

## First records of chirostylid and galatheid crustaceans (Decapoda, Anomura) from New Caledonia

by Keiji BABA \*

**Abstract.** — One species of Chirostylidae and four of Galatheidae are reported from New Caledonia for the first time; *Uroptychus amabilis* sp. nov. and *Galathea squamea* sp. nov. are described and illustrated; *Galathea ohshimai* Miyake & Baba, *G. subsquamata* Stimpson, and *G. ternatensis* De Man, are newly recorded.

**Résumé.** — Une espèce de Chirostylidae et quatre espèces de Galatheidae sont décrites ou signalées pour la première fois de Nouvelle-Calédonie. Ce sont *Uroptychus amabilis* sp. nov. et *Galathea squamea* sp. nov., qui sont figurés, *G. ohshimai* Miyake & Baba, *G. subsquamata* Stimpson et *G. ternatensis* De Man.

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Although numerous littoral species of the Galatheidae have been recorded from various localities in the Indo-Pacific tropical and subtropical seas, there are no published accounts of the New Caledonian galatheids or chirostylids, the closest relatives to the Galatheidae. Recent access to a small collection of galatheids from that Island, made possible through the courtesy of Dr. Th. MONOD, reveals that four species of the genus *Galathea* occur off Nouméa. Three of them have been known previously from Indo-Pacific tropical reefs, and their occurrence in New Caledonia is therefore not unexpected, but the remaining species proved new to science. Also included here is a single specimen of a new species of the Chirostylidae, taken off Nouméa and deposited in the Rijksmuseum van Natuurlijke Historie, Leiden.

I thank Dr. Th. MONOD, Muséum national d'Histoire naturelle, Paris, and Dr. L. B. HOLTHUIS, Rijksmuseum van Natuurlijke Historie, Leiden, for placing the New Caledonian material at my disposal. I am also grateful to Dr. K. K. TIWARI, Zoological Survey of India, Calcutta, for examining the type specimen of *Uroptychus bacillimanus* Alcock. I should be thankful to Dr. Fenner A. CHACE, Jr., Smithsonian Institution, Washington, D. C., for kindly reviewing the manuscript.

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Family CHIROSTYLIDAE

***Uroptychus amabilis* sp. nov.**

(Figs. 1, 2)

MATERIAL EXAMINED. — Outside Recif Mtere, off Nouméa, New Caledonia, 30 m deep, 23 July 1971, leg. A. G. Humes & R. C. Halverson, no. 1685. — 1 male (holotype, RMNH reg. no. Crust. D. 31506).

DESCRIPTION OF HOLOTYPE

Carapace slightly broader than long, excluding rostrum. Dorsal surface feebly convex, unarmed, with fine setae especially thick on posterior half; distinct ridge along posterior third of lateral margin; lateral margins posteriorly diverging, greatest breadth measured at posterior fourth. Anterolateral angle produced; upper margin of orbit rather deeply concave, outer angle moderately produced.

Rostrum triangular, moderately broad at base, more than half of remaining carapace length, dorsally deeply concave; lateral margin smooth on left, having minute tooth-like projection at distal fifth on right.

Eyestalk comparatively large, about  $3/5$  of rostral length, basally broad, distally narrow.

Abdomen also unarmed, sparsely setose.

Antennal peduncle rather stout; distal two segments with large inner terminal marginal spine each; antennal scale as broad as peduncle, falling short of distal end of ultimate segment; basal segment (proximal to scale) distinctly produced at outer distal margin.

Third maxilliped as illustrated; inner toothed ridge of ischium with weak denticles. Merus dorso-ventrally flattened, distally widened, with rather long extero-ventral setae; two small inner marginal spines on distal half; terminal marginal spine well developed, rather remote from inner marginals and directed antero-externally.

Anterior part of sternal segments as illustrated; third thoracic sternite not depressed, anterior margin deeply incised medially, laterally produced.

Left cheliped missing. Right cheliped slender, cylindrical, unarmed, moderately setose, more than three times as long as carapace including rostrum. Palm shorter than wrist, more or less depressed, barely four times as long as broad. Fingers not distinctly gaping, less than half as long as palm; tips curving inward; inner margin of movable finger basally produced moderately, that of immovable finger slightly convex medially.

