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Marine Janiroidea from Martinique, French Antilles, with descriptions of a new genus and four new species (Crustacea : Isopoda)

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Résumé : Onze espèces de sept genres d'Isopodes Janiroidea sont recensées en différents endroits de la barrière de corail le long de la côte est de la Martinique, dans les Antilles fran!aises. *Bagatus serricauda* Menzies & Glynn, 1968 est redécrite. Le nouveau genre, *Rostrobagatus*, de Janiroidae est créé, quatre nouvelles espèces sont décrites et leurs effinités discutées : *Rostrobagatus microps* n. sp., *Joeropsis antiensis* n. sp., *J. schoelcheri* n. sp. et *Uromuna deodata* n. sp.

Abstract : Eleven species of janiroid isopods belonging to seven genera are recorded from mainly coral reef localities along the east coast of Martinique, French Antilles. *Bagatus serricauda* Menzies & Glynn, 1968 is redescribed. The new janirid genus *Rostrobagatus* is established and four new species are described, with a brief discussion on the supposed affinities : *Rostrobagatus microps* n.gen. n.sp., *Joeropsis antillensis* n.sp., *J. schoelcheri* n.sp. and *Uromuna deodata* n.sp.

INTRODUCTION

The Caribbean marine isopod fauna is the best known of all tropical areas. In recent decades there has been an intensified interest for isopod studies in this area and many up to then unknown species were discovered. While the marine isopods from the Gulf of Mexico, Belize and Caribbean Sea of Colombia have been investigated intensively, our knowledge of the fauna from most Caribbean islands is far from being complete.

The present study was undertaken to determine the occurence and distribution of marine isopods in the eastern Caribbean and to facilitate identification of the regional isopod fauna. This is the third contribution as part of a series surveying the marine isopod fauna of Martinique, French Antilles and reports on the asellote superfamily Janiroidea. The Janiroidea are represented by 11 species in 7 genera and 5 families, including 4 species new to science and a new genus. Most of the author's fieldwork in April 1990 was carried out on nearshore coral reefs or in seagrass beds along the east coast of the island. Almost all material recorded herein was obtained from cryptofaunal samples (dead corals).

The specimens are deposited in the Museum National d'Histoire Naturelle, Paris, France (MNHN) and in the author's private collection.

SYSTEMATIC ACCOUNT

Janiridae

Bagatus Nobili, 1906

Bagatus platydactylus Nobili, 1906

1906 *Bagatus platydactylus* Nobili, Bull. Mus. natn. Hist. nat., 12 : 268.

1982 *Bagatus platydactylus*, Pires, J. nat. Hist., 16 : 244 [synonymy].

Material : 1 ♂ (HGM), Petite Anse de Macabou ; seagrass beds (*Syringodium, Thalassia*), 0-1 m, 7 April 1990. 2 ♂♂, 1 ♀ (MNHN), Madras, Baie de Tartane ; dead corals in seagrass beds ; moderately exposed location, 1-2 m, 18 April 1990. 1 ♂, 2 immature ♂♂, 2 ♀♀ (1 ovigerous) (HGM), Petite Anse de Macabou ; dead corals on nearshore patch reef ; exposed reef flat and seaside margin, 0-2 m, 6-15 April 1990.

Remarks : a common species of probably pantropical distribution. It is redescribed in Müller (in press), based on material from the Society Islands.

Bagatus serricauda Menzies & Glynn, 1968 (Figs. 1-25)

1968 *Bagatus serricaudus* Menzies & Glynn, Stud. Fauna Curaçao and other Caribb. Isl., 27 (104) : 79, fig. 43.

1982 *Bagatus serricaudus*, Pires, J. nat. Hist., 16 : 236-239, figs. 22-28.

1989 *Carpias serricaudus*, Kensley & Schotte, Guide to the marine Isopod Crustaceans of the Caribbean : 87, fig. 39D.

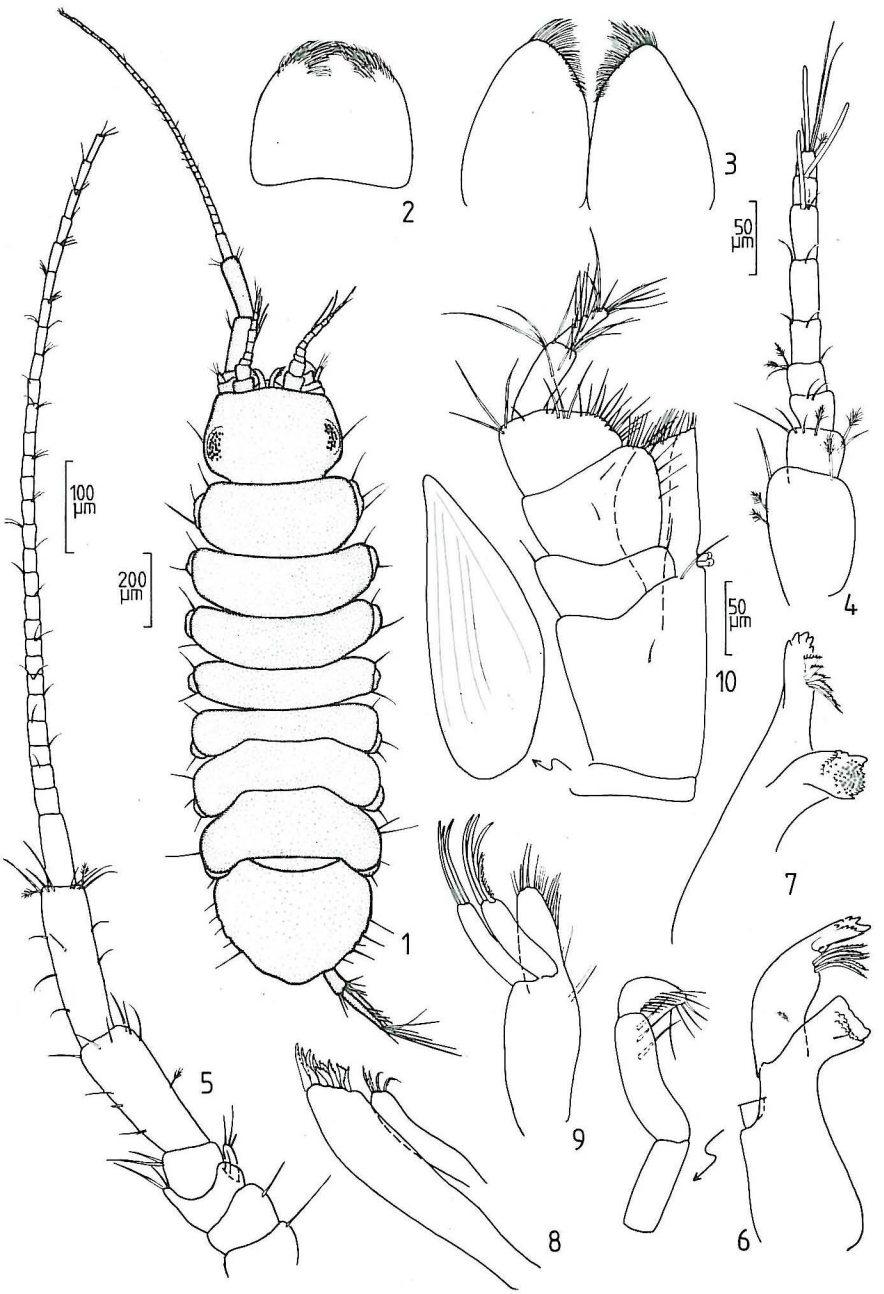
1990 *Bagatus serricaudus*, Müller, Senckenbergiana biol., 70 (1989) (1/3) : 205, fig. 2.

1991 *Carpias serricaudus*, Schotte, Heard & Kensley, Gulf Res. Rep., 8 (3) : 254.

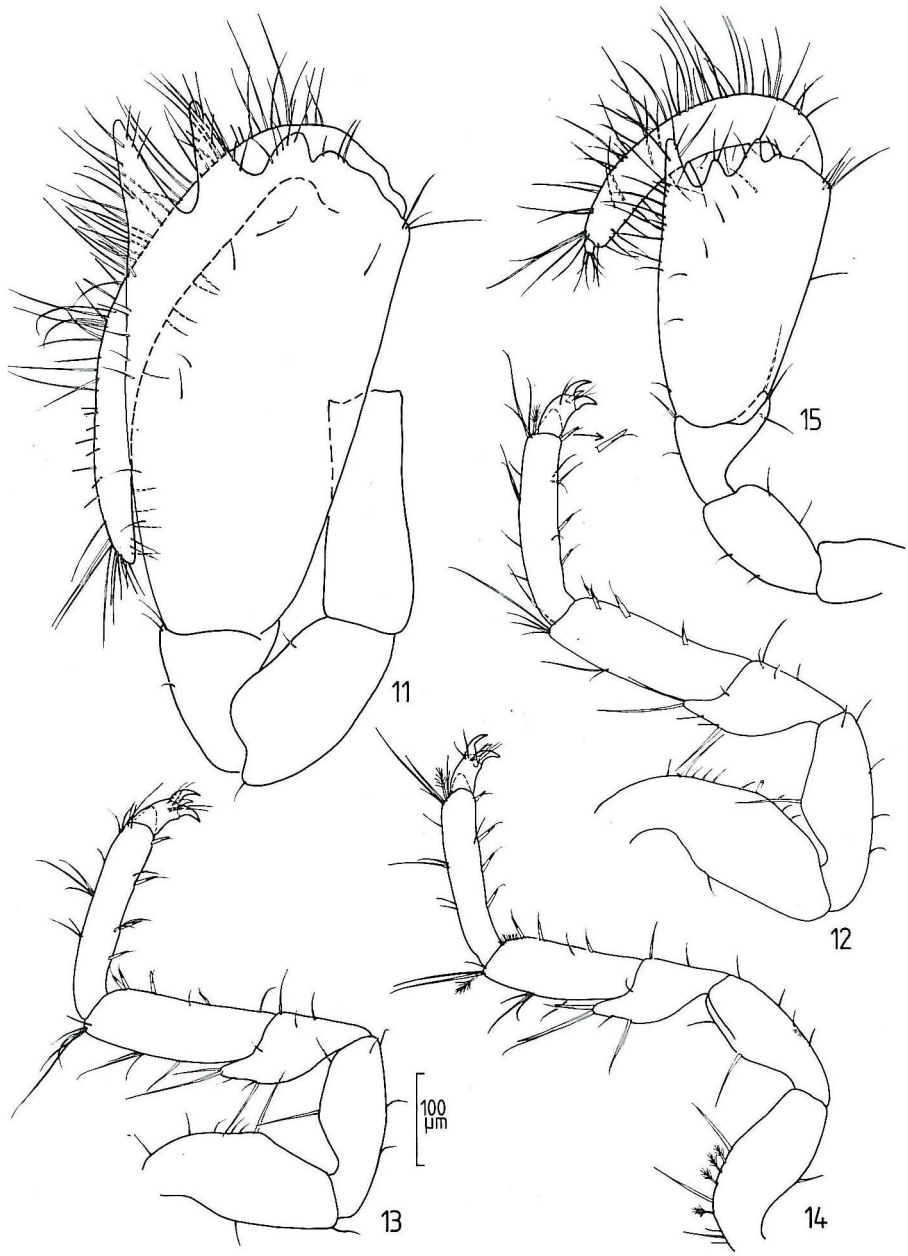
Material : 7 ♂♂ (HGM), Petite Anse de Macabou ; dead corals from nearshore patch reef ; exposed reef flat and seaside margin, 0-2 m, 6-15 April 1990. 11 ♂♂ (HGM), Cap Chevalier ; reef flat of nearshore fringing reef, exposed location ; from mainly dead corals (*Porites*), 0,5-1,5 m, 11 April 1990. 21 ♂♂, 2 ♀♀ (1 ovigerous), deposited as follows : 12 ♂♂ , 1 ♀ (HGM), 9 ♂♂, 1 ovigerous ♀ (MNHN), La Trinité ; bank reef west of Pointe Rouge, Anse Rivière ; dead corals on exposed reef flat, 0-2 m, 12 April 1990.

