

Description of *Metacirolana agujae* n. sp., and redescription of *M. agaricicola* Kensley, 1984, from the Caribbean Sea of Colombia (Isopoda: Cirolanidae)

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Abstract

Metacirolana agaricicola Kensley, 1984 from the Caribbean Sea of Colombia is redescribed, with particular reference to its sexual dimorphism. *Metacirolana agujae* n. sp., known only from Colombia, is described. The interspecific affinities of both species are discussed and notes on their habits are given.

Zusammenfassung

Metacirolana agaricicola Kensley, 1984 wird, basierend auf Material von der Karibischen Küste Kolumbiens wiederbeschrieben, unter ausführlicher Berücksichtigung des Geschlechtsdimorphismus. *Metacirolana agujae* n. sp. aus dem gleichen Gebiet wird beschrieben. Die zwischenartlichen Beziehungen beider Arten werden diskutiert, mit Anmerkungen zu deren Habitatpräferenz.

Introduction

This contribution continues the examination of the marine isopod fauna from the Santa Marta area at the Caribbean Sea of Colombia.

The genus *Metacirolana* is represented by two species, *Metacirolana agaricicola* Kensley, 1984, previously known only from Belize (Kensley & Schotte, 1989: 154) and a species new to science, *Metacirolana agujae* n. sp.

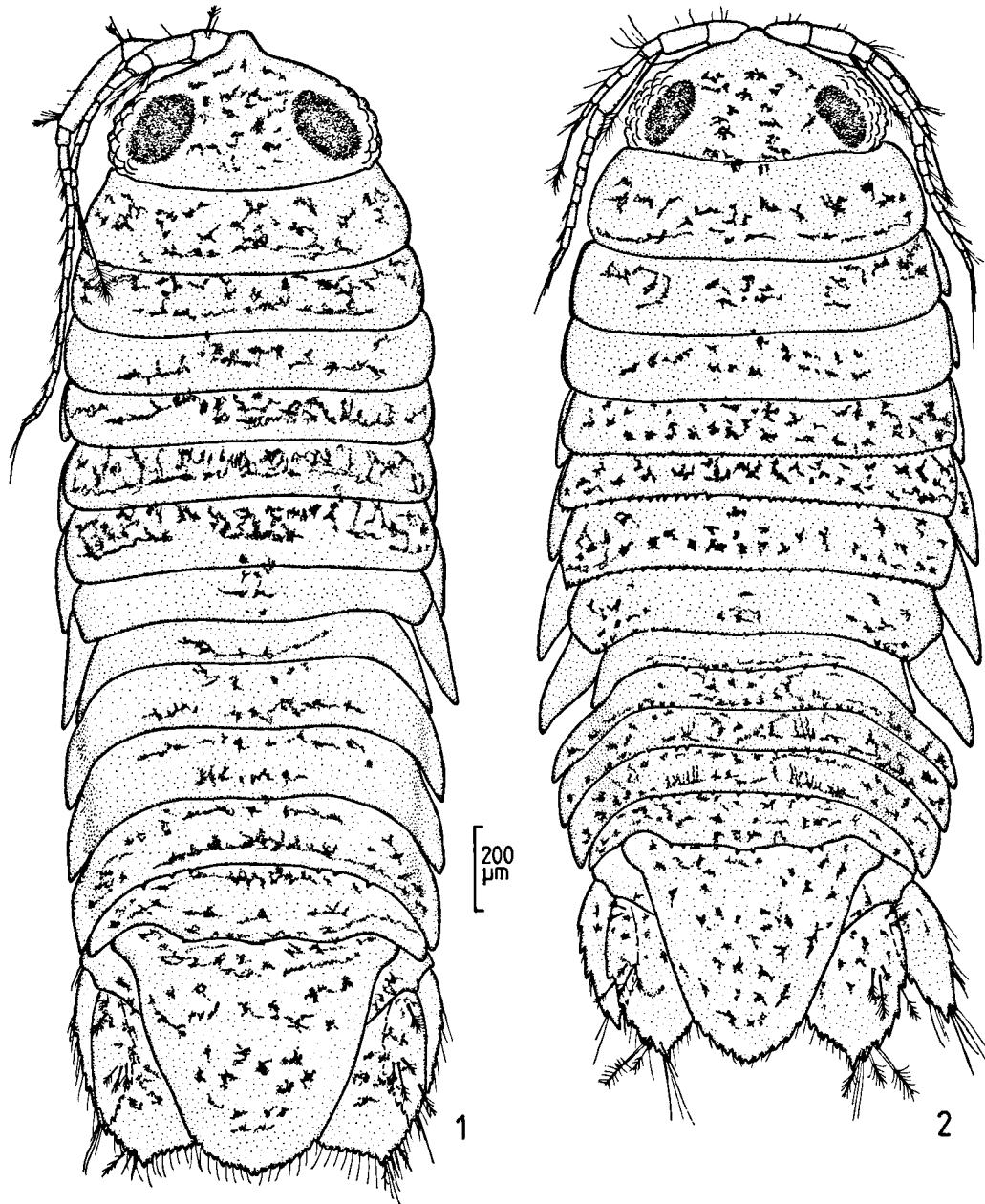
The new species was easily recognizable by the characteristic shape of the distal pleotelsonic mar-

gin. The second species, however, proved difficult to identify.

While examining Colombian specimens, some features in disagreement with the original description of *M. agaricicola* (see Kensley, 1984: 33, Figs. 21–22) could be found. Females from Colombia bear several denticles on the posterior margins of pereonites 4–7 and all pleonites. Few denticles are present on the posterior margins of pleonites 4–5 in the male. Propodi, carpi, and meri of pereopods 1–3 bear some toothlike tubercles on their posterior margins. Moreover, no sexual dimorphism in the body form was mentioned in the original description (Kensley, 1984: 36).

However, re-examination of one male, six females and two immature adult paratypes from Belize (National Museum of Natural History, Washington, coll. no. USNM 211261) revealed that all these features have been overlooked or misinterpreted in the original description. The neglect of the pereonal and pleonal denticulations in the Belizean material may be due to the condition of the material. It seems that the specimens have been deposited for a while in an acidiferous preservative, making it difficult to observe delicate structures. Staining of one female with "Serva Blue R" showed these denticulations more distinctly (Fig. 8). It may be possible that the number of pereonal and pleonal denticles is lower in the Belizean material.

