kii, central Japan, July 24, 1937.—1 ovig. ♀, 1 ♀, SMBL Anom. 4.

Kano, Tanabe Bay, Kii Pen., Sept. 8, 1961, I. Kogo leg.—1 ♂, ZLKU 14375.

Not labelled, SMBL coll. (probably from Kii Pen.)—2 ♀♀, ZLKU 14376.

Off Tomioka, Amakusa, Kumamoto Pref., western Kyushu, ca. 40 m deep, Mar. 17, 1966, A. Taki leg.—1 ovig. ♀, ZLKU 14131.

Off Tomioka, Amakusa, ca. 30 m deep, June 29, 1967, A. Taki leg.—1 ovig. ♀, AMBL.

Off Tomioka, Amakusa, Aug. 15, 1935, S. Miyake leg.—1 ♂, ZLKU 14127.

Off Tomioka, Amakusa, date unknown, Y. Ono leg.—1 ♀, ZLKU 14244.

Measurements: Males are 9.5–7.2 mm, ovigerous females 13.1–10.0 mm and non-ovigerous females 14.0–3.8 mm in carapace length.

Ecology: The animal has been recorded in commensal with ctenidians, such as *Comanthus* sp. and *Tropometra carinata* caught in depths of 3 to 120 m. Two of the present specimens were found on *Comanthina schlegeli* (Carpenter).

Remarks: As mentioned in the section of the remarks on the genus, the Japanese material should be referred to *elegans*. Except for the records given in the synonymy, there are numbers of reports on its occurrence as follows: Haswell (1882b), Miers (1884), de Man (1888, 1902), Henderson (1888, 1893), Zehntner (1894), Borradaile (1900), Grant & McCulloch (1906), Potts (1915), Balss (1921), Laurie (1926), Gordon (1935) and Tirmizi (1966). However, as above-papers are all without mention of epipods, the records of the occurrences would be better to be removed from the synonymy till confirmed by reexamination.

Galathea Fabricius

Galathea Fabricius, 1793 (not seen), p. 471; Dana, 1852, p. 478; Bell, 1847, p. 195; Haswell, 1882b, p. 161; Henderson, 1888, p. 117; Ortmann, 1892, p. 248; Milne Edwards & Bouvier, 1894, p. 249;—1897, p. 13; Ortmann, 1901, p. 1150; Benedict, 1902, p. 246; Stimpson, 1907, p. 230; Balss, 1913b, p. 1; Schmitt, 1921, p. 163; Schellenberg, 1928, p. 80; Barnard, 1950, p. 482; Makarov, 1962, p. 81.

Diagnosis: Rostrum flat dorsoventrally, triangular with four lateral teeth. Carapace furnished with many transverse ridges fringed with short setae. Cervical groove distinct or not distinct. Outer orbital

angle rounded or spiniform or pyramidal. Orbit delimited ventrally with a denticulated crest.

Basal antennular segment with two or three distal spines. Third maxilliped moderately setose, ischium usually triangular in cross section, with inner toothed ridge, merus with spinose margins. Chelipeds moderately long and spinulose. Ambulatory legs spinose, dactylus with broad setae on inner toothed or unguiculate margin, but without a row of plumose setae. Third thoracic sternite roughly triangular. Eyestalk short, corneal region somewhat dilated distally and well pigmented. Abdomen not spinose dorsally.

Epipods sometimes absent from all pereopods or present on first pair or first three pairs of pereopods.

Type-species: *Cancer strigosus* Linnaeus, 1776.

Remarks: As mentioned previously, some of the more aberrant forms were inserted into three new genera, *Ligiogalatea*, *Phylladorhynchus* and *Allogalatea*. The proper *Galatea* is easily recognized by the rostrum laterally four-toothed. The species of this genus are more variable among individuals themselves than in any other genera but they are defined particularly by the presence or absence of epipods on pereopods, the shapes of the third maxillipeds, sternal segments, antennular basal segment and the armature of the carapace.

Galatea strigosa (Linnaeus, 1776)

Galatea strigosa: Bell, 1847, p. 200, with fig.; Bonnier, 1888a, p. 1688;—1888b, p. 125; Ortmann, 1892, p. 250, pl. 11, fig. 6—Nice; Naples; Milne Edwards & Bouvier, 1894, p. 252;—1900, p. 282—Gulf of Gascogne; Appellöf, 1906, p. 135—Norwegian fjords; Selbie, 1914, p. 72—Ireland; Bouvier, 1922, p. 42—West of Tarifa (Strait of Gibraltar); Schellenberg, 1928, p. 81, fig. 61; Figueira, 1960, p. 6—Azores; Luther & Fiedler, 1961, p. 150, pl. 21—Mediterranean; Riedl, 1963, p. 283, pl. 96—Adria.

Material examined: Cadaquis (?), from fisherman's net, 1954, I. Gordon leg.—1 ♂, NSM.

Measurements: Carapace including rostrum 47.4 mm long, and 30.9 mm broad.

Distribution: Known from the Norwegian fjords southwards to the west of Tarifa, Azores, the Canary Islands, the Mediterranean and Adriatic Sea. Tidemarks to a depth of 590 m.

Galathea algae sp. nov.

(Fig. 2)

Diagnosis: Rostrum flat. Carapace as long as broad, rather smooth above with two gastric, six hepatic and five branchial marginal spines. Basal antennular segment with three terminal spines. Merus of third maxilliped with two inner marginal spines of large size and two outer marginal spinules. Chelipeds and ambulatory legs spinose and setose. Epipods present on first pair of pereopods.

Description of holotype: The rostrum is longer than broad, flat and slightly pubescent dorsally. The outer orbital angle is rounded and unarmed. The carapace is as long as broad and rather smooth dorsally, with two gastric spines. It is also armed with five branchial marginal spines and six hepatic spines of which the two are large and lateral in position, the three small and dorsal, and another one large, situated behind the insertion of the antenna. The cervical groove is not distinct.

The basal segment of the antennule bears three spines distally, the outermost of them reaching nearly to the tip of the rostrum. The first segment of the antennal peduncle has a sharp spine anteriorly prolonged. The second and the third segments are armed with spines as in common species.