Description, mature ♂ : total length 1,6-1,8 mm, 3,2 times longer than wide. Body colourless, segments bearing few lateral setae. Cephalon 1,5 times wider than long, with slightly convex frontal margin. Large dorsolateral eyes composed of many small, well pigmented ommatidia. Pereonites decreasing in length from pereonite 1 to 4, increasing in length from pereonite 5 to 7 ; all coxae of pereopods visible in dorsal view, with rounded lateral margins. Free pleonite very short, hidden beneath posterior margin of pereonite 7. Pleotelson 1,2 times wider than long, with shallowly serrate lateral and broadly rounded distal margin .

Antenna 1, peduncle of 4 articles decreasing in size distally ; proximal peduncular article much wider and longer than remaining 3 distal peduncular articles ; flagellum 5-articulate ; three distal flagellar articles bearing aesthetasc. Antenna 2, peduncle 6-articulate ; 4 proxi-



Figs. 1-10 : *Bagatus serricauda* Menzies & Glynn, 1968, ♂ : 1. dorsal view ; 2. labrum ; 3. labium ; 4. antenna 1 ; 5. antenna 2 ; 6. left mandible ; 7. right mandible, palp omitted ; 8. maxilla 1 ; 9. maxilla 2 ; 10. maxilliped.



Figs. 11-15 : *Bagatus serricauda* Menzies & Glynn, 1968, ♂ : 11. pereopod 1 ; 12. pereopod 2 ; 13. pereopod 3 ; 14. pereopod 4 ; 15. pereopod 1, other (small) ♂.

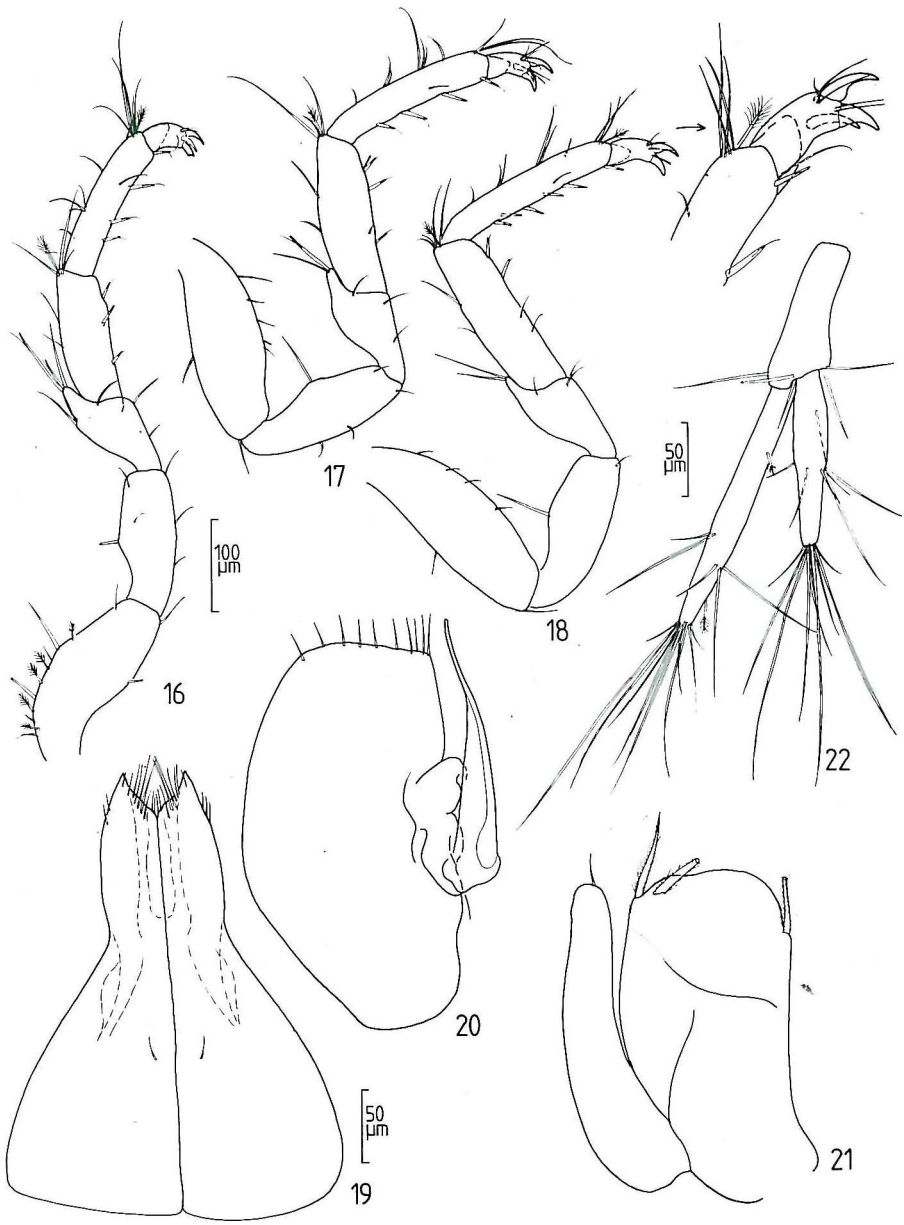
mal articles short, wider than long ; 3rd article with setose squama ; peduncular articles 5 and 6 elongate, each about as long as four proximal articles together ; flagellum much longer than peduncle, of numerous setose articles ; first flagellar article as long as flagellar articles 2-4 together.

Distal margin of labrum broadly rounded, densely covered with setules. Lobes of labium roughly oval, distal and inner distal margins densely setulose. Incisor and lacinia mobilis of left mandible 5-cuspidate, spine row of 5 pectinate spines ; molar relatively slender, triturative distal part truncate, bearing a short seta ; mandibular palp 3-articulate with 2nd article somewhat longer than proximal and distal ones ; 2nd article with 3 slender spines in distal half ; 3rd article with 14 setae. Molar of right mandible 5-cuspidate, spine row of 6 pectinate spines. Maxilla 1, slender inner ramus bearing 4 fringed distal setae ; inner distal margin of outer ramus with 9 short, denticulate spines. Maxilla 2, inner ramus with several slender setae and setules along distal and medial margins ; inner lobe of outer ramus with 4 slender, curved spines, medial one pectinate ; outer lobe of outer ramus with 3 slender, curved spines. Epipodite of maxilliped with subacute apex ; distal margin of endite straight, bearing several slender setae ; medial margin of endite with 2 coupling hooks ; setose palp 5-articulate ; 2nd article largest, articles 1-3 wider than long ; 2 distal articles slender and longer than wide.

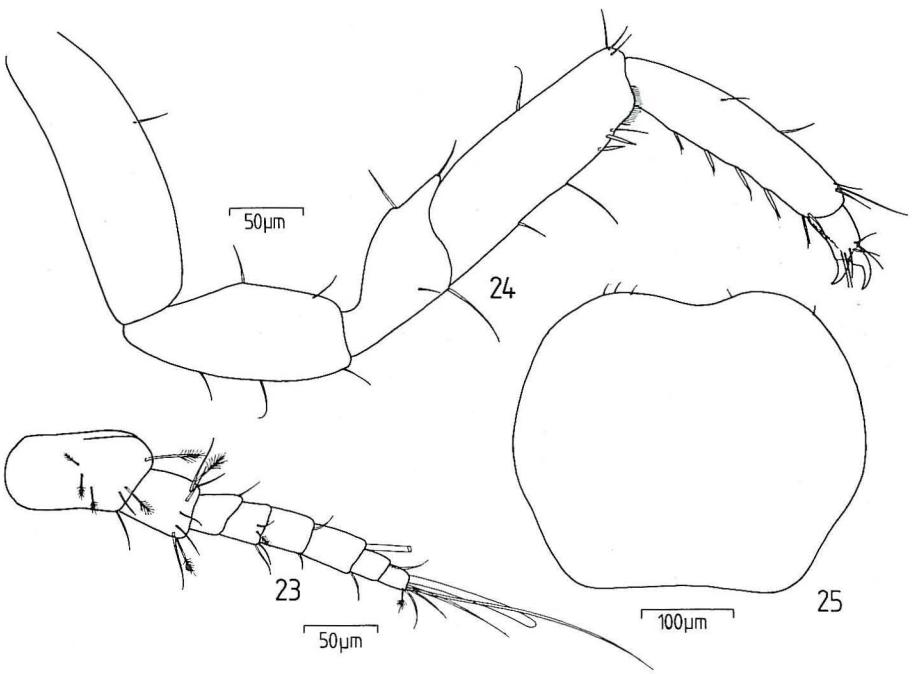
Pereopod 1 sexually dimorphic, much larger and subchelate in ♂ ; dactylus present only in small males as tiny setose article at apex of propodus ; propodus curved, long and slender, with many setae along anterior margin ; carpus somewhat longer and much wider than propodus, posterodistal margin with 3 strong, setose tooth-shaped tubercles of variable size ; merus smallest article (except for dactylus, when present), roughly triangular ; basis longer than ischium. Ambulatory pereopods 2-7 quite similar in shape and arrangement of spines and setae ; dactylus of these pereopods with 3 ungues ; rectangular propodus always more slender and longer than carpus ; both propodus and carpus bearing row of slender compound spines along posterior margins ; anterodistal margin of merus with short projection; basis slightly longer than ischium.

First pleopods with sinuous outer margins, proximally 2,7 times wider than in distal 3rd ; distal part projected into triangular, acute lobe bearing several slender setae in characteristic arrangement, as figured. Sympodite of pleopod 2 with convex outer margin and almost straight distal margin bearing 10 short setae ; copulatory organ very slender and somewhat curved in distal third, well extending beyond distal margin of sympodite. Endopodite of pleopod 3 indistinctly biarticulate, bearing 3 distal plumose setae ; slender exopodite uniarticulate, not extending beyond distal margin of outer ramus ; distal margin of exopodite rounded, tipped with short seta. Uropods shorter than pleotelson ; peduncle of uropod 4/5 length of exopodite and 3/5 length of endopodite ; uropodal rami elongate-slender, bearing several long setae (longest at apex) ; moreover, endopodite with 2 feathered sensorial setae.

♀ : in size and general habitus similar to ♂. Proximal peduncular article of antenna 1 less expanded than in ♂, flagellum of 4 articles. Pereopod 1 in contrast to ♂ ambulatory, similar in shape to remaining pereopods ; dactylus of pereopod 1 biunguiculate. Distal margin of operculum shallowly concave, bearing some very short setae.



Figs. 16-22 : *Bagatus serricauda* Menzies & Glynn, 1968, ♂ : 16. pereopod 5 ; 17. pereopod 6 ; 18. pereopod 7 ; 19. first pleopods ; 20. pleopod 2 ; 21. pleopod 3 ; 22. uropod.



Figs. 23-25 : *Bagatus serricauda* Menzies & Glynn, 1968, ♀ : 23. antenna 1 ; 24. pereopod 1 ; 25. operculum.

Remarks : The correct name of this species is *Bagatus serricauda*, not *serricaudus* as used throughout in the literature. Cauda is a Latin noun, for which a masculine (caudus) does not exist.

The species is best distinguished from other members of the genus by the shallowly serrate pleotelsonic margin, shape of the male pereopod 1 carpus with 3 posterodistal tooth-shaped tubercles and the relatively short uropods. Its affinities remain uncertain.

Few authors report on the substrate preference of this species. Müller (1990 : 205) found one specimen "under rocks" in 0,5-1 m, Schotte, Heard & Kensley (1991 : 254) obtained also one specimen in algal substratum in 3-4 m. The present material from Martinique was exclusively washed from dead coral substrate. The bathymetrical distribution of *B. serricauda* ranges from the intertidal to about 4 m.

Distribution : Puerto Rico ; Turks and Caicos Islands ; Martinique ; Santa Marta area, Caribbean Sea of Colombia.

Bagatus stylodactylus Nobili, 1906

1906 *Bagatus stylodactylus* Nobili, Bull. Mus. natn. Hist. nat., 12 : 268.

1982 *Bagatus stylodactylus*, Pires, J. nat. Hist., 16 : 243-244, fig. 42 [synonymy].

Material : 2 ♂♂ (HGM), Petite Anse de Macabou ; algal vegetation on rocks and nearshore patch reef, 0-1 m, 6-10 April 1990. 3 ♂♂ (HGM), Petite Anse de Macabou ; dead corals from nearshore patch reef ; exposed reef flat and seaside margin, 0-2 m, 6-15 April 1990. 4 ♂♂ (MNHN), Petite Anse de Macabou ; under stones and rocks, intertidal and shallow rockpools, 10 April 1990. 1 immature ♂ (HGM) La Trinité ; bank reef west of Pnte. Rouge, Anse Rivière ; dead corals on exposed reef flat, 0-2 m, 12 April 1990.

