Thalassinidea (Crustacea, Decapoda) from French Polynesia

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ABSTRACT
New material from the Marquesas Islands and other localities of French Polynesia provided 12 thalassinidean species treated in this work, five of which are new to science. There are four species of Axiidae: Acanthaxius spinosissimus (Rathbun, 1906), Axiopsispica Kensley, 2003, Axiopsis consobrina de Man, 1905, Calaxius sibogae (de Man, 1925); one of Strahlaxiidae: Neaxius trondlei n. sp.; two of Thomassiniidae: Crosniera dayrati n. sp., Mictaxius salvati n. sp.; four of Callianassidae: Callianassa amboinensis de Man, 1888, Corallianassa coutierei (Nobili, 1904), Neocallichirus frouini n. sp., Cheramus sibogae (de Man, 1905); and one of Upogebiidae: Gebiacantha albengai n. sp. Neaxius trondlei n. sp. is differentiated by article 2 of antennal peduncle with one or two upper spines, unarmed laterally; merus of pereopod 2 and 3 unarmed on lower border; telson with three well marked transverse carinae equally distant from one another. Crosniera dayrati n. sp. is differentiated by a non spike-like, triangular rostrum, non flattened eyestalks with terminal corneas, elongate telson and uropods. Mictaxius salvati n. sp. is hermaphro-dite and has abdominal pleuron 1 rounded posteroventrally, approximately square telson with posterior border nearly straight, uropod exopod not bilobed. Neocallichirus frouini n. sp. is characterised by major pereopod 1 merus with prominent lower expansion bearing large spines, maxilliped 3 with non quadrade propodus. Gebiacantha albengai n. sp. differs in having a rostrum nearly twice as long as wide with three infrarostral spines, single spine on anterolateral border of carapace, pereopod 1 propodus unarmed on mesial surface.

KEY WORDS
Crustacea, Decapoda, Thalassinidea, French Polynesia, new species.
RÉSUMÉ

Thalassinidea (Crustacea, Decapoda) de Polynésie française.

Du nouveau matériel des Îles Marquises et d’autres localités de Polynésie française a permis d’identifier 12 espèces de Thalassinidea, cinq d’entre elles étant nouvelles. Il y a quatre espèces d’Axiidae : Acanthaxius spinosissimus (Rathbun, 1906), Axiopsis pica Kensley, 2003, Axiopsis consobrina de Man, 1905, Calaxius sibogae (de Man, 1925) ; une de Strahlaxiidae : Neaxius trondlei n. sp. ; deux de Thomassiniidae : Croniera dayrati n. sp., Mictaxius salvati n. sp. ; quatre de Callianassidae : Callianassa amboinensis de Man, 1888, Corallianassa coutierei (Nobili, 1904), Neocallichirus frouini n. sp., Cheramus sibogae (de Man, 1905) ; et une d’Upogebiidae : Gebiacantha albengai n. sp. Neaxius trondlei n. sp. se distingue par un pedoncule antenne avec une ou deux épines dorsales et aucune épine latérale, le mérus des péréiopodes 2 et 3 au bord ventral inermes, le telson aux trois carènes transversales bien marquées et équidistantes. Croniera dayrati n. sp. diffère par un rostre triangulaire, non terminé en pointe, les pedoncles oculaires non aplatis, aux cornées terminales, le telson et les uropodes allongés. Mictaxius salvati n. sp. est hermaphrodite et se caractérise aussi par le pleuron abdominal 1 au bord postéro-ventral arrondi, le telson à peu près quadrangulaire au bord postérieur presque rectiligne, l’exopodite des uropodes non bilobé. Neocallichirus frouini n. sp. se distingue par le grand péréiopode 1 à forte expansion ventrale au mérus, le maxillipède 3 au propode non quadrangulaire. Gebiacantha albengai n. sp. se caractérise par un rostre presque deux fois plus long que large avec trois épines infra-orales, une épine au bord antéro-latéral de la carapace, le propode du péréiopode 1 inermes à la face mésiale.

MOTS CLÉS
Crustacea, Decapoda, Thalassinidea, Polynésie française, nouvelles espèces.

INTRODUCTION

The Thalassinidea of French Polynesia are poorly known. Poupin (1998) provided a checklist of decapod Crustacea from the area in which nine thalassinidean species were reported. Most material for this study came from the MUSORSTOM 9 Expedition to the Marquesas Islands. Additional specimens from other localities in French Polynesia were provided by the collections of the FV Marara (J. Poupin) and BENTHAUS (malacologists workshop to the Rapa Island) as well as private individuals, Patrick Frouin, Gustav Paulay and Bernard Salvat. Twelve species are identified, four of the Axiidae, one of the Strahlaxiidae, two of the Thomassiniidae, four of the Callianassidae and one of the Upogebiidae. Five of them are new and all the others are new records. This work provides further information on the thalassinidean fauna of French Polynesia and permits certain problems concerning their taxonomy to be addressed, Poore’s (1994) key to families and genera is mainly used and discussed, also Poore’s (1997) paper on the little known family Thomassiniidae. Most of the material studied belong to the collection of the Muséum national d’Histoire naturelle, Paris (MNHN); a few are from the collection of the University of Florida (UF). Other repositories mentioned are: University of Guam, Invertebrate Collection (UGI), Smithsonian Institution, Washington (USNM), Zoologisch Museum Amsterdam (ZMA).
The measurements given in the descriptions are:
carapace length (cl.) measured from the tip of the rostrum to the posterior border of the carapace;
total length (tl.) measured from the tip of the rostrum to the posterior border of the telson.

Figured specimens and appendages were stained with a light solution of chlorazol black, sometimes with a drop of lactic acid added. The anterior part of the carapace, the telson and uropods are figured in dorsal view and appendages in lateral view.

Abbreviations used in the descriptions are: A1, antennule; A2, antenna; Md, mandible; Mx1 and Mx2, maxillule and maxilla; Mxp 1-3, maxillipeds 1-3; P1-5, pereopods 1-5; Plp 1-5, pleopods 1-5.

The following terminology may require explanation (from Ngoc-Ho 2003):
For axiids, A2 acicle = antennal scale.
For callianassids and thomassiniids, Mxp3: “pediform” means ischium-merus length more than three times merus width; “subpediform” means ischium-merus length about two to three times merus width; “operculiform” means ischium-merus length less than two times merus width.

For upogebiids, lateral ridges are the upper longitudinal toothed crests of the gastric region, on either side of the rostrum.

Family Axiidae Huxley, 1879
Genus Acanthaxius
Sakai & de Saint Laurent, 1989

*Acanthaxius spinosissimus* (Rathbun, 1906)

(Acatus spinosissimus Rathbun, 1906: 894, fig. 50a, b.
Asiposis (Asiposis) spinosissima – de Man 1925: 70, 98, pl. 8, fig. 18-18g.

**Type Material.** — Holotype: Molokai Island (Hawaii), *Albatros*, stn 3847, 8.IV.1902, 41-43 m, sex not indicated, cl. 7.5 mm, tl. 18.5 mm (USNM 30534).

**Material Examined.** — French Polynesia. Marquesas Islands, Nuku Hiva, MUSORSTOM 9, *Alis*, stn 1305, 90-155 m, 10.IX.1997, P. Bouchet, B. Dayrat, B. Richer de Forges coll., 1 broken oovigerous?, cl. 11 mm, tl. 28 mm (MNHN-Th 1420).

**Distribution.** — Hawaii (Rathbun 1906); North of Buton strait, Indonesia (de Man 1925); Nuku Hiva, Marquesas Islands, French Polynesia.

**Description**

Carapace (Fig. 1A, B) with pointed rostrum reaching slightly beyond eyes to distal margin of second article of A1 peduncle; lateral border with five spines, continuous with lateral carina of gastric region, latter with seven spines; median rostral carina with three spines, median carina of gastric region with nine spines; submedian carina with eight to nine spines. Anterolateral border of carapace with two spines; two or three hepatic spines present. Cervical groove extending to whole carapace bearing on each side four dorsal and seven lateral spines. Postcervical carapace with small scattered tubercles; weak median carina on posterior half.

Pleuron of abdominal somite 1 (Fig. 1D) narrowing ventrally, anterior border with denticles; pleuron of abdominal somite 2 broadly rounded ventrally, pleura 3-5 with broad ventral angle, pleura 2 and 3 with lower distal denticles. Telson (Fig. 1C) approximately 1.3 times as long as wide, lateral border with two spines; posterior border with median spine and three postero lateral spines, inner largest; two pairs of large dorsal spines.

Eyestalk cylindrical, as long as rostrum, cornea terminal, well pigmented. A1 peduncle (Fig. 1B) unarmed, second article about as long as third. A2 article 1 and 3 with one and three lower spines respectively (Fig. 1B), acicle with pointed tip nearly reaching to distal margin of article 4 and carrying small mesial spine (Fig. 1A), article 4 nearly twice as long as article 5. Mx2 scaphognathite with posterior seta. Mxp3 (Fig. 1G, H) coxa and basis with two and one lower spines respectively; ischium having three lower spines and prominent mesial toothed crest; five lower spines on merus, increasing in size distally; lower subdistal spine on carpus; exopod not reaching to distal margin of merus.
FIG. 1. — Acanthaxius spinosissimus (Rathbun, 1906), Marquesas, ♀ (MNHN Th 1420): A, anterior part of carapace; B, lateral view; C, telson and uropods; D, abdomen, telson and uropods in lateral view; E, F, pereopods 1 and 2; G, H, maxilliped 3 and ischium in mesial view; I, pleopod 2. Scale bars: 1 mm.
Thalassinidea (Crustacea, Decapoda) from French Polynesia

Right P1 (left missing) (Fig. 1E) slender with three lower spines on ischium; three upper and 10 lower spines on merus; carpus bearing two upper spines; upper margin of propodus with seven strong spines, six smaller spines on lower margin, two longitudinal rows of three and four spines on lateral surface with distal spine near cutting edge of dactylus; fingers slender, longer than palm, cutting edge of both carrying alternatively round or pointed small teeth, dactylus tip curved downwards. P2 (Fig. 1F) with two lower spines on ischium, four lower spines on merus and lower subdistal spine on carpus; propodus with palm about as long as fingers, fixed finger cutting edge pectinate. Gill formula is presented in Table 1.