The ischium of the third maxilliped is slightly more than a half of the merus, with a single spine at the inner distal margin, the inner toothed ridge bearing about 26 closely placed denticles. The merus is armed with two inner marginal spines of large size, and with the outer margin two-spinulated.

The chelipeds are spinose and setose with moderate length, measuring $10/7$ of the carapace length. The wrist is shorter than the finger, with a strongly developed inner marginal, three outer marginal, three ventral spines and two rows of dorsal spines, each of the dorsal rows being composed of four or five spines. The palm is as long as the finger, spinous and setose marginally and dorsally, the dorsal spinules being lined up in two rows, each of four or five in number. The fingers are not gapped, with rather sharpened tubercles on their cutting edges. The movable finger bears one marginal and two dorsal spines on the proximal portion. The immovable finger is spinous marginally.

The ambulatory legs are also setose. In the first pair the merus is furnished with fine but plumose setae together with eight spines on the outer margin, the inner margin being two-spined distally. The carpus bears five outer marginal and three dorsal spines. The propodus has four outer marginal spines proximally and four or five inner marginal spines which are slender and mobile. The dactylus is serrated

on the inner margin, with about five broad setae. The second pair is similar to the first. The third is weak in armature as in other species so that the merus bears two outer marginal spines distally and four dorsal spines.

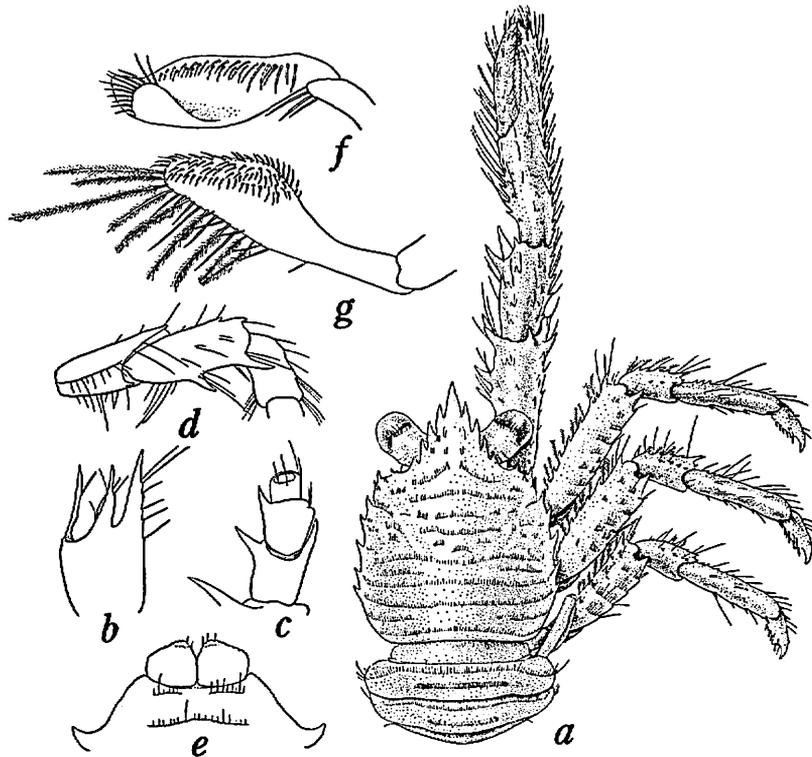


Fig. 2. *Galathea algae* sp. nov., holotype, male, *a*, animal in dorsal view, $\times 6$; *b*, basal segment of left antennule, $\times 14$; *c*, left antennal peduncle, $\times 14$; *d*, endopod of right third maxilliped, $\times 14$; *e*, anterior part of sternal segments, $\times 14$; *f*, left first pleopod, dorsal view, $\times 49$; *g*, left second pleopod, ventral view, $\times 49$.

Epipods are present only on the first pair of the pereopods. First and second pleopods are as represented in Fig. 2, *f*, *g*.

Material examined: Off Tosa-shimizu, Tosa Bay, 27 m deep, June 1959, K. Kurohara leg.—1 ♂ (holotype), 1 ♀, ZLKU 7046.

Measurements of holotype (in mm):

Length of carapace including rostrum.....	6.2
Breadth of carapace.....	4.4

Length of rostrum	2.0
Breadth of rostrum	1.5
Length of cheliped	12.3
Length of wrist	2.0
Length of palm	2.4
Length of movable finger	2.6

Ecology: The animals were found clinging to seaweeds taken in a depth of 27 m.

Relationships: The species is very allied to *Galathea subsquamata* Stimpson in all respects, from which it differs in the fact that the epipods are present only on the first pair of the pereopods in *G. algae* instead of being on the first three pereopods in *G. subsquamata*.

Galathea lenis sp. nov.

(Fig. 3)

Diagnosis: Rostrum flat, slightly pubescent dorsally. Outer orbital angle spinulated. Carapace rather smooth dorsally, without gastric spines but armed with a well-developed anterolateral, one large and two small hepatic marginal spines. Basal antennular segment with three terminal spines. Merus of third maxilliped with three inner marginal spines and one outer marginal spine at midway. Cheliped setose and spinulose. Inner margin of dactylus of ambulatory leg with undeveloped unguiculi and six broad setae. Epipods absent from all pereopods.

Description of holotype: The rostrum is flat and about twice as long as broad. It is slightly pubescent above, the central spine being setose laterally. The orbit is ventrally armed with a developed spine, its outer angle is spinulated.

The carapace is rather smooth dorsally, being free from the equipment of long setae and gastric spines. On the second transverse ridge are two spines laterally, each situated behind the orbital angle. The hepatic region is armed with a well-developed anterolateral spine and two spinules, one of the latter being inside of the anterolateral spine and the other behind it. It is also with a rather large spine behind the insertion of the antenna or on the lateral wall of the carapace. The cervical groove is not distinct. There are two spines on the anterior branchial region and three on the posterior, the foremost of the latter being the largest.