Remarks : probably pantropical. A redescription is provided in Müller (in press), based on material from the Society Islands.

Rostrobagatus n. gen.

Diagnosis : Janiridae with broad pereonal tergites extending laterally and somewhat ventrally, hiding small, rounded coxae of pereonites 2-5 from dorsal view. Cephalon with small dorsolateral eyes and well-developed frontal rostrum, present as a rounded, ovate lobe. Pereopod 1 sexually dimorphic as in genera *Bagatus* Nobili, 1906 and *Carpias* Richardson, 1902. Coxa of first pereopod enlarged, elongate-triangular, forming lateral margins of first pereonite. Pereopods 2-7 ambulatory. Pereonite 6 ventrally with large posteriad directed keel. One free pleonite present in front of pleotelson. Distal margin of female operculum concave. Biramous uropods slender, slightly shorter than pleotelson.

Derivatio nominis : the generic name refers to the presence of a cephalic rostrum and the similarity to species of *Bagatus* Nobili, 1906.

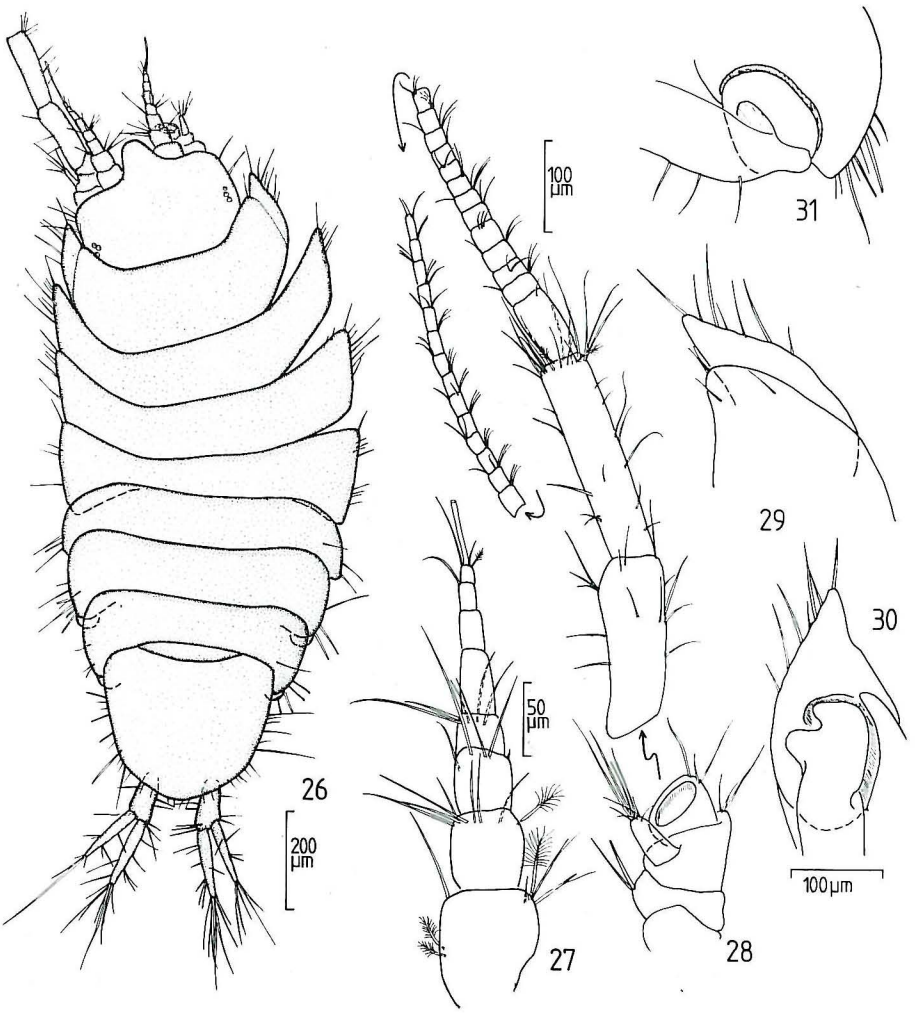
Rostrobagatus microps n. sp. (Figs. 26-55)

Holotype : ♂ (MNHN), Petite Anse de Macabou ; dead corals from nearshore patch reef ; exposed reef flat and seaside margin, 0-2 m, 6-15 April 1990.

Paratypes : 8 ♂♂, 4 ♀♀ (2 ov.), 1 immature ♂, deposited as follows : 6 ♂♂, 2 ovigerous ♀♀, 1 immature ♂ (HGM), 2 ♂♂, 2 ♀♀ (1 ovigerous) (MNHN), collected together with holotype. 11 ♂♂, 2 ♀♀ (1 ovigerous), 1 immature ♂, deposited as follows : 5 ♂♂, 1 ovigerous ♀ (HGM), 6 ♂♂ , 1 ♀, immature ♂ (MNHN), Madras ; Baie de Tartane ; dead corals in seagrass beds, moderately exposed location, 1-2 m, 18 April 1990.

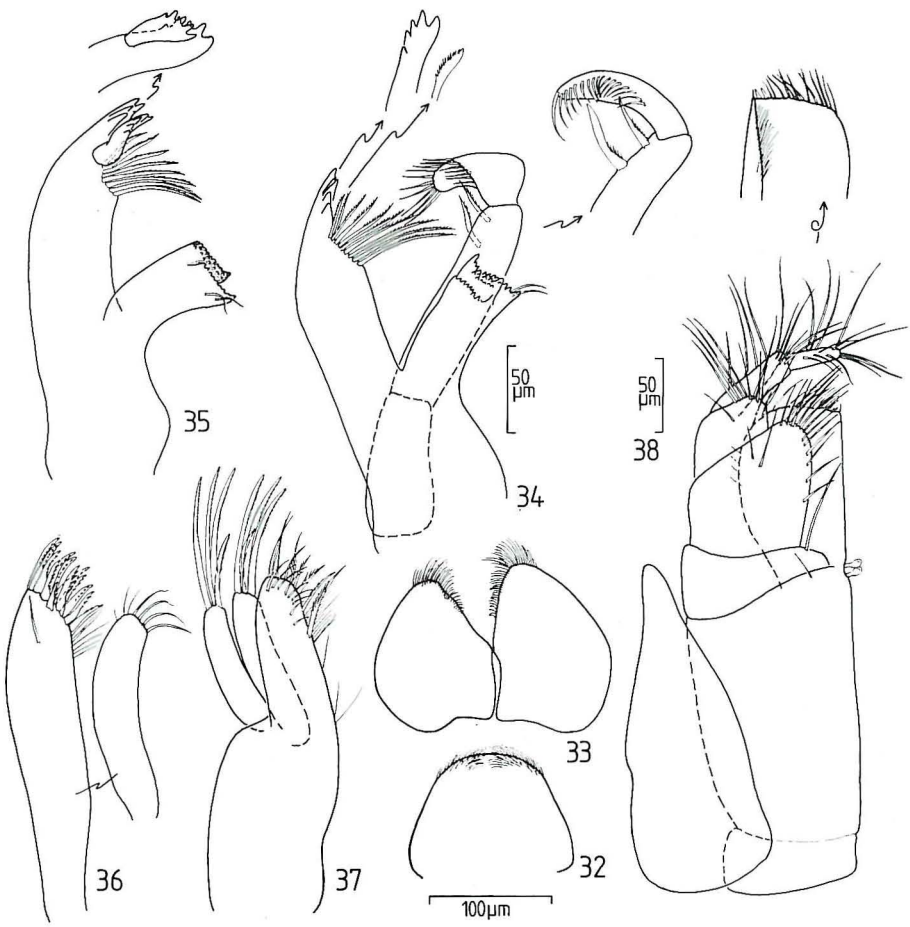
Derivatio nominis : the specific name refers to the small eyes.

Description, ♂ : total length of body 1,6 mm, 2,3 times wider than long, with several lateral setae and slender spines, colourless. Very small, dorsolateral eyes in posterior part of cephalon, composed of 3 distinctly pigmented ommatidia. Rounded, ovate rostrum about 1/3 length of cephalon. Lateral parts of tergites of pereonites 1-3 anteriad directed ; lateral parts of pereonite 4 widening, about twice length of medial part ; lateral parts of pereonites 5-7 posteriad directed, with rounded posterolateral margins. Free pleonite very small, hidden beneath posterior margin of pereonite 7. Pleotelson 1,1 times wider than long, distal margin broadly rounded ; pleotelsonic margins smooth, bearing several laterally directed setae and slender spines. Anus covered by several slender spines articulating at ventrodistal surface of pleotelson.



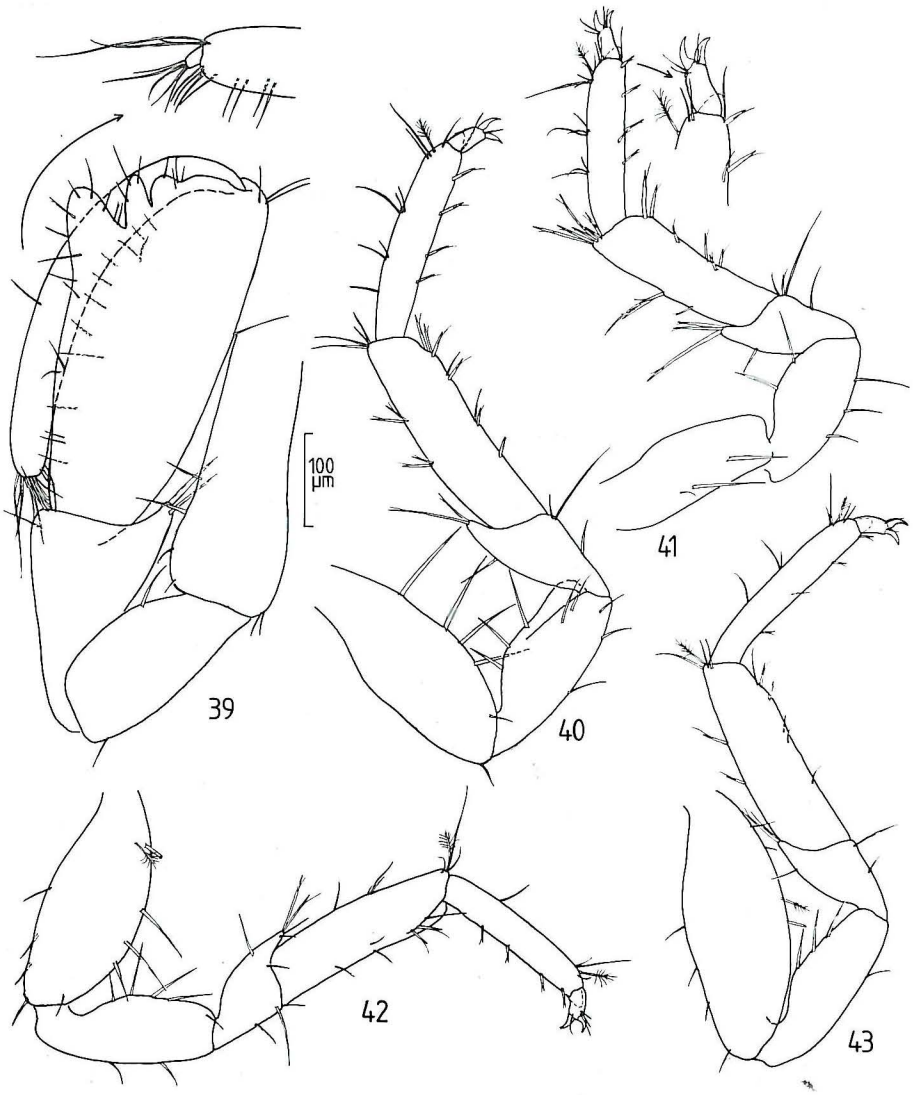
Figs. 26-31 : *Rostrobagatus microps* n.sp., ♂ holotype : 26. dorsal view ; 27. antenna 1 ; 28. antenna 2 ; 29. first right coxa and pereonite margin dorsal view ; 30. first right coxa, ventral view ; 31. coxa 5, ventral view.