Female Plp1 present as a short fine filament. Plp2-5 (Fig. II) with narrow rami, long and slender appendix interna. Uropodal (Fig. IC) exopod with four spines on lateral margin, eight or nine spines along suture line, largest at junction, four spines along outer carina; endopod bearing three spines along lateral margin, distal largest, five spines on median carina.

REMARKS
This specimen agrees with the type from Hawaii (Rathbun 1906) and the Siboga specimen (de Man 1925), especially in the presence of well developed spines along the posterior border of the cervical groove. Other similarities are: 1) anterolateral border of carapace with one or two spines; 2) hepatic spines (or spines on the anterolateral region of carapace) present; 3) carina present on posterior half of post-cervical region of carapace; 4) pereopod 1 and pereopods 3-5 slender and spinose; and 5) four dorsal spines on the telson.

With the material from the Marquesas included, Acanthaxius spinosissima is now known from three specimens, all of them damaged. The ovigerous female from the Marquesas is the largest (tl. 28 mm) as compared with the type from Hawaii (sex not indicated, tl. 18.5 mm) and the Siboga specimen (♂ tl. 16.82 mm). It bears more spines on the rostrum and pereopods which is probably related to its adult stage and larger size.

Table 1. — Acanthaxius spinosissimus (Rathbun, 1906), gill formula.

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<tr>
<th>Maxillipeds</th>
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Acanthaxius was established by Sakai & de Saint Laurent (1989) who included Axius spinosissimus in the genus. However, the latter species does not agree with the generic diagnosis in the following features: 1) the rostral margins are continuous with the gastric region; 2) the anterolateral border of carapace and the cervical groove bear spines; 3) the pointed tip of antennal article 2 is not curved inward; and 4) the chelae of P1 is not obliquely positioned (this character is variable).

Kensley (1996: 70) states that Acanthaxius spinosissimus does not fit the generic definition, but has characteristics of Oxyrhynchaxius Parisi, 1917. Comparison of Acanthaxius spinosissimus with species of Oxyrhynchaxius (see Lin et al. 2000: 199) nevertheless reveals important differences in the latter, including the styliform rostrum, unarmed cervical groove and unarmed anterolateral border of carapace.

The species spinosissimus Rathbun, 1906 should logically be placed in a new genus related to Acanthaxius. However it seems undesirable to establish a monotypic taxon on the basis of three damaged specimens. The species is here provisionally retained in the genus Acanthaxius as proposed by Sakai & de Saint Laurent (1989), pending a future study of additional material.

Genus Axiopsis Borradaile, 1903

Axiopsis pica Kensley, 2003
(Fig. 2)

Axiopsis pica Kensley, 2003: 363, figs 1, 2, pl. 1.
FIG. 2. — *Axiopsis pica* Kensley, 2003; A-E, Rangiroa, ♂ (UF 1337): A, lateral view; B, anterior part of carapace; C, pereopod 1; D, telson and uropods; E, male pleopod 3; F, Mariana Islands, ♀ (UF 552), pleopod 3. Scale bars: 2 mm.
**Axiopsis serratifrons** K. Milne-Edwards, 1873:

- Guam Island, Apra Harbor, 1♀ (USNM 296401); Apia Island, 1♀ (USNM 243377); Piti Bay, 1♀, 2♂ (USNM 243369); Atofia Atoll, 1♀ (USNM 291366); Tepungan Channel, 1♀ (FGI); Agat Bay, 1♀ (UF), 3♀♂ (UF); 2♂♂, 6♀♂ (UF).

**A. pica**:

- New Caledonia, Ile des Pins, Mission Singer-Polignac 1961, 1♀, 1♂, cl. 21.5 mm (MNHN Th 691).
- Mariana Islands, Guam Island, Atofia Atoll, reef flat, among rocks, 10-20 feet, 17.X.2002, H. Conley coll., 1♀, cl. 10.5 mm (UF 1232); near Harbor entrance, among rocks, 25-35 feet, 18.VI.2002, H. Conley coll., 1♀, cl. 13.5 mm (UF 3021); Asan Bay, E of Camel Rock, among rocks, 10-20 feet, 18.XI.2002, H. Conley coll., 1♀, cl. 12 mm (UF 2972); Alutom Island, Agat Bay, H. Conley coll., 1♀, cl. 13.5 mm (UF 3022); Asan Bay, E of Camel Rock, 35 feet, 18.V.2002, H. Conley coll., 1♀, cl. 16 mm (UF 2782); Apra Harbor, Drydock Shoal, among coral rubble and rocks, 3-15 feet, 14.V.2002, H. Conley coll., 1♀, cl. 15.5 mm (UF 2772); Agat Bay, N of Alutom Island, fore reef, deep in coral rubble, 15.XI.2000, H. Conley coll., 1♀, cl. 11 mm, 1♀ (UF 59).

**TYPE MATERIAL.** — Holotype: Guam, Ane Island, ♀ (USNM 296400). Paratypes: Guam, Luminao, 2♀♂ (USNM 243376); Puium Patch Reef, 1♀ (USNM 243377); Piti Bay, 1♀, 1♂ (USNM 243369); Atofia Atoll, 1♀ (USNM 296401); Atofia Atoll, 1♀ (USNM 291365); Tepungan Channel, 1♀ (FGI); Agat Bay, 1♀ (UF), 3♀♂ (UF); 2♂♂, 6♀♂ (UF).

**MATERIAL EXAMINED.** — French Polynesia. Tuamotu Archipelago, Rangiroa Atoll, reef flat, under rocks, 16.X.2001, C. Meyer coll., 1♀, cl. 26.5 mm, tl. 67 mm (figured) (UF 1337).

**OTHER MATERIAL EXAMINED FOR COMPARISON.** — *Axiopsis pica*: Mariana Islands. Guam Island, Atofia Atoll, reef flat, among coral rubble and rocks, 2-4 feet, 3.VI.2002, H. Conley coll., 1♀, cl. 16 mm (UF 2782); Atofia Atoll, Drydock Shoal, under rocks and dead coral, 3-15 feet, 12.VI.2002, H. Conley coll., 1♀, ovig. 1♀ (UF 2861); Glass Breakwater, among rocks, 10-20 feet, 17.X.2002, H. Conley coll., 1♀, cl. 10.5 mm (UF 1232); near Harbor entrance, among rocks, 25-35 feet, 18.VI.2002, H. Conley coll., 1♀, cl. 13.5 mm (UF 3021); Asan Bay, E of Camel Rock, among rocks, 10-20 feet, 18.XI.2002, H. Conley coll., 1♀, cl. 12 mm (UF 2972); Alutom Island, Agat Bay, H. Conley coll., 1♀, cl. 13.5 mm (UF 3022); Asan Bay, E of Camel Rock, 35 feet, 18.V.2002, H. Conley coll., 1♀, cl. 16 mm (UF 2782); Apra Harbor, Drydock Shoal, among coral rubble and rocks, 3-15 feet, 14.V.2002, H. Conley coll., 1♀, cl. 15.5 mm (UF 2772); Agat Bay, N of Alutom Island, fore reef, deep in coral rubble, 15.XI.2000, H. Conley coll., 1♀, cl. 11 mm, 1♀ (UF 59).

**DISTRIBUTION.** — Guam (Kensley 2003); Rangiroa Atoll, French Polynesia.

**REMARKS**

This species was described in detail and illustrated by its author (Kensley 2003). The present male from Rangiroa is larger than all the type specimens studied but fully agrees in the color pattern especially and also in having several flattened tubercles on the mesial and lateral surfaces of the P1 propodus (Fig. 2C). Other similarities are: 1) shape of rostrum (Fig. 2B); 2) length of A2 acicle reaching the distal border of the fourth article of A2 peduncle (Fig. 2B); 3) morphology of abdominal pleura (Fig. 2A); 4) morphology of pereopods (Fig. 2A); and 5) morphology and spinulation of the telson and uropods (Fig. 2D).

Variation concerns a higher number of spines on the rostrum and appendages as compared with the types.

Male Plp1 absent; male Plp2 with appendix interna and appendix masculina; Plp3-5 with appendix interna, rami slender in male, with long setae (Fig. 2E), comparatively larger and broader in female (Fig. 2F), with finer and shorter setae.

*Axiopsis pica*, as stated by its author, is closely related to *Axiopsis serratifrons*. The Rangiroa specimen was compared with the holotype of the latter species, a male from Hawaii (MNHN Th 147) which is figured (Fig. 3).

The holotype of *Axiopsis serratifrons* is at present nearly transparent and in fair condition. All mouth appendages as well as the P2 and P4 remain on the body (Fig. 3A) while the right P1 and P5 are broken off (Fig. 3C, D). Main morphological differences of this specimen as compared with *Axiopsis pica* are: 1) P1 slender, no longitudinal upper and lower carinae on propodus (Fig. 3D) (P1 more robust, longitudinal upper and lower carinae present on propodus in *A. pica*); 2) no trace of flattened tubercles on the mesial and lateral surfaces of P1 propodus (Fig. 3D) (flattened tubercles present in *A. pica*); and 3) telson approximately 1.2 times as long as wide (Fig. 3F) (telson approximately quadrato in *A. pica*).
Although there are differences between the holotype of *A. serratifrons* (Fig. 3) and the figures presented by Kensley (1981: figs 1-3), examination of additional material in the MNHN collection and from Guam indicates that these are variations, in addition to those listed by Kensley (1981: table 1). They concern the following: 1) the antennal acicle varies in length between reaching the middle of the fourth antennal article (in holotype, Fig. 3B) to reaching the middle of the last article and beyond (Kensley 1981: fig. 2A); 2) P1 merus is usually unarmed on the upper margin (as in holotype, Fig. 3D) or provided with a rudimentary to strong upper subdistal spine (Kensley 1981: fig. 1); 3) the abdominal pleura are approximately straight ventrally, with a spinule (as in holotype, Fig. 3A), or...
more convex and unarmed (Kensley 1981: fig. 1), intermediate shapes exist; and 4) the telson is longer than wide (in holotype, Fig. 3F) or subquadrate (Kensley 1981: fig 2b). Variation in the length of the antennal acicle is also found in *A. pica*.