The basal segment of the antennule bears three terminal spines. The antennal peduncle is as in common species, so that the first

segment has a stout spine of moderate length, and the third segment bears an inner distal marginal spine.

The ischium of the third maxilliped is as long as the merus, its inner toothed ridge having about 18 denticles. The merus has the inner margin with three spines and the outer margin spinulated at midway. The carpus is smooth and unarmed.

The chelipeds are setose and spinose, being about twice as long as the carapace, when measured from the tip of the rostrum to the tip of the finger. The arm is spinous dorsally and marginally, the inner marginal spines are acute and large. The wrist is shorter than the finger, with spines which are arranged in four longitudinal lines each with four to six spines. The anterior second of the inner marginal spines of the wrist is well developed. The palm is very spinous with equal length to the finger. It bears four longitudinal rows of spines or spinules, the marginal spines being rather large and the dorsal small. The fingers are slightly gapped, each finger is tuberculate on entire length of the cutting edge, with one large tubercular process proximally.

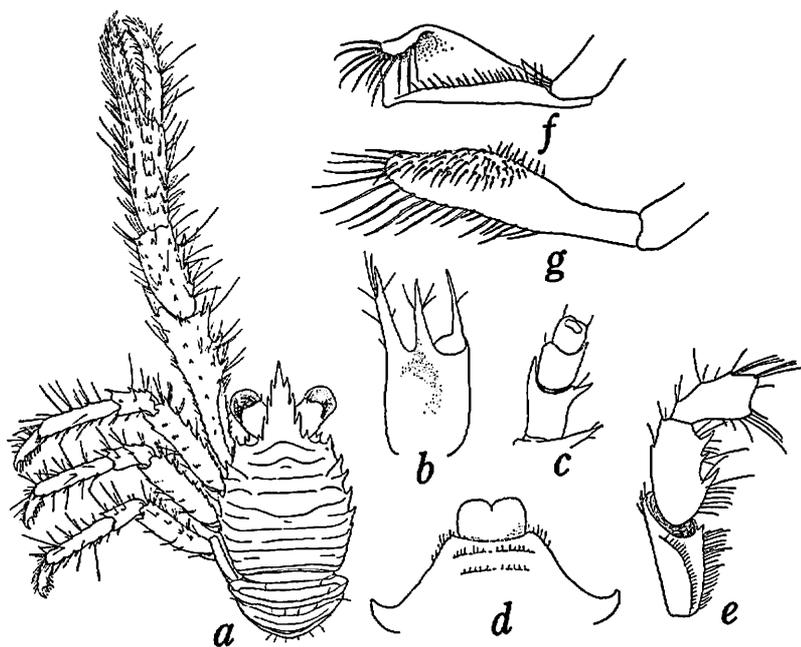


Fig. 3. *Galathea lenis* sp. nov., holotype, male, *a*, animal in dorsal view, $\times 4.4$; *b*, basal segment of right antennule, $\times 15$; *c*, right antennal peduncle, $\times 15$; *d*, anterior part of sternal segments, $\times 15$; *e*, endopod of right third maxilliped, $\times 15$; *f*, left first pleopod, dorsal view, $\times 53$; *g*, left second pleopod, ventral view, $\times 53$.

The ambulatory legs are also setose with the exception that the merus is not thickly setose but sparsely equipped with short, soft setae. In the first pair the merus has about nine outer marginal spines, and a well-developed and one or two minute inner marginal spines. The carpus is armed with four outer marginal, four dorsal and one inner distal marginal spines. The propodus also bears two outer marginal and six inner marginal spines, the latter being all slender and movable. The inner margin of the dactylus has pointed unguiculi, which gradually reduce their size towards the base of the segment. The second pair is very similar to the first, the third shows more weak armature so that the merus has no outer marginal spines but a single distal one and also bears about four dorsal and one inner distal marginal spines.

Epipods are not present on any of the pereopods.

The first and second pleopods are as represented in Fig. 3, *f*, *g*.

Colour: After the preservation in alcohol for 20 days, the carapace and abdomen are light seashell pink, and the chelipeds orange. The fingers are reddish orange along their cutting edges. The ambulatory legs are seashell pink and tinged with orange.

Material examined: Off Nishino-omote, Tanega-shima I., southern Kyushu, 15-30 m deep, June 27, 1967, Kagoshima Univ. coll.—1 ♂, ZLKU 14256 (holotype).

Measurements of holotype (in mm):

Length of carapace including rostrum.....	6.2
Breadth of carapace.....	3.9
Length of rostrum	2.2
Breadth of rostrum	1.2
Length of cheliped	16.3
Length of wrist.....	2.8
Length of palm.....	3.8
Breadth of palm	1.5
Length of movable finger.....	3.7

Relationships: The species has a strong resemblance to *Galathea ternatensis* de Man, from which it differs in the following regards: (1) Epipods are present on the first pair of the pereopods in *G. ternatensis*, whereas they are quite absent from all the pereopods in *G. lenis*. (2) The carapace of *G. ternatensis* is furnished with long coarse setae, while that of *G. lenis* is smooth without any coarse setae. (3) In *G. ternatensis* the dactylus of the ambulatory leg bears a well-developed spine and three or four small ones on the inner margin, whereas in *G.*

lenis it has six spines which decrease in size towards the base of the segment.

Galathea tanegashimae sp. nov.

(Fig. 4)

Diagnosis: Rostrum flat and sparsely setose dorsally. Outer orbital angle rounded. Carapace rather smooth but with coarse, short setae, and also armed with two gastric and nine lateral marginal spines. Basal segment of antennule with three terminal spines. Merus of third maxilliped with two inner marginal spines, distal one of them minute and proximal large. Cheliped rather long, spinose and setose. Pterygostomial flap without any spine near pleural suture. Epipods present on first pair of pereopods.

Description of holotype: The rostrum is flat and longer than broad, the dorsal surface being sparsely furnished with fine setae. The outer orbital angle is rounded, but immediately outside of it is a rather large spine.

The carapace, excluding the rostrum, is as long as broad, rather smooth and sparsely furnished with short, coarse setae dorsally. It is armed with two gastric spines and eight or nine marginal spines, two or three of them being on the hepatic and the other six on the branchial region. In addition to these a developed spine is present behind the insertion of the antenna or near the pleural suture.