Walking legs similar, comparatively broad, devoid of spines, but furnished with coarse setae; propodus slightly curving inward, with pair of spinelets at distal end of inner margin; dactylus straight, about half as long as propodus; inner margin with six spines, including terminal small spine; penultimate and antepenultimate subequal and large, proximal three smaller, decreasing in size toward base of segment; several fine plumose setae on outer margin.



FIG. 1. — *Uroptychus amabilis* sp. nov., holotype, male, dorsal view.

First abdominal segment devoid of pleopod. Second segment with distinct pleopod; endopod rather simple, without any projection and curved lobe; exopod barely half as long as endopod.

*Measurements of holotype* (mm): Length of carapace including rostrum, 3.1; Breadth of carapace, 2.3; Length of cheliped (right), 10.1; Length of wrist, 3.0; Length of palm, 2.7; Breadth of palm, 0.7; Length of finger, 1.2.

**ECOLOGY.** — The holotype was found among *Siphonogorgia variabilis* (Hickson), a soft coral identified by Dr. J. VERSEVELDT of the Leiden Museum.

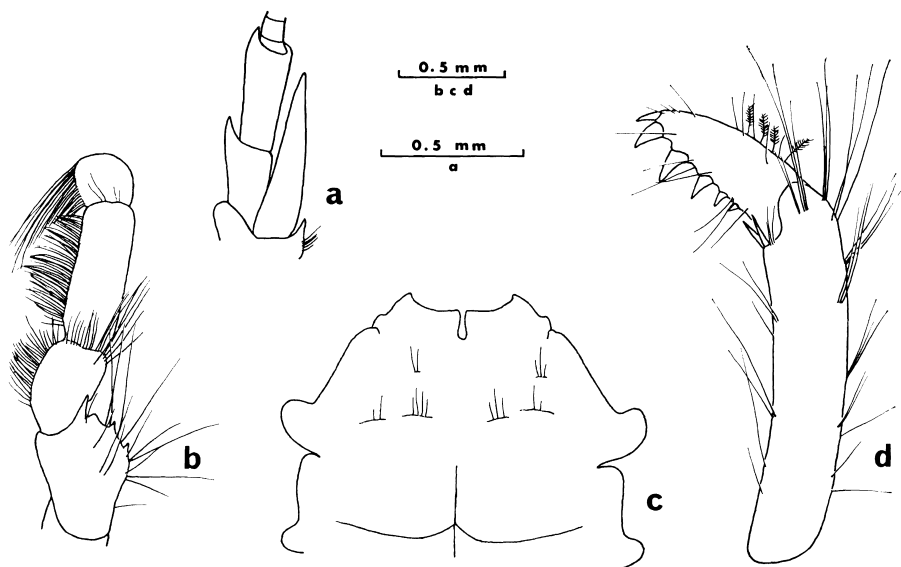


FIG. 2. — *Uroptychus amabilis* sp. nov., holotype, male; a, left antennal peduncle; b, endopod of right third maxilliped; c, anterior part of sternum; d, distal two segments of third walking leg.

REMARKS. — This new species is related to *Uroptychus bacillimanus* Alcock & Anderson from off the southwest coast of India and off Sri Lanka; however, reliable comparison seemed almost impossible because of the brevity of the original description. At my request Dr. K. K. TIWARI of the Zoological Survey of India kindly examined the syntypes of *U. bacillimanus* deposited there, sent me illustrations of them, and mentioned that our specimen might be distinct. The distinguishable characters are as follows: 1) The anterior margin of the third thoracic sternite is more narrowly notched in the new species. 2) The distal two segments of the antennal peduncle are unarmed in *U. bacillimanus*. 3) In *U. bacillimanus* the dactylus of the walking leg bears seven inner marginal spines, the penultimate of which is the largest, the remainder decreasing in size toward the base of the segment; in *U. amabilis*, however, the penultimate and antepenultimate inner marginal spines are large and subequal.