Antenna 1, peduncle of 4 setose articles decreasing in size distally ; flagellum 4-articulate ; first flagellar article as long as articles 2 and 3 together ; distal flagellar article with single aesthetasc. Antenna 2, peduncle 6-articulate ; four proximal articles short ; articles 1, 2 and 4 wider than long ; 3rd article as long as wide, with setose squama ; peduncular articles 5 and 6 elongate, 6th 1,2 times length of 5th ; flagellum somewhat longer than peduncle, slender, of 27 setose articles ; proximal flagellar article 1,2 times length of articles 2-4 together.



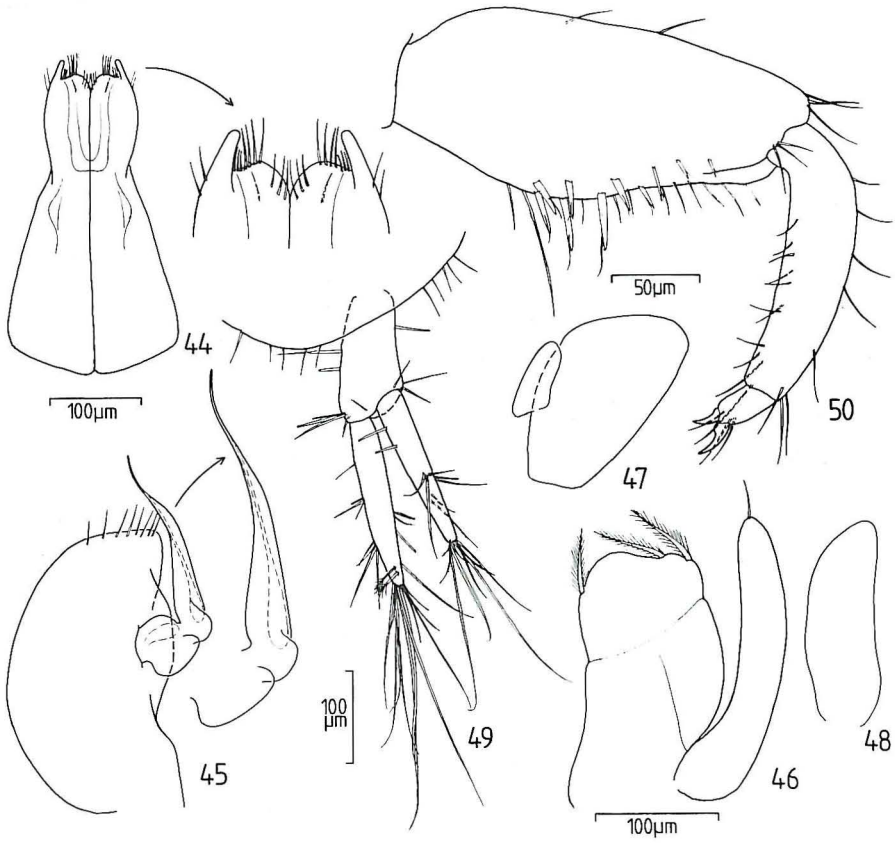
Figs. 32-38 : *Rostrobagatus microps* n.sp., ♂ holotype : 32. labrum ; 33. labium ; 34. right mandible ; 35. left mandible, palp omitted ; 36. maxilla 1 ; 37. maxilla 2 ; 38. maxilliped.

Distal margin of labrum broadly rounded, densely covered with setules. Lobes of labium roughly oval, distal and inner distal margins densely setulose. Incisor and lacinia mobilis of left mandible 5-cuspidate, spine row of 8 slender fringed spines ; molar slender, triturative distal part truncate, bearing 2 short setae ; mandibular palp 3-articulate with 2nd article longest ; 2nd article with 2 distal fringed spines, terminal article with row of 17 curved setae. Incisor of right mandible 5-cuspidate, spine row of 10 slender fringed spines. Slender inner ramus of maxilla 1 bearing 4 distal setae ; inner distal margin of outer ramus with 13 short denticulate spines. Maxilla 2, inner ramus with 13 slender setae, 5 slender fringed spines and several setules along distal and mediodistal margin ; both inner and outer lobe of outer



Figs. 39-43 : *Rostrobagatus microps* n.sp., ♂ holotype : 39. pereopod 1 ; 40. pereopod 2 ; 41. pereopod 4 ; 42. pereopod 6 ; 43. pereopod 7.

ramus with 4 curved, slender fringed spines ; one of these spines about half length of remaining 3 spines. Epipodite of maxilliped roughly triangular, subacute apex reaching to distal half of first palp article ; distal margin of endite almost straight, with row of several slender setae and 2 tiny mediodistal spines ; medial margin of endite with 2 coupling hooks ; maxillipedal palp 5-articulate ; proximal article twice longer than wide, mediodistal margin with single slender seta ; 2nd article 1,2 times longer than wide, with rounded, densely setose mediodistal lobe ; 3rd article 1,3 times wider than long, mediodistal margin bearing several



Figs. 44-50 : *Rostrobagatus microps* n.sp. ♂ (holotype 44, 46, 49 ; paratypes 45, 47, 48) : 44. first pleopods ; 45. pleopod 2 ; 46. pleopod 3 ; 47. pleopod 4 ; 48. pleopod 5 ; 49. uropod. Immature ♂, paratype : 50. dactylus, propodus and carpus of pereopod 1.

long setae ; distal two palp articles slender, 4th 1,7 times length of terminal one, both bearing several long setae.

Sexually dimorphic pereopod 1 subchelate and much more robust in ♂ ; dactylus present as tiny, setose article at apex of propodus ; propodus barely setose, somewhat curved, long and slender, almost reaching back to distal margin of merus ; carpus somewhat longer and much more robust than propodus, roughly ovate in outline ; posterodistal margin with 3 rounded, tooth-shaped tubercles increasing in length posteriorly ; anterodistal margin of merus with short projection bearing 2 slender spines ; basis longer than ischium. Ambulatory pereopods 2-7 quite similar in shape and arrangement of spines and setae ; dactylus of these pereopods biunguiculate ; rectangular propodus always more slender than carpus ; posterior margins of propodus and carpus bearing some slender compound spines ; slender compound spines also present on anterior margin of carpus in pereopods 2-5 and 7 ;

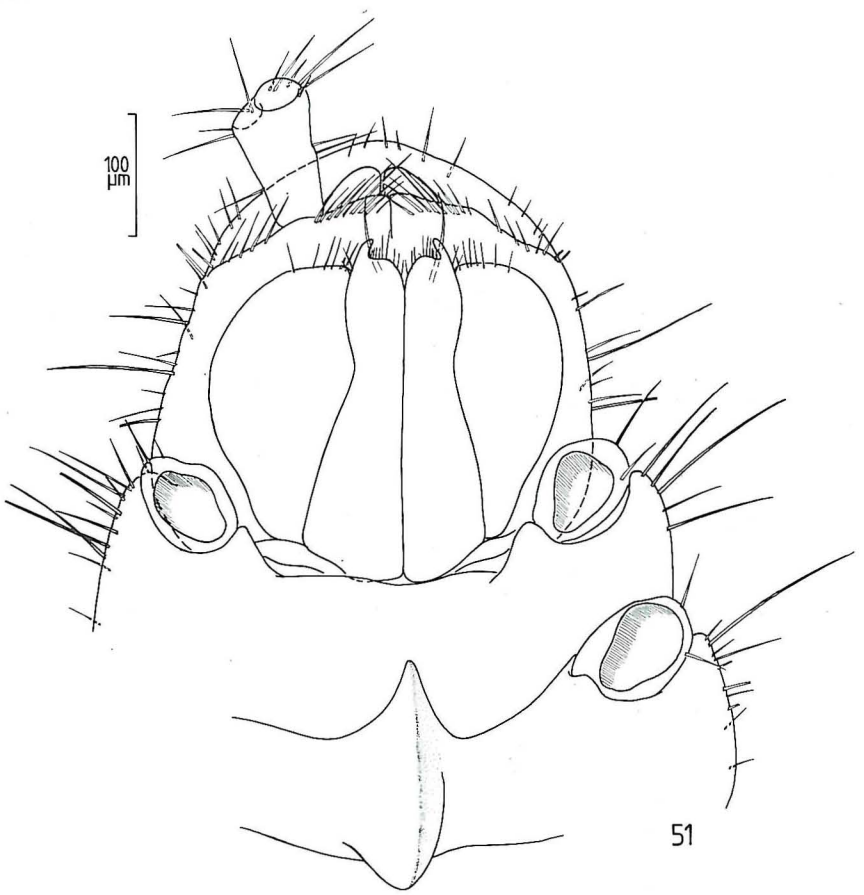
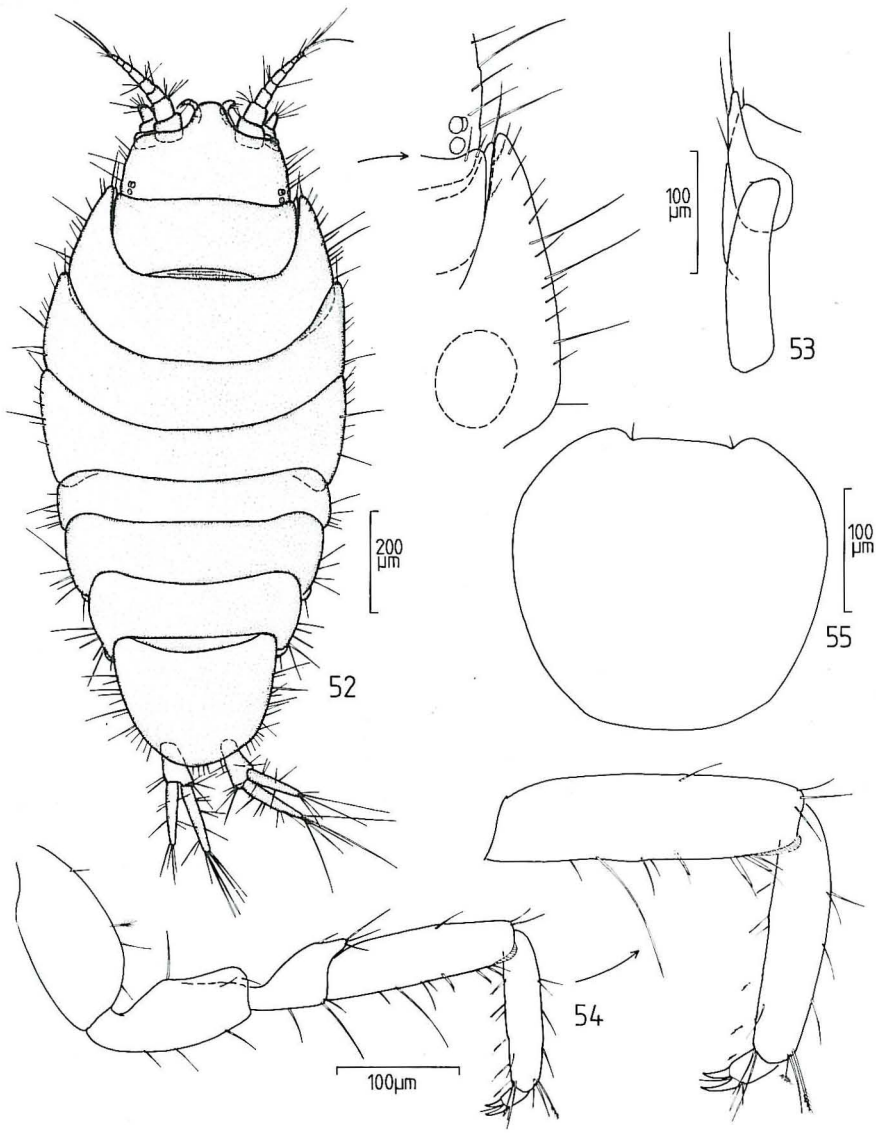


Fig. 51 : *Rostrobagatus microps* n.sp., ♂ paratype : pereonites 6-7 and pleon, ventral view.

anterodistal margin of merus projected, bearing 1-3 slender compound spines ; basis distinctly longer than ischium.