The basal segment of the antennule bears three spines distally, the outermost being the strongest. The antennal peduncle has a short, stout spine on the first segment. The second and the third segments are spinose distally as in common species.

The ischium of the third maxilliped is longer than the merus, with an inner distal marginal spine, its inner toothed ridge bearing about 18 closely placed denticles. The merus has two inner marginal spines and two outer marginal spinules, the distal of the former being minute and the proximal large, situated midway of the margin.

The chelipeds are long, being about twice as long as the carapace, when measured from the tip of the rostrum to the tip of the finger. It is spinous and setose, the setae are not coarse but rather soft. The wrist is nearly as long as the finger, provided with two outer marginal spines of which the proximal one is well developed, four outer marginal spinules, two rows of dorsal spines each of about five spinules, and four ventral spines. The palm is longer than the movable finger, with four longitudinal rows of spines dorsally and marginally, the two of them on the dorsal surface being composed of spinules. The fingers are gapped. The movable finger bears on the cutting edge two large

tubercles proximally, its margin has a single spine at proximal portion. The cutting edge of the immovable finger is also armed with two large tubercles, one of them being situated proximally and corresponding to that of the movable finger, and the other on the distal fifth point.

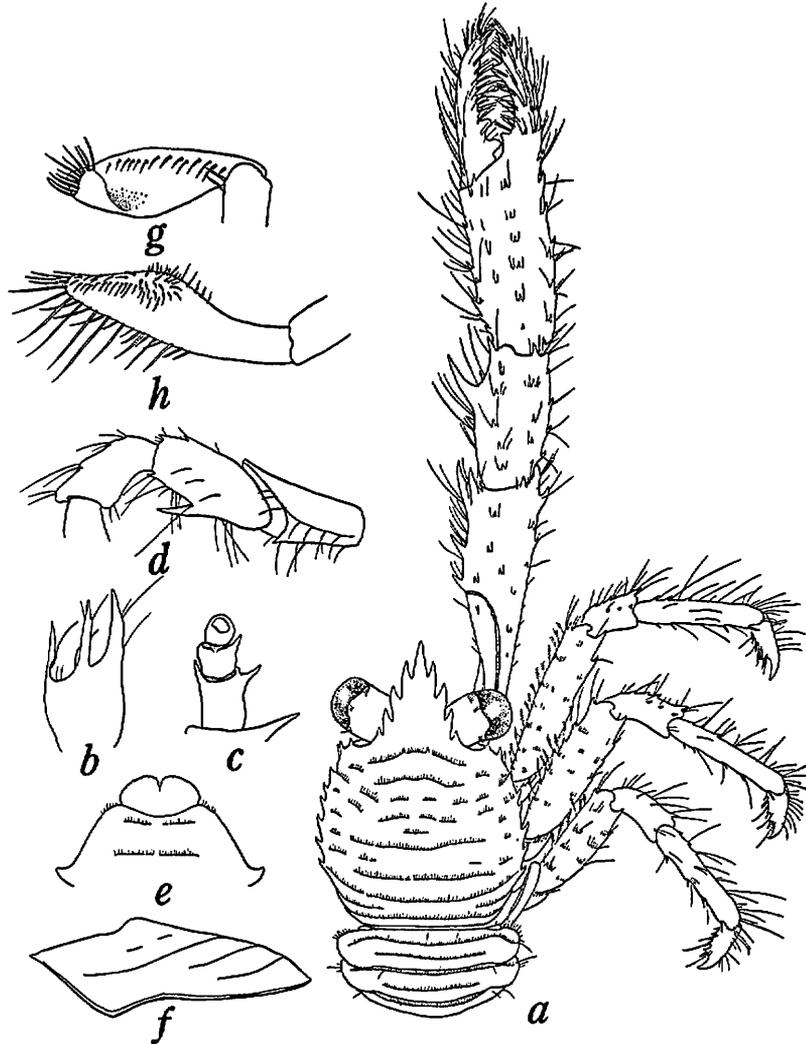


Fig. 4. *Galathea tanegashimae* sp. nov., holotype, male, *a*, animal in dorsal view, $\times 7.3$; basal segment of left antennule, $\times 15$; *c*, right antennal peduncle, $\times 15$; *d*, endopod of left third maxilliped, $\times 11$; *e*, anterior part of sternal segments, $\times 15$; *f*, left pterygostomial flap, $\times 11$; *g*, left first pleopod, dorsal view, $\times 54$; *h*, left second pleopod, ventral view, $\times 54$.

The ambulatory legs are not rugose but setose. In the first pair the merus is armed with eight or nine outer marginal and two inner marginal spines, setting up soft plumose setae along the outer margin. The carpus bears four outer marginal and three dorsal spines. The propodus is also spinose with three outer marginal and seven inner marginal spines, the latter being all slender and mobile. The dactylus is armed on the inner margin with unguiculi which are rather sharply pointed and decrease in size proximally. The second pair is similar to the first, but the third is the shorter and more reduced in armature; the merus has an outer marginal spines and four dorsal spinules.

The pterygostomial flap has no spine near the pleural suture.

Epipods are present on the first pair of the pereopods.

The first two pleopods are as represented in Fig. 4, *g, h*.

Colour: After 20 days in alcohol, the carapace, abdomen and ambulatory legs are of light seashell pink. The cheliped is orange.

Material examined: Off Nishino-omote, Tanega-shima I., southern Kyushu, Japan, 15-30 m deep, June 27, 1967, Kagoshima Univ. coll.— 2♂♂ (larger ♂, holotype), ZLKU 14257.

Measurements of holotype (in mm):

Length of carapace including rostrum.....	5.2
Breadth of carapace.....	3.5
Length of rostrum	1.7
Breadth of rostrum	1.3
Length of cheliped	13.1
Length of wrist	2.3
Length of palm	3.2
Length of movable finger	2.5

Relationships: This species is very allied to *Galathea affinis* Ortmann in all respects, but differs in the followings: (1) The pterygostomial flap has a spine near the pleural suture in *G. affinis*, but non in *G. tanegashimae*. (2) *G. affinis* has no epipods on any of the pereopods, whereas *G. tanegashimae* bears them on the first pair of the pereopods.