Family GALATHEIDAE

***Galathea ohshimai* Miyake & Baba, 1967**

*Galathea ohshimai* Miyake & Baba, 1967: 207, fig. 3 - Palau Is.

*Galathea ohshimai*: BABA, 1977: 250 — Obi Is.; Talaud Is.

MATERIAL EXAMINED. — Nouméa, Aquarium de Nouméa, No. 4149, leg. R. Catala.  
— 1 male (carapace length, 4.3 mm).

This species seems to be confined to the tropical coral reefs ; it has been recorded from the Palau Islands, Talaud Islands, and Obi Islands.

The tuft of setae on the distal segment of the antennule, the presence or absence of which seems to be one of the most useful characters in *Galathea* (HAIG, 1973), is evident in both the present and the type material, but it is less pronounced in the former. So far I have examined a number of specimens of the Snellius Expedition (BABA, 1977) as well as the type (MIYAKE & BABA, 1967). Two inner marginal spines on the merus of the third maxilliped, the distal being the smaller, are constant throughout the entire material. In the type and the Snellius material there are three or four eminences on the outer margin of the carpus, whereas in the present specimen two small spines are seen, the distal of which is, however, nearly obsolete on the left maxilliped. The absence of two or three outer marginal spines on this segment is one of the most important characters of *Galathea orientalis* Stimpson, the most common species in Japanese waters, to which the present species is most closely related. The most useful character for separating these two species now proves to be the presence or absence of a carapacial marginal spinule between the end of the cervical groove and the anterolateral spine. This spinule is present in all of approximately 600 specimens of *G. orientalis* examined, while it is completely absent in all examined material of *G. ohshimai*.

***Galathea subsquamata* Stimpson, 1858**

Synonymy as given by BABA (1977 : 247).

MATERIAL EXAMINED. — Fosse aux Canards, Nouméa, 20-23 m deep, Aquarium de Nouméa, September 1972, leg. R. Catala. — 1 male (c.l., 5.5 mm).

This species has so far been known from Japan southward to western and eastern Australia.

Of three terminal spines of the antennular basal segment the inner and the outer-ventral are usually subequal in size, but in this material the inner is reduced, almost half as long as the outer-ventral. No further additional characters of significance were noted.

***Galathea ternatensis* De Man, 1902**

Synonymy as given by BABA (1977 : 245).

MATERIAL EXAMINED. — Fosse aux Canards, Nouméa, 20-23 m deep, Aquarium de Nouméa, September 1972, leg. R. Catala. — 1 ovigerous female (c.l., 7.5 mm).

This species has been known from Kyushu, Japan, the Bonin Islands, Ternate, north coast of New Guinea, western Australia, the Maldives, and Providence Island.

The present specimen is somewhat aberrant in several respects : The merus of the third maxilliped, instead of being trispinose on the inner margin, has the median spine greatly

reduced, almost to a tubercular tooth, on either side. The tuft of setae supposed to be pronounced on the distal segment of the antennule (MELIN, 1939 ; BABA, 1977) is less pronounced, with shorter and fewer setae. The second segment of the antennal peduncle has two distinctly small spines on the inner and outer distal margins, as illustrated by MELIN (1939, fig. 41) ; the third, however, completely lacks the outer distal marginal spine (MELIN, 1939 : MIYAKE & BABA, 1963).

***Galathea squamea* sp. nov.**

(Figs. 3, 4)

**MATERIAL EXAMINED.** — Fosse aux Canards, Nouméa, 20-23 m deep, Aquarium de Nouméa, September 1972, leg. R. Catala. — 1 male (holotype, MNHN, Paris, Crust. Sec., no. Ga 1118).

**DESCRIPTION OF HOLOTYPE**

Carapace nearly as long as broad excluding rostrum. Dorsal surface with very weak striations, scaly on anterior half and on branchial regions ; median and posterior transverse ridges only complete and uninterrupted ; fringe of setae on transverse ridges reduced. Pair of gastric spines. Lateral margins moderately convex, with seven spines : five acute behind cervical groove, one just outside of orbital angle and another anterolateral.