First pleopods proximally 1,8 times wider than in distal third ; outer distal lobe slender with rounded apex, 3 times longer than wide, with 2 setae near outer basal margin ; broadly rounded inner lobe much wider than long, with several setae in characteristic arrangement, as figured. Sympodite of pleopod 2 with convex outer margin and almost straight distal margin bearing 8 short setae ; copulatory organ very slender and somewhat curved in distal third, well extending beyond distal margin of sympodite. Endopodite of pleopod 3 indistinctly biarticulate, bearing 3 distal plumose setae ; slender exopodite uniarticulate, slightly extending beyond distal margin of endopodite ; distal margin of exopodite rounded, tipped with short seta. Both rami of 4th pleopod without setae, exopodite much smaller and more slender than ovate endopodite ; uniramous pleopod 5 without setae, elongate-ovate.



Figs. 52-55 : *Rostrobagatus microps* n.sp., ♀ paratype ; 52. dorsal view ; 53. coxa and basis of pereopod 1, ventral view ; 54. pereopod 1 ; 55. operculum.

Slender, biramous uropods 4/5 of length of pleotelson ; peduncle of uropod 4/5 of length of subequal rami ; uropodal rami slender, bearing several setae (longest at apex) ; moreover, uropodal endopodite with 2 distal feathered sensorial setae.

Immature ♂ : in all features quite similar to mature ♂, except for shape of first pereopod. Dactylus of pereopod 1 biunguiculate, 1/5 of length of slender, curved propodus ; carpus

the largest article of pereopod 1, ovate, lacking tooth-shaped tubercles at posterodistal margin ; posterior margin of carpus bearing several compound spines and setae in distal two thirds.

♀ : in general habitus and size resembling ♂. Lateral part of first pereonite not extended ; first coxa very slender, distal projection barely visible in dorsal view ; anterolateral parts of pereonites 2-3 more strongly extended than in ♂ ; lateral margins of first pereonite covered by anterolateral margins of second pereonite.

First pereopods ambulatory, very similar to pereopods 2-7 ; rectangular propodus and carpus bearing posterior row of some slender compound spines.

Operculum almost circular, lateral angles of convex distal margin bearing short seta.

Remarks : The monotypic genus *Rostrobagatus* n.gen. resembles closely the genera *Bagatus* and *Carpias*. The following features distinguish it from both : presence of a cephalic rostrum ; laterally extended pereonal tergites ; anteriad projected, roughly triangular coxae of pereopod 1 ; 6th pereonite with strongly developed, posteriad directed medioventral keel. Pereopods 2-7 biunguiculate.

Rostrobagatus shares with *Bagatus* and *Carpias* the presence of a sexually dimorphic pereopod 1, being subchelate in the mature ♂ and ambulatory in the ♀. The morphology of antennae, mouthparts, pereopods 2-7, pleopods and uropods does not differ markedly from *Bagatus* and *Carpias*.

All specimens available were found associated with dead coral substrate in areas with moderate and strong wave exposition, from the intertidal to about 2 m depth.

Distribution : Martinique, French Antilles.

Joeropsidae

Joeropsis Koehler, 1885

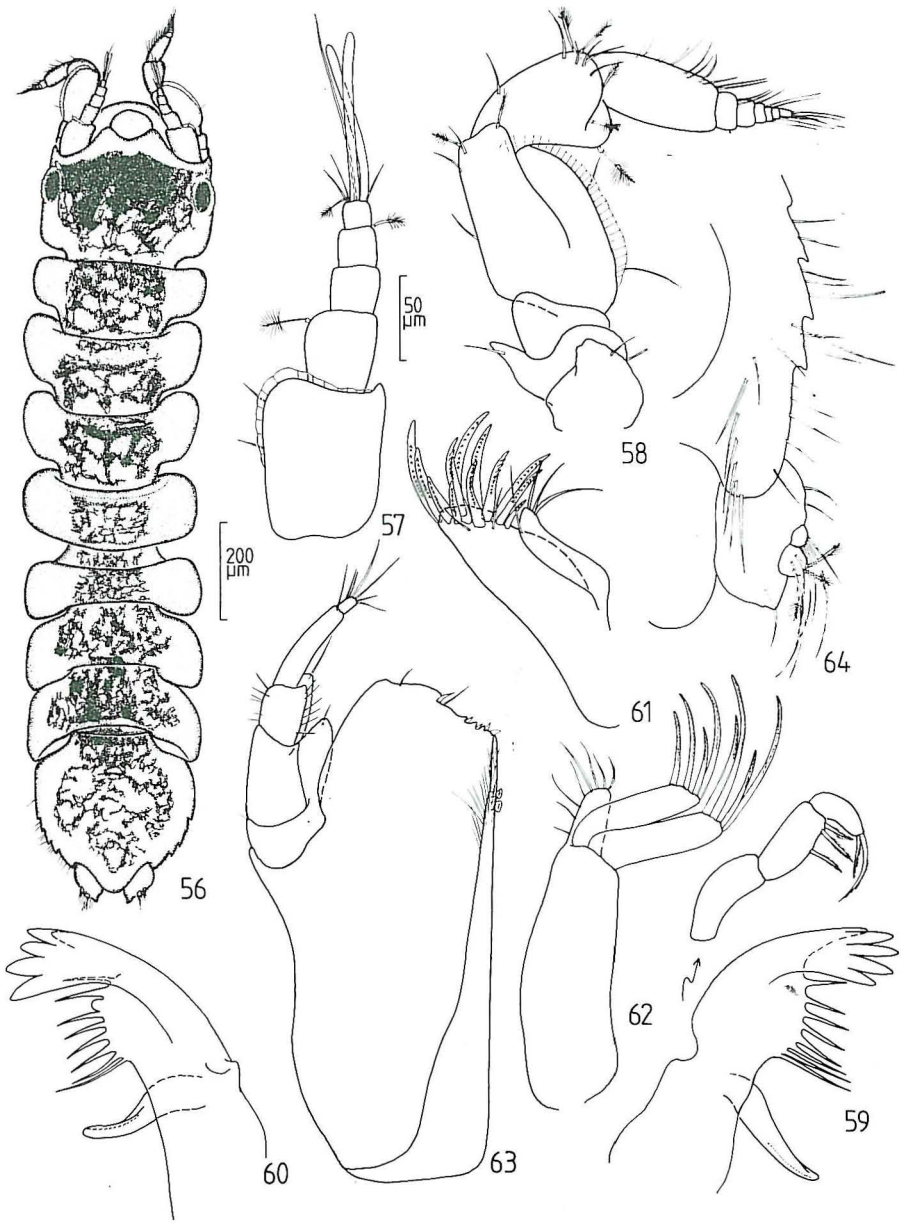
Joeropsis antillensis n.sp. (Figs. 56-69)

Holotype : ♂ (MNHN), Cap Chevalier ; reef flat on nearshore fringing reef, exposed location ; from mainly dead corals (*Porites*), 0,5-1,5 m, 11 April 1990.

Paratypes : 1 ♂ (MNHN), collected together with holotype. 1 ♂ (HGM), La Trinité ; bank reef west of Pointe Rouge, Anse Rivière ; dead corals on exposed reef flat, 0-2 m, 12 April 1990.

Derivatio nominis : the specific name refers to the geographic area of the type locality, the Antilles.

Description, ♂ : total length 1,6 mm, body 4,4 times longer than wide. Violet-brown pigmentation covering most of dorsal surface of body ; present as an almost solid patch on cephalon, extending back to distal pleotelsonic margin as a broad stripe of rather dense pigment reticulations. Lateral margins of cephalon and pereonites smooth. Cephalon 1,2 times wider than long, with semicircular rostral plate ; dorsolateral, well pigmented eyes of moderate size, composed of many small ommatidia, located in anterior half of cephalon. Free pleonite very short. Pleotelson as long as wide, convex lateral margins with several short



Figs. 56-64 : *Joeropsis antillensis* n.sp., ♂ holotype : 56. dorsal view ; 57. antenna 1 ; 58. antenna 2 ; 59. right mandible ; 60. left mandible, palp omitted ; 61. maxilla 1 ; 62. maxilla 2 ; 63. maxilliped ; 64. left uropod and posterolateral margin of pleotelson, ventral view.

posterolateral setae and 4 distinct denticulations in posterior half, respectively ; distal margin of pleotelson rounded.

Antenna 1 of 5 articles ; proximal article largest, much wider and as long as articles 2-4, bearing fringe of scales along outer distal margin ; terminal article with 2 aesthetascs, 4 simple setae and a feathered sensory seta. Antenna 2, peduncle 5-articulate ; 3 proximal articles small and wider than long ; 2nd article with tooth-shaped process at mediodistal margin ; 4th article longest and widest, with fringe of scales over entire outer and distal margin ; 5th article 3/4 length of 4th article ; flagellum of 7 setose articles ; proximal article longer and wider than remaining flagellar articles together.

Incisor of mandibles 5-cuspidate ; spine row of right mandible with 10, of left mandible with 8 spines ; a short, rounded lobe present between 6th and 7th spine of left mandible ; molar elongate slender; mandibular palp 3-articulate, articles somewhat decreasing in length distally ; 2nd article with 3 fringed spines in distal half ; 3rd article with 2 terminal fringed spines. Slender inner ramus of maxilla 1 with 4 distal setae ; outer ramus with 12 denticulate spines and 2 setae at mediodistal margin. Inner ramus of maxilla 2 with 8 slender setae at medial and distal margins ; both inner and outer lobe of outer ramus with 4 slender, fringed spines at distal margin. Epipodite of maxilliped broken off in holotype ; in ♂ paratype, slender, curved, not reaching to first palp article ; distal margin of maxillipedal endite blunt, irregularly denticulate, with 2 short setae and 5 very small leaf-like spines ; palp 5-articulate ; proximal article wider than long, with ventrodistal, triangular process extending beyond 2nd article ; 4th article elongate-slender, 5 times length of terminal one.

Ambulatory pereopods similar among one another, posterior margin of rectangular propodus with 2-3 slender compound spines ; pereopods somewhat increasing in length from 1-7.

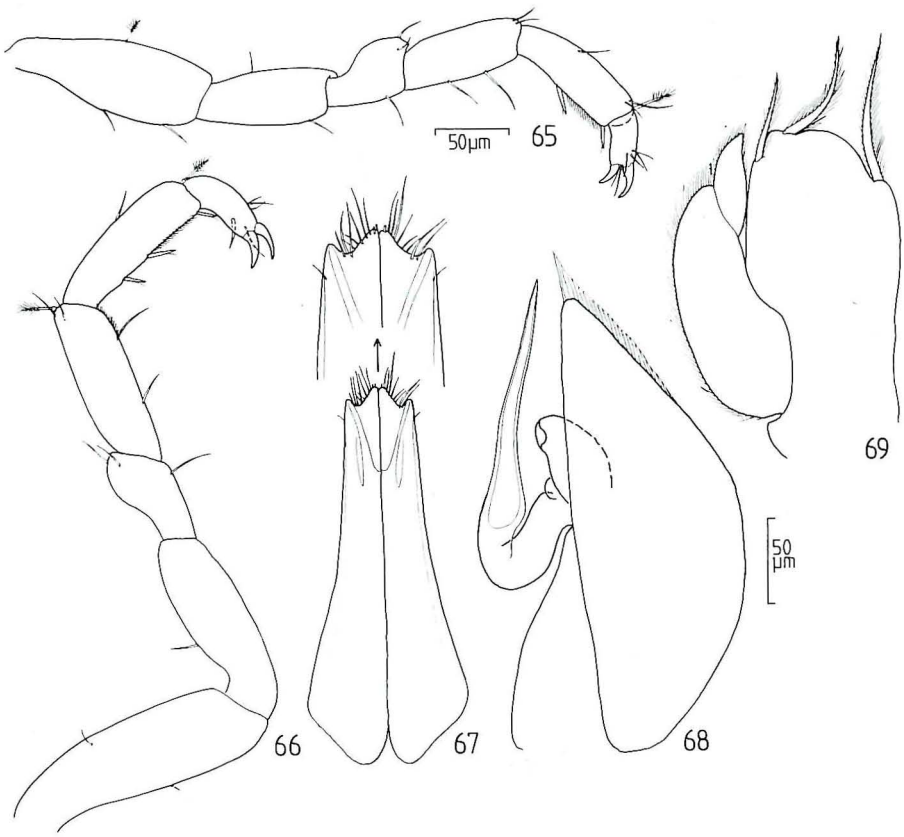
Inner distal lobe of first pleopods triangular, with narrowly rounded distal margin, as long as wide ; outer distal lobe much shorter, rounded ; setae at distal margins of pleopodal lobes in characteristic arrangement, as figured. Outer margin of pleopod 2 sympodite convex, outer distal margin with fringe of scales ; copulatory organ spine-shaped, slightly bent at mid-length, somewhat extending beyond distal margin of sympodite. Broad endopodite of pleopod 3 with 3 distal plumose setae ; exopodite biarticulate, terminal article distally narrowed, articulating obliquely ; lateral margin of exopodite articles setulose. Inner distal margin of uropod peduncle projected, subacute ; knob-like endopodite larger than exopodite, both bearing some slender setae ; moreover, uropodal endopodite with 3 feathered sensory setae.