Sadayoshia gen. nov.*

Diagnosis: Rostrum rather broad at base with two lateral spines

* It is a great pleasure of the present writer to dedicate this generic name to Prof. Sadayoshi Miyake of Kyushu University, who is one of the authorities of the Crustacea.

on each side, central spine stout and spiniform. Carapace weak in striation. Branchial region with five marginal spines. Cervical groove distinct. Outer orbital angle rounded.

Basal segment of antennule elongated with five distal spines. Third maxilliped moderately setose, ischium of triangular shape in cross section. Chelipeds stout, depressed and setose. Ambulatory legs without plumose setae on dactyli. Third thoracic sternite roughly triangular. Eyes large but not expanded distally. Abdomen unarmed dorsally.

Epipods absent from all pereopods.

Type-species: *Sadayoshia miyakei* sp. nov.

Remarks: *Sadayoshia miyakei* is represented by three specimens which happened to be taken from southern Kyushu. It bears some eminent characters as shown in the following regards for which it is placed between *Galathea* s.l. and *Munida*.

(1) The rostrum is rather broad with two lateral teeth on either side, the central spine being stout and spiniform. If the lateral spines are one in number the animal would be inserted into *Munida*.

(2) The striation on the carapace and the presence of the outer orbital angle rounded agree with those of *Galathea*.

(3) The eyes are large but not expanded distally.

(4) The basal segment of the antennule is similar to that of *Phylladorhynchus*, but much elongated, with the proximal second of the outer marginla spines extended as in *Munida*.

(5) The chelipeds and the ambulatory legs are not squamiferous but rather smooth and much depressed, having a close resemblance to those of *Galathea*.

(6) The sternite of the third thoracic somite is of roughly triangular shape as in *Galathea*.

There has been recorded a single allied species, *Munida quinque-spinosa* Balss from Great Nicobar Island. According to the species account by Doflein & Balss (1913), the carapace, antennule and chelipeds are similar to those of *Munida*, whereas the third thoracic sternite to that of *Galathea*. As far as the generic position is concerned, at this stage, Balss' species would be inserted into the present taxon.

Sadayoshia miyakei sp. nov.

(Figs. 5, 6)

Diagnosis: Rostrum spiniform with two lateral teeth at base, distal one of them large and proximal small. Outer orbital angle rounded

and unarmed. Carapace distinct in striation, with a transverse row of eight to ten gastric spines, seven lateral marginal spines and two other spines on second stria. Basal antennular segment elongated with five spines distally. Merus of third maxilliped with three or four inner marginal spines, outer margin not spined. Cheliped of moderate length, stout, depressed, spinose and setose; setae partly iridescent. Ambulatory legs stout and setose; setae likewise iridescent. Merus, carpus and propodus with soft, short plumose setae on outer margin. Epipods absent from all pereopods.

Description of holotype: The rostrum is not pubescent but smooth dorsally, and armed with two lateral teeth at base, the proximal being small and the distal large. The central tooth is spiniform. The dorsal surface of the rostrum is somewhat convex longitudinally. The outer orbital angle is rounded and unarmed. The lower margin of the orbit bears two tubercular teeth of large size.

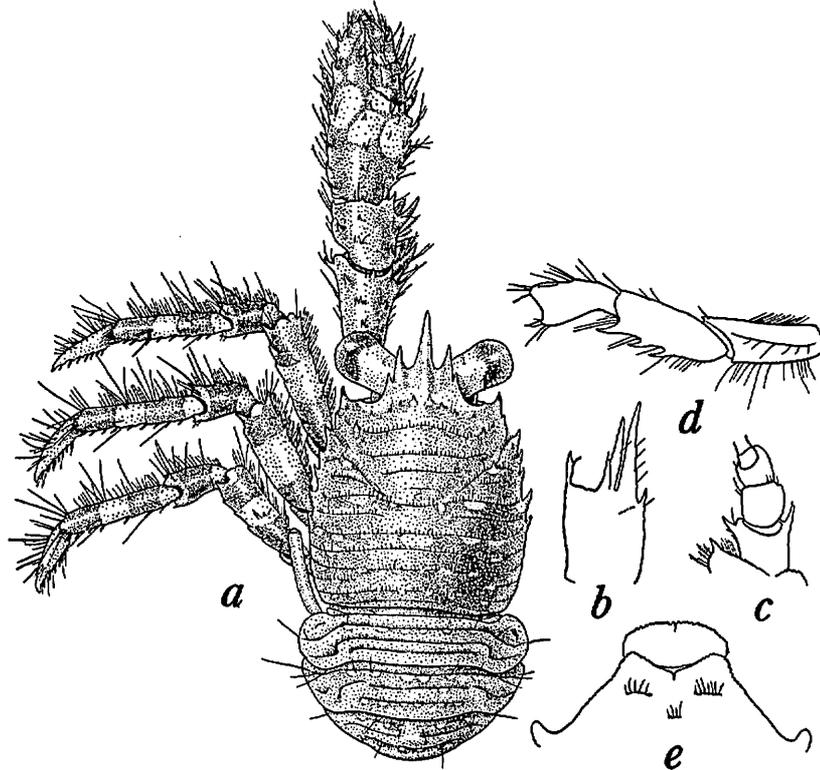


Fig. 5. *Sadayoshia miyakei* sp. nov., holotype, male, *a*, animal in dorsal view, $\times 4.6$; *b*, basal segment of left antennule, $\times 16$; *c*, left antennal peduncle, $\times 16$; *d*, endopod of left third maxilliped, $\times 16$; *e*, anterior part of sternal segments, $\times 16$.

The carapace, excluding the rostrum, is nearly as long as broad, distinct in striation and scarcely furnished with long setae. It is armed with a transverse row of ten gastric spines and two on the lateral sides of the second stria, likewise one on the anterior branchial region or behind the cervical groove. Marginally it also bears seven spines, i.e., two on the hepatic region of which the proximal is small and slightly dorsal in position, three on the anterior branchial and other two on the posterior branchial region.