**Axiopsis consobrina** de Man, 1905

*(Fig. 4)*


*Axiopsis (Axiopsis) consobrina* — de Man 1925: 80, pi. 6, fig. 13-13c. — Poore & Griffin 1979: 230, fig. 4.

Non *Axiop.*

*S. S. consobrina* — Tirmizi 1983: 91, fig. 4.

**TYPE MATERIAL.** — Lectotype: Siboga, stn 305, from Solor Strait, Indonesia, 3° (ZMA), selected by Sakai (1994).

**MATERIAL EXAMINED.** — French Polynesia. Society, Tahiti, 2.5 m, coarse sand, 17.1.1995, P. Frouin coll., 1 juvenile, cl. 6 mm, tl. 16 mm, P2-4 missing (MNHN Thl426).

**DISTRIBUTION.** — Indonesia (de Man 1905); Gulf of Carpentaria, Queensland, Australia (Poore & Griffin 1979); Tahiti, Society, French Polynesia.

**DESCRIPTION**

Carapace (Fig. 4B) with triangular pointed rostrum overreaching eyes to distal border of second article of A1 peduncle; lateral border carrying five or six spinules continuous with lateral carina of gastric region, latter with 10 spinules and tubercles. Median carina extending anteriorly to about midlength of rostrum, with 17 tubercles; submedian carina with nine tubercles; no spinules or tubercles between median and submedian carinae. Anterolateral border of carapace (Fig. 4A) unarmed; cervical groove well defined. Abdominal somite 1 (Fig. 4A) with pleura ventrally obtuse, pleuron 3-5 with minute tooth on anterior margin, ventral spine on pleuron 6. Telson (Fig. 4G) about 1.2 times as long as broad, lateral border with four spinules, four large spines on dorsal surface; posterior border convex carrying three posterolateral spinules, all minute, median posterior spine larger.

A1 peduncle (Fig. 4B) with article 2 and 3 of about same length. A2 peduncle (Fig. 4A, B) bearing lower distal spine on article 3; acicle slender, with a proximal spine on mesial margin, tip nearly reaching distal border of article 4. Mxp3 (Fig. 4C, D) with large coxal spine; ischium having five lower spines and mesial crest of blunt teeth; merus with five lower spines, larger distally, carpus with lower distal spine. P1 (Fig. 4A, E) unequal (left larger), similar. Ischium and merus each with three or four lower spines, upper subdiscal spine on merus; carpus and propodus unarmed, fingers shorter than palm; dactylus curved with bifid tip, half of it corneous. Abdominal sternite 4 with strong lateral spine. Plp 1 absent; plp 2-5 (Fig. 4F) with long digitiform *appendix interna*.

Uropod (Fig. 4G) exopod with suture; three spinules and movable distal spine along lateral margin, external dorsal carina with five spinules; endopod with two spinules and distal spine on lateral margin, dorsal carina with five spines, distal one near distal border.

**REMARKS**

Sakai (1994) examined the three type specimens of *Axiopsis consobrina* and stated that only two of these were actually of this species while the third (from North Sulu Island) belonged to *A. tsushimaensis* Sakai, 1992. The male of *Axiopsis consobrina*, from Solor Strait, described in detail by de Man (1925), was selected as the lectotype and a diagnosis of the species was presented. Komai *et al.* (2002) gave additional characteristics to differentiate this species from *A. tsushimaensis*.

The present juvenile (possibly 2, given the comparatively slender P1 and the *appendix masculina* absent from the Plp2) agrees with the lectotype of *Axiopsis consobrina* in several features: 1) the triangular rostrum, pointed at tip with five spinules on each lateral border; 2) the median carina extending onto the rostrum; 3) the intermediate region between carinae unarmèd; 4) the A2 acicle with a subproximal spine on the mesial border; 5) the general morphology of P1, except for the dactylus; and 6) the general morphology...
of the telson and uropods. There are differences in: 1) a higher number of spinules or tubercles on the carinae (still within the range of variations of the species) (see Sakai 1994: table 1); 2) the Mxp3 ischium bearing five lower spines (two to three spines in the lectotype); and 3) the P1 dactylus with a bifid tip half of it corneous (tip entire in the lectotype). This character is probably variable since in the relative species, *A. tsushimaensis*, a bifid tip is reported on both the dactylus and the fixed finger in specimens from southern Japan (Komai et al. 2002) whereas it is absent from the type (Sakai 1992: 173, fig. 14).

Comparisons of *A. consobrina* with *A. tsushimaensis* were given by Sakai (1994) and Komai et al. (2002). As de Man (1925: 72) stated, *A. consobrina* is closely related to *A. serratifrons*, from which it differs in two features: 1) there are no spinules
or tubercles between the carinae of the gastric region (scattered tubercles present between carinae in *A. serratifrons*); and 2) the P1 merus bears a strong upper subdistal spine (in typical *A. serratifrons*, this spine is either rudimentary or absent). As mentioned above, the length of the A2 acicle is variable in *A. serratifrons* and cannot be used as a reliable differentiating character between the two species.

Tirmizi (1983) assigned a female from Bali, Indonesia, to *A. consobrina*, an identification that Sakai (1994: 199) rejected on the basis of scattered denticles between the median and submedian carinae. By contrast, the two specimens (1 ?, 1 2, tl. 19 and 24 mm) from the Gulf of Carpentaria, Queensland, Australia (Poore & Griffin 1979: 230) agree well with the type except for the median carina of the gastric region that exists as a double row in its posterior third. This can probably be regarded as a variation.

**Genus *Calaxius* Sakai & de Saint Laurent, 1989**

*Calaxius sibogae* (de Man, 1925)  
(Fig. 5)

*Calocaris (Calastacus) sibogae* de Man, 1925: 118, pl. 9, fig. 21-21e.

*Calaxius sibogae* — Sakai & de Saint Laurent 1989: 86.

**TYPE MATERIAL.** — Holotype: *Siboga*, stn 139, N of Batjan Island, Indonesia, 2 (ZMA De 102461).

**MATERIAL EXAMINED.** — French Polynesia. Marquesas Islands, Nuku Hiva, MUSORSTOM 9, *Alis*, stn 1298, 305 m, 9.IX.1997, P. Bouchet, B. Dayrat, B. Richer de Forges coll., 1 2, cl. 7 mm, tl. 18 mm (MNHN Th 1421).

**DISTRIBUTION.** — Indonesia (de Man 1925); Nuku Hiva, Marquesas Islands, French Polynesia.

**DESCRIPTION**

Carapace (Fig. 5B) with pointed rostrum overreaching eyes to distal border of second article of A1 peduncle, lateral border carrying two large spines and continuous with lateral carina of gastric region, latter also with two spines. Median carina having two spines anterior to blunt tubercle; submedian carina with three spines; distal spinous tubercle anteriorly between median and submedian carinae. Anterolateral border of carapace (Fig. 5A) unarmed; cervical groove defined in median part, faint laterally; inconspicuous short postcervical carina on posterior fourth of carapace. Abdominal somite 1 (Fig. 5A) with triangular pleuron ventrally subacute, pleuron 2 broadly rounded ventrally, pleura 3-6 slightly angular. Telson (Fig. 5I) about 1.3 times as long as broad, lateral border with two small spines; posterior border regularly rounded carrying three posterolateral spines, inner largest, outer very small.

A1 peduncle (Fig. 5B) with article 2 and 3 of about same length. A2 peduncle (Fig. 5A, B) bearing lower distal spine on article 1 and 3; acicle slender, tip reaching approximately distal third of article 4. Mxp3 (Fig. 5H, I) with lower distal spine on coxa and basis; ischium having two lower spines and mesial crest of blunt teeth; merus with three lower spines, larger distally, carpus with small lower distal spine; long exopod flagellum overreaching merus. P1 (Fig. 5A, D) similar in length and spinulation with left slightly stouter than right; ischium with lower distal spine; merus having one or two upper subdistal spines and three or four lower spines; carpus with oblique setose crest near lower border and two upper spines; propodus well setose dorsally, palm about 1.2 times as wide on left appendage, more slender on right with longitudinal lower crest and four upper spines, scattered tubercles on lateral surface and median distal spine near base of fixed finger; both fixed finger and dactylus with large triangular tooth near proximal third of cutting edge; dactylus with curved tip. P2 (Fig. 5E) merus with two lower spines. P3 missing, P4 (Fig. 5F) with two lower spinules on merus, propodus with lower spiniform corneous setae, distal largest. P5 (Fig. 5G) simple. Female Plp1 (Fig. 5A) as fine short filament on abdominal somite 1. Plp2-5 (Fig. 5C) with slender rami and long, slender *appendix interna*. Uropod (Fig. 5J) exopod with suture; three spinules and movable distal spine along
FIG. 5. — Calcius sibogae (de Man, 1925), Marquesas, ♀ (MNHN Th 1421): A, lateral view; B, anterior part of carapace; C, pleopod 2; D-G, pereopod 1-3 and distal part of pereopod 5; H, I, maxilliped 3 and ischium in mesial view. Scale bars: 1 mm.
lateral margin, dorsal carinae unarmed; endopod with minute spinule around midlength and distal spine on lateral margin, dorsal carina with three spines, distal near distal border.

REMARKS
The specimen studied agrees with the holotype of Calaxius sibogae in the shape and spinulation of the rostrum, the abdominal pleura slightly pointed ventrally, the spinulation of P1, and the spinulation of the telson and uropods.
It differs in the following characters: 1) rostrum slightly shorter reaching the distal margin of the second article of A1 peduncle (vs rostrum reaching the middle of the last article of A1 peduncle in holotype); 2) Mxp3 stouter with three and one lower spines on merus and carpus respectively (vs Mxp3 with one lower spine on merus, carpus unarmed in holotype); 3) P1 with fingers not longer than the palm (vs P1 fingers one and a half as long as palm in holotype); 4) telson nearly 1.5 times as long as broad (vs “quadrangular, somewhat longer than broad” in holotype); and 5) median carina of the uropod endopod with three spines including distal one (vs one distal spine in holotype).
This specimen is smaller than the holotype (cl. 12.5 mm, tl. 29.5 mm) and the above differences are probably due to the difference in size and age.