Specimens are deposited in the Zoological Museum, Amsterdam (ZMA), the National Museum of



Figs. 1–2. *Metacirolana agaricicola* Kensley, 1984, from Colombia: 1, dorsal view ♂; 2, dorsal view ♀

Natural History, Smithsonian Institution, Washington, D.C. (USNM), the collection of the Instituto de Investigaciones Marinas de Punta de Betin (INVEMAR) in Santa Marta and in the author's collection.

Metacirolana agaricicola Kensley, 1984
(Figs. 1–30)

Material. – Belize: 1 ♂, 6 ♀♀, 2 immature adults, paratypes (USNM 211261), on *Agaricia* sp. coral on fore reef, 15.2 m. Colombia: Punta de Betin, Santa Marta: 1 ♀ (coll. Müller),

coral rubble, 22–23 m, 19 June 1985; 1 immature adult (ZMA), coral rubble, 6 m, 4 August 1985; 1 ♂ (coll. Müller), coral rubble, 20–22 m, 26 January 1986; 5 ♂♂, 9 ♀♀, 1 immature adult (coll. Müller), coral rubble, 30 m, 10 February 1986. Isla Morrito de Santa Marta: 3 ♂♂, 7 ♀♀ (2 gravid) (USNM), coral rubble, 30 m, 18 February 1986. Isla Morro Grande de Santa Marta: 1 ♀ (ZMA), coral rubble, 25 m, 18 September 1985; 3 ♂♂, 7 ♀♀ (2 gravid) (ZMA), coral rubble, 18 m, 9 October 1985; 5 ♂♂, 16 ♀♀ (2 gravid) (ZMA), coral rubble, 30 m, 19 March 1986. Punta Aguja, about 5 km E. of Santa Marta: 1 ♀ (ZMA), coral rubble, 17–20 m, 7 December 1985; 1 ♂, 1 ♀ (INVERMAR), coral rubble, 17–19 m, 9 January 1986. Bahia Concha, about 10 km N.E. of Santa Marta: 1 immature adult (ZMA), coral rubble, 1.5–5 m, 7 January 1986. Bahia Chengue, about 15 km N.E. of Santa Marta: 1 ♂, 1 ♀ (ZMA), coral rubble, 15–17 m, 21 January 1986. Bahia Guachaquita, about 35 km N.E. of Santa Marta: 1 ♂, 1 ♀ (ZMA), coral rubble, 13 m, 28 February 1986. Arrecifes, Punta el Diamante, about 40 km N.E. of Santa Marta: 3 ♀♀ (ZMA), from algae, hydroids, and bryozoans on rocks, 6–10 m, 26 September 1986.

Description. – Male: Body about 3 times as long as wide, with scattered brown pigment patches and reticulations, total length 2.0–2.8 mm (Fig. 1). Cephalon with median rostral process; eyes very large, darkly pigmented. Coxae of pereonites 2–7 with distinct furrow, visible in lateral view (Fig. 3). Lateral margins of pleonites not markedly produced horizontally. Pleotelson slightly wider than long; posterior margin (Fig. 15) serrated, provided with 14–16 short, plumose setae, each seta within serration. Cephalon with frontal lamina broadened anteriorly and clypeus projecting anteroventrally (Fig. 4). Penes relatively short (Fig. 5).

Antenna 1 (Fig. 6) peduncle of 3 articles, article 3 less than half as long as article 2; flagellum of 9 articles; two proximal articles with about 8–10 aesthetascs, remaining articles with single aesthetasc. Antenna 2 (Fig. 7) with 5 peduncular articles, distal one subequal to third and fourth together; flagellum of 13 setose articles, setae longest on terminal article.

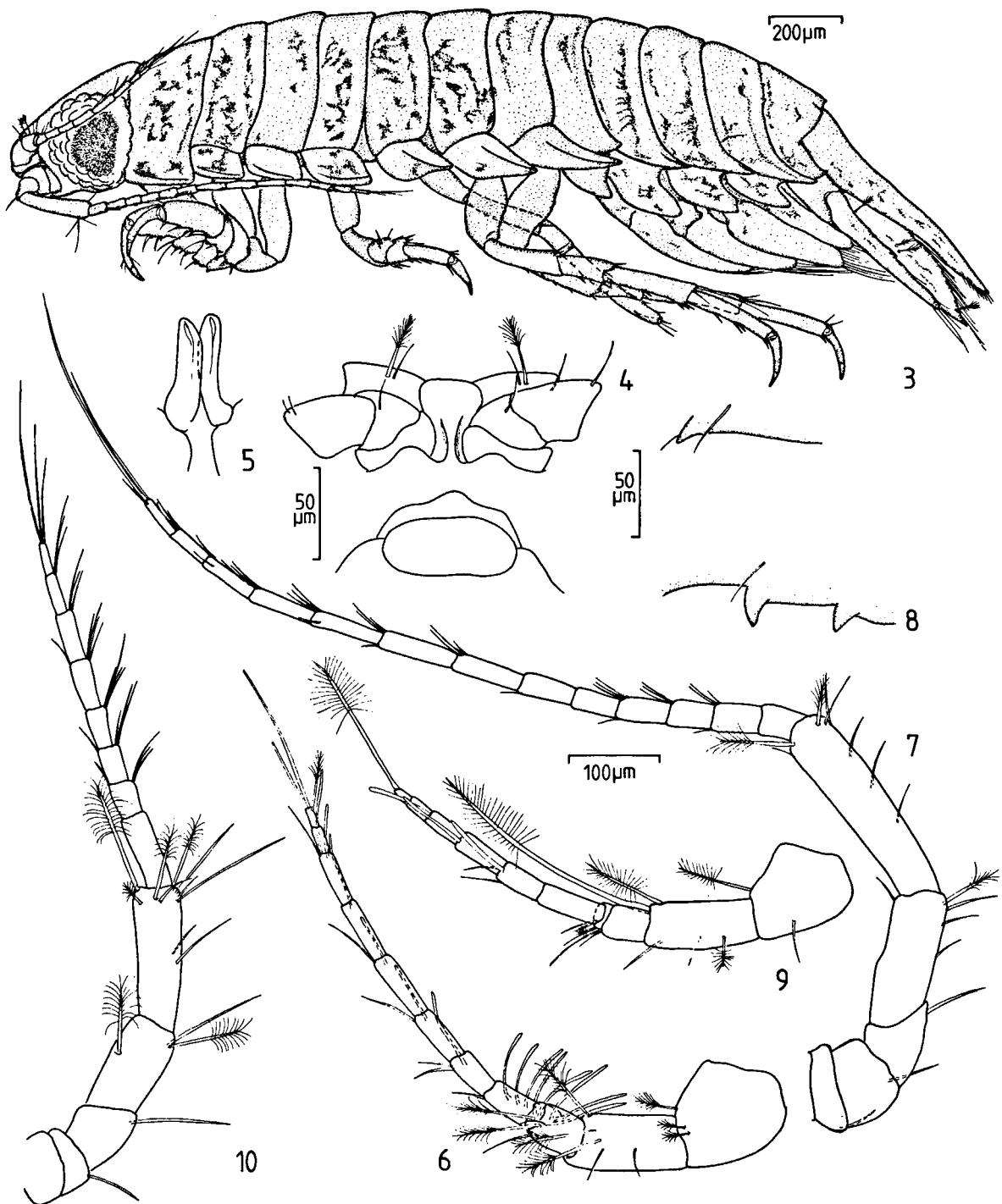
Mandible (Fig. 11), second palp article as long as first and third together; second and third article with some spines in distal half; incisor of 4 sclerotized cusps, spine-row of 7–8 spines. Maxilla 1 (Fig. 12), narrow endopodite with 3 distal, feebly plumose spines; outer ramus with 9–11, partly serrate spines. Maxilla 2 (Fig. 13), inner ramus with 6 distal spines, innermost long and fringed; inner and outer lobe of outer ramus with 3 distal spines. Maxilliped (Fig. 14) slender, endite extending beyond