The basal segment of the antennule is elongated and bears five spines distally which are arranged as those of *Phylladiorhynchus serrirostris* but more developed. The first segment of the antennal peduncle has a small spine internally. The second has both outer and inner distal marginal spines but the third is without spines distally.

In the third maxilliped the ischium is as long as the merus, its inner toothed ridge bearing about 28 closely placed denticles. The merus has the smooth outer margin and the inner margin with three spines.

The cheliped is stout, depressed, spinose and setose, being equal to the carapace in length; the setae are iridescent. The arm is spinous, the outer margin being rather smooth. The wrist is as long as broad and shorter than the movable finger, with spinules dorsally and marginally, but an inner marginal spine at midway is strongly developed as in *Galathea*. The palm is broad, nearly as long as the movable finger and is spinose marginally, its inner margin armed with seven or eight spines or spinules and the outer margin with about seven spines; the dorsal surface is not spinous but two or three distal spinules. The fingers are slightly gapped, the cutting edge bearing tubercular teeth. The movable finger is armed with a single dorsal and three outer marginal spines.

The ambulatory legs are rather smooth, stout and setose. The coarse setae are fairly iridescent. The merus, carpus and propodus each is thickly furnished with soft, short plumose setae on the outer margin. In the first pair the merus has nine outer marginal and one inner distal marginal spines. The carpus also bears three outer marginal, one or two dorsal and one inner distal marginal spines. The propodus is armed with three outer marginal, one dorsal and eight or nine inner marginal spines which are all slender and mobile. The dactylus is serrated on the inner margin with about six broad setae. The second pair is very similar to the first, but the third is reduced in armature so that the merus has two dorsal spines alone and the carpus a distal outer marginal spine.

Epipods are absent from all the pereopods.

First and second pleopods are as represented in Fig. 6.

Colour: After 20 day in alcohol the body is yellow to reddish orange. When closely examined, the carapace is yellowish orange with small blotches of a light purple along the transverse ridges, but the anterior portion of it is light seashell pink. Abdomen is quite equal to the carapace in coloration. Chelipeds are orange with four rounded patches of a light yellow. Ambulatory legs are yellowish, with two bands of orange on the merus, one on the carpus and other one on the median point of the propodus.

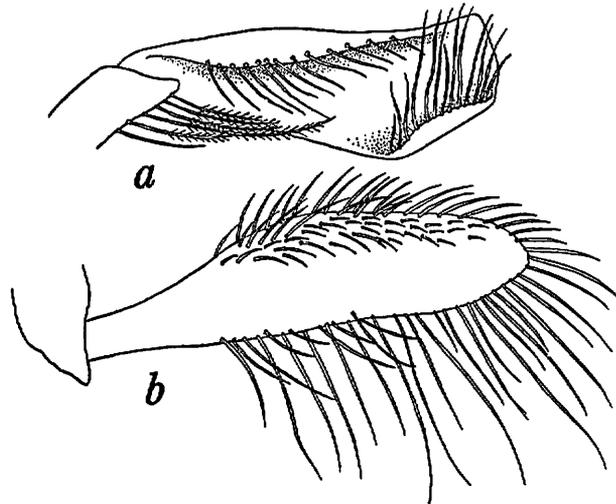


Fig. 6. First two pleopods of *Sadayoshia miyakei* sp. nov., holotype, male, *a*, right first pleopod, dorsal view, $\times 54$; *b*, right second pleopod, ventral view, $\times 54$.

Material examined: Off Mage-jima Islet, west of Tanega-shima I., southern Kyushu, Japan, 35-40 m deep, June 30, 1967, Kagoshima Univ. coll.—1 ♂ (holotype), 2 ovig. ♀♀, ZLKU 14245.

Measurements of holotype (in mm):

Length of carapace including rostrum.....	9.2
Breadth of carapace.....	6.3
Length of cheliped	20.1
Length of wrist	2.6
Length of palm	4.8
Breadth of palm	3.2
Length of movable finger	4.7

The ovigerous females measure 8.8–8.5 mm in carapace length.

Munida rufiantennulata sp. nov.

(Fig. 7)

Diagnosis: Rostrum spiniform and horizontal. Carapace armed with six to nine gastric spines, one pair of spines on lateral ends of second transverse ridge, five or six lateral marginal spines, one on anterior branchial region and two postcervicals. Second abdominal segment with eight tubercular teeth on dorsal transverse ridge. Basal antennular segment with two lateral and two terminal spines, innermost of the latter small. Third segment of antenna without any spine. Merus of third maxilliped with two inner marginal spines. Cheliped spinous and setose, setae fine and plumose. Epipods absent from all pereopods.

Description of holotype: The rostrum is spiniform, rather stout and horizontal. The supraorbital spine terminates midway of the rostrum.

The carapace, excluding rostrum, is as long as broad, the transverse ridges being few in number. It is armed with five pairs of gastric spines, of which the innermost and the outer three pairs are minute, and the inner second rather large. Behind the gastric row of spines are two spines which are situated at lateral ends of the second transverse ridge. Marginally the hepatic region bears two spines, the distal is a well-developed anterolateral spine. The branchial region has three spines marginally and a single spine dorsally which is placed behind the bifurcation of the cervical groove. A pair of postcervical spines are present.

The second abdominal segment bears eight tubercular teeth on the anterior transverse ridge.

The basal segment of the antennule is not setose but smooth with two lateral and two terminal spines, the inner one of the latter being small. The first segment of the antennal peduncle is devoid of setae and has an undeveloped spine. The third segment is without any spine.

The third maxilliped is moderately setose and not squamiferous. The ischium is not thin but triangular in cross section. The merus bears two inner marginal spines, the distal one of which is small.