Family STRAHLAXIIDAE Poore, 1994
Genus Neaxius Borradaile, 1903.

Neaxius trondlei n. sp.
(Figs 6; 7)

TYPE MATERIAL. — Holotype: Marquesas Islands, Ua Huka, MUSORSTOM 9, stn 19, Hane bay, W coast, with algae, corals, pebbles, 5.X.1997, R. von Cosel, J. Trondlé, J. Tardy coll., $, cl. 29 mm, tl. 78 mm (MNHN Th 1419). Paratypes: same locality, 1 $ , cl. 30 mm, tl. 78 mm (MNHN Th 1419), 1 $ , cl. 21 mm, tl. 78 mm (MNHN Th 1419), 1 $ , cl. 22 mm, tl. 78 mm (MNHN Th 1419). OTHER MATERIAL EXAMINED. — Neaxius acanthus (A. Milne-Edwards, 1879): New Caledonia. Lectotype $ (dried) (selected by Sakai & de Saint Laurent 1989), cl. 26 mm, tl. 74.5 mm (MNHN Th 812); paralectotype, $, cl. 27 mm, broken, poor condition, all pereopods lost except P2 (A2 Fig. 7L, M) (MNHN Th 190).

DISTRIBUTION. — Only known from the type locality.

DIAGNOSIS. — Carapace with bifid rostrum, lateral rostral margin with three or four spines, lateral carina of gastric region unarmed; anterolateral border of carapace with three or four spines. Telson with three prominent transverse carina on dorsal surface, equally distant from one another.

DESCRIPTION
Carapace (Fig. 6A, B) with bifid and slightly depressed rostrum reaching beyond eye; lateral rostral margin with three or four teeth, continuous with lateral carina of gastric region, latter unarmed; median rostral carina with four tubercles. Anterolateral border of carapace with four spines. Eyestalk nearly reaching distal border of second article of A1 peduncle; cylindrical, cornea hemispherical, distal, weakly pigmented. Gastric region weakly convex, cervical groove well defined, with two or three lateral spines. Pleuron of abdominal somite 1 (Fig. 6B) tapering and bifid or trifid ventrally; pleuron of abdominal somite 2 overlapping that of somite 1, ventrally rounded bearing five to ten spinules; pleura of somites 3 and 4 with posterior and posterolateral setae. Thoracic sternite of P4 with lateral spine. Telson (Fig. 7L) about two-thirds
FIG. 6. — Neaxius trondlei n. sp., Marquesas; A, I, holotype, ♂ (MNHN Th 1419); B, G, H, ♂ paratype (MNHN Th 1427); C–F, ♂ paratype (MNHN Th 1427); A, anterior part of carapace; B, lateral view; C, maxilla; D, antenna; E, F, major and minor pereopod 1; G, pleopod 1; H, I, pleopod 2. Scale bars: 2 mm.
as long as its largest breadth, three prominent transverse carinae on dorsal surface, equally distant from one another; lateral border convex near proximal third and tapering posteriorly; posterior border concave medially with median spine.

A1 peduncle (Fig. 6A) hardly reaching distal half of article 4 of A2 peduncle. A2 peduncle (Fig. 6D) with article 2 pointed distally, carrying one or two upper spines, unarmed laterally; article 3 with lower spine; acicle large, distally acute with mesial spine (Fig. 6A) and five or six lower spines; article 4 nearly twice as long as article 5. Md cutting edge (Fig. 7I) smooth. Mx1 exopod sickle-shaped. Mx2 (Fig. 6C) scaphognathite carrying no posterior seta. Mxp1 (Fig. 7E) epipod with truncate posterior lobe. Mxp2 (Fig. 7F) with curved digitiform epipod; exopod flagellum hardly articulated. Mxp3 (Fig. 7G, H) ischium with mesial crest bearing obtuse round teeth; four or five lower spines on merus, larger distally, lower distal spine on carpus; exopod not reaching distal border of merus, flagellum obscurely articulated.

Major PI (Fig. 6E) either on right or left, much stouter than minor in male (Fig. 6F) with lower spine on basis, four or five spines on ischium; merus with three upper spines, four or five spines on proximal half of lower border, distal half slightly excavated, unarmed, except for two median spines near distal margin (in holotype only); carpus with lower proximal spine; propodus unarmed, fixed finger bearing small round teeth on cutting edge with larger one near distal third; dactylus of major P1 with two large teeth on cutting edge, near proximal and distal third and small round teeth between; dactylus of minor P1 unarmed. P2 (Fig. 7A) unarmed except for lower spine on ischium. P3-5 (Fig. 7B-D) as figured, unarmed. P1-3 with coxal spine.

Gill formula is presented in Table 2. Male Plp1 absent, female Plp1 (Fig. 6G) uniramous, with basipod indistinctly separated from last article; Plp2-5 (Figs 6H, I; 7K) in male and female, with broad rami and digitiform appendix interna.

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Uropod (Fig. 7J) exopod nearly triangular in shape with proximal spine, two curved unarmed carinae and 10 or 11 spines on posterior margin, no suture; endopod with large spine on posterolateral angle, two to four spines on median longitudinal carina and two or three spines on posterolateral border.

**Remarks**

This species has no posterior seta on the Mx2 scaphognathite and this feature is probably of generic importance, as a posterior seta is also absent from the Mx2 of *N. acanthus*, type species of *Neaxius*. By contrast, it is present on the Mx2 of *Strahlaxius plectrorhynchus* (Strahl, 1862), type species of *Strahlaxius* (Strahlxiidae), as well as in many other groups of thalassinideans. Poore (1994: 85) discussed its significance in the thalassinidean taxonomy.

The new taxon is similar to *Neaxius acanthus* as well as to *Neaxius glyptocercus* (von Martens, 1868) by the morphology and spinulation of the rostrum and gastric region, and the morphology of the telson and uropods.

It differs from *Neaxius acanthus* in: 1) the second article of A2 peduncle is armed near its base with one or two upper spines and unarmed laterally (same article armed with one upper spine, four or five lateral spines in *N. acanthus*, Fig. 7L, M); 2) the third article of A2 peduncle bears a lower spine (unarmed in *N. acanthus* Fig. 7L); 3) one spine on the lower border of Mxp3 carpus (three to five spines in *N. acanthus*); 4) the distal half of the lower border of P1 merus and all lower border of P2 merus are unarmed (spines present in *N. acanthus*); and
FIG. 7. - *A-K*, Neaxius trondlei n. sp., Marquesas; *A-I*, ♂ paratype (MNHN Th 1427); *J, K*, holotype, ♀ (MNHN Th 1419); *A-D*, pereopod 2-5; *E, F*, maxilliped 1 and 2; *G, H*, maxilliped 3 and ischium in mesial view; *I*, mandible; *J*, telson and uropods; *K*, pleopod 3; *L, M*, *Neaxius acanthus* (A. Milne-Edwards, 1879), ♂ paralectotype (MNHN Th 190), antenna in lateral and dorsal view. Scale bars: 2 mm.
5) the telson with three well marked transverse carina equally distant from one another (distal carina often faint and apart from the others in *N. acaensus*).

It differs from *N. glyptocercus* in: 1) the cervical groove has two or three lateral spines (unarmed in *N. glyptocercus*); 2) the second article of A2 peduncle is armed near its base with one or two upper spines (unarmed in *N. glyptocercus*); 3) the Mxp3 bears four or five lower spines on merus, a lower spine on carpus (Mxp3 with two to four lower spines on merus, lower border of carpus unarmed in *N. glyptocercus*); 4) the lower border of P3 merus is unarmed (with spines in *N. glyptocercus*); and 5) the telson with three well marked transverse carina (distal carina often nearly absent in *N. glyptocercus*).

Family **THOMASNIIDAE** de Saint Laurent, 1979  
Genus *Crosniera* Kensley & Heard, 1991

*Crosniera dayrati* n. sp.  
(Figs 8; 9)

**TYPE MATERIAL.** — Holotype: Marquesas Islands, Nuku Hiva, MUSORSTOM 9, Alls, stn 1306, 283-448 m, 10.IX.1997, P. Bouchet, B. Dayrat, B. Richer de Forges coll., 2, cl. 5 mm, d. 15.5 mm (MNHN Th 1418).

**ETYMOLOGY.** — The species is named for Benoit Dayrat, one of the collectors.

**DISTRIBUTION.** — Only known from the type locality.

**DIAGNOSIS.** — Carapace with short acute triangular rostrum, slightly overreaching eyes; *linea thalassinica* extending posteriorly to level of cervical groove, latter present in median part; no anterolateral setal rows; posterodorsal margin excavate, continuous with posterolateral margin, latter with slight thickening.

Abdominal somite 1 (Fig. 8A) shorter than second, without anterolateral lobes, pleuron rounded ventrally; abdominal somite 2 weakly overlapping somite 1, pleuron with lower border nearly straight; abdominal somites 3-6 with convex lower border, somites 3-5 with fine lateral setae not arranged in rows. Telson (Fig. 9H), broken in holotype, presumably longer than broad, tapering posteriorly.

Eyestalk (Fig. 8B) short, not flattened, cornea terminal. A1 with article 1 overreaching eyestalk, article 2 shorter than article 3. A2 acicle very small, article 4 nearly three times as long as article 5. Mx2 (Fig. 9A) scaphognathite tapering posteriorly, with posterior seta (broken in figured appendage). Mxp1, 2 (Fig. 9B, C) as figured. Mxp3 (Fig. 9D, E) pediform with exopod slightly longer than ischium, latter with convex lower border carrying stiff setae and weak spinous mesial crest; merus with small lower spine near midlength and larger one distally; carpus, propodus, dactylus unarmed.