midlength of second palp article, with 3 fringed distal setae and coupling hook on medial margin; palp article 3 much broader and longer than other articles.

Pereopods 1–3 (Figs. 18–20) short and robust; pereopods increasing in length from 4–6 (Figs. 21–23); pereopod 7 (Fig. 24) slightly shorter than pereopod 6. Pereopod 1 shortest, propodus oval, posterior margin with 2 toothlike tubercles and 3 serrate compound spines; carpus triangular, posterior margin with pair of toothlike tubercles and a single serrate compound spine; posterior margin of merus with 3 serrate compound spines; mesial margin of ischium with single compound spine; basis longer than carpus, merus, and ischium together. Pereopods 2 and 3 more slender than pereopod 1, anterolateral margin of merus produced.

Pleopod 1 (Fig. 26), basis with 3 retinacula and pair of laterodistal fringed setae; endopodite roughly parallel-sided, 2.3 times longer than wide, distal margin with 16 plumose setae; exopodite distally widening, distal margin with 19 plumose setae, 1.6 times longer than wide. Pleopod 2 (Fig. 27), endopodite two times longer than wide, copulatory stylet articulating at inner base, slightly reaching beyond ramus; distal margin of ramus with 14 plumose setae; exopodite 2 times longer than wide, distal margin with 19 plumose setae; retinacula and fringed setae of basis as in pleopod 1. Pleopod 3 (Fig. 28), basis with 3 retinacula and pair of fringed setae; endopodite 1.7 times longer than wide, with 14 distal plumose setae; exopodite broadly oval, with suture line at about midlength; distal margin with 22 plumose setae. Pleopod 4 (Fig. 29), retinacula and setae of basis as in pleopod 3; endopodite 1.7 times longer than wide, distal margin with 12 plumose setae; exopodite broadly oval with transverse suture line and 25 plumose setae in distal half. Pleopod 5 (Fig. 30), basis with 3 small retinacula; inner distal margin with short, simple seta; endopodite 1.8 times longer than wide, bare of any setae; exopodite broadly oval with transverse suture line, distal margin with 21 plumose setae. (N.B.: All plumose setae on rami of pleopods are drawn as simple setae.)

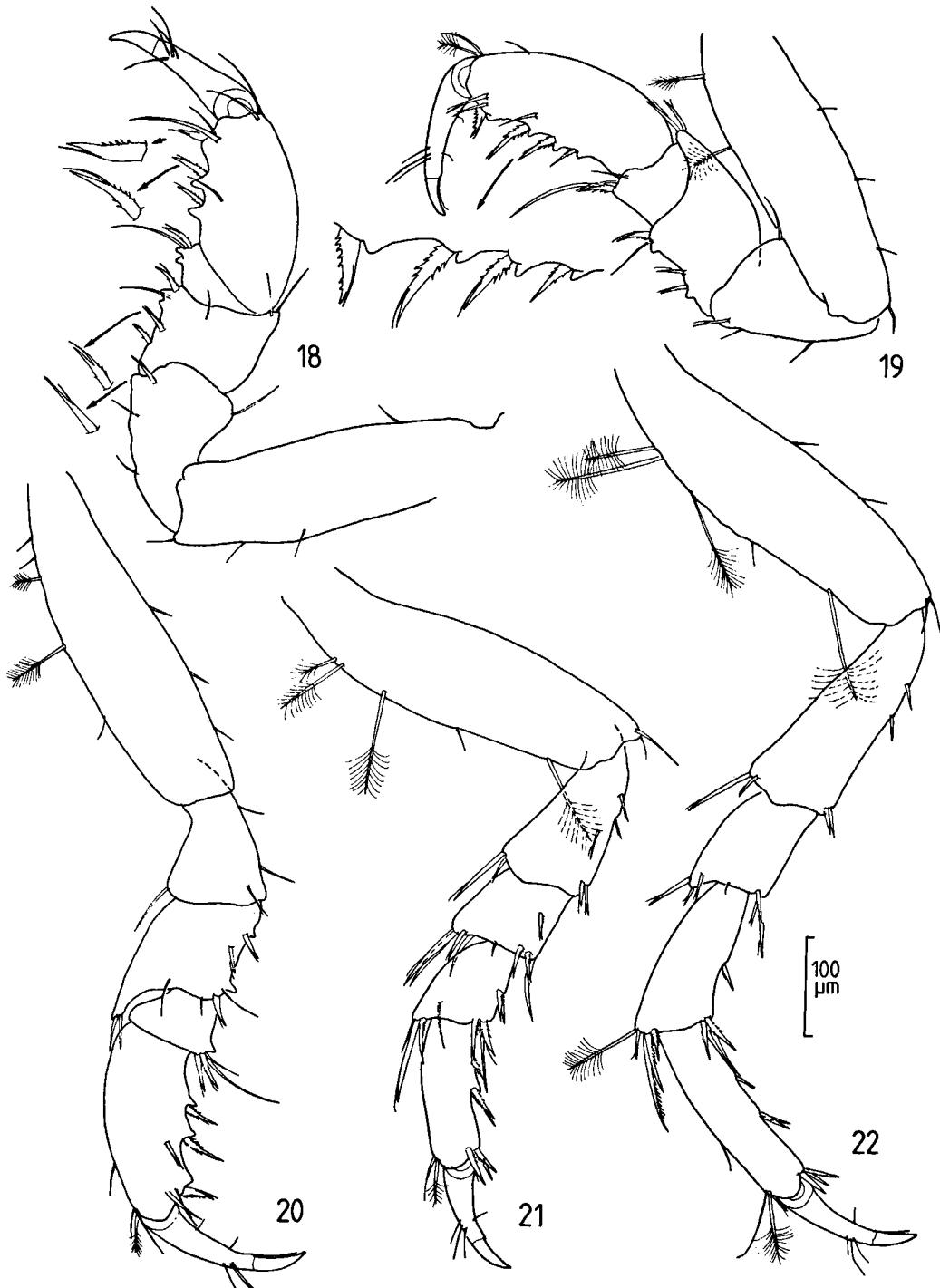
Outer distal margin of uropodal sympodite pro-