The chelipeds are spinous and setose with soft, fine, plumose setae thickly and also with long coarse setae which are iridescent. The arm has one outer distal marginal, two dorsal rows of eight and three spines respectively and three inner marginal spines. The wrist is slightly shorter than the palm, with four dorsal, five inner marginal,

two outer marginal and three ventral spines. The palm is rather depressed and shorter than the movable finger, with four outer marginal, five dorsal, four inner marginal spines. The fingers are devoid of plumose setae but has coarse setae, they are not gapped but touch each other with tubercular teeth on the cutting edge. The distal portion are crossed each other and equipped with spinules, each being placed on the outer margin

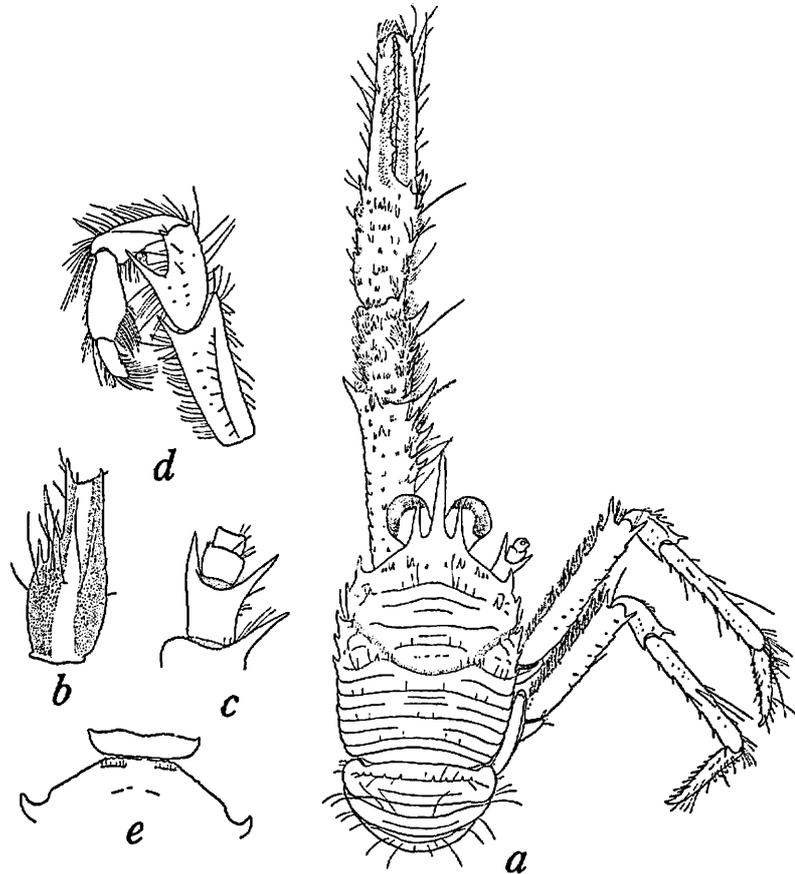


Fig. 7. *Munida rufiantennulata* sp. nov., holotype, ovigerous female, *a*, animal in dorsal view, $\times 4.4$; *b*, basal segment of right antennule, $\times 10$; *c*, right antennal peduncle, $\times 10$; *d*, endopod of left third maxilliped, $\times 10$; *e*, anterior part of sternal segments, $\times 15$.

The ambulatory legs are rather stout and slightly squamiferous only on the merus. The first pair is missing. In the second pair the merus is furnished with fine plumose setae along the outer margin.

The carpus is somewhat raised longitudinally on the dorsal surface, and has four outer marginal spines of which the distal one is the largest, the inner distal margin being also spined. The propodus is setose with long setae and has smooth surface, with eight inner marginal spines which are slender and mobile. The dactylus is long, measuring about two-thirds of the preceding segment. The inner margin is serrated with about ten broad, short setae each springing from the base of the serrated tooth. The third pair is similar to the second, but as usual in all other species, gradually reduces in armature.

Epipods are not present on any of the pereopods.

Colour: After a week in formalin, the animal is of a light orange in ground colour. The anterior branchial region is marked with red. The antennule is reddish with a longitudinal stripe of white which is seen from a ventral aspect. The cheliped is reddish orange on the distal halves of the fingers and the distal portion of the palm, the ventral surface of the articulated part between the wrist and the palm is speckled with fresh red.

Material examined: Near Danjo Is., 32°13.6' N, 128°20.2' E, 167 m deep, Aug. 6, 1967, I. Uchimura leg.—1 ♀ (holotype), 1 ovig. ♀, ZLKU 14297.

Measurements of holotype (in mm):

Length of carapace including rostrum.....	9.1
Breadth of carapace.....	5.1
Length of rostrum	2.7
Length of cheliped	18.0
Length of wrist	3.0
Length of palm	3.4
Breadth of palm	1.7
Length of movable finger	4.8

The ovigerous female measures 7.3 mm in carapace length.

Relationships: The species is very allied to *Munida heteracantha* Ortman, from which it differs in the fact that the basal segment of the antennule of *M. rufiantennulata* bears the inner terminal spine of small size, while that of *M. heteracantha* has the large one which is equal to the outer terminal spine. At first glance the species is recognized by its red antennule with a longitudinal stripe of white.

Munida pilosimanus sp. nov.

(Figs. 8, 9)

Diagnosis: Rostrum straight and spiniform. Carapace with two postcervical and two gastric spines and two spinules behind or inside of anterolateral spine, but devoid of cardiac spine. Lateral margin with six spines, two of them on hepatic and other four on branchial region. Hindmost transverse ridge armed with two spines. Second to fourth abdominal segments each with four spines dorsally. Inner terminal spine on antennular basal segment larger than outer one. Third