P1 (Fig. 8C, D.) subequal, similar, unarmed except for teeth on fingers, right slightly stouter than left; a few lower tubercles on ischium; merus with lower border convex; propodus with fixed finger shorter than palm in both appendages, fixed finger with small round teeth proximally on cutting edge in both appendages and large anteriorly directed tooth near midlength on right appendage; dactylus with curved tip, cutting edge with small rectangular tooth near midlength followed anteriorly by small round teeth in right appendage, unarmed in left. P2-5 (Fig. 8E-H) as figured; P2 with pectinate cutting edge on fixed

**DESCRIPTION**

Carapace (Fig. 8B) with short acute triangular rostrum, slightly overreaching eyes; *linea thalassinica* extending posteriorly to level of cervical groove, latter present in median part; no anterolateral setal rows; posterodorsal margin excavate, continuous with posterolateral margin, latter with slight thickening.

Abdominal somite 1 (Fig. 8A) shorter than second, without anterolateral lobes, pleuron rounded ventrally; abdominal somite 2 weakly overlapping somite 1, pleuron with lower border nearly straight; abdominal somites 3-6 with convex lower border, somites 3-5 with fine lateral setae not arranged in rows. Telson (Fig. 9H), broken in holotype, presumably longer than broad, tapering posteriorly.

Eyestalk (Fig. 8B) short, not flattened, cornea terminal. A1 with article 1 overreaching eyestalk, article 2 shorter than article 3. A2 acicle very small, article 4 nearly three times as long as article 5. Mx2 (Fig. 9A) scaphognathite tapering posteriorly, with posterior seta (broken in figured appendage). Mxp1, 2 (Fig. 9B, C) as figured. Mxp3 (Fig. 9D, E) pediform with exopod slightly longer than ischium, latter with convex lower border carrying stiff setae and weak spinous mesial crest; merus with small lower spine near midlength and larger one distally; carpus, propodus, dactylus unarmed.

P1 (Fig. 8C, D.) subequal, similar, unarmed except for teeth on fingers, right slightly stouter than left; a few lower tubercles on ischium; merus with lower border convex; propodus with fixed finger shorter than palm in both appendages, fixed finger with small round teeth proximally on cutting edge in both appendages and large anteriorly directed tooth near midlength on right appendage; dactylus with curved tip, cutting edge with small rectangular tooth near midlength followed anteriorly by small round teeth in right appendage, unarmed in left. P2-5 (Fig. 8E-H) as figured; P2 with pectinate cutting edge on fixed
Fig. 8. — Crosnierea dayrati n. sp., Marquesas, holotype, ♀ (MNHN Th 1418); A, lateral view; B, anterior part of carapace; C, D, minor and major pereopod 1; E-H, pereopod 2-5. Scale bars: 1 mm.
finger; P3 propodus about three times as long as broad, with lower distal thick setae; P4 propodus more slender, about 4.5 times as long as broad; P5 subchelate.

Gill formula is presented in Table 3.
Plp1 (Fig. 8A) relatively large, of two articles. Plp2-5 (Fig. 9F, G) similar, exopod and endopod slender, with digitiform appendix interna. Uropod (Fig. 9H) endopod and exopod elongate, with rounded posterior border; endopod presumably longer than telson with small spine on median carina.

REMARKS
The new taxon is similar to the type species of Crosniera, *C. minima* (Rathbun, 1901) in: 1) presence of a rostral spine overreaching the eyes; 2) *linea thalassinica* present and incomplete; 3) A2 acicle present and small; 4) Mxp3 exopod as long as ischium, latter with stiff setae on lower
TABLE 3. — Crosniera dayrati n. sp., gill formula. Abbreviation: r, rudiment.

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border and dentate crest on mesial surface; 5) general morphology of pereopods; 6) telson wider proximally than distally; and 7) pleopodal rami relatively narrow.

It differs from C. minima and other known species of Crosniera in: 1) non spike-like, triangular rostrum similar to that of Crosniera sp. 1 from Indonesia identified by Poore (1997: 402, fig. 31); 2) non flattened eyestalks with terminal corneas; and 3) elongate telson and uropods. It can be noted that setal pits are absent.

Genus Mictaxius Kensley & Heard, 1991

*Mictaxius salvati* n. sp.

**TYPE MATERIAL.** — Holotype: French Polynesia, Mururoa, Mission II Tuamotu, 40 m, 1965, B. Salvat coll., hermaphrodite ovigerous specimen, broken, poor condition, cl. 4 mm, tl. 14 mm (MNHN Th 1417).

**ETYMOLOGY.** — The species is named for Bernard Salvat who collected the material.

**OTHER MATERIAL EXAMINED.** — *Mictaxius* sp. 1, Tahiti, Moorea Island, Tiahura, B. A. Thomassin coll., stn Tia 23, no date, 1 ♂, 1 ♂ with setae, dl. 8 mm and 7.2 mm (MNHN Th 1302).

**DIAGNOSIS.** — Hermaphrodite. Carapace with obsolete rostrum; *linea thalassinica* lateral to eyes running full length of carapace; anterolateral setal row of about 12 setae; cervical groove present in median part; dorso-posterior margin excavate, continuous to posterior margin, without setal rows. Abdominal somite 1 (Fig. 10B) narrower than somite 2, without anterolateral lobes, pleuron rounded ventrally, lateral setal row present with six or seven hardly visible setae; abdominal somite 2 weakly overlapping somite 1; abdominal somites 2-6 of approximately same length, flattened, without setal rows. Telson (Fig. 10I) 1.2 times as long as broad, lateral border convex in proximal half and tapering to slightly rounded posterior border.

**DESCRIPTION**

Carapace (Fig. 10A) with obsolete rostrum; *linea thalassinica* lateral to eyes running full length of carapace; anterolateral setal row of about 12 setae; cervical groove present in median part; dorso-posterior margin excavate, continuous to posterior margin, without setal rows. Abdominal somite 1 (Fig. 10B) narrower than somite 2, without anterolateral lobes, pleuron rounded ventrally, lateral setal row present with six or seven hardly visible setae; abdominal somite 2 weakly overlapping somite 1; abdominal somites 2-6 of approximately same length, flattened, without setal rows. Telson (Fig. 10I) 1.2 times as long as broad, lateral border convex in proximal half and tapering to slightly rounded posterior border.

Eyestalks (Fig. 10A) slightly flattened, adpressed, acute distomesially, cornea distolateral. A1 (Fig. 10A) with article 1 shorter than eyestalk, article 2 shorter than article 1, article 3 subequal to article 1. A2 (Fig. 10H) with minute acicle; article 5 half as long as article 4, reaching just beyond last antennular article. Md (Fig. 10I) with small teeth on cutting edge. Mx2 (Fig. 10E) scaphognathite carrying posterior seta about 1.4 times its length. Mxp1 and 2 (Fig. 11D, F) as figured, Mxp1 epipod tapering distally. Mxp3 (Fig. 10F, G) pediform, with small exopod; small lower spine on coxa; ischium two times as long as merus, with stiff setae on proximal half of lower border and weak mesial crest of 12-13 spines; carpus-dactylus unarmed.
Fig. 10. — *Mictaxius salvati* n. sp., Mururoa, Tuamotu, holotype, hermaphrodite (MNHN Th 1417); A, anterior part of carapace; B, abdomen, telson and uropods in lateral view; C, D, major and minor pereopod 1; E, maxilla; F, G, maxilliped 3 and ischium in mesial view; H, antenna; I, mandible; J, telson and uropods. Scale bars: A-D, J, 1 mm; E-I, 0.5 mm.
TABLE 4. — *Mictaxius salvati* n. sp., gill formula. Abbreviation: r, rudiment.

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P1 (Fig. 10C, D) subequal, similar; nine or 10 lower spinules on ischium; merus ovate with convex lower border; propodus with fixed finger about as long or slightly shorter than palm, small triangular tooth near midlength of cutting edge; dactylus weakly overreaching fixed finger, unarmed. P2-4 (Fig. 11A-C) as figured; P3 propodus about 1.7 times as long as broad, lower border convex; P4 propod three times as long as broad, lower border straight, P5 simple.

♀ gonopore well open on P3, small ♂ gonopore on P5.

Gill formula is presented in Table 4.

Plp1 (Fig. 11F) relatively large, of two articles. Plp2 (Fig. 11G) exopod and endopod slender, *appendix masculina* present, partly fused with *appendix interna*. Plp3-5 (Fig. 11H) with digitiform *appendix interna*. Uropod (Fig. 10J) endopod and exopod about as long as telson, rounded, unarmed except for small median spine on endopod.

**Remarks**

This species agrees with the diagnosis of the genus given by Poore (1997) except for being hermaphrodite and in having the uropod exopod not apically twisted or bilobed.

It differs by: 1) abdominal pleuron 1 rounded posteroventrally (tapering in *M. thalassicola*); 2) telson approximately quadrate with posterior border nearly straight (posterior border rounded in *M. thalassicola*); 3) uropod exopod not bilobed; and 4) much fewer setal pits than in *M. thalassicola*.

The hermaphrodite status separates this new species from *Mictaxius thalassicola* and all known *Mictaxius* members.

The juvenile specimens (♀ of t. 8 mm and ♂ of t. 7.2 mm) from Tahiti (MNHN Th 1302), cited as *Mictaxius* sp. 1 by Poore (1997: 408) are likely to belong to this new taxon. They differ mainly in being gonochoristic and having a shorter *linea thalassinica* (not reaching the posterior border of the carapace). The latter difference may be due to their young age and, as they are also very small, it is hard to be certain about their sexual status.

Family **Callianassidae** Dana, 1852

Subfamily **Callianassinae** Dana, 1852

Genus **Callianassa** Leach, 1814

**Callianassa amboinensis** de Man, 1888

(Fig. 12)


*Callianassa (Trypaea) amboinensis* — de Man 1928b: 27, 93, 107, 165, pl. 18, fig. 28-28c.

*Callianassa (Calliactites) amboinensis* — Borradaile 1903: 545.

*Callianassa ngeroehae* Sakai, 1999: 49.