Rostrum comparatively broad, more than half as long as remaining carapace length, one and half times as long as broad. Lateral margin with four teeth ; distal three acute, subequal in size, basal one small but more or less pronounced ; incision rather deep ; few long coarse setae near distal two teeth.

Abdomen smooth, devoid of long setae. Second and third abdominal segments with two transverse ridges, distinct groove just in front of each posterior ridge. Two pairs of pleopods present.

Basal antennular segment with three terminal spines, inner nearly as long as outer-dorsal ; no tuft of setae on distal segment. Anterior process of first segment of antenna sharp ; second segment with both inner and outer terminal marginal spines, third with outer terminal. Sternal segments as illustrated. Anterior margin of third thoracic sternite slightly convex with distinct median notch. Following sternite depressed anteriorly, produced on anterolateral margin.

Ischium of third maxilliped as long as merus, with strong spine on inner distal margin ; cutting edge with 16 sharp denticles. Merus with two well-developed inner marginal spines of subequal size, outer distal margin only feebly produced but not forming distinct spine. Carpus unarmed.

Cheliped fully twice as long as carapace including rostrum, stout, spinose, massive, moderately setose. Spination as illustrated. Palm twice as long as broad, one and half times as long as wrist. Fingers gaping, tips curving inward to cross each other ; left movable finger with pronounced process basally, but right one devoid of such process, only slightly convex instead.