♀ : unknown.

Remarks : the affinities of the new species remain uncertain. *J. antillensis* n.sp. resembles to some extend *J. schoelcheri* n.sp. (see this species). It is distinguished from other members of the genus through the pigmentation pattern, morphology of pleotelson, mandibles (spine row of incisor) and first pleopods.

The few specimens available were found associated with dead coral substrate in areas with strong wave exposition, in 0-2 m depth.

Distribution : Martinique, French Antilles.



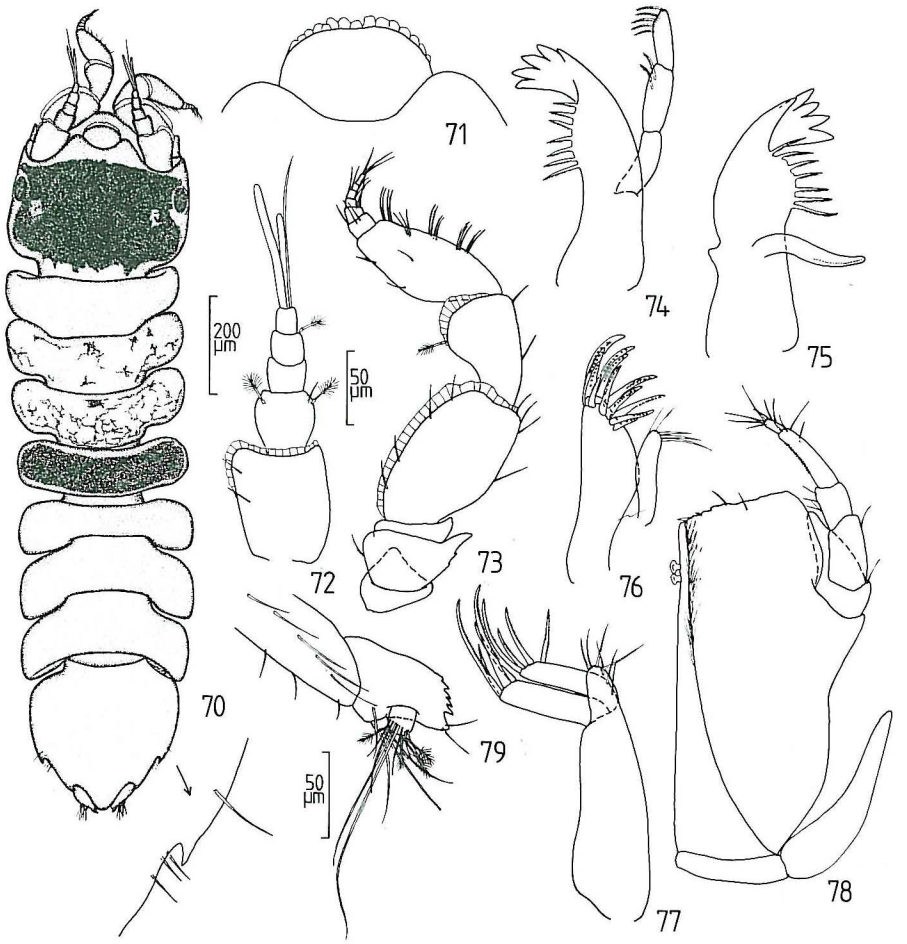
Figs. 65-69 : *Joeropsis antillensis* n.sp., ♂ holotype : 65. pereopod 1 ; 66. pereopod 7 ; 67. first pleopods ; 68. pleopod 2 ; 69. pleopod 3.

Joeropsis paradubia Müller, 1989

1989 *Joeropsis paradubia* Müller, Senckenbergiana biol., 69 (1988) (4/6) : 390-392, fig. 1a-p.

Material : 4 ♂♂ (HGM), Madras ; Baie de Tartane ; dead corals in seagrass beds, moderately exposed location, 1-2 m, 18 April 1990. 15 ♂♂ ♂♂, 5 ♀♀ (3 ovigerous), 13 immature adults (MNHN), Petite Anse de Macabou ; dead corals on nearshore patch reef ; exposed reef flat and seaside margin, 0-2 m, 6-15 April 1990. 2 ♂♂, 1 larvigerous ♀ (HGM), Cap Chevalier ; reef flat on nearshore fringing reef, exposed location ; from mainly dead corals (*Porites*), 0,5-1,5 m, 11 April 1990.

Remarks : there is only one other record of *J. paradubia* from the Santa Marta area, Caribbean coast of Colombia. While all specimens in Colombia were found under stones on sandy bottom, the material from Martinique was obtained exclusively from dead coral substrate. The vertical distribution ranges from the intertidal to 2 m.

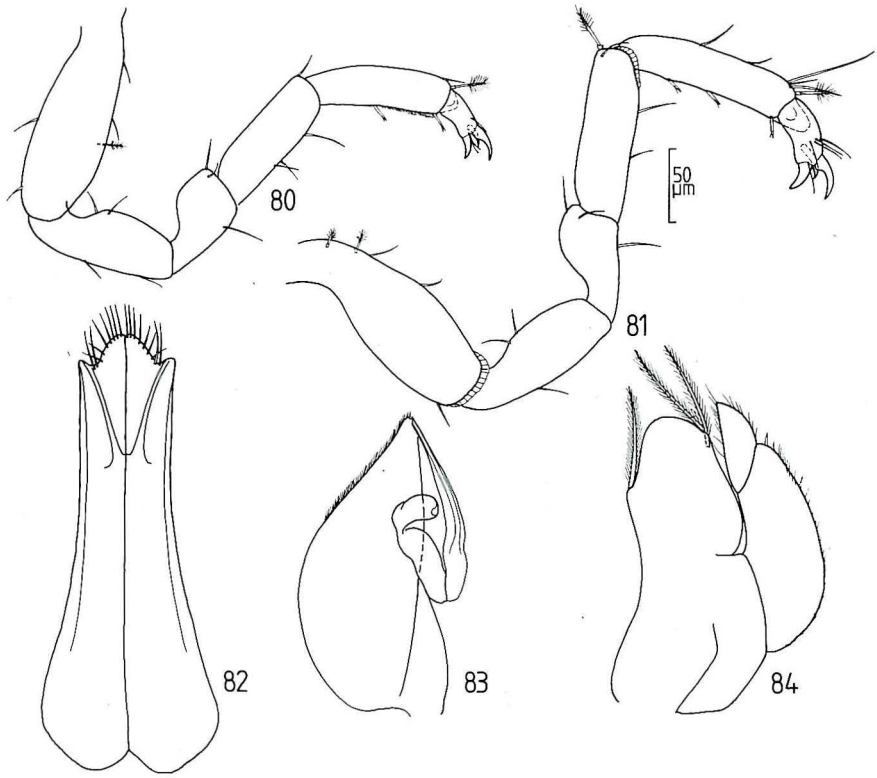


Figs. 70-79 : *Joeropsis schoelcheri* n.sp., ♂ holotype : 70. dorsal view ; 71. rostral plate ; 72. antenna 1 ; 73. antenna 2 ; 74. right mandible ; 75. left mandible, palp omitted ; 76. maxilla 1 ; 77. maxilla 2 ; 78. maxilliped ; 79. uropod and posterolateral margin of pleotelson, ventral view.

Joeropsis schoelcheri n.sp. (Figs. 70-84)

Holotype : ♂ (MNHN), Madras, Baie de Tartane ; dead corals in seagrass beds ; moderately exposed location, 1-2 m, 18 April 1990.

Paratypes : 1 ♂, 1 immature adult (HGM), Petite Anse de Macabou ; algal vegetation on rocks and nearshore patch reef, 0-1 m, 6-10 April 1990. 1 ♂ (MNHN), Petite Anse de Macabou ; dead corals on nearshore patch reef ; exposed reef flat and seaside margin, 0-2 m, 6-15 April 1990. 1 immature adult (HGM), Petite Anse de Macabou ; under stones and rocks, intertidal and shallow rockpools, 10 April 1990.



Figs. 80-84 : *Joeropsis schoelcheri* n.sp., ♂ holotype : 80. pereopod 1 ; 81. pereopod 6 ; 82. first pleopods ; 83. pleopod 2 ; 84. pleopod 3.

Derivatio nominis : the species is named for Victor Schoelcher, who abolished slavery in the West Indies in 1794.

Description, ♂ : total length 1,4 mm, body 3,8 times longer than wide. Pigmentation present as a large, violet-brown, solid patch on cephalon and pereonite 4, almost entirely covering the respective segment ; few pigment reticulations on pereonites 2-3, lacking in ♂ paratype from Petite Anse de Macabou. Lateral margins of cephalon and pereonites smooth. Cephalon 1,3 times wider than long, with semicircular rostral plate ; dorsolateral, well pigmented eyes of moderate size, composed of many small ommatidia, located in anterior half of cephalon. Free pleonite very short. Pleotelson as long as wide, convex lateral margins with distinct denticle in posterior half ; distal margin of pleotelson rounded.

Antenna 1 of 5 articles ; proximal article largest, much wider and longer than articles 2 and 3 together, with fringe of scales along outer and distal margin ; terminal article with 2 aesthetascs and a long, slender seta. Peduncle of 2nd antenna 5-articulate ; proximal 3 articles small and wider than long ; 2nd article with 2 indistinct denticulations and acute,

tooth-shaped process at mediodistal margin ; 4th article longest and widest, with fringe of scales over entire outer and distal margin ; 5th article 7/10 length of 4th article ; flagellum of 7 setose articles ; proximal article longer and wider than remaining flagellar articles together.

Incisor of both mandibles 5-cuspidate, spine row with 7 fringed spines ; molar elongate slender ; mandibular palp 3-articulate, articles subequal in length ; 2nd article with 2 distal, terminal one with 4 distal fringed setae. Slender inner ramus of first maxilla bearing 3 distal setae and some setules ; outer ramus with 12 denticulate spines at mediodistal margin. Ovate inner ramus of maxilla 2 bearing 7 setae at medial and distal margin ; both inner and outer lobe of outer ramus with 4 slender, fringed spines at distal margin. Epipodite of maxilliped slender, half length of endite ; distal margin of endite blunt, indistinctly denticulate, with 2 short setae and 2 very small leaf-like spines ; palp 5-articulate ; proximal article wider than long, with ventrodistal, triangular process extending beyond 2nd article ; 4th article elongate-slender, 4 times length of terminal article.

Ambulatory pereopods similar among one another, posterior margin of rectangular propodus with 2-3 slender compound spines ; pereopods somewhat increasing length from 1-7.

Inner distal lobe of first pleopods triangular, with narrowly rounded distal margin, as long as wide, bearing 7 submarginal setae along ventral margin and 2 submarginal setae near outer base of dorsal margin ; outer distal lobe much shorter than inner lobe, with narrowly rounded distal margin, without setae. Outer margin of pleopod 2 sympodite convex in proximal two-thirds ; distal third almost straight, with fringe of setules, tapering to narrowly rounded apex ; copulatory stylet strongly narrowing in distal third, reaching to apex of sympodite. Broad endopodite of pleopod 3 with 3 distal plumose setae ; exopodite biarticulate, terminal article distally narrowed, articulating obliquely ; lateral margins of exopodite articles barely setulose. Inner distal margin of uropod peduncle subacute, bearing 2 short setae ; medial margin of peduncle with 5 denticulations ; knob-like endopodite twice larger than exopodite, both bearing some slender distal setae, these more longer on endopodite ; moreover, endopodite with 4 feathered sensory setae.

♀ : unknown.