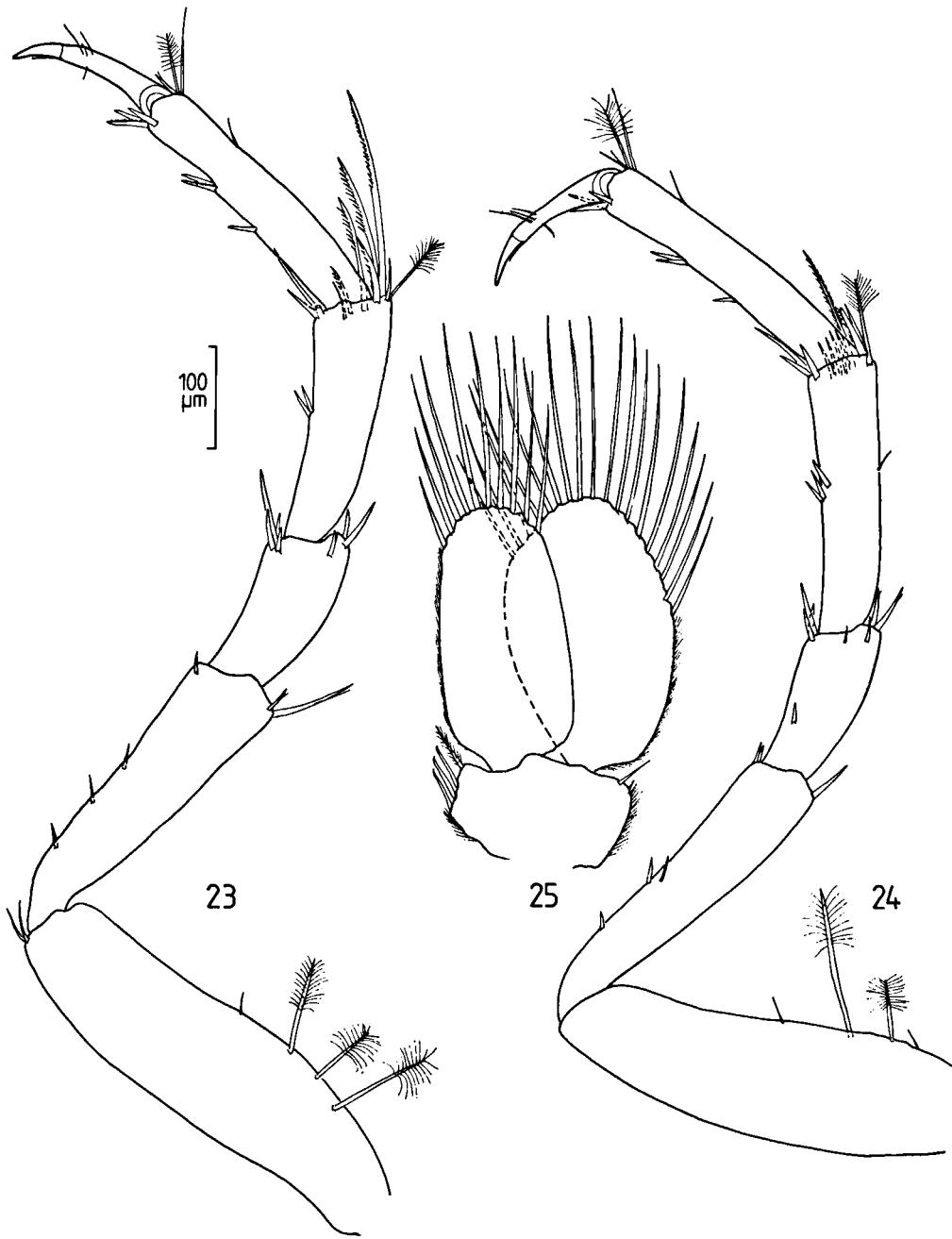
Figs. 3–10. *Metacirolana agaricicola* Kensley, 1984, from Colombia: 3, lateral view σ ; 4, clypeal region σ ; 5, penes σ ; 6, antenna 1 σ ; 7, antenna 2 σ ; 8, φ paratype from Belize (USNM coll. no. 211261), denticles on posterolateral margins of pleonites 3 and 4; 9, antenna 1 φ ; 10, antenna 2 φ .



Figs. 11–17. *Metacirolana agaricicola* Kensley, 1984, from Colombia: 11, mandible ♂; 12, maxilla 1 ♂; 13, maxilla 2 ♂; 14, maxilliped ♂; 15, posterior margin of pleotelson ♂; 16, uropod ♂; 17, uropod and pleotelson ♀.



Figs. 18–22. *Metacirolana agaricicola* Kensley, 1984, ♂, from Colombia: 18, pereopod 1; 19, pereopod 2; 20, pereopod 3; 21, pereopod 4; 22, pereopod 5.

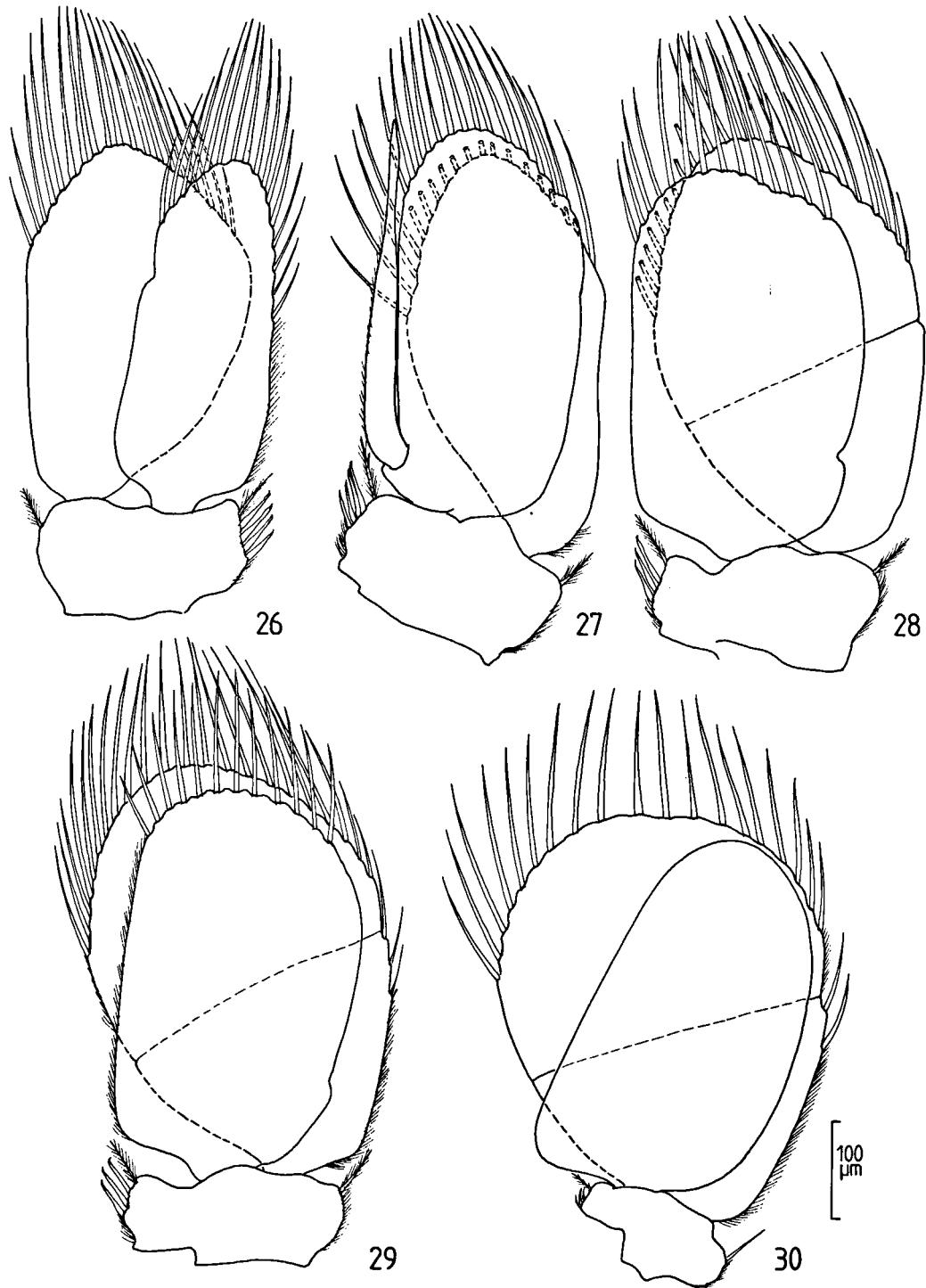


Figs. 23–25. *Metacirolana agaricicola* Kensley, 1984, from Colombia: 23, pereopod 6 ♂; 24, pereopod 7 ♂; 25, pleopod 2 ♀ (plumosity of setae in pleopod omitted).

duced into elongate-triangular lobe with distal plumose seta; endopodite somewhat widened distally, with serrate margin; plumose setae set within serrations; dorsal surface near outer margin with 7 feathered sensory setae; exopodite narrow, about

2.3 times longer than wide, its margin with strong indentations and plumose setae set within these marginal teeth (Fig. 16).

Female: Body (Fig. 2) about 2.5 times longer than wide, therefore more robust than male, total length



Figs. 26–30. *Metacirolana agaricicola* Kensley, 1984, ♂, from Colombia: 26, pleopod 1; 27, pleopod 2; 28, pleopod 3; 29, pleopod 4; 30, pleopod 5. (Plumosity of setae not drawn.)

2.0–2.7 mm. Pigmentation as in male. Cephalon with median rostral process; darkly pigmented eyes slightly smaller than in male. Pleotelson narrower than in male, slightly longer than wide; posterior margin with fewer serrations, provided with 10 short plumose setae; each seta set within serration. Posterior margins of pereonites 4–7 and all pleonites with many denticles.

Antenna 1 (Fig. 9), inner distal margin of first peduncular article with 1, of second peduncular article with 2 feathered sensory setae; distal sensory seta of second article very long, extending beyond 5th article of flagellum; flagellum of 6–7 articles, articles 3–5 with single aesthetasc; terminal article with long, feathered sensory seta. Flagellum of second antenna (Fig. 10) shorter than in male, of 8 setose articles.

Anterior margin of basis in pereopods 5 and 6 with some denticles (not drawn). Pleopod 2 (Fig. 25), endopodite 2.1 times longer than wide, distal margin with 10 plumose setae; exopodite broadly rounded, 1.6 times longer than wide, distal margin with 18 plumose setae (drawn as simple setae).

Uropods (Fig. 17) similar to male, with fewer marginal indentations and far fewer plumose setae.

Remarks. — *Metacirolana agaricicola* appears to be closely allied with *M. agujae* n. sp. described below. Females of both species are similar in general habitus and shape of their appendages. *M. agaricicola* is easily distinguished from that species by the arrangement of denticulations and setae of the distal pleotelsonic margin and the denticles at the posterior or pereonal and pleonal margins. Most specimens of *M. agaricicola* are larger than *M. agujae* and have more strongly developed pigment reticulations.

M. agaricicola is a subtidal species, known from depths of about 1 to 30 m. Often it has been found associated with coral rubble.

Distribution. — Belize, Caribbean Sea of Colombia.

Metacirolana agujae n. sp. (Figs. 31–53)

Material. — Holotype, from Colombia: Punta Aguja, about 5 km E. of Santa Marta, 1 ♀ (ZMA), coral rubble, 17–19 m, 9 January 1986.

Paratypes, from Colombia: Punta Aguja, 2 ♀ ♀, 1 postmanca (ZMA), coral rubble, 17–20 m, 7 December 1985. Bahia Concha, about 10 km N.E. of Santa Marta, 3 ♀ ♀ (coll. Müller), coral rubble, 1.5–5 m, 7 January 1986.

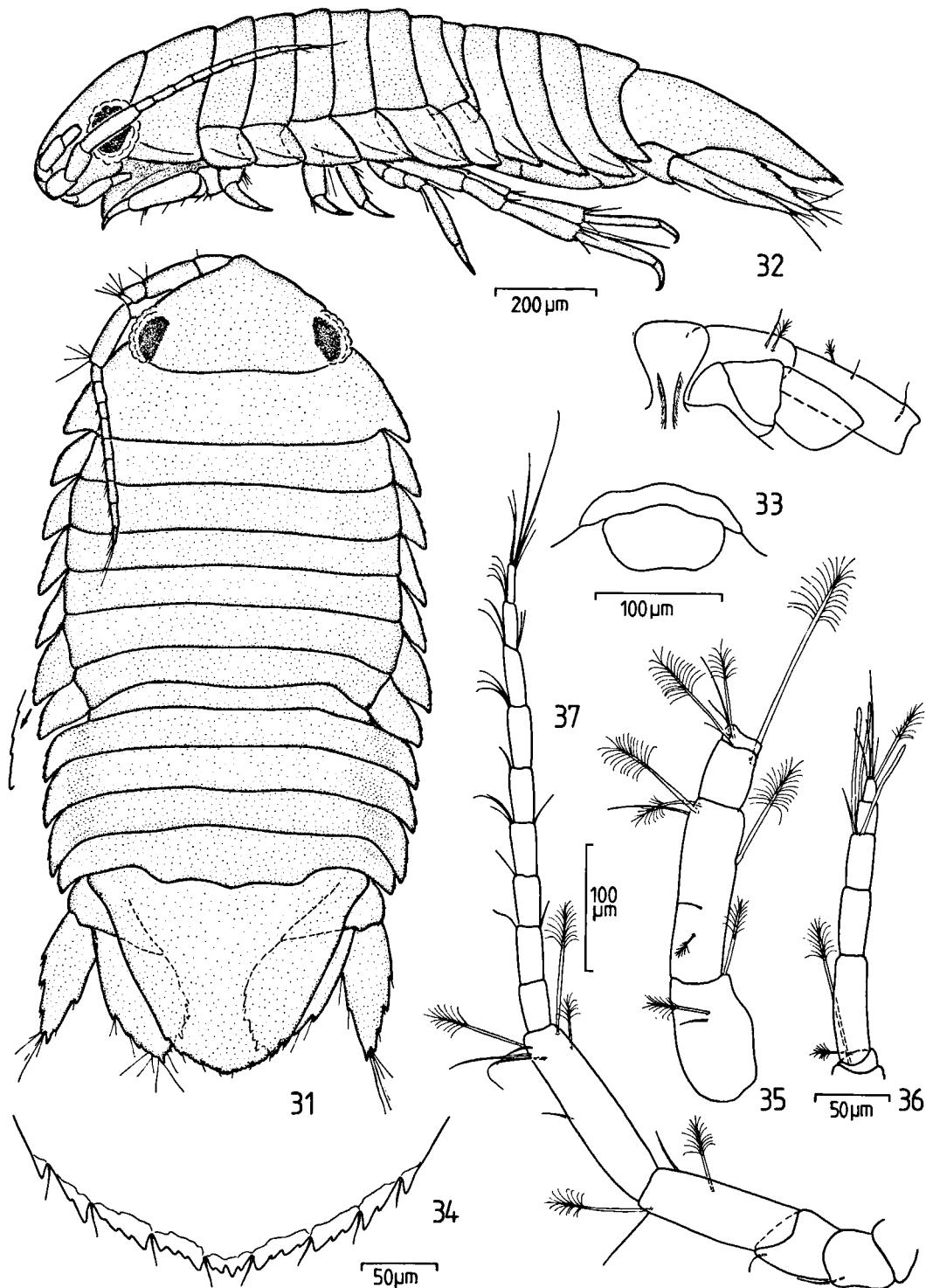
Diagnosis. — *Metacirolana* without or with sparsely developed pigment reticulations. Pereon and pleonites 2–5 with shallow lateral serrations. Distal pleotelsonic setae short, separated by 2–4 denticles.

Description of female. — Body relatively robust, twice as long as wide (Fig. 31). Holotype without any pigment pattern; paratypes from Bahia Concha with sparsely developed pigment reticulations. Total length 1.65–2.1 mm. Cephalon with shallow median rostral process; eyes large and well-pigmented, situated laterally. Coxae of pereonites 2–7 with distinct furrow, visible in lateral view (Fig. 32). Lateral margins of pleonites not markedly produced horizontally. Pleotelson 1.5 times wider than long; posterior margin with denticulations in characteristic arrangement: 8 short, simple setae separated by 2–4 denticulations, as figured (Fig. 34). Cephalon with frontal lamina broadened anteriorly and clypeus (Fig. 33) projecting anteroventrally.

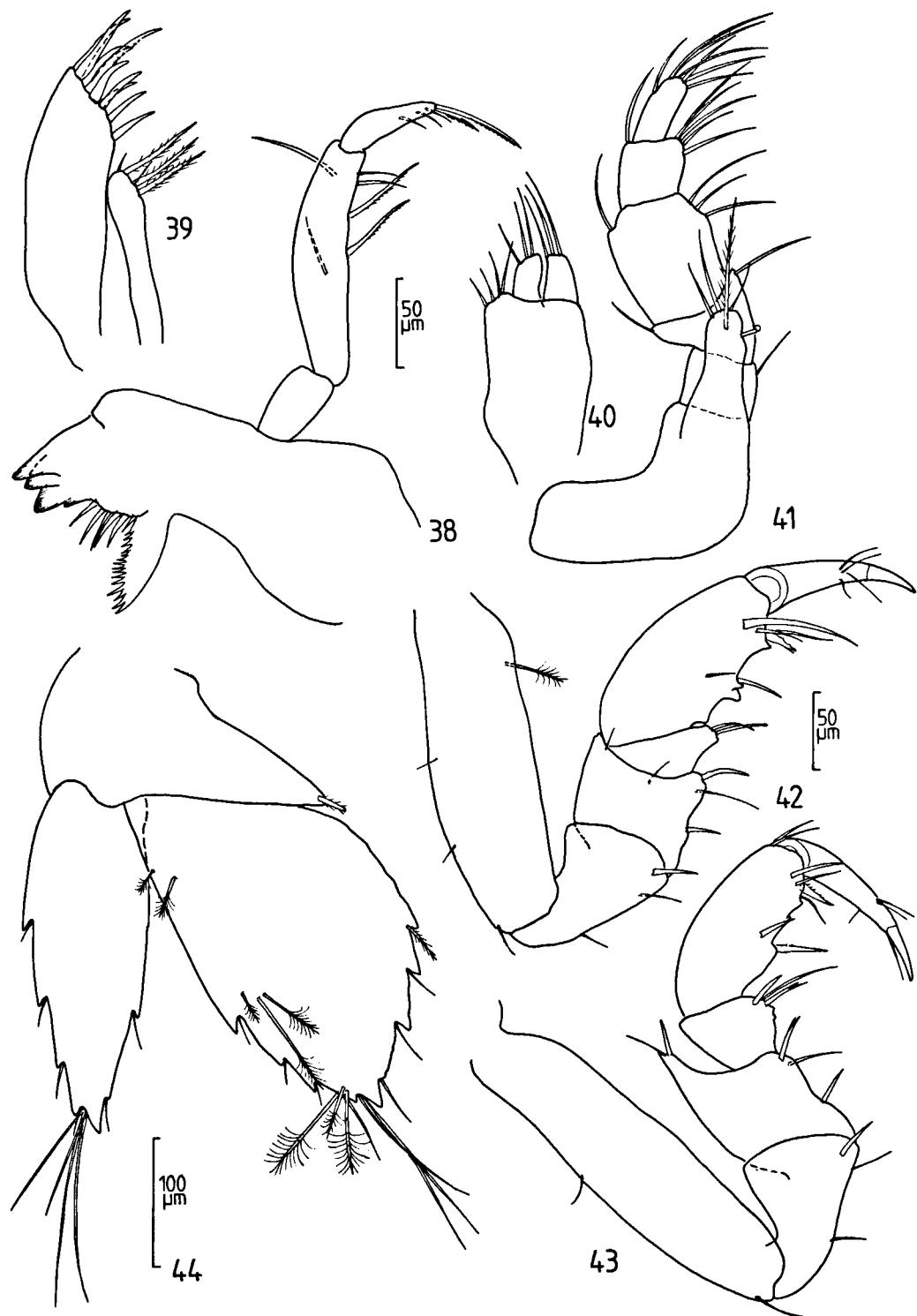
Antenna 1, peduncle of 3 articles (Fig. 35); second article about as long as first and third together; flagellum of 6 articles (Fig. 36); 4th article with 2, 5th article with single aesthetasc. Antenna 2 (Fig. 37) of 5 peduncular articles, distal one as long as third and fourth together; flagellum of 9 setose articles.

Mandible (Fig. 38), second palp article somewhat longer than first and third together; second and third article with some spines in distal half; incisor of 4 sclerotized cusps, spine-row of 6 spines. Maxilla 1 (Fig. 39), narrow endopodite with 3 distal, feebly plumose spines and 2 short, simple setae; outer ramus with 9 partly serrate spines. Maxilla 2 (Fig. 40), inner ramus with 4 short distal spines; inner and outer lobe of outer ramus with 3 distal spines. Maxilliped (Fig. 41) slender, endite extending beyond midlength of second palp article, with 3 distal simple setae, and a longer, feebly plumose seta; a single coupling hook on mediodistal margin of endite; third article of palp longest.

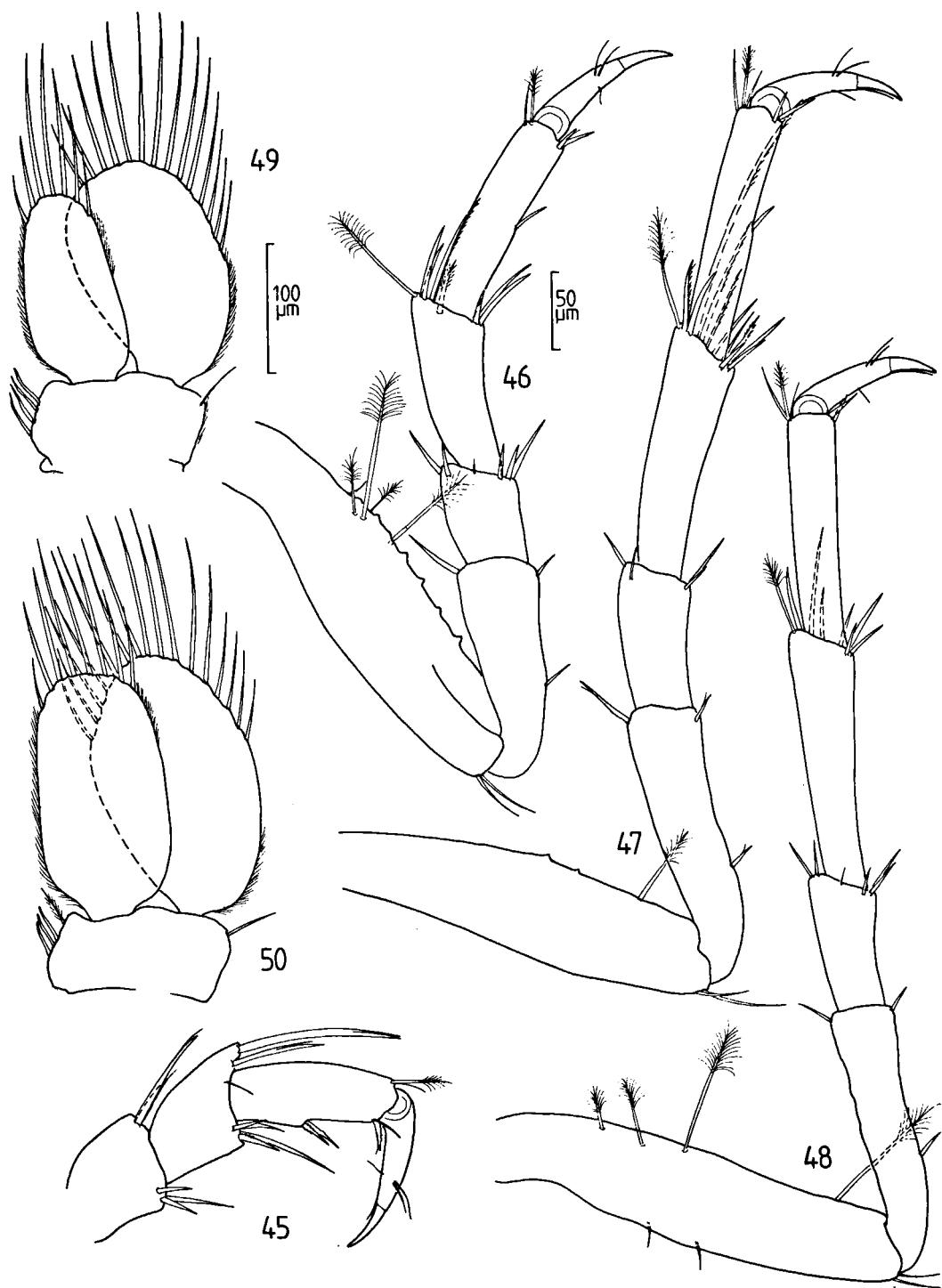
Pereopods becoming more slender posteriorly.



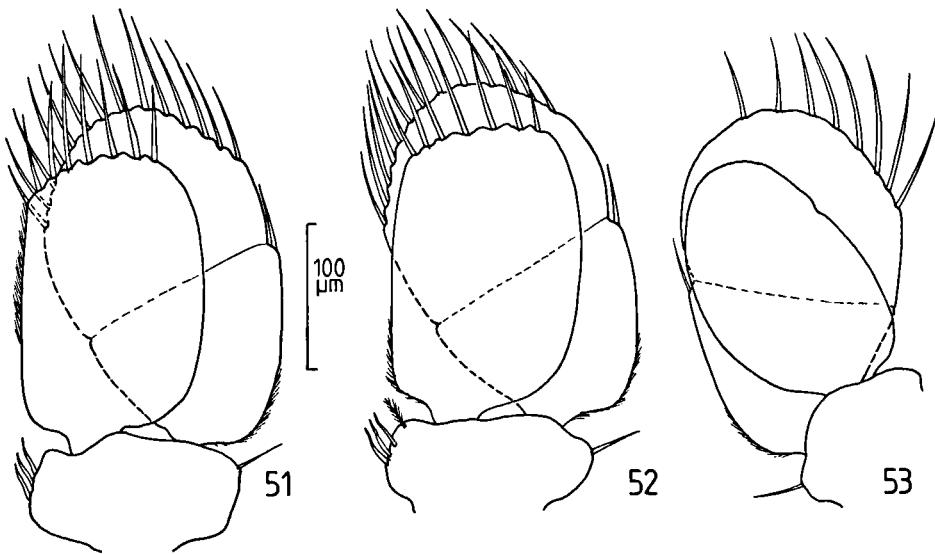
Figs. 31–37. *Metacirolana agujae* n. sp., ♀: 31, dorsal view; 32, lateral view; 33, clypeal region; 34, posterior margin of pleotelson; 35, peduncle and first flagellar article of antenna 1; 36, flagellum of antenna 1; 37, antenna 2. (Fig. 36 drawn from ♀ paratype, others from holotype.)



Figs. 38–44. *Metacirolana agujae* n. sp., ♀, holotype: 38, mandible; 39, maxilla 1; 40, maxilla 2; 41, maxilliped; 42, pereopod 1; 43, pereopod 2; 44, uropod.



Figs. 45–50. *Metacirolana agujae* n. sp., ♀, holotype: 45, distal pereopod 4; 46, pereopod 5; 47, pereopod 6; 48, pereopod 7; 49, pleopod 1; 50, pleopod 2. (Plumosity of setae in pleopods not drawn.)



Figs. 51–53. *Metacirolana agujae* n. sp., ♀, holotype: 51, pleopod 3; 52, pleopod 4; 53, pleopod 5. (Plumosity of setae not drawn.)

Pereopod 1 more robust than other ones. Pereopods 6 and 7 subequal in length. Pereopod 1 (Fig. 42), propodus oval, posterior margin with 3 tooth-like tubercles and denticulate, distal compound spine; mesial margin of propodus with long, curved spine; carpus triangular with 2 posterodistal setae; posterodistal margin of merus with serrate, curved spine. Pereopod 2 (Fig. 43), propodus more slender than in pereopod 1, posterior margin with 2 serrate spines, anterodistal margin of merus produced. Pereopod 3 similar in shape to pereopod 2. Pereopod 4 (Fig. 45), anterodistal margin of carpus with pair of compound spines; distal one of carpus very long, reaching almost distal margin of propodus. Anterior margin of basis in pereopods 5 and 6 (Figs. 46, 47) with some denticulations. Pereopod 7 (Fig. 48) as illustrated.

Pleopod 1 (Fig. 49), basis with 4 retinacula; endopodite twice as long as wide, distal margin with 7 plumose setae; exopodite distally widening, distal margin with 14 plumose setae, 1.4 times longer than wide. Pleopod 2 (Fig. 50), endopodite 1.9 times longer than wide, distal margin with 8 plumose setae; exopodite 1.6 times longer than wide, distal margin with 16 plumose setae; medial margin of basis with 3 retinacula and short feathered seta. Pleopod 3 (Fig. 51), basis with 3 retinacula; endopodite 1.5 times longer than wide, with 7 distal

plumose setae; exopodite broadly oval, with suture line at about midlength; distal margin with 15 plumose setae. Pleopod 4 (Fig. 52), basis with 3 retinacula and a short, feathered seta at inner margin; endopodite as in pleopod 3; exopodite quite similar to exopodite of pleopod 3, with 14 distal plumose setae. Pleopod 5 (Fig. 53), endopodite oval, 1.6 times longer than wide, bare of any setae; exopodite broadly oval, with transverse suture line, distal margin with 8 plumose setae. (N.B.: All plumose setae on rami of pleopods drawn as simple setae.)

Uropod (Fig. 44), outer distal margin of symподite produced into elongate-triangular lobe with distal plumose seta; endopodite somewhat widening distally, its margin with some strong indentations and few short setae set within these indentations; dorsal surface near outer margin with 8 feathered sensory setae; exopodite narrow, about 2.8 times longer than wide, its margin with some indentations; few short setae set within these indentations.

Remarks. — *Metacirolana agujae* n. sp. resembles *M. agaricicola* in its general habitus. It can be distinguished from the latter by the characteristic shape of the distal pleotelsonic margin, its more sparsely serrate uropodal endopodite and by the lack of pereonal as well as pleonal denticulations.

M. agujae is a subtidal species, known from depths between 1.5 and 20 m. It has been found exclusively associated with dead coral substratum.

Distribution. – Caribbean Sea of Colombia.

Etymology. – The specific name is a noun in apposition taken from the type-locality.

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