**Type Material.** — Whereabouts unknown, probably lost (see Sakai 1999).

**Type Locality.** — Ambon, Indonesia.

**Material Examined.** — [Marquesas Islands. Hiva Oa, Alis, MUSORSTOM 9, stn 1204, 9°52.6'S, 139°03.2'W, 60-62 m, 20.VIII.1997, P. Bouchet, B. Dayrat, B. Richer de Forges coll., 1 ovigerous ♀, cl. 3 mm, d. 12 mm (MNHN Th 1431).]

[Philippines. Coronis, MUSORSTOM 3, stn 117, 12°31'N, 120°39'E, 92-97 m, 3.VI.1985, 1 broken ♀, cl. 4 mm (MNHN Th 1227)].
**Distribution.** — Ambon, Indonesia (de Man 1888; Zehnten 1894); Eylath, Israel (Holthuis 1958); Dampier Archipelago, western Australia (Poore & Griffin 1979); Heron Island, Queensland, Australia (Sakai 1984); Port Essington, Northern Territory, Australia (Sakai 1988); New Caledonia (Ngoc-Ho 1991); Marquesas Islands, French Polynesia.

**Remarks**

This Marquesas specimen agrees with the description and figures of the type (de Man 1888) and other material previously studied (Sakai 1984, 1988) in the shape of the rostrum, the eyestalks, the A1, A2 (Fig. 12A), the morphology of the Mxp3 (Fig. 12E), the pereopods (Fig. 12B, C), and the telson and uropods (Fig. 12F).

Ngoc-Ho (1991) assigned a ♂ specimen from New Caledonia (MNHN Th 1071) to this species and compared it with an ovigerous ♀ of the Siboga Expedition (ZMA De 102-435) that she mistook for the holotype (see Sakai 1999: 39). Sakai contended that the holotype described...
by de Man was missing and that the New Caledonian specimen belonged to a different species, *Callianassa ngochoae*. According to Sakai (1999), it differs from *C. amboinensis* in:

1) “the terminal segment (or segment 3) of A1 peduncle is 1.5 times as long as the penultimate segment (segment 2) while it is three times as long in *C. amboinensis*”. When laid flat, the ratio of A1 segments 3/2 in the New Caledonian specimen is actually about 2.5 (see Ngoc-Ho 1991: fig. 1a). The same ratio is found in other material, including the *Siboga* specimen (de Man 1928b: 167) and the ovigerous female from Wistari Reef, Australia studied by Sakai (1984: 96, fig. 1C).

2) “the merus of the larger cheliped is serrated and largely convex ventrally while it is neither regularly serrated nor convex ventrally in *C. amboinensis*”. The merus of the larger cheliped is actually convex in a specimen from Malaysia examined by Zehntner (1894: 194: “le mérépôdite de la

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**Fig. 12.** — *Callianassa amboinensis* de Man, 1888, Marquesas, ♀ (MNHN Th 1431); A, anterior part of carapace; B, C, pereopods 1; D, peraeopod 3; E, maxilliped 3; F, telson and uropods. Scale bar: 1 mm.
Thalassinidea (Crustacea, Decapoda) from French Polynesia

grande patte antérieure est plus dilaté au milieu”), it is both curved and minutely dentate in some specimens from Australia (Sakai 1984: 96, fig. 1; 1988: fig. 1D; Poore & Griffin 1979: 248, fig. 14D). In the New Caledonian specimen the merus of the larger P1 is more convex and serrated (Ngoc-Ho 1991: fig. 1) but probably lies within the range of variation of the species.

3) “the telson is about as long as broad”.

The shape of the telson in the New Caledonian specimen (Ngoc-Ho 1991: fig. 1g) agrees with that of most material of *C. amboinensis* previously described, including the holotype (de Man 1888: fig. 4a).

The New Caledonian specimen is therefore maintained in *C. amboinensis* as the differences mentioned above are here considered as variations. *Callianassa ngochoae* is regarded as a junior synonym of the latter species.

Variations occur in:

1) the length ratio between segment 3 and segment 2 of A1 varies between 2.5 and 3;
2) the lower border of the major P1 can be straight and unarmed or convex and serrate; and
3) the length of A2 peduncle varies between reaching midlength and the distal fourth of segment 3 of A1 peduncle.

Subfamily CALLICHIRINAE
Manning & Felder, 1991

Genus *Corallianassa* Manning, 1987


*Callianassa* (*Callichirus*) — Borradaile 1903: 546.

*Callianassa* Manning, 1992: 571.

*Glypturus* — Sakai 1999: 78 (part).

REMARKS

There is confusion in the taxonomy of this genus and actions concerning the species *Callianassa* (*Callichirus*) *coutierei* Nobili, 1904 and its junior synonym *Callianassa* (*Callichirus*) *placida* de Man, 1905 are here considered and discussed.

Following Borradaile (1903), Nobili (1904) and de Man (1928b) placed the two species, *coutierei* and *placida* under the subgenus *Callianassa* (*Callichirus*).

De Saint Laurent (1973), then de Saint Laurent & Le Loeuff (1979: 97) reinstated the genus *Callichirus* Stimpson, distinct from *Callianassa*.

Manning (1987) erected the new genus *Corallianassa* which included the species *Callichirus coutierei* (Nobili, 1904) and *Callichirus placidus* (de Man, 1905).

Manning (1992) established *Corallichirus* and placed *Callichirus placidus* (de Man) in this new genus.

Sakai (1999: 78) considered *Callianassa* (*Callichirus*) *coutierei* Nobili, 1904 and *Callianassa placida* de Man, 1905 as synonyms, and assigned the species to the genus *Glypturus* Stimpson, 1866.

*Corallianassa coutierei* (Nobili, 1904)

(Fig. 13)


*Callianassa placida* de Man, 1905: 612.

*Callianassa* (*Callichirus*) *placida* — de Man 1928b: 29, 93, 108, 171, 177, pl. 18, fig. 29-29b, pl. 19, fig. 29.c-e.

*Callianassa coutierei* — Tudge et al. 2000: 143.

*Callichirus coutierei* — de Saint Laurent & Le Loeuff 1979: 97.

*Callichirus placidus* — de Saint Laurent & Le Loeuff 1979: 97.


*Glypturus coutierei* — Sakai 1999: 78, figs 17a-f, 18a-d.

*Glypturus placidus* — Sakai 1999: 82, fig. 17c-e.

TYPE MATERIAL. — Lectotype (selected by Sakai [1999]): Djibouti, H. Coutiere coll., 2, cl. 10.5 mm, d. 36.5 mm, broken (MNHN Th 75). Paratype: 5 ♀ ♂, poor condition (3 specimens of cl. 11-14 mm, 2 large specimens badly damaged, including 1 ovigerous of body length 55 mm) (MNHN Th 73).

MATERIAL EXAMINED. — Marquesas Islands. Ua Huka, MUSORSTOM 9, stn 20 south, Hinipahue Bay, 8°56.20’S, 139°32.90’W, on paving stone of
Fig. 13. — *Corallianassa coutierei* (Nobili, 1904), Marquesas, ♀ (MNHN Th 1430); A, B, anterior part of carapace in dorsal and lateral view; C, distal part of major pereopod 1; D, minor pereopod 1; E, pereopod 3; F, telson and uropods; G, H, maxilliped 3 and ischium in mesial view; I, pleopod 1; J, pleopod 2; K, pleopod 3. Scale bars: 1 mm.
sidewalk with sand, IX. 1997, R. von Cosel, J. Trondlè and J. Tardy coll., 1 broken ♂, cl. 11 mm, d. 41.5 mm, major P1 broken at level of distal part of merus (MNHN Th 1430).

**OTHER MATERIAL EXAMINED FOR COMPARISON.** — *Corallianassa coutierei*: Arabian Gulf. Mission J. Bonnier & Ch. Perez 1901, 1 ♂, cl. 14 mm, d. 53 mm (MNHN Th 476). Madagascar. Iles Glorieuses, intertidal, 29.1.1971, A. Crosnier coll., 1 ♂, cl. 9 mm, d. 31.5 mm (MNHN Th 475).

*Corallianassa longiventris* (A. Milne-Edwards, 1870): Martinique. Lectotype (selected by de Saint Laurent & Le Loeuff 1979), 2 ♀, cl. 9.5 mm, d. 38.5 mm (MNHN Th 86); 1 paralectotype ♂, cl. 12 mm, d. 46.5 mm (MNHN Th 87).

*Glypturus acanthochirus* Simpson, 1866: Martinique. IX. 1984, Celimène leg., 1 ♀, cl. 24 mm, d. 81 mm (MNHN Th 676).


**DISTRIBUTION.** — Djibouti (Nobili 1904); Suba off Seba, Indonesia (de Man 1928b), Tulér Madagascar, Philippines, Tahiti (Sakai 1999), Marquesas Islands, French Polynesia.

**DESCRIPTION**

Rostrum (Fig. 13A, B) triangular with pointed tip overreaching midlength of eyestalks and slightly upturned; anterolateral spines of carapace with proximal non-calcified membrane. Abdominal segment 2 a little longer than segment 6 (7/6.5 mm). Telson (Fig. 13F) wider proximally than distally, posterior border straight.

Eyestalks (Fig. 13A, B) with terminal rounded corneas. A1 peduncle shorter than that of A2 (Fig. 13A) reaching approximately midlength of last A2 article. Mxp3 (Fig. 13G, H) subpediform, with moderate spinous crest on ischium, propodus strongly widened ventrally, nearly quadrate. P1 unequal; minor P1 (Fig. 13D) with ischium bearing lower spines larger distally, merus ovate and unarmed; ischium and merus of major P1 (Fig. 13C) missing; carpus and propodus of both major and minor P1 unarmed with a small tooth on cutting edge of fixed finger, two teeth on cutting edge of dactylus. P3 (Fig. 13E) propodus with small posterior lobe.

Plp1 (Fig. 13J) two-segmented with small distal hook; Plp2 (Fig. 13J) foliaceous, biramous with elongated appendix interna; Plp3-5 (Fig. 13K) with embedded and shorter appendix interna than that of Plp2. Uropod (Fig. 13F) much longer than telson, exopod with truncate posterior border and two proximal spines; endopod tapering posteriorly.