Remarks : *J. schoelcheri* n.sp. resembles in several features *J. antillensis* described herein (general habitus, except for denticulation of pleotelson ; morphology of antennae, maxillae, maxilliped, pereopods and pleopods). It is best distinguished from *antillensis* by its more robust habitus, pigment pattern, the presence of only one denticle on either side of the pleotelsonic margins and distinctly multidenticulate medial margin of the uropod peduncle. Other Caribbean species with similar morphology are *Joeropsis rathbunae* Richardson, 1902 and *J. paradubia* Müller, 1989. *J. schoelcheri* can be distinguished from *rathbunae* by the lack of setae on cephalon and pereonites, as well through the pigment pattern and longer inner distal lobes of the male first pleopods (cf. Kensley 1984 : 74, fig. 45 ; Müller 1989 : 393, fig. 2). The new species is easily distinguished from *J. paradubia* through the pigment pattern (only a solid patch on the cephalon of *paradubia*) and longer inner distal lobes of the male first pleopods (cf. Müller 1989 : 390, fig. 1). Considering only

the pigmentation pattern of the Caribbean species of the genus, *schoelcheri* is most similar to *Joeropsis bifasciatus* Kensley, 1984, though closer affinities do not exist according to the morphology of the first pleopods (cf. Kensley 1984 : 68-70, fig. 42).

The habitat preference of the new species is not clear. The few specimens available were found associated with dead corals, algae and under rocks in 0-2 m depth.

Distribution : Martinique, French Antilles.

Munnidae

Uromunna Menzies, 1962

Uromunna deodata n.sp. (Figs. 85-105)

Holotype : ♀ (MNHN), Petite Anse de Macabou ; dead corals from nearshore patch reef ; exposed reef flat and seaside margin, 0-2 m, 6-15 April 1990.

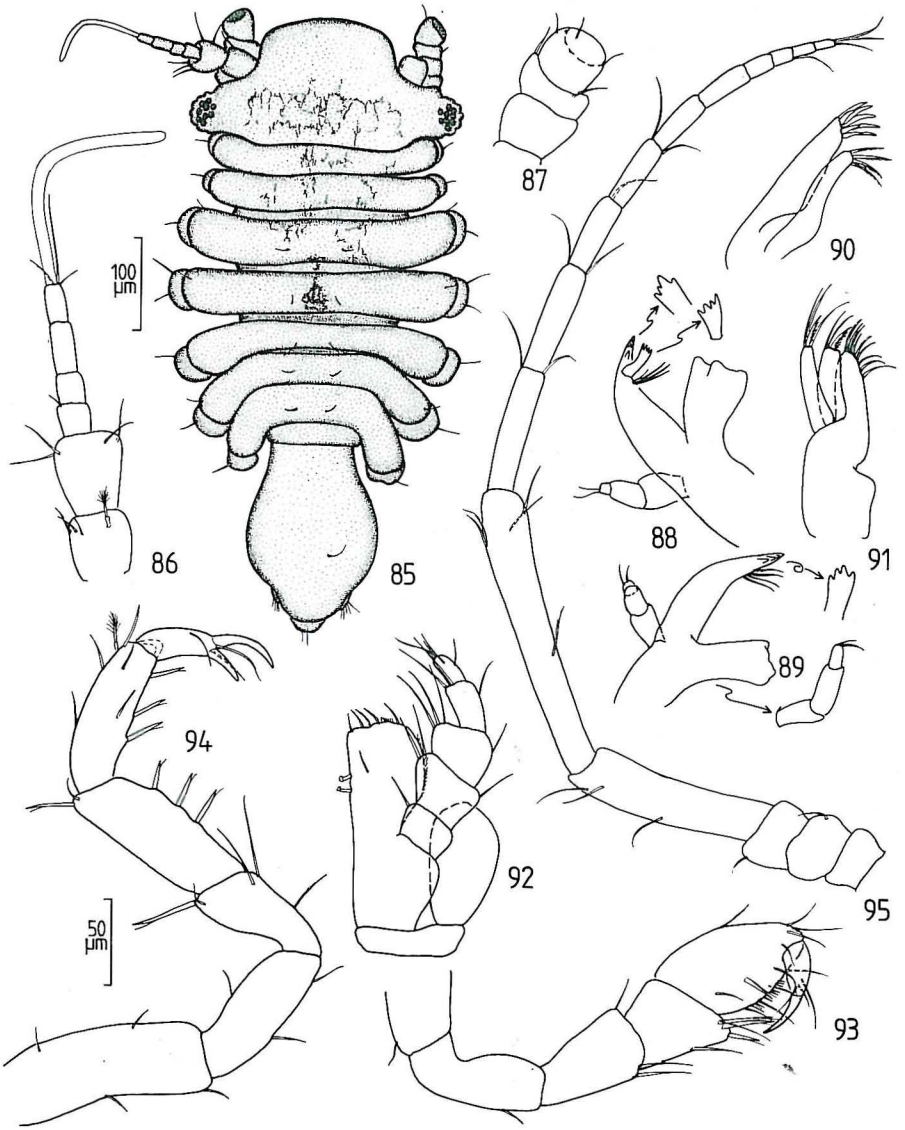
Paratype : ovigerous ♀ (MNHN), collected together with holotype.

Derivatio nominis : the specific name comes from the Latin and means "given by god".

Description, ♂ : total length 0,65 mm, body 2,2 times longer than wide. Cephalon and pereonites 1-4 with some diffuse brownish pigment reticulations. Pereonites increasing in width from 1 to 4, decreasing in width from 4 to 7. Pereonites 3-7 with pair of short mid-dorsal setae ; moreover, pereonites 3-4 and 6 with pair of short dorsolateral setae. All rounded coxae visible in dorsal view. Coxae 1-3 and 5-7 with a short lateral seta, 4th coxa with 2 lateral setae. Cephalon about twice longer than wide, about as wide as pereonite 4. Frontal margin of cephalon slightly convex. Eyes situated on stout eyestalks, relatively large and well-pigmented. Free pleonite hidden beneath posterior margins of 7th pereonite. Pleotelson globose, 1,4 times longer than wide, with smooth margins.

First antenna 6-articulate, with 2 broad basal articles ; distal 4 articles much narrower, penultimate article most slender ; terminal article bearing single aesthetasc and 3 simple setae. Second antennae broken off at 3rd articles ; proximal articles short, wider than long.

Left mandible with 4-cuspidate incisor and lacinia mobilis, spine row of 4 short slender spines ; prominent molar process somewhat widening distally, with triturative surface ; 3-articulate palp relatively short, not reaching to apex of incisor ; terminal article much smaller than 2 proximal articles, bearing two short setae. Right mandible as left one, except for lack of lacinia mobilis. Slender inner ramus of maxilla 1 with 4 fringed setae ; outer ramus bearing 8 short spines at mediodistal margin. Elongate-ovate inner ramus of second maxilla bearing 8 curved setae along mediodistal margin ; both inner and outer lobe of outer ramus with short terminal serrate spine ; moreover, outer lobe with 3, inner lobe with 2 curved setae. Epipodite of maxilliped ovate, somewhat widening in distal half, reaching to distal half of second palp article ; distal margin of endite almost straight, with row of 4 short setae at inner distal margin ; medial margin of endite with 2 slender coupling hooks ; palp 5-articulate ; distal 2 articles much more slender than robust proximal 3 articles, which are wider than long.



Figs. 85-95 : *Uromunna deodata* n.sp. ♂ holotype : 85, dorsal view ; 86. antenna 1 ; 87. proximal articles of antenna 2 ; 88. left mandible ; 89. right mandible ; 90. maxilla 1 ; 91. maxilla 2 ; 92. maxilliped ; 93. pereopod 1 ; 94. pereopod 2. - ♀ paratype : 95. antenna 2.

First pereopod subchelate, smaller than pereopods 2-7 ; dactylus with slender, curved unguis, almost reaching back to proximal margin of ovate propodus ; medial surface of propodus with slender compound spine and 3 curved setae, posterior margin with 4 curved

setae and several spinules ; carpus trapezoid, bearing 3 slender posterodistal compound spines. Pereopods 2-7 increasing much in length from anterior to posterior, with biunguiculate dactylus ; propodus and carpus always with row of some slender compound spines along posterior margin ; slender compound spines present also on anterior margin of propodus, as well as on anterodistal margin of carpus and merus in pereopods 3-7.

First pleopods slender, tapering to narrowly rounded distal part ; each bearing a seta on ventral surface at about midlength and 3 short subapical setae also on ventral surface, sympodite of pleopod 2 with strongly convex outer margin in proximal half ; outer margin in distal half almost straight, with fringe of scales ; spine-like copulatory organ continuously tapering to subacute apex, slightly reaching bevond distal margin of sympodite. Broad endopodite of pleopod 3 with 4 plumose setae in distal third ; exopodite much smaller than endopodite, distally narrowed, with setulose outer margin and subterminal seta. Uropodal rami ovate, endopodite 1,3 times length of exopodite ; exopodite with curved distal setae ; exopodite with 2 distal setae and 4 feathered sensory setae.

♀ : as ♂, except for sexual characters. Peduncle of antenna 2 5-articulate ; 3 basal articles short, wider than long ; articles 4-5 elongate, 5th 1,6 times length of 4th ; flagellum of 10 partly setose articles, articles strongly decreasing in length distally. Shield-shaped operculum tapering in distal half to narrowly rounded apex, bearing pair of short subterminal setae on ventral surface.

Remarks : *U. deodata* n.sp. is quite similar to the following three species : *Uromunna humei* Poore, 1984 from Australia ; *U. nana* (Nordenstam, 1933), with certainty known from the Falkland Islands and southern Chile, but recorted also from Tristan da Cunha, St. Paul and Amsterdam Islands ; and *U. phillipi* Poore, 1984 from Australia. The new species can be distinguished by some minor features as the slightly convex frontal margin of the head, the relative size of the pereonites, a somewhat convex posterolateral pleotelsonic margin, spination of the maxillipedal endite (some leaflike spines in *U. humei* and *phillipi*) and details of the male pleopods 1-2 (see Nordenstam 1933 : 222-225, figs. 56-57 and Winkler 1992 : 319-326, figs. 6-10 for *U. nana* ; Poore 1984 : 75-76, figs. 10-12 for *U. humei* and Poore 1984 : 76-80, figs. 13-15 for *U. phillipi*). Unfortunately most species of *Uromunna* are incompletely characterized, making a discussion of interspecific affinities almost impossible.

No close affinities are apparent to the two other Caribbean species of the genus (*Uromunna caribea* (Carvacho, 1977), *U. reynoldsi* (Frankenberg & Menzies, 1966)).

Distribution : Martinique, French Antilles.

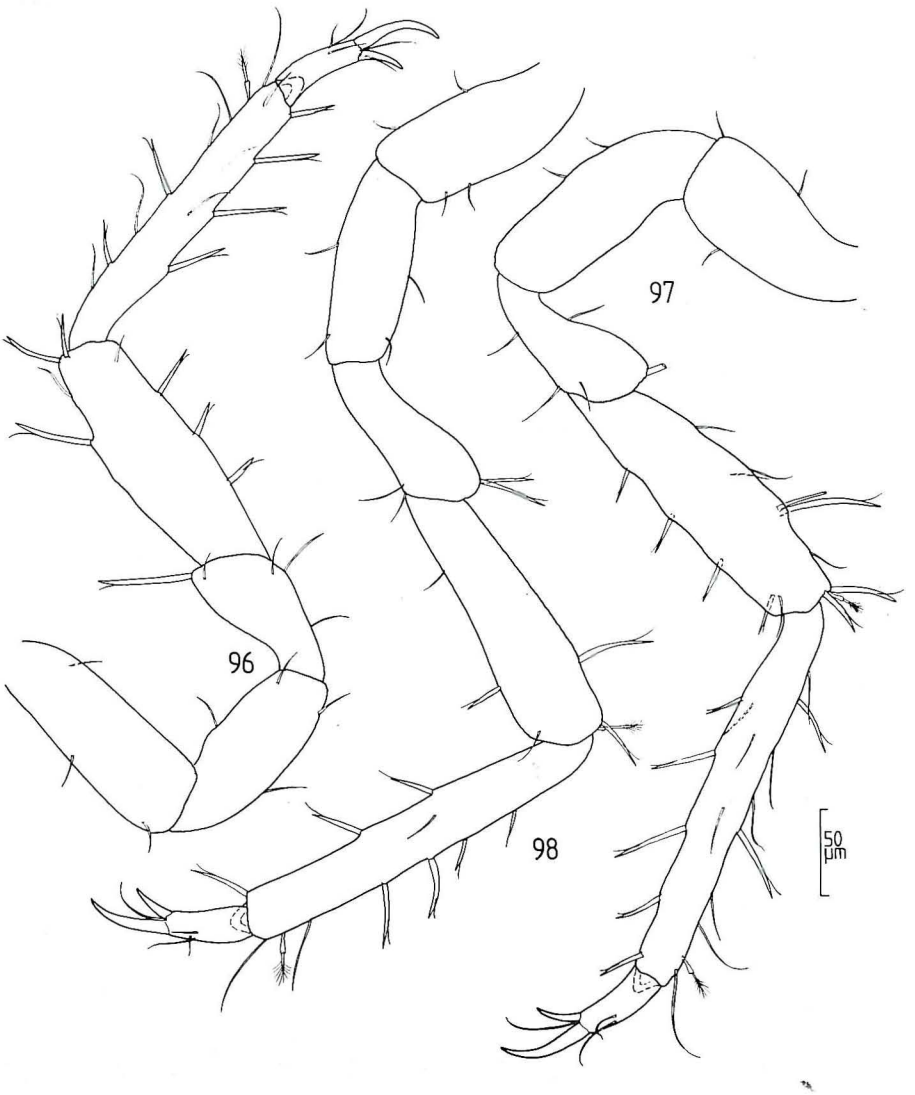
Santiidae

Santia Sivertsen & Holthuis, 1980

Santia milleri (Menzies & Glynn, 1968)

1968 *Antias milleri* Menzies & Glynn, Stud. Fauna Curaçao and other Caribb Isl. 27 (104) : 74-75, fig. 39 A-F.