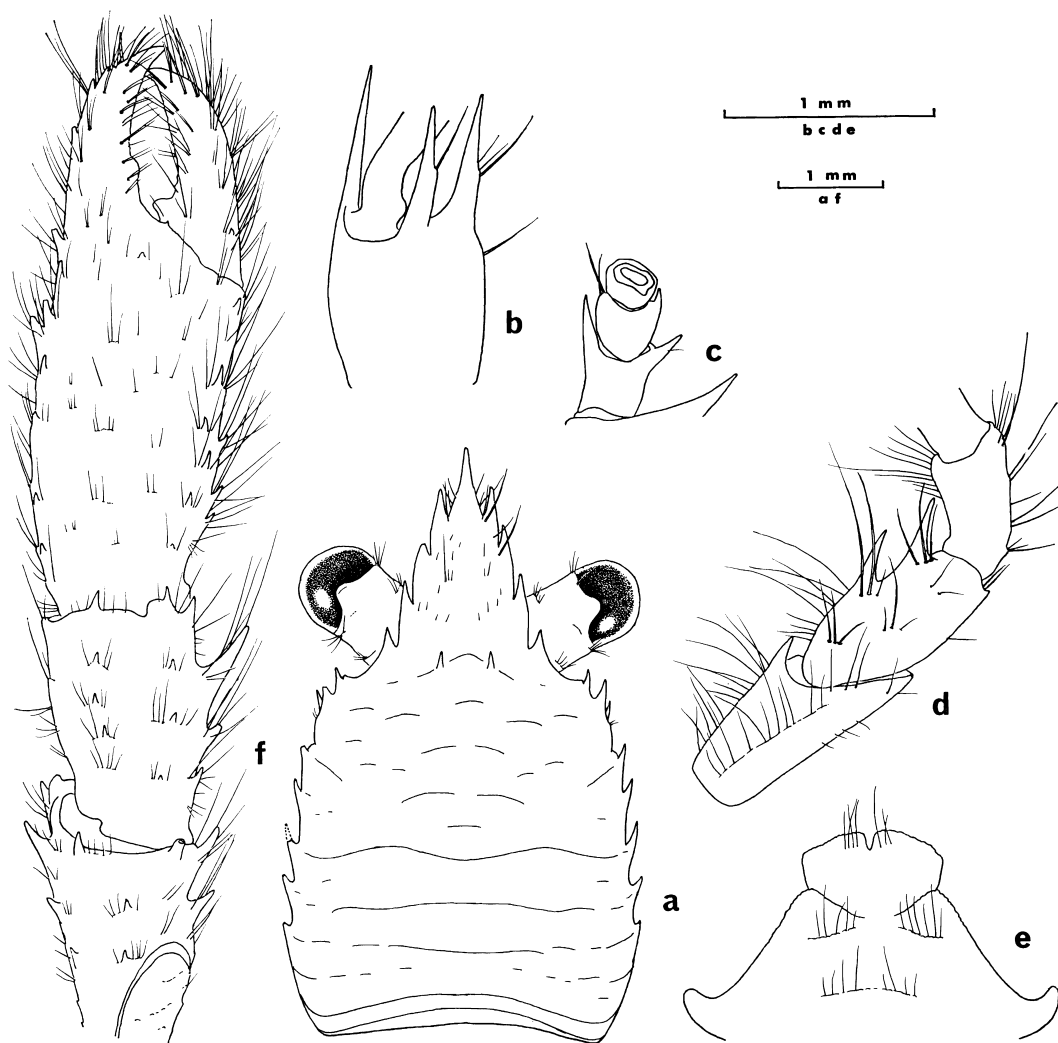


FIG. 3. — *Galathea squamea* sp. nov., holotype, male ; a, carapace ; b, basal segment of left antennule ; c, left antennal peduncle ; d, endopod of left third maxilliped ; e, anterior part of sternum ; f, left cheliped.

Walking legs rather stout, with long coarse setae especially thick on outer margin. Spination as illustrated ; merus of first walking leg with about eight outer marginals and three inner marginals ; more or less pronounced spine just inside of inner distal marginal ; four outer marginal and two or three dorsal spines on carpus ; propodus one and half times as long as dactylus, with two proximal outer marginal spines and five inner marginal spinelets ; dactylus distally curving inward, ending in sharp claw, inner margin with about six teeth decreasing proximally, movable seta arising from base of each tooth. Second

leg similar to first, but slightly broader and shorter. Third leg shorter and weaker in armature than preceding two; merus with one outer distal marginal, four dorsal nearer outer margin, and two inner terminal.

Epipods absent from all pereopods.

*Measurements of holotype* (mm) : Length of carapace including rostrum, 5.3; Breadth of carapace, 3.2; Length of cheliped, 11.3 (left), 11.2 (right); Length of wrist, 2.2 (l.), 2.1 (r.); Length of palm, 3.3 (l.), 3.2 (r.); Breadth of palm, 1.7 (l.), 1.8 (r.); Length of finger, 2.1 (l.), 2.2 (r).

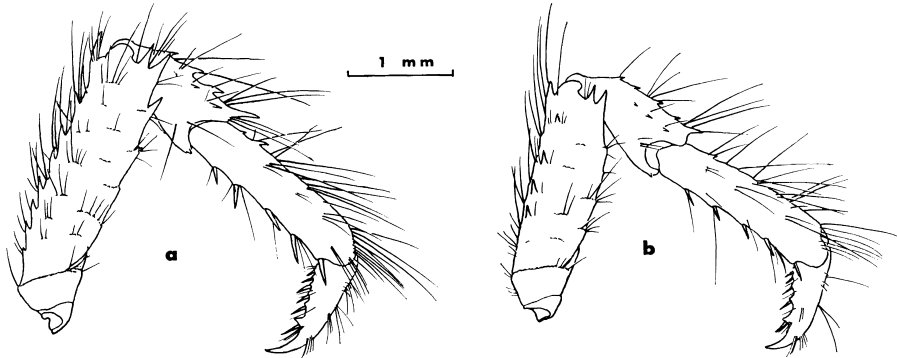


FIG. 4. — *Galathea squamea* sp. nov., holotype, male; a, right first walking leg; b, right third walking leg.

REMARKS. — *Galathea squamea* is closely related to *Galathea subsquamata* Stimpson known from Japanese waters southward to western and eastern Australia, in the scaliform striation of the anterior half of the carapace, from which it differs as follows: 1) The first three pairs of pereopods have epipods in *G. subsquamata*, while there is no trace of epipods on those appendages in *G. squamea*. 2) The terminal segment of the antennule bears a long tuft of setae on the outer distal margin in *G. subsquamata*; such setae are completely absent in this new species.

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*Manuscrit déposé le 6 décembre 1977.*