**REMARKS**

The present classification of the specimen from Marquesas is based on the following viewpoint: Sakai’s synonymy of *Callianassa coutierei* Nobili, 1904 with *Callianassa placida* de Man, 1905 is accepted. De Man (1928b: 174) noted three differences between the two species: 1) rostrum slightly upturned in *C. coutierei*, downturned in *C. placida*; 2) corneas subterminal in *C. coutierei*, terminal in *C. placida*; and 3) P1 ischium with spines placed perpendicular to lower border in *C. coutierei* as opposed to being directed obliquely forward in *C. placida*.

Examination of the types and other material of *C. coutierei* reveals that these characters are variable: 1) the rostrum in *C. coutierei* can be slightly upturned or nearly horizontal; 2) the corneas are subterminal in the lectotype of *C. coutierei* (see Sakai 1999: fig. 17a) but terminal in the specimen from Nosy Bé (MNHN Th 475) and the present specimen from the Marquesas; and 3) spines on P1 ischium can be perpendicular or obliquely directed forward on the lower border in *C. coutierei* as opposed to being directed obliquely forward in *C. placida*.

Examination of the present material does not confirm the establishment of the genus *Corallichirus* Manning, 1992 (type species: *Corallianassa xutha*), or its separation from the genus *Corallianassa* (type species: *Corallianassa longiventris*).
Manning (1992) placed in *Corallichirus* all those species (formerly assigned to *Corallianassa*) in which "the second abdominal somite is subequal in length to the sixth abdominal somite" whereas *Corallianassa* was "restricted to species in which the second abdominal somite is distinctly longer than the sixth abdominal somite, almost as long as the sixth somite and telson combined" (see also Poore’s [1994] key distinguishing the two genera).

This diagnostic feature, however, is subject to variation. In all material of *Corallianassa coutierei* (or *Corallichirus coutierei* sensu Manning 1992) examined, abdominal segment 2 is longer than abdominal segment 6. In the lectotype (MNHN Th 75), the relative length of segment 2/6 is 7.5/6.5 mm, and segment 2/6 + telson is 7.5/9 mm. Abdominal segment 2 is nearly as long as segment 6 + telson (11/12 mm) in an ovigerous ♀ from Madagascar (MNHN Th 476); it is as long as segment 6 + telson in a ♂ from Nosy Bé (MNHN Th 475) (6.5 mm for both).

As for *Corallianassa longiventris*, both the lectotype (MNHN Th 86) and paralectotype (MNHN Th 87) have abdominal segment 2 as long as segment 6 + telson (6.5 mm for both in the lectotype, 8 mm in the paralectotype). In the material from Florida (four specimens, MNHN Th 1273), abdominal segment 2 is about as long as segment 6 + telson in two ♂ of tl. 67 mm and 88 mm, slightly shorter in the ♂ of tl. 83.5 mm (15/16 mm), but much longer in the ♂ of tl. 105.5 mm (18.5/15.5 mm).

Another feature mentioned by Manning (1992) is the maximum size; adults of *Corallianassa* may attain a total length of 100 mm, whereas members of *Corallichirus* are smaller with a maximum total length of 55 mm.

The maximum size is unlikely to be a good differentiating character. Furthermore, species of *Corallichirus* (sensu Manning 1992) may include large specimens and in the type material of *C. coutierei*, two large females (one ovigerous, both broken) were referred to (see Nobili 1904: 238; 1906a: 110) as being of tl. 80 mm.

Sakai (1999: 72) considered both *Corallianassa* and *Corallichirus* as synonyms of *Glypturus* s.l. Stimpson, but his action is not justified according to the present examination of material.

This work adopts Manning’s (1987: 390) definition of *Glypturus* s.s., restricting this genus to species with a trispinous front, lateral eye corneas, spines on both merus and palm of P1. These features allow the genus to be distinguished from other callianassid genera and especially from its close relative, *Corallianassa*.

**Genus Neocallichirus** Sakai, 1988

Neocallichirus frouini n. sp.

(Fig. 14)

**Type Material.** — Holotype: French Polynesia, Tahiti, stn 13, 17°31'25"S, 149°32'08"W, 18 m, mud, 16.I.1995, P. Frouin coll., ♂, cl. 5.5, d. 19 mm (MNHN Th 1432) (Fig. 14A, B, J, L, M). Paratypes: stn 15, 17°31'30"S, 149°32'12"W, 6 m, fine sand, 5.VII.1994, P. Frouin coll., 4 ♂, cl. 4.5 mm, d. 4.5 mm, tl. 16 mm (Fig. 14C-H, J, K, N), cl. 3.5-4 mm, tl. 12.5-14 mm, 2 ♀, cl. 3.5 mm, tl. 12.5 mm (Fig. 14O), cl. 3 mm, d. 11 mm (MNHN Th 1433).

**Etymology.** — The species is named for Patrick Frouin who collected the material.

**Other Material Examined.** — Neocallichirus mauritianus (Miers, 1882): Mauritius. 1880, Robillard coll., 12, cl. 13 mm, d. 48 mm (MNHN Th 504).

**Distribution.** — Only known from Tahiti.

**Diagnosis.** — Rostrum very short, no rostral spine; abdominal segments 3-5 with lateral tufts of setae; telson with lateral borders regularly curved, posterior border weakly concave medially, unarmed. Eyestalk with cornea dorsal, subterminal, disk-shaped; A peduncle shorter than that of A2. Mxp3 subpediform with both ischium and merus tapering distally; propodus with rounded lower border, about three or four times as wide as dactylus at proximal third, narrowing distally; dactylus digitiform, slender. P1 unequal, dissimilar. Major P1 ischium convex with 12-16 lower spines; merus with dilated lower border, widest in proximal third carrying two or three large spines, narrower distally with five to six spines; carpus, propodal palm and fixed finger unarmed. Plp1 uniramous, Plp2 bimemous with *appendix interna* in both sexes; Plp3 with embedded *appendix interna*. Uropod exopod with rounded posterior border, uropod endopod subquadrate.
Fig. 14. — *Neocallichirus frouini* n. sp., Tahiti; A, B, I, L, M, holotype, ♂ (MNHN Th 1432); C-H, J, K, N, ♀ paratype (MNHN Th 1433); O, ♀ paratype (MNHN Th 1433); A, lateral view; B, anterior part of carapace; C, D, major and minor pereopod 1; E, F, pereopod 2 and 3; G, H, maxilliped 3 and ischium in mesial view; I, telson and uropods; J, K, maxilliped 1 and 2; L, pleopod 1; M, O, pleopod 2; N, pleopod 3. Scale bars: A-I, L-N, 1 mm; J, K, O, 0.5 mm.
**DESCRIPTION**

Carapace (Fig. 14B) with very short triangular rostrum, no rostral spine. Abdominal segments 3-5 (Fig. 14A) with lateral tufts of setae. Telson (Fig. 14I) approximately 1.2 times as wide as long, lateral borders regularly curved, posterior border slightly concave medially, unarmed.

Eyestalk (Fig. 14B) with blunt distal tip; cornea dorsal, subterminal, disk-shaped. A1 peduncle shorter than that of A2, reaching about midlength of last A2 article, latter about as long as penultimate; antennal acicle very small. Mxp1 (Fig. 14J) epipod tapering distally. Mxp2 (Fig. 14K) exopod shorter than merus, small epipod. Mxp3 subpediform (Fig. 14G, H) without exopod, both ischium and merus with lower border regularly curved and tapering distally; ischium nearly twice as long as merus bearing weak mesial crest of spinules; carpus as long as merus, lower border rounded; propodus about three or four times as wide as dactylus near proximal third, narrowing distally to digitiform slender dactylus.

PI unequal, dissimilar. Major PI (Fig. 14C) ischium with convex lower border bearing 12-16 spinules; merus with dilated triangular lower border, wide in proximal third carrying two or three large spines, narrower distally with five to six spinules; carpus about as long as merus, lower border rounded posteriorly, unarmed; propodal palm approximately one and a half times as long as carpus and twice as long as fingers, unarmed and so is fixed finger; dactylus cutting edge with large flat tooth proximally and small triangular tooth on distal third. Minor PI (Fig. 14D) with all articles unarmed, carpus largest, about twice as long as palm, latter nearly as long as fingers. P2, P3 (Fig. 14E, F) as figured. P3 propodus with moderate rounded posterior lobe; P4 and P5 subchelate.

Male Plp1 (Fig. 14L) uniramous, indistinctly biarticulated with small distal hook-shaped expansion, female Plp1 lost; male Plp2 (Fig. 14M) and female Plp2 (Fig. 14O) biramous with appendix interna. Plp3-5 (Fig. 14N) foliaceous, appendix interna well embedded with only distal row of thick setae showing on mesial border of endopod. Uropod (Fig. 14I) exopod approximately triangular with rounded posterior border; endopod broadened posteriorly, subquadrate.

**REMARKS**

By the slightly concave posterior border of the telson, this new taxon seems close to the genus *Sergio* Manning & Lemaitre, 1993. In *Sergio* species, however, the median cleft on the posterior border of the telson is much more pronounced and sometimes armed with a spine (see Manning & Lemaitre 1993: fig. 1), the telson is broader (about 1.5 times as broad as long in the type species, *S. guassutinga* Rodrigues, 1971) (see Manning & Felder 1995: fig. 1), and the uropod endopod is slender, longer than broad, tapering distally (Manning & Lemaitre 1993: 40, diagnosis) whereas it is subquadrate in the new taxon. The latter also differs with *Sergio* species by the eye corneas that are neither subterminal nor hemispherical.

The new taxon agrees with the definition of *Neocallichirus* given by Sakai (1988, 1999) and Manning & Felder (1991) in several features except that for the Mxp3, the ischium-merus narrows distally and the propodus is not subquadrate, though ventrally dilated. It is also unusual in having an appendix interna on the Plp2 of both male and female. This feature is found in a few other *Neocallichirus* species, e.g., *N. moluccensis* (de Man, 1905) (see Sakai 1999: fig. 25e, f), *N. cacahuate* Felder & Manning, 1995 or *N. raymanningi* Blanco Rambla & Lemaitre, 1999.