1981 *Antias milleri*, Pires, Crustaceana 40 (2) : 132-134, figs. 1-5.



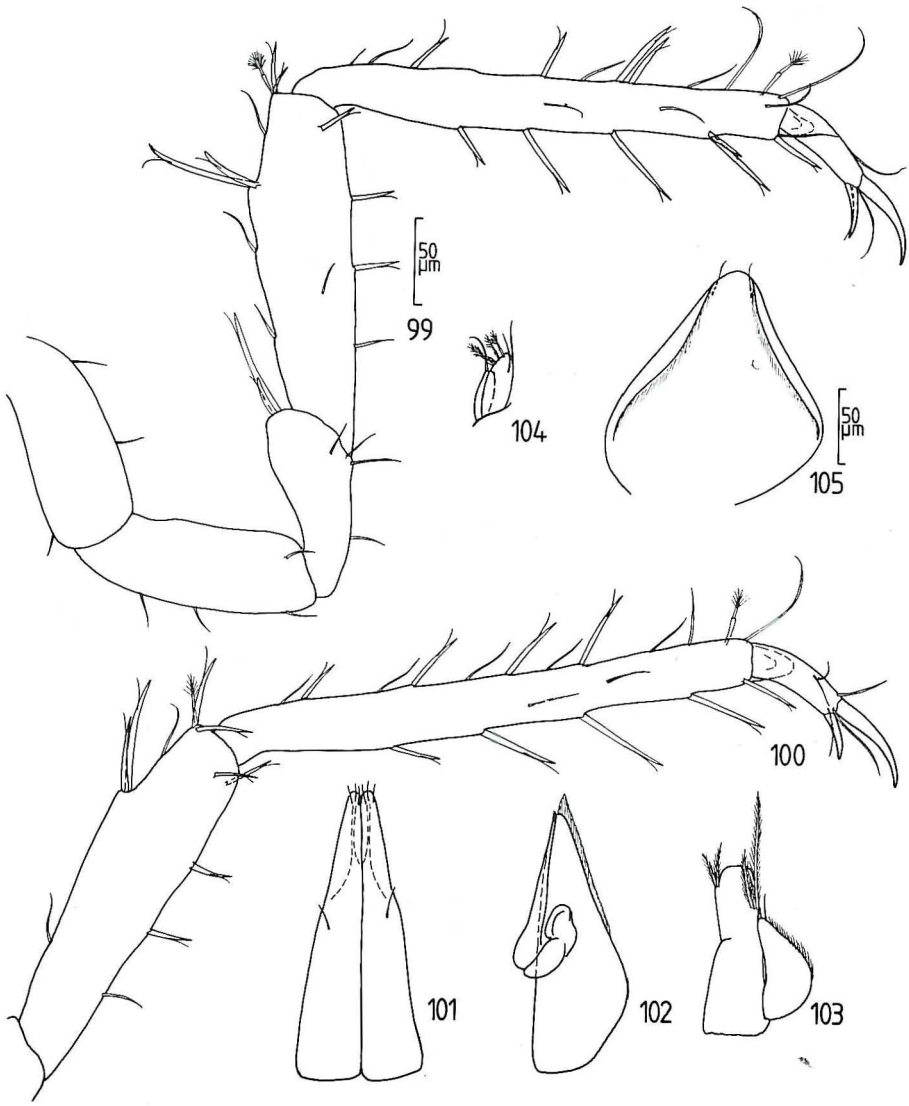
Figs. 96-98 : *Uromunna deodata* n.sp., ♂ holotype : 96. pereopod 3 ; 97. pereopod 4 ; 98. pereopod 5.

1983 *Antias milleri*, Menzies & Kruczynski, Mem. Hourglass Cruises 6 (1) : 97, 99, fig. 34.

1989 *Santia milleri*, Kensley & Schotte, Guide to the marine isopod crustaceans of the Caribbean. Smiths. Inst. Press : 99, fig. 43F-H.

1989 *Santia milleri*, Wolff, Steenstrupia, 15 (7) : 184 [key].

1991 *Santia milleri*, Schotte, Heard & Kensley, Gulf Res. Rep. 8 (3) : 254.



Figs. 99-105 : *Uromunna deodata* n.sp. - ♂ holotype : 99. pereopod 6 ; 100. dactylus, propodus and carpus of pereopod 7 ; 101. first pleopods ; 102. pleopod 2 ; 103. pleopod 3 ; 104. left uropod, ventral view. - ♀ paratype : 105. operculum.

Material : 1 larvigerous ♂ (MNHN), Madras ; Baie de Tartane ; dead corals in seagrass beds ; moderately exposed location, 1-2 m, 18 April 1990. 2 ovigerous ♀♀ (HGM), Petite Anse de Macabou ; dead corals from nearshore patch reef ; exposed reef flat and seaside margin, 0-2 m, 6-15 April 1990.

Remarks : The species has a wide distribution in the subtropical and tropical Western Atlantic. Up to now is has been found in the Gulf of Mexico, Cozumel, Belize, Puerto Rico, Bahamas, Turks and Caicos Islands, Anguilla, Jamaica (Kensley & Schotte 1989 : 99), Caribbean coast of Colombia (unpublished record) and Brazil (Pires 1981 : 132-134, fig. 1).

The habitat of this species seems to be rather diverse : it was found associated with dead coral substrate, the algae *Amphiroa fragilissima*, *Halimeda* and *Sargassum* in 0-6 m depth.

Pleurocopidae
Pleurocope Walker, 1901
Pleurocope floridensis Hooker, 1985

1985 *Pleurocope floridensis* Hooker, Proc. biol. Soc. Wash. 98 (1) : 257-261, figs. 3-4 .
1989 *Pleurocope floridensis*, Kensley & Schotte, Guide to the marine isopod crustaceans of the Caribbean. Smiths. Inst. Press : 98, figs. 43C-E, 44.
1989 *Pleurocope floridensis*, Wolff, Steenstrupia 15 (7) : 178 [text].
1991 *Pleurocope floridensis*, Schotte, Heard & Kensley, Gulf Res. Rep. 8 (3) : 254.

Material : 1 ovigerous ♀, 2 immature adults (HGM), Madras, Baie de Tartane ; dead corals in seagrass beds, moderately exposed location, 1-2 m, 18 April 1990. 2 ♀♀ (1 ovigerous) (MNHN), La Trinité ; bank reef west of Pnte Rouge, Anse Rivière ; exposed reef flat, dead corals, 0-2 m, 12 April 1990.

Remarks : Though discovered only few years ago, this highly characteristic species has meanwhile been recorded from some other places in the West-Atlantic : Belize ; Turks and Caicos Islands ; Florida Middlegrounds. The vertical distribution ranges from 0-55 m. The substrate preference is not very specific. It was discovered in "artificial habitat cryptofaunal samples" (Hooker 1985 : 255), obtained from *Neogoniolithon* washings (Schotte, Heard & Kensley 1991 : 254), and associated with dead corals in Martinique.

It is noteworthy that *P. floridensis* was not found during my extensive fieldwork in the Santa Marta area, Caribbean Sea of Colombia (1985-86).

Incertae Sedis
Mexicope Hooker, 1985
Mexicope kensleyi Hooker, 1985

1985 *Mexicope kensleyi* Hooker, Proc. biol. Soc. Wash. 98 (1) : 261-265, figs. 5-6 .
1989 *Mexicope kensleyi*, Kensley & Schotte, Guide to the marine isopod crustaceans of the Caribbean. Smiths. Inst. Press : 81, fig. 37.
1989 *Mexicope kensleyi*, Wolff, Steenstrupia 15 (7) : 188 [text].
1991 *Mexicope kensleyi*, Schotte, Heard & Kensley, Gulf. Res. Rep. 8 (3) : 253.

Material : 1 immature adult (HGM), Petite Anse de Macabou ; dead corals from nearshore patch reef ; exposed reef flat and seaside margin, 0-2 m, 6-15 April 1990.

Remarks : This unique species has not been assigned to a certain family up to now. Its known geographic distribution is the same as for *Pleurocope floridensis*, plus an unpubli-

shed record from the Santa Marta area at the Caribbean Coast of Colombia (in prep.). The vertical distribution ranges from the intertidal to 30 m, where it was obtained from cryptofaunal samples (dead corals, *Neogoniolithon* washings, sand-rubble bottom).

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REFERENCES

HOOKER, A., 1985. New species of Isopoda from the Florida Middlegrounds (Crustacea : Peracarida). *Proc. biol. Soc. Wash.*, 98 (1) : 255-280.

KENSLEY, B., 1984. The Atlantic Barrier Reef Ecosystem at Carrie Bow Cay, Belize, III : New marine Isopoda. Smiths. *Contr. mar. Sci.* 24 : 1-81.

KENSLEY, B. & M. SCHOTTE, 1989. Guide to the marine isopod crustaceans of the Caribbean. Smiths. Inst. Press (N. Dutro ed.) : 1-308.

MÜLLER, H.-G., 1989. Joeropsidae aus N-Kolumbien, mit zwei Neubeschreibungen (Crustacea : Isopoda : Asellota). Senckenbergiana biol. 69 (1988) (4/6) : 389-396.

MÜLLER, H.-G., 1990. Janiridae from the Caribbean Sea of Colombia. Senckenbergiana biol. 70 (1989) (1/3) : 203-207.

MÜLLER, H.-G., in press. Janiridae from coral reefs at the Society Islands, French Polynesia (Crustacea : Isopoda). *Zool. Abh. Staatl. Mus. Tierkunde* Dresden.

NORDENSTAM, A., 1933. Marine Isopoda of the families Serolidae, Idotheidae, Pseudidotheidae, Arcturidae, Parasellidae, Stenetriidae, mainly from the South Atlantic. *Further zool. Res. Swed. Antarct.* Exped. 1901-1903. 3 (1) : 1-284.

PIRES, A.M.S., 1981. The occurence of *Antias milleri* (Isopoda, Asellota) on the Brazilian coast and a description of the male. *Crustaceana* 40 (2) : 132-134.

POORE, G.C.B., 1984. Redefinition of *Munna* and *Uromunna* (Crustacea : Isopoda : Munnidae), with descriptions of five species from coastal Victoria. *Proc. r. Soc. Vict.* 96 (2) : 61-81.

SCHOTTE, M., R.W. HEARD & B. KENSLEY, 1991. Studies on the Crustacea of the Turks and Caicos Islands, British West Indies. III. Records of marine Isopoda from Pine Cay, Fort George Cay and adjacent waters. Gulf Res. Rep., 8 (3) : 251-257.

WINKLER, H., 1992. On two Magellanic Munnidae ; a new species of *Munna* and *Uromunna nana* (Nordenstam, 1933) (Crustacea : Isopoda : Asellota). *J. nat. Hist.*, 26 : 311-326.