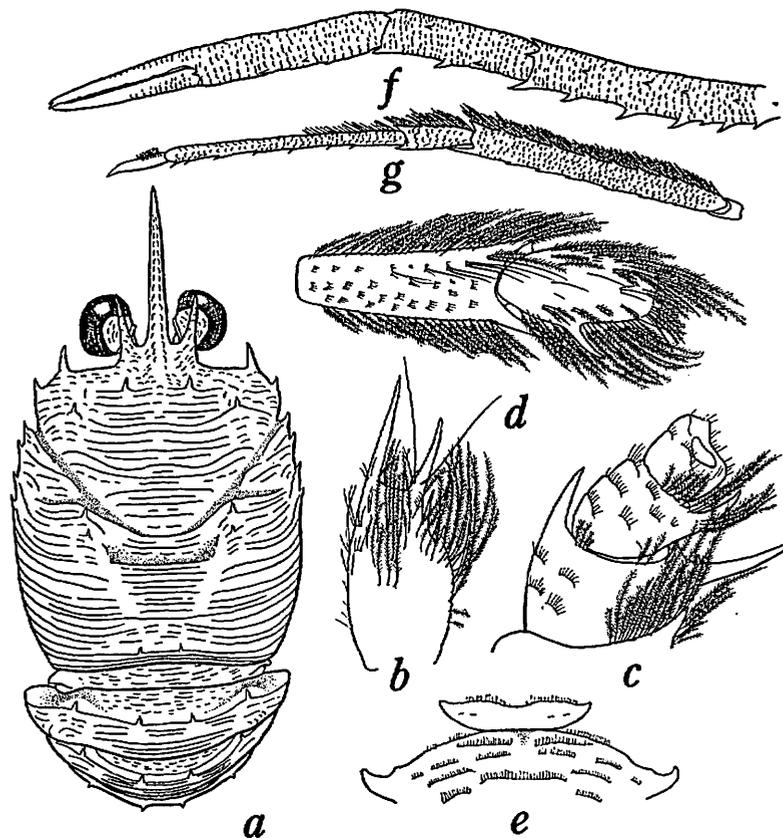


Fig. 8. *Munida pilosimanus* sp. nov., holotype, male, *a*, animal in dorsal view, $\times 1.3$; *b*, basal segment of left antennule, $\times 4$; *c*, right antennal peduncle, $\times 4$; *d*, endopod of right third maxilliped, $\times 3$; *e*, anterior part of sternal segments, $\times 7$; *f*, right cheliped, $\times 1$; *g*, left first ambulatory leg, $\times 0.9$.

maxilliped setose, merus with an inner marginal spine at midway. Chelipeds cylindrical, squamiferous and furnished with plumose setae on inner margin. Ambulatory legs slender, squamiferous and furnished with plumose setae. Merus with spinose inner margin. Dactylus minutely serrated on inner margin. First pleopod of male absent. Epipods not present on any of pereopods.

Description of holotype: The rostrum is straight and spiniform. The supraorbital spines fail to reach the middle of the rostrum, slightly curving outwards.

The carapace, excluding the rostrum, is as long as broad without long setae dorsally. The gastric region has two spines which are placed behind the supraorbitals. There are also two spines behind and inside of the anterolateral spines and two postcervicals each with a small appendix behind. There is no cardiac spine. Two spines are likewise placed on the hindmost transverse ridge. The lateral margin bears six spines, two of them being on the hepatic and the others on the branchial region, the foremost being the well-developed anterolateral spine.

The second to fourth abdominal segments bear each four spines on the anterior transverse ridge. The pleura of the third and fourth segments are not rounded but become narrow distally.

The basal segment of the antennule has two lateral marginal and two terminal spines, the inner one of the latter being the larger. The first segment of the antennal peduncle bears a short spine, and has the anterior margin furnished with plumose setae. The third segment has an inner distal marginal spine.

The third maxilliped is setose. The ischium is thin and longer than the merus which is particularly thickly furnished with long plumose setae with one inner marginal spine at midway. The distal segments are not expanded but subcylindrical.

The chelipeds are squamiferous and cylindrical, the left one being the larger and more spinous. The arm is spinose and setose, with eight (right) or 12 (left) inner marginal, six (right) or 11 (left) inner ventral marginal, 10 (right) or 15 (left) dorsal and one outer distal marginal spines, the inner margin being furnished with plumose setae. The wrist is shorter than the movable finger, with plumose setae on the proximal half of the inner margin. It is spinous with three (right) or six (left) inner marginal, two dorsal and three inner-ventral spines, the outer margin being almost smooth. The palm is longer than the finger, devoid of setae, and has two or three inner marginal, four (right) or eight (left) inner-ventral spines and also a single spine at the distal portion of the dorsal surface close to the outer margin. The fingers are carinated dorsally and not gapped in the left but a little gapped

at the proximal portion in the right. The tip of the immovable finger is biramous with spines between which the movable finger fits in when the fingers are closed.



Fig. 9. Left second pleopod of *Munida pilosimanus* sp. nov., holotype, male, ventral view, $\times 10$.

The ambulatory legs are slender, squamiferous, spinose marginally and furnished with long plumose setae on the margins of the merus, carpus and proximal half of the propodus. In the first pair the merus bears 14 outer marginal and seven inner marginal spines, the distal spines of both margins being the strongest. The carpus has six or seven outer marginal and one inner distal marginal spines. The propodus is slender with rudimentary inner marginal spines, measuring about three times of the dactylus length. The latter segment bears the unguiculate tip and is slightly serrated on the inner margin with short setae. The second pair is smaller but more spinous than the first. The third is similar to but shorter than the second.

The first pleopod is absent. The second pleopod is as represented in Fig. 9.

Epipods are not present on any of the pereopods.

Colour: Not remain.

Material examined: Tosa Bay, ca. 250 m deep, Mar. 28-30, 1960, K. Sakai leg.—1 ♂, ZLKU 7591, 1 ♀, ZLKU 7594.

Measurements of holotype (in mm):

Length of carapace including rostrum	48.7
Breadth of carapace	28.5
Length of rostrum	16.9
Length of cheliped	117.3
Length of wrist	19.2
Length of palm	26.3
Breadth of palm	5.5
Length of movable finger	21.5

The female measures 22.9 mm in carapace length.

Relationships: The species has a strong resemblance to *Munida squamosa* Henderson, from which it differs in the following respects: (1) The carapace of *M. pilosimanus* sp. nov. has no cardiac spine, while that of *M. squamosa* is quite reverse. (2) The fourth abdominal segment of *M. pilosimanus* has four spines on the anterior stria, however, that of *M. squamosa* bears four on the anterior stria as in *M. pilosimanus* and another additional one on the posterior stria.

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