Among the Indo-Pacific species of *Neocallichirus*, *N. frouini* n. sp. is most similar to *N. mauritianus* (Miers, 1882) (assigned to this genus by Sakai 1999) (see Miers 1884: 15, fig. 2, 2a; de Man 1929: pl. 2, fig. 4a-c; Kelsley 1976: 51, fig. 3). The type material of *N. frouini* n. sp. (tl. 11-19 mm) is compared with a 2 specimen of *N. mauritianus* from Mauritius (tl. 48mm) (MNHN Th 504). There are similarities in the shape of the eyestalks and corneas, the lower expansion bearing spines of the major PI merus, the unarmed minor PI1 with a long carpus, and the slender Mxp3 with a triangular merus (see Kelsley 1976: fig. 3C).
Thalassinidea (Crustacea, Decapoda) from French Polynesia

The new taxon can be differentiated from *N. mauritianus* by: 1) lower expansion on major PI merus with larger spines, at least two large proximal spines in all specimens; 2) major PI carpus shorter than the palm in male as in female (Fig. 14C) rather than longer than the palm in female of *N. mauritianus* (see de Man 1928a: pl. II, fig. 4b); 3) male major PI with fixed finger as long as dactylus and no deep excavation between bases of fingers, Fig. 14C; rather than shorter than dactylus with deep excavation between bases in *N. mauritianus* (see Miers 1884: fig. 2a); 4) telson with lateral borders weakly convex, posterior border slightly concave (Fig. 14I) instead of rounded lateral borders and posterior borders straight in *N. mauritianus* (see Ksleys 1976: fig. 3B); and 5) the new taxon can also be separated from *N. mauritianus* and all other *Neocallichirus* by the non quadrate Mxp3 propodus (Fig. 14G) (as compared with Ksleys 1976: fig. 3C).

The type material of the present species includes only small specimens which however are unlikely to be young representatives of *N. mauritianus* but members of a different taxon.

Subfamily Cheraminae
Manning & Felder, 1991

Genus *Cheramus* Bate, 1888

*Cheramus sibogae* (de Man, 1905)
(Fig. 15)

*Callianassa Sibogae* de Man, 1905: 613; 1928b: 27, 98.

*Callianassa (*Cheramus*) Sibogae — de Man 1928b: 124, pl. 11, fig. 17-17e.


**Type Material.** — Holotype: Indonesia, Java Anchorage (7°31'30"S, 149°32'12"W), 6 m, fine sand, 12.IV.1994, P. Frouin coll., 1 ♀, cl. 3.5 mm, tl. 11 mm (Fig. 16A-G, I-K), 2 jvs. cl. 2.3-2.5 mm, tl. 9-9.5 mm (Fig. 16H) (MNHN Th 1435).

**Material Examined.** — Tahiti, Society, French Polynesia, stn 15, 17°39'30"S, 149°32'12"W, 6 m, fine sand, 12.IV.1994, P. Frouin coll., 1 ♀, cl. 3.5 mm, tl. 11 mm (Fig. 16A-G, I-K), 2 jvs. cl. 2.3-2.5 mm, tl. 9-9.5 mm (Fig. 16H) (MNHN Th 1435).

**Remarks**
This species is assigned to the genus *Cheramus*, following Tudge et al. (2000) due to the presence of a rostral spine, subterminal lateral corneas, pereopod 1 without meral hook, pleopods 3-5 slender with digitiform *appendix interna*, elongate uropod exopod (though length is not twice width, as defined by Manning & Felder 1991). The absence of both Mxp3 as well as one PI casts a little uncertainty over the identification of the present specimen. It nevertheless agrees well with the holotype of *C. sibogae* (see de Man 1928b: 124, pl. 11, fig. 17-17e) and the material from Australia studied by Ngoc Ho (1994: 54, fig. 3) in the acute and slightly upturned rostrum (Fig. 15A, B), the form of eyestalks, the A1 and A2 (Fig. 15A), the (presumably) minor PI (Fig. 15C), and the telson and uropods (Fig. 15K). The P2-P5 (Fig. 15D-G) are all unarmed and the P3 propodus is not expanded ventrally, lacking a posterior lobe.

Female Plp1 (Fig. 15H) is uniramous, Plp2 (Fig. 15I) is biramous, Plp3-5 (Fig. 15J) with slender rami and digitiform *appendix interna*.
Indopacific species of *Cheramus* (see Tudge *et al.* 2000), e.g., *C. preadatrix* (de Man, 1905) and *C. propinqua* (de Man, 1905), it has a subpedi-form Mxp3 (Fig. 16F, G) (slightly wider in the juvenile, Fig. 16H), the major P1 (Fig. 16B) lacking a meral hook, the P3 propodus elongated with no posterior lobe (Fig. 16D), the Plp1 (Fig. 16J) slender and uniramous, the Plp2 biramous in female (Fig. 16K). Nevertheless, the uropod exopod is definitely shorter relative to the telson than in the other species. Other particularities that could be of generic or specific value are: eyes terminal, corneas rounded, A1 and A2 peduncles of about same length (Fig. 16A);
P2-5 (Fig. 16C-E) unarmed, telson subquadrate with lateral borders regularly curved (Fig. 16I). Assigning these three specimens to a known or a new taxon is difficult however as they are all young and very small. They are here provisionally placed in the genus *Cheramus* and additional material is needed to determine their status.

**Family UPOGEBIIDAE** Borradaile, 1903

**Genus Gebiacantha** Ngoc-Ho, 1989

*Gebiacantha albengai* n. sp.

(Fig. 17)

**Type material.** — Holotype: Rapa Island, Austral, French Polynesia, BENTHAUS, in dead corals, 30 m,
Fig. 17. — *Gebia cantha albengai* n. sp., Rapa, holotype, ♀ (MNHN Th 1436); A, B, anterior part of carapace, dorsal and lateral view; C, D, antennule and antenna; E, F, pereopod 1 and distal part in mesial view; G, H, pereopod 2 and 3; I, pleopod 3; J, telson and uropods. Scale bars: 1 mm.
ETYMOLOGY. — The species is named for Laurent Albenga who sorted the material.

DISTRIBUTION. — Only known from the type locality.

DIAGNOSIS. — Rostrum nearly twice as long as wide, three infrarostral spines and six small spiniform teeth on lateral border; anterolateral border of carapace with single spine; seven spinules on lateral ridges of gastric region. Telson with lateral borders convex, posterior border concave medially.

A1 peduncle with lower spine on article 1; A2 peduncle with lower spine on article 3. P1 subchelate, lower spine on ischium; upper subdistal spine and seven lower spines on merus; carpus with three upper spines and four subdistal spines: one upper, one lower and two large mesial; propodus bearing nine upper spines and upper mesial distal spine near base of dactylus; four lower spines on proximal half and two mesial lower spines, near base of fixed finger, latter about half as long as dactylus carrying five small pointed teeth on cutting edge. Dactylus dentate on upper border, cutting edge unarmad. P2 merus with upper distal spine and five spines on proximal half of lower border, carpus with upper and lower subdistal spine; propodus with upper proximal spine. P3 merus with two lower spines; lower distal spine on carpus.

Uropod exopod and endopod longer than telson, posterior border nearly straight, lateral inner border convex.

DESCRIPTION

Rostrum (Fig. 17A) nearly twice as long as wide at base, far overreaching eyestalks, with three spines on ventral surface (distal broken in holotype) and six small spiniform teeth on each lateral border. Anterolateral border of carapace (Fig. 17B) with spine; epistome with pointed mesial tip. Gastric region with small tubercles alongside shallow and narrow lateral grooves, fine lateral ridges bearing seven spinules. Cervical groove well defined with three dorsolateral spinules on each side; linea thalassinica faint, invisible posterior to cervical groove. Telson (Fig. 17J) approximately 1.2 times as wide as long, lateral border convex near proximal third, posterolateral angle rounded, posterior border concave in median part, very faint U-shaped carina on dorsal surface. A1 (Fig. 17C) peduncle with large lower spine on article 1. A2 (Fig. 17D) peduncle with large lower spine on article 3, antennal scale with pointed tip. P1 (Fig. 17E, F) slender, subchelate. Ischium with lower spine. Merus over three times as long as wide, with upper subdistal spine and seven lower spines. Carpus with fine longitudinal groove on upper part of external surface, three upper spines, four subdistal spines: one upper, one lower and two large mesial. Propodus about 2.5 times as long as wide, bearing nine upper spines and upper mesial distal spine near base of dactylus; lower border with four lower spines on proximal half and two mesial lower spines more distally, near base of fixed finger, latter about half as long as dactylus carrying five small pointed teeth on cutting edge. Dactylus dentate on upper border, cutting edge unarmad. P2 (Fig. 17G) merus with upper distal spine and five spines on proximal half of lower border, carpus with upper and lower subdistal spine; propodus with upper proximal spine. P3 (Fig. 17H) merus with two lower spines; lower distal spine on carpus.

Uropod exopod and endopod longer than telson, posterior border nearly straight, lateral inner border convex.

REMARKS

The new taxon can be placed within the group of Gebiacantha species that inhabit warm waters, with the uropods longer than the telson, as mentioned by Ngoc-Ho (1989: 144). Among these, the most closely related to G. albengai n. sp. is G. ceratophora (de Man, 1905) (see de Man 1928b: 69, fig. 9-9g; de Saint Laurent & Ngoc-Ho 1979: 57, figs 6-8; Ngoc-Ho 1994: 64, fig. 5). The two are similar in the long rostrum, the small number of spines on the anterolateral border of the carapace, the A2 peduncle and the shape of the telson. They can be differentiated as follows (characters of G. ceratophora in brackets): 1) rostrum nearly twice as long as wide in G. albengai n. sp. (vs about 1.3 times as long as wide); 2) three infrarostral spines in G. albengai n. sp. (vs one infrarostral spine); 3) P1 propodus...
unarmed on mesial surface, with two large lower spines posterior to fixed finger in *G. albengai* n. sp. (vs several spines on mesial surface, one lower spine posterior to fixed finger); and 4) uropodal exopod with nearly straight posterior border in *G. albengai* n. sp. (vs posterior border of uropod exopod rounded).

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REFERENCES


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