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THE GENUS *GNATHIA* LEACH (ISOPODA) FROM THE SANTA MARTA AREA, NORTHERN COLOMBIA, WITH A REVIEW OF GNATHIIDEA FROM THE CARIBBEAN SEA AND GULF OF MEXICO

by

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ABSTRACT

Six species of the genus *Gnathia* (Crustacea: Isopoda: Gnathiidea) are recorded from the Caribbean Sea of northern Colombia. *Gnathia gonzalezi* n. sp., *Gnathia magdalenensis* n. sp., *Gnathia samariensis* n. sp., and *Gnathia vellosa* n. sp. are described; *Gnathia beethoveni* Paul & Menzies, 1971 and *Gnathia virginalis* Monod, 1926 are redescribed and recorded for the first time from Colombia. The Gnathiidea of the Caribbean Sea and Gulf of Mexico are reviewed.

RÉSUMÉ

Six espèces du genre *Gnathia* (Crustacea: Isopoda: Gnathiidea) sont signalées pour la Mer des Caraïbes au large des côtes de Colombie du Nord. Sont décrites *Gnathia gonzalezi* n. sp., *Gnathia magdalenensis* n. sp., *Gnathia samariensis* n. sp. et *Gnathia vellosa* n. sp.; *Gnathia beethoveni* Paul & Menzies, 1971 et *Gnathia virginalis* Monod, 1926 sont redécrites et pour la première fois signalées de Colombie. Sont passés en revue les Gnathiidea de la Mer des Caraïbes et du Golfe de Mexique.

INTRODUCTION

Between April 1985 and May 1986 the author carried out sampling of marine isopods near Santa Marta, northern Colombia. The samples have been taken from a variety of habitats, ranging from the intertidal down to depths of about 30 m. The species of *Gnathia* treated in this paper were often found in large numbers in coral rubble below the intertidal zone.

No species of this group was previously known from the Caribbean coast of Colombia. The first species to be noted from the tropical and subtropical western Atlantic was *Gnathia triospathiona* Boone, 1918 found near Florida. In his monograph of the Gnathiidea, Monod (1926) added three species from the Antilles: *Gnathia johanna* Monod, 1926, *Gnathia virginalis* Monod, 1926 and the deep-water form *Akidognathia poteriophora* Monod, 1926. The former species was recently redescribed by the author (Müller, in press). Menzies & Glynn (1968) described *Gnathia puertoricensis* from Puerto Rico. This species was later recorded from Belize (Kensley, 1984) and Cuba (Ortiz, 1983). The sixth species known from the Caribbean Sea and Gulf of Mexico was *Gnathia beethoveni* from Venezuela (Paul & Menzies, 1971). During the sampling program of the Hourglass Cruises, another species new to science came to light from the central west Florida shelf: *Gnathia floridensis* Menzies & Kruczynski, 1983. These authors presented a key to the Gulf and Caribbean Gnathiidae, but overlooked the species described by Monod. Finally, Kensley (1984) described *Gnathia rathi* from Belize, which he later recorded from Barbados as well (Kensley, 1987). In his general remarks on Caribbean Gnathiidea, Kensley (1984) also overlooked the species described by Monod (1926).

MATERIAL AND METHODS

The material treated here was obtained by hand while skin and SCUBA diving, or while wading in very shallow water. The substratum was collected and transported to the laboratory in fine mesh cloth bags and plastic bags. After storing in 5% formalin/sea water for some hours, the sample was washed with fresh water over a 0.5 mm sieve and preserved in 70% ethanol. Specimens were separated with the aid of a dissecting stereomicroscope and stored in 70% ethanol.

No notes on females and Praniza-larvae are included in this paper because no reliable characters could be found for their identification to species level.

ACKNOWLEDGEMENTS

My special thanks are due to Dr. Torben Wolff of the Zoologisk Museum, Copenhagen and Dr. Thomas E. Bowman, National Museum of Natural History, Washington for the loan of specimens. I am also very grateful to my wife and Mr. José Gonzalez for their help during the fieldwork in Colombia, further to the staff of the Instituto de Investigaciones Marinas de Punta de Betin, Santa Marta (INVEMAR) for technical support. This study was made possible through a grant of the German Academic Exchange (DAAD).

ABBREVIATIONS

Specimens are deposited as follows: Senckenberg-Museum, Frankfurt, Germany (SMF), Zoölogisch Museum, Amsterdam, The Netherlands (ZMA), Zoologisk Museum, Copenhagen, Denmark (ZMC), National Museum of Natural History, Washington, United states (USNM), Instituto de Investigaciones Marinas de Punta de Betin, Santa Marta, Colombia (INVEMAR), and in the author's collection.

Other abbreviations used in text and figures (in accordance with Wägele, 1987): A 1 = antenna 1; A 2 = antenna 2; Md = mandible; Mxp = maxilliped; P 1-5 = pereopods 1-5; Pn 1-7 = pereonites 1-7; Py = pylopod; Tel = telson; UEn = endopodite of uropod; UEx = exopodite of uropod; Urp = uropod.

KEY TO THE GULF AND CARIBBEAN GNATHIIDEA (based on mature males)

1. Without eyes, ischium of P 3 distally shovel-like broadened (deep-water form) ..... *Akidognathia poteriophora* Monod
— Eyes present, P 3 distally not shovel-like broadened 2
2. Frontal border of head medially concave ..... *Gnathia gonzalezi* n. sp.
— Frontal border of head medially otherwise 3
3. Frontal border of head barely convex ..... *Gnathia rathi* Kensley
— Frontal border of head strongly convex or with 3-4 projections 4
4. Frontal border of head strongly convex 5
— Frontal border of head with 3-4 projections 6
5. Dorsal surface, in particular of head and Pn 1 with several long setae ..... *Gnathia floridensis* Menzies & Kruczynski
— Dorsal surface without long setae ..... *Gnathia triospathiona* Boone
6. Frontal border of head with 4 projections ..... *Gnathia beethoveni* Paul & Menzies
— Frontal border of head with 3 projections 7
7. Mandibles with inner lobe 8
— Mandibles without inner lobe 9
8. Cutting edge of mandibular lobe with rounded, toothlike structures and some minute setae ..... *Gnathia johanna* Monod
— Cutting edge of inner lobe straight, without setae ..... *Gnathia magdalenensis* n. sp.
9. Posterolateral edges of Pn 4 granular 10
— Posterolateral edges of Pn 4 smooth 11
10. Mandibular carina distally notched, Pn 5 about twice as wide as long ..... *Gnathia vellosa* n. sp.
— Mandibular carina distally rounded, Pn 5 about 1.5 times wider than long ... *Gnathia virginalis* Monod
11. Head dorsally granular, Pn 4-6 poorly defined ..... *Gnathia puertoricensis* Menzies & Glynn
— Head dorsally smooth, Pn 4-6 well defined ..... *Gnathia samariensis* n. sp.

REVIEW OF THE GULF AND CARIBBEAN GNATHIIDEA

Akidognathia Stebbing, 1912

Akidognathia poteriophora Monod, 1926

Akidognathia potoriophora Monod, 1926: 300-304, figs. 122-123 (♂).

Distribution. — Known only from the type-locality near St. Croix, Antilles, depth 914 m.

Gnathia Leach, 1813

Gnathia beethoveni Paul & Menzies, 1971 (Figs. 1-2)

Gnathia beethoveni Paul & Menzies, 1971: 42-44, figs. 22-24 (♂).

Material. — Punta de Betin, Sta. Marta: 1 ♂ (INVEMAR), coral rubble, 13 m, 3 June 1985; 1 ♂ (USNM 234088), coral rubble, 22-23 m, 19 June 1985; 1 ♂ (ZMC), coral rubble, 15-20 m, 27 November 1985; 4 ♂♂ (SMF 16278), coral rubble, 20-22 m, 26 January 1986; 5 ♂♂ (Coll. Müller), coral rubble, 30 m, 10 February 1986. Isla de Morro Grande near Sta. Marta: 3 ♂♂ (ZMA), coral rubble, 30 m, 19 March 1986. Isla Morrito near Sta. Marta: 1 ♂ (INVEMAR), coral rubble, 30 m, 18 February 1986. Punta Ancón near Taganga, about 3 km east of Sta. Marta: 2 ♂♂ (ZMA), coral rubble, 15 m, 2 August 1985. Punta de la Aguja, about 5 km north-east of Sta. Marta: 1 ♂ (USNM 234089), coral rubble, 17-20 m, 7 December 1985. Bahía de Chengue, about 15 km north-east of Sta. Marta: 7 ♂♂ (ZMA), coral rubble, 15-17 m, 21 January 1986. Bahía de Nenguangue, about 25 km north-east of Sta. Marta: 1 ♂ (ZMC), coral rubble, 16 m, 10 October 1985.

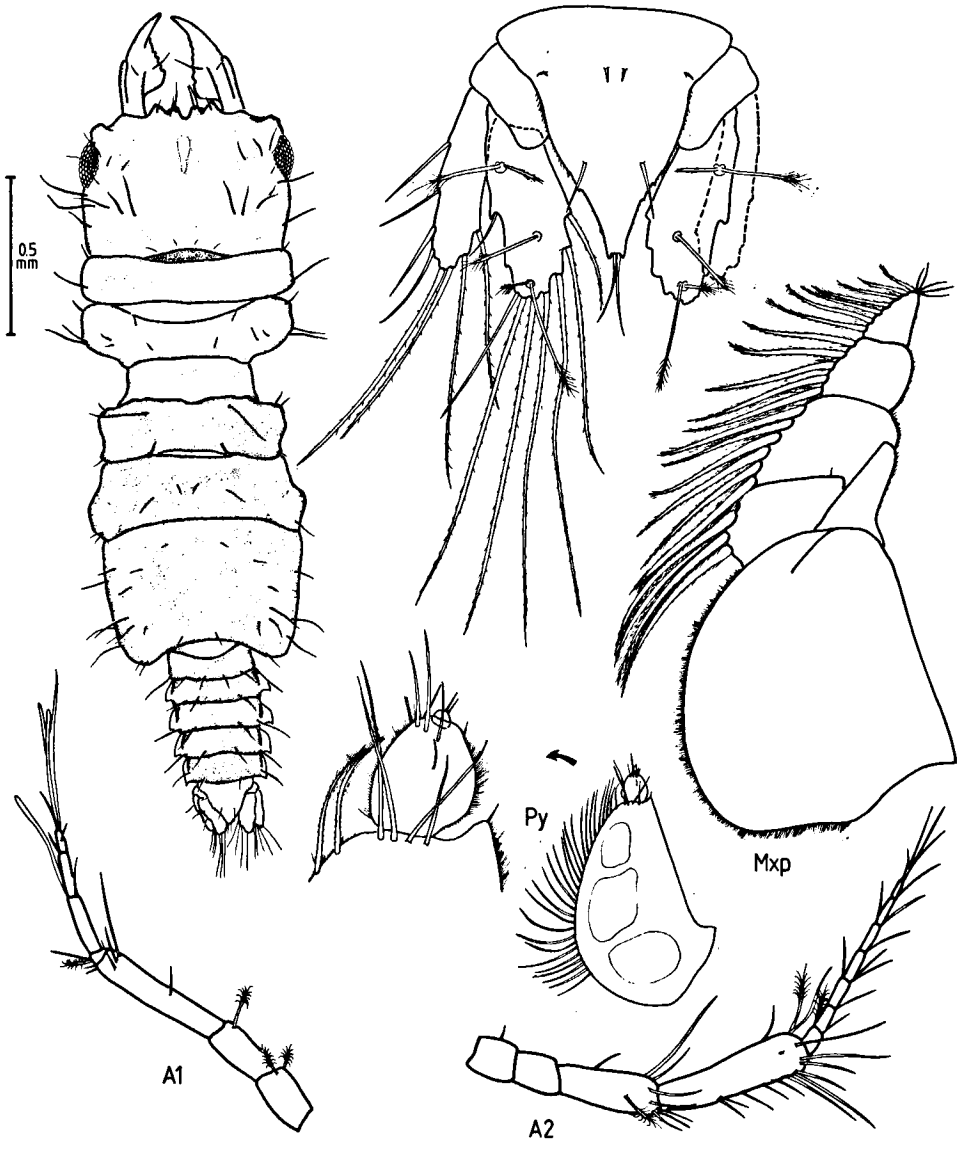

Fig. 1. *Gnathia beethoveni* Paul & Menzies, 1971, ♂; dorsal view, tail fan and appendages.

Description of ♂. — Cephalon smooth, without tuberculations, one third wider than long, bearing only few setae of different lengths and irregular arrangement; front of cephalon with 4 projections; head anteromedially slightly excavated; lateral eyes well pigmented. Pn 1 short, lacking free lateral margins, without setae; Pn 2-6 subequal in length, sixth longest; Pn 7 very short, hidden beneath posterior margin of Pn 6, without setae; all Pn well defined. Pleonites subequal in length. Tel triangular, slightly longer than wide, lateral margins distally shallowly serrate, sinuous. A 1 peduncle 3-segmented, third segment longest; flagellum of 4 segments; basal segment very short, penultimate segment with 1 aesthetasc, apical segment with 2 aesthetascs. A 2 peduncle 4-segmented, terminal segment longest; flagellum of 7 segments. Md with 2 setae at inner dorsal margin. Mxp of 5 segments; basal segment broadest, semicircular, with narrow lobe at inner distal corner, 4 distal segments

Fig. 2. *Gnathia beethoveni* Paul & Menzies, 1971, ♂; P 1-5.

bearing finely fringed setae. Py with broad basal segment bearing finely fringed setae at convex medial margin, apically with 4 simple setae of different length; apical segment very small, with 2 short, simple setae (fig. 1). P 1-5 as in fig. 2. Basis of P 1-3 with long setae. UEx narrower than but subequal in length to UEn, both rami with elongate, fringed setae; UEn dorsally with 5 long sensory setae.

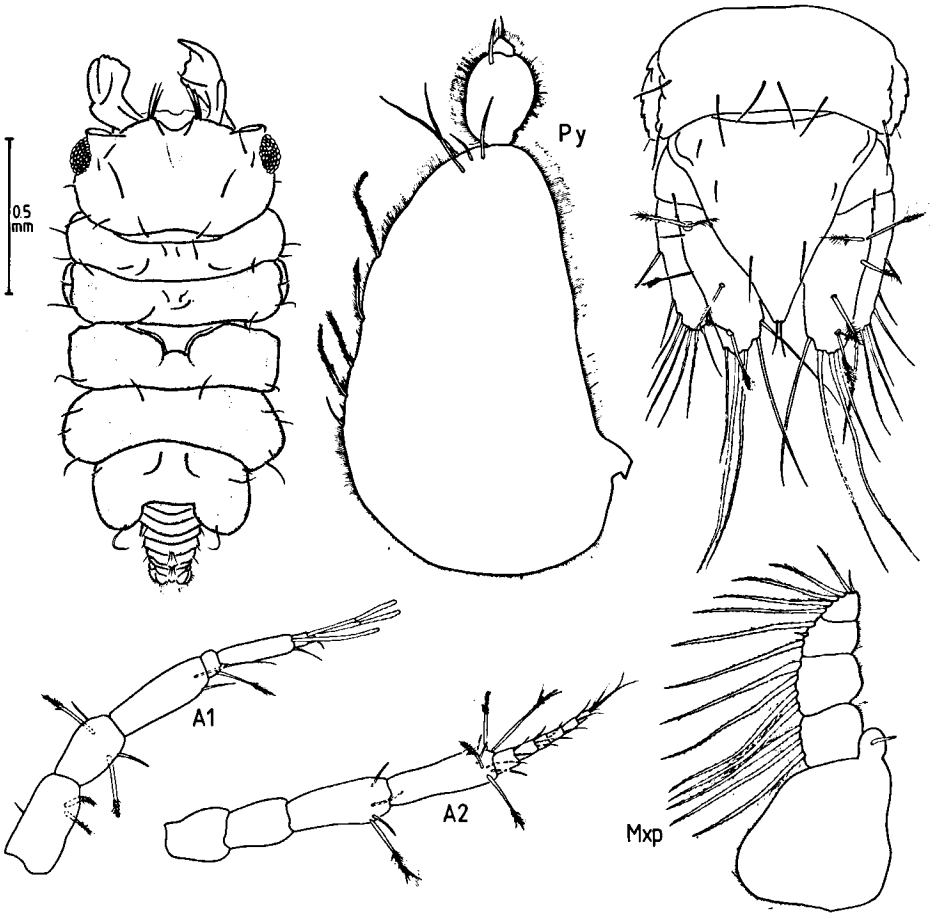

Fig. 3. *Gnathia gonzalezi* n. sp., ♂, paratype; dorsal view, tail fan and appendages.

Affinities. — As Paul & Menzies (1971: 43-44) pointed out, *G. beethoveni* may be closely related to *Gnathia margaritarum* Monod, 1926, known only from the Pacific coast of Panamá.

Distribution. — Northern Colombia and Venezuela.

Gnathia floridensis Menzies & Kruczynski, 1983

Gnathia floridensis Menzies & Kruczynski, 1983: 22-24, fig. 8 (♂♀).

Distribution. — Central west Florida shelf.

Gnathia gonzalezi n. sp.
(Figs. 3-4)

Holotype. — ♂ (SMF 16270), Punta de Betin, Sta. Marta, coral rubble, 15 m, 1 July 1985.

Paratypes. — Punta de Betin, Sta. Marta: 1 ♂ (INVEMAR), coral rubble, 12 m, 29 November 1985; 1 ♂ (USNM 234090), coral rubble, 16 m, 2 January 1986; 19 ♂♂ (SMF 16271), coral rubble, 30 m, 10 February 1986. Isla de Morro Grande near Sta. Marta: 19 ♂♂ (ZMA), coral rubble, 30 m, 19 March 1986; 13 ♂♂ (ZMA), coral rubble, 18 m, 9 October 1985. Isla Morrito near Sta. Marta: 82 ♂♂ (10 ♂♂ Coll. Müller, 10 ♂♂ USNM 234091, 10 ♂♂ ZMC, 10 ♂♂ INVEMAR, 42 ♂♂ ZMA), coral rubble, 30 m, 18 February 1986. Punta de la Aguja, about 5 km east of Sta. Marta: 1 ♂ (ZMA), coral rubble, 17-19 m, 9 January 1986.

Description of ♂ paratype. — Cephalon smooth, without tuberculations, about twice as wide as long, bearing only few setae; anteromedial part of head slightly excavated; lateral eyes well pigmented. Pn 1 short, lacking free lateral margins, with 1 pair of short setae; Pn 2 slightly shorter than Pn 3; Pn 4 anteromedially notched, anterolateral edges

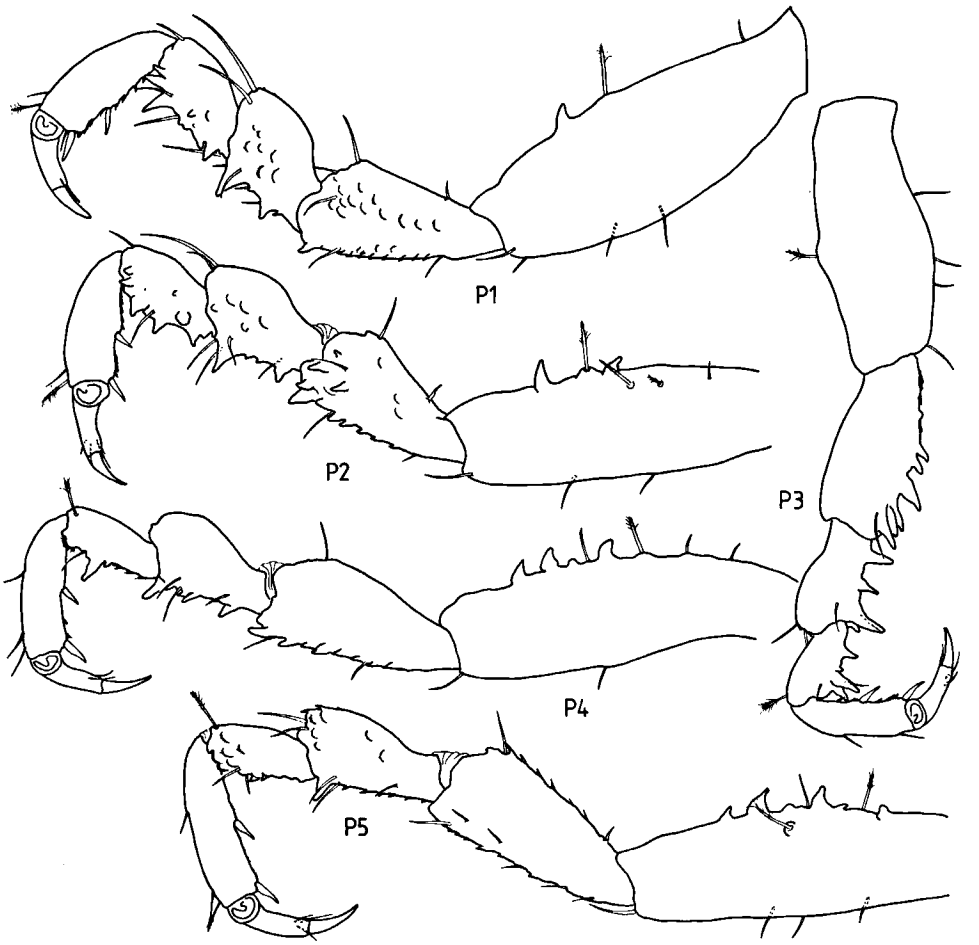

Fig. 4. *Gnathia gonzalezi* n. sp., ♂, paratype; P 1-5.

slightly granular. Pn 5-6 longest. Pn 7 very short, hidden beneath posterior margin of Pn 6. All Pn well defined, Pn 2-6 with only few setae of irregular arrangement. Pleon in nearly all specimens more or less downcurved; pleonites subequal in length. Tel triangular, as long as wide; lateral margins smooth, sinuous. A 1, peduncle segment 3 longest, segment 2 shortest; flagellum of 4 segments; second, third and fourth segment with 1 aesthetasc. A 2 peduncle 4-segmented, fourth segment longest; flagellum of 6 articles. Md with 1 seta at inner dorsal margin. Mxp of 5 segments, large basal segment with rounded lobe bearing a short seta at inner distal corner; 4 distal segments bearing finely fringed setae; apical segment with an outward directed simple seta. Py with broad basal segment with only few, finely fringed setae at convex medial margin and 4 simple setae apically; Py with 2 distal segments, each with 1 simple seta (fig. 3). P 1-5 with variable number of tubercles (fig. 4). UEx narrower than but subequal in length to UEn, both rami bearing elongate fringed setae; UEn with 6 sensory setae.

Affinities. — In general morphology this species seems to be allied to *Gnathia akaroensis* Monod, 1926, hitherto known from New Zealand only. It is distinguished from *G. akaroensis* by the lack of tubercles at its dorsal surface and different setation.

Derivatio nominis. — Named after Mr. José Gonzalez, for his valuable help during the fieldwork in Colombia.

Distribution. — Northern Colombia.

Gnathia johanna Monod, 1926

Gnathia johanna Monod, 1926: 490-493, fig. 215 (♂); Müller, in press.

Distribution. — Virgin Islands.

Gnathia magdalenensis n. sp.
(Figs. 5-6)

Holotype. — ♂ (SMF 16272), Bahía de Nenguangue, about 25 km north-east of Sta. Marta, coral rubble, 18 m, 2 September 1985.

Paratypes. — Punta de Betin, Sta. Marta: 1 ♂ (INVEMAR), coral rubble, 22-23 m, 19 June 1985; 6 ♂♂ (ZMA), coral rubble, 15 m, 1 July 1985; 1 ♂ (USNM 234092), coral rubble, 6 m, 4 July 1985; 1 ♂ (SMF 16276), coral rubble, 12-15 m, 15 December 1985; 1 ♂ (SMF 16277), coral rubble, 20-22 m, 26 January 1986. Isla de Morro Grande near Sta. Marta: 2 ♂♂ (Coll. Müller), coral rubble, 25 m, 18 September 1985; 10 ♂♂ (ZMA), coral rubble, 18 m, 9 October 1985; 7 ♂♂ (ZMC), coral rubble, 30 m, 19 March 1986. Isla Morrito near Sta. Marta: 5 ♂♂ (Coll. Müller), coral rubble, 30 m, 18 February 1986. Punta Ancón near Taganga, about 3 km east of Sta. Marta: 1 ♂ (INVEMAR), coral rubble, 15 m, 2 August 1985. Bahía de Chengue, about 15 km north-east of Sta. Marta: 3 ♂♂ (INVEMAR), coral rubble, 7-8 m, 27 September 1985. Bahía de Nenguangue, about 25 km north-east of Sta. Marta: 1 ♂ (ZMA), coral rubble, 16 m, 10 October 1985. Punta de la Aguja, about 5 km north-east of Sta. Marta: 1 ♂ (INVEMAR), coral rubble, 10 m, 24 September 1985; 2 ♂♂ (USNM 234093), coral rubble, 18 m, 2 October 1985; 1 ♂ (SMF 16275), coral rubble, 21 m, 8 November 1985; 1 ♂ (SMF 16274), coral rubble, 17-20 m, 7 December 1985; 2 ♂♂ (SMF 16273), coral rubble, 17-19 m, 9 January 1986. Bahía de Guachaquita: 3 ♂♂ (ZMA), coral rubble, 13 m, 28 February 1986.

Description of ♂ paratype. — Cephalon with few tuberculations beside the eyes and anteromedially; head slightly wider than long, frontal margin with three projections; medial projection smallest, bearing 2-4 short setae; lateral projections largest, faintly serrate at their outer margin and with 2 setae dorsally; anteromedial part of head slightly excavated; lateral eyes well pigmented. Pn 1 not visible in dorsal view, Pn 2 shorter than Pn 3; Pn 6 longest; Pn 7 very short, hidden beneath posterior margin of Pn 6; Pn 2-6 only with few short setae. Pleon in all specimens straight, pleonites subequal in length. Tel triangular, slightly longer than wide, lateral margins distally serrate, sinuous. A 1 with 3 peduncle segments; flagellum of 5 segments, third, fourth and terminal segment with 1 aesthetasc. A 2 peduncle 4-segmented, fourth longest, first and second short, of nearly equal length, one third the length of fourth segment; flagellum of 7 segments. Md with inner lobe and seta at inner dorsal margin; inner edges of Md with teeth of nearly equal size. Mxp of 5 segments; large basal segment with elongate lobe at inner distal corner; 4 distal segments bearing finely fringed setae; terminal segment with 4 short, simple apical setae. Py with broad basal segment bearing finely fringed setae at convex medial margin, furthermore 3 simple apical setae and 2 very short simple setae at inner distal corner; with 2 distal segments, penultimate segment with 4 setae of different length; terminal segment minute, with 2 very short, simple setae. UEx narrower than but subequal in length to UEn; both rami bearing elongate setae; UEn with 5 sensory setae at dorsal surface (fig. 5). P 1-5 as in fig. 6, long and slender.

Affinities. — *G. magdalenensis* seems to be allied to *Gnathia johanna* Monod, 1926 (cf. Müller, in press), having the front margin of the head with 3 projections and an inner lobe at the Md. It differs from *G. johanna* in having the cutting edge of the inner mandibular lobe straight, without rounded teeth and minute setae, and by the presence of several tubercles on the anterior dorsal surface of the cephalon.

Derivatio nominis. — Named after the Magdalena Department, northern Colombia.

Distribution. — Northern Colombia.

Gnathia puertoricensis Menzies & Glynn, 1968
(Fig. 7)

Gnathia puertoricensis Menzies & Glynn, 1968: 23-24, figs. 6 A-G, 7 C-D (♂, Praniza-larva); Kensley, 1984: 43 (new record); Ortiz, 1983: 6, fig. 3 (new record).

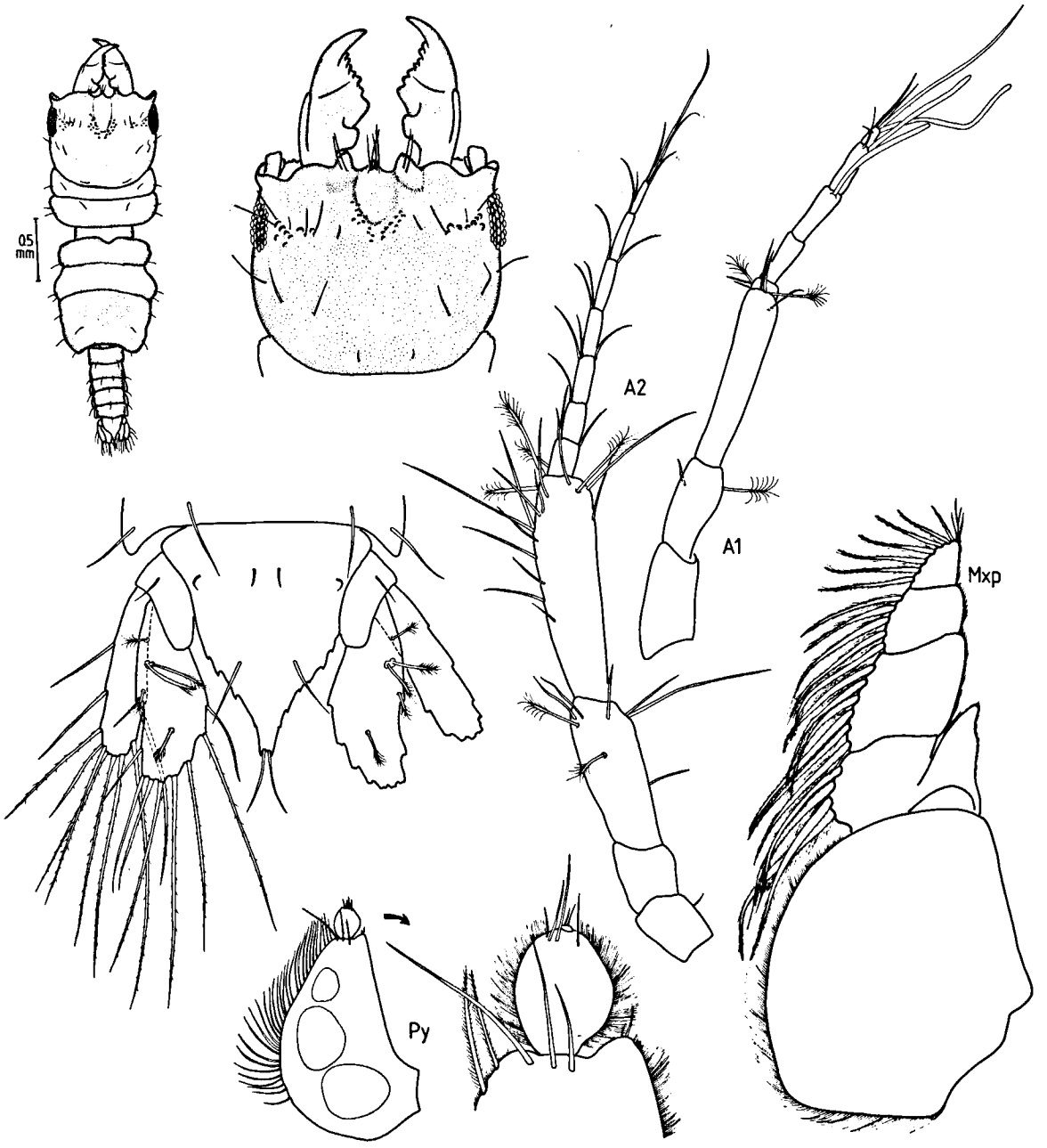

Fig. 5. *Gnathia magdalenensis* n. sp., ♂, paratype; dorsal view, tail fan and appendages.

Important details are lacking in the original description, therefore the holotype is figured here again. The specimen of Menzies & Glynn described as female is a Praniza-larva.

Distribution. — Puerto Rico, Belize, Cuba.

Gnathia samariensis n. sp.
(Figs. 8-9)

Holotype. — ♂ (SMF 16268), Isla de Morro Grande near Sta. Marta, coral rubble, 30 m, 19 March 1986.

Description of ♂ holotype. — Cephalon

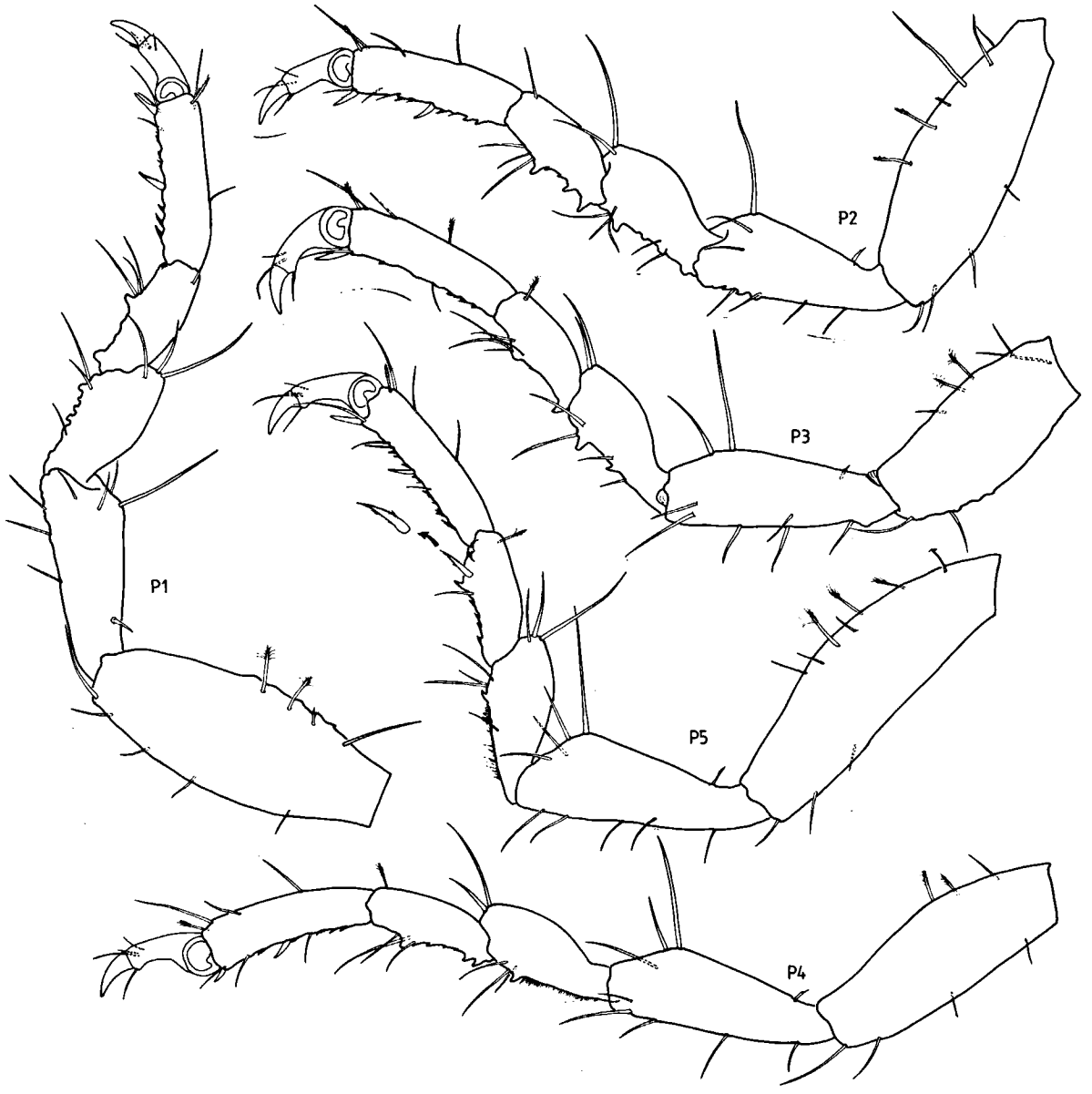

Fig. 6. *Gnathia magdalenensis* n. sp., ♂, paratype; P 1-5.

smooth, without tuberculations, about three fourth as long as wide, with only few setae of irregular arrangement; front of cephalon with 3 projections; lateral projections largest and provided with a simple seta; all projections apically rounded; anteromedial part of head excavated; lateral eyes well pigmented; Pn 1 not visible in dorsal view; Pn 2 shorter than Pn 3; Pn 4-6 medially concave, well-defined; Pn 6 longest; Pn 7 very short, hidden beneath posterior margin of Pn 6; all Pn, except Pn 7, with simple setae of irregular arrangement. Pleonites subequal in length. Tel triangular, slightly broader than long; lateral margins smooth, sinuous. A 1 with 3 peduncle segments, third longest, second shortest; flagellum of 4 segments, second, third and terminal segment with 1 aesthetasc. A 2 with 4 peduncle segments, fourth longest,

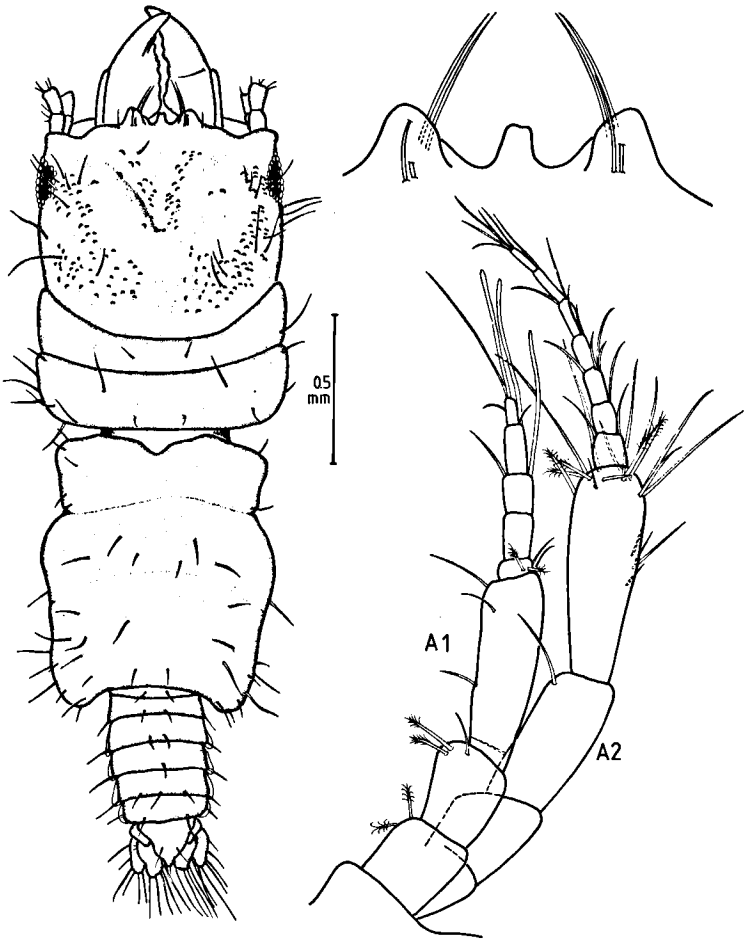

Fig. 7. *Gnathia puertoricensis* Menzies & Glynn, 1968, ♂, holotype; dorsal view, frontal margin of cephalon and antennae.

second shortest; flagellum of 7 articles. Inner edges of Md with small teeth of nearly equal size. Mxp of 5 segments; basal segment broad, semicircular, with narrow lobe at inner distal corner; 4 distal segments bearing finely fringed setae. Py with broad basal segment bearing finely fringed setae on convex medial margin, medially with a simple and a sensory seta, distally with 3 sparsely fringed setae; penultimate segment nearly circular, with 2 simple apical setae; terminal segment minute, with 2 very short, simple setae. UEx narrower than but subequal in length to UEn; both rami with elongate setae, UEn dorsally with 6 sensory setae (fig. 8). P 1-5 as in fig. 9; most striking features of P 1 are 2 serrate spines at propodus and a large, leaflike, denticulate spine at carpus; carpus and merus of P 1-5 ventrally and laterally with tubercles.

Affinities. — No statements can be made at present concerning the relationships to other species of *Gnathia*. Of the *Gnathia* species known from the tropical West Atlantic it resembles more closely *G. puertoricensis*.

Derivatio nominis. — Named after the city of Santa Marta.

Distribution. — Northern Colombia.

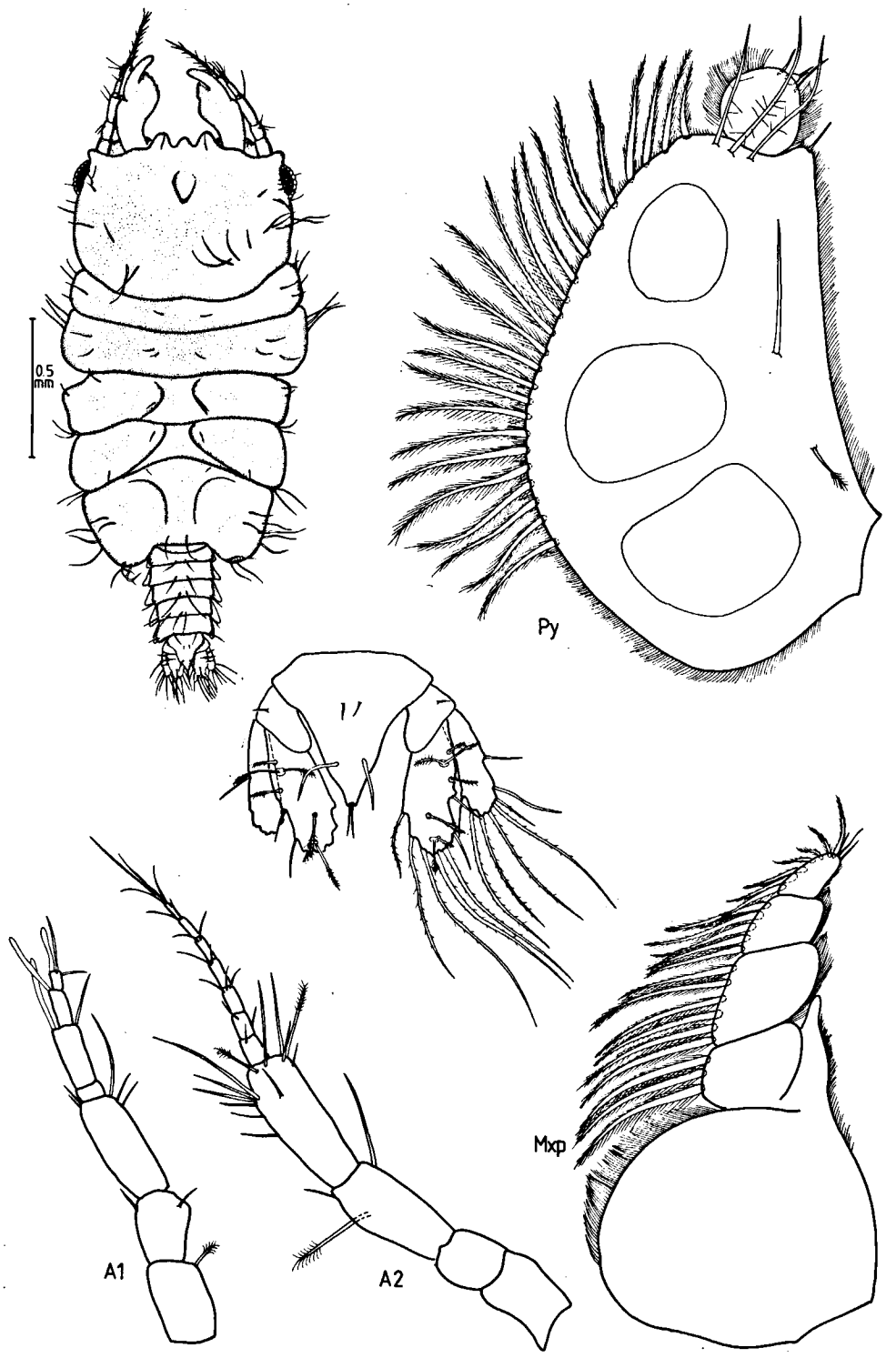

Fig. 8. *Gnathia samariensis* n. sp., ♂, holotype; dorsal view, tail fan and appendages.

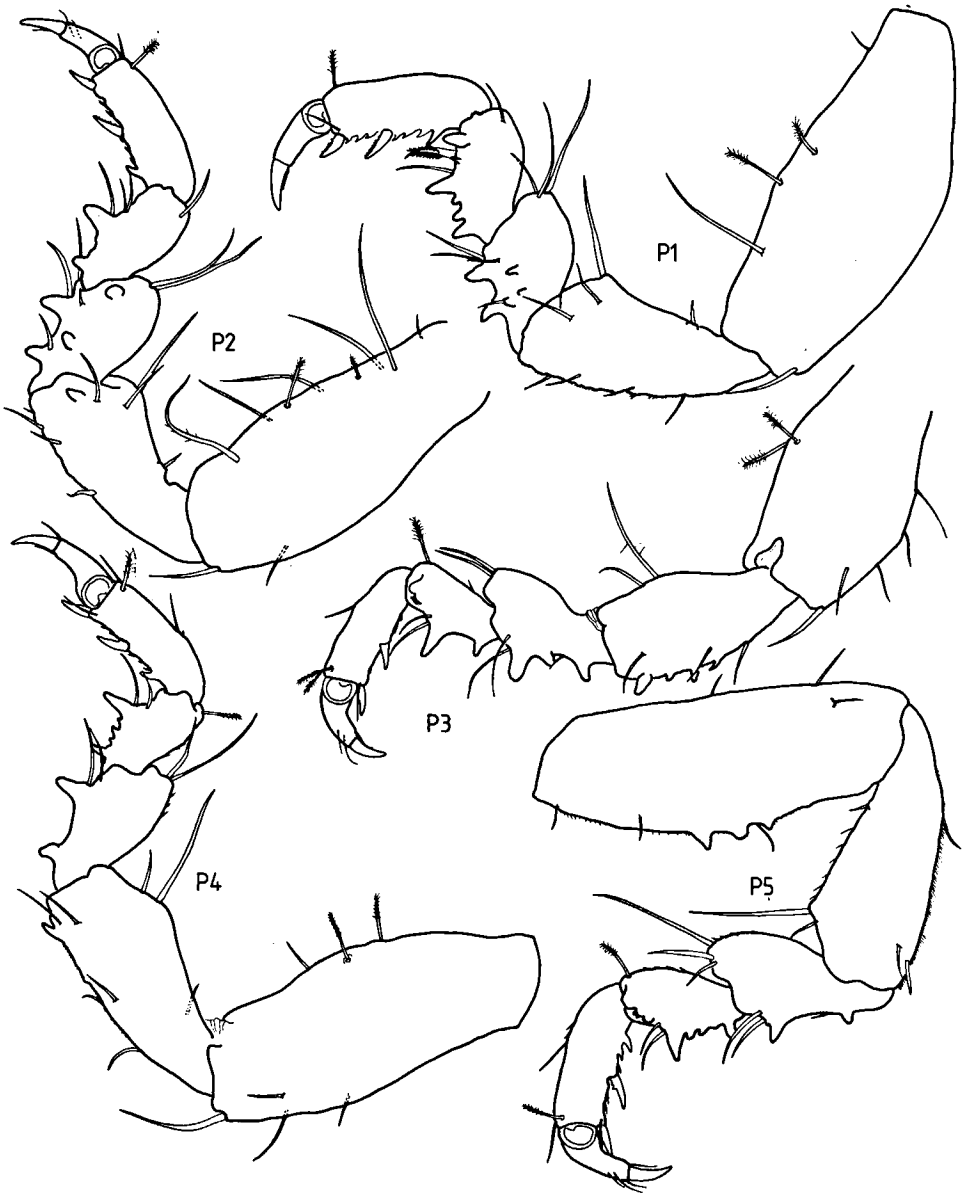

Fig. 9. *Gnathia samariensis* n. sp., ♂, holotype; P 1-5.

Gnathia triospathiona Boone, 1918

Gnathia triospathiona Boone, 1918: 591-611, pl. 91 fig. 3 (♂).
Perignathia triospathiona; Monod, 1926: 555-558, fig. 252 (♂).

Distribution. — Gulf Stream, off Key West, Florida, depth 198 m.

Gnathia vellosa n. sp.
(Figs. 10-11)

Holotype. — ♂ (SMF 16269), Isla de Morro Grande near Sta. Marta, from sponges and hydroids, 25-30 m, 18 September 1985.

Description of ♂ holotype. — Integument of head and Pn 2-4 indurate, finely granular;

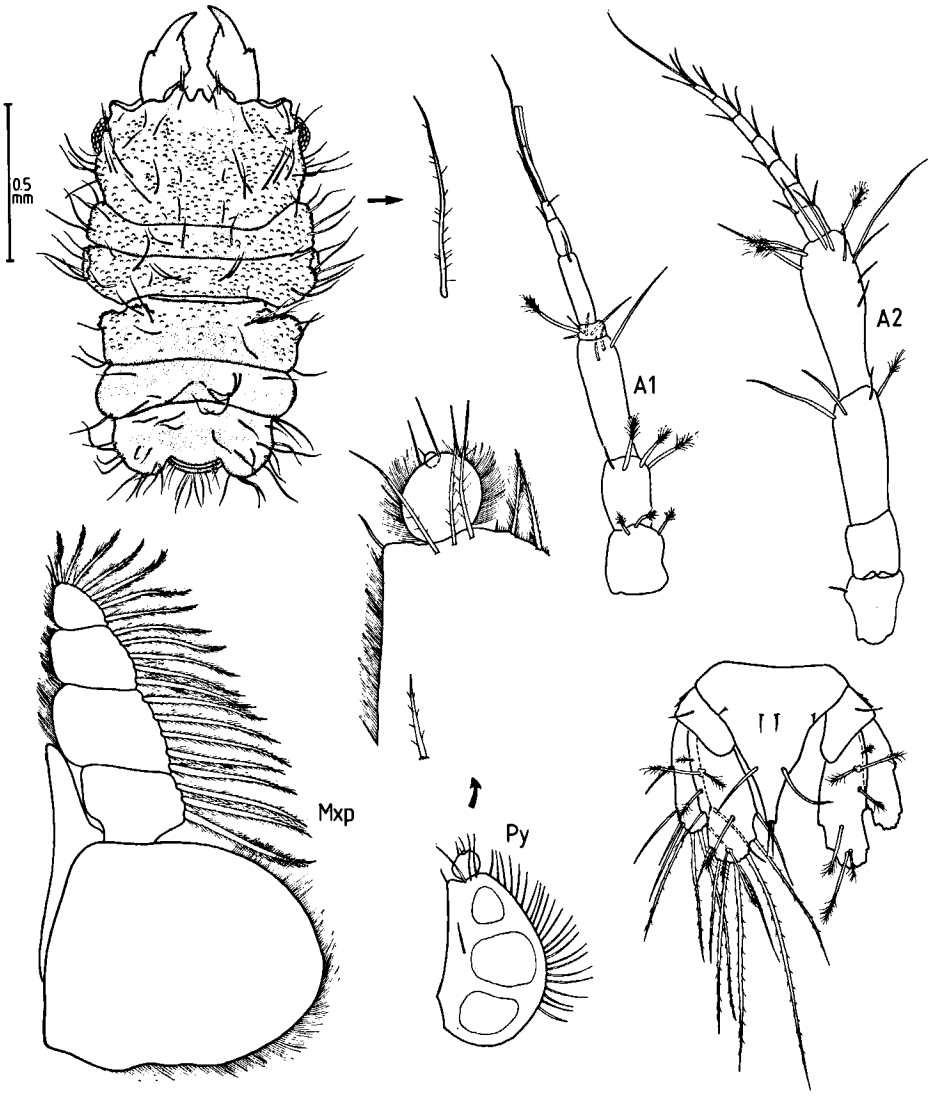

Fig. 10. *Gnathia vellosa* n. sp., ♂, holotype; dorsal view, tail fan and appendages.

head 1.5 times wider than long, anteromedial part of head slightly excavated, anterior margin with 3 projections; medial projection apically notched, lateral projections broad at base with 2 simple setae at dorsal surface; lateral eyes well pigmented. Pn 1 not visible in dorsal view; Pn 2 slightly shorter than Pn 3, lateral margins granular; Pn 4 with only anterolateral margins granular; Pn 5 and 6 smooth, laterally rounded; Pn 7 very short, hidden beneath posterior margin of Pn 6; Pn 2-6 with several sparsely fringed setae. Pleon downcurved, pleonites subequal in length. Tel triangular, slightly longer than wide, lateral margins smooth, sinuous. A 1 with 3 peduncle segments, third longest; flagellum of 4 segments, terminal segment with 2 aesthetascs. A 2 with 4 peduncle segments, fourth longest; flagellum of 7 articles. Md with apex pointed, carina distally notched. Mxp of 5 segments; basal segment broad, with narrow lobe at inner distal corner; 4 distal segments bearing finely fringed setae at convex medial margin. Py with broad basal segment bearing finely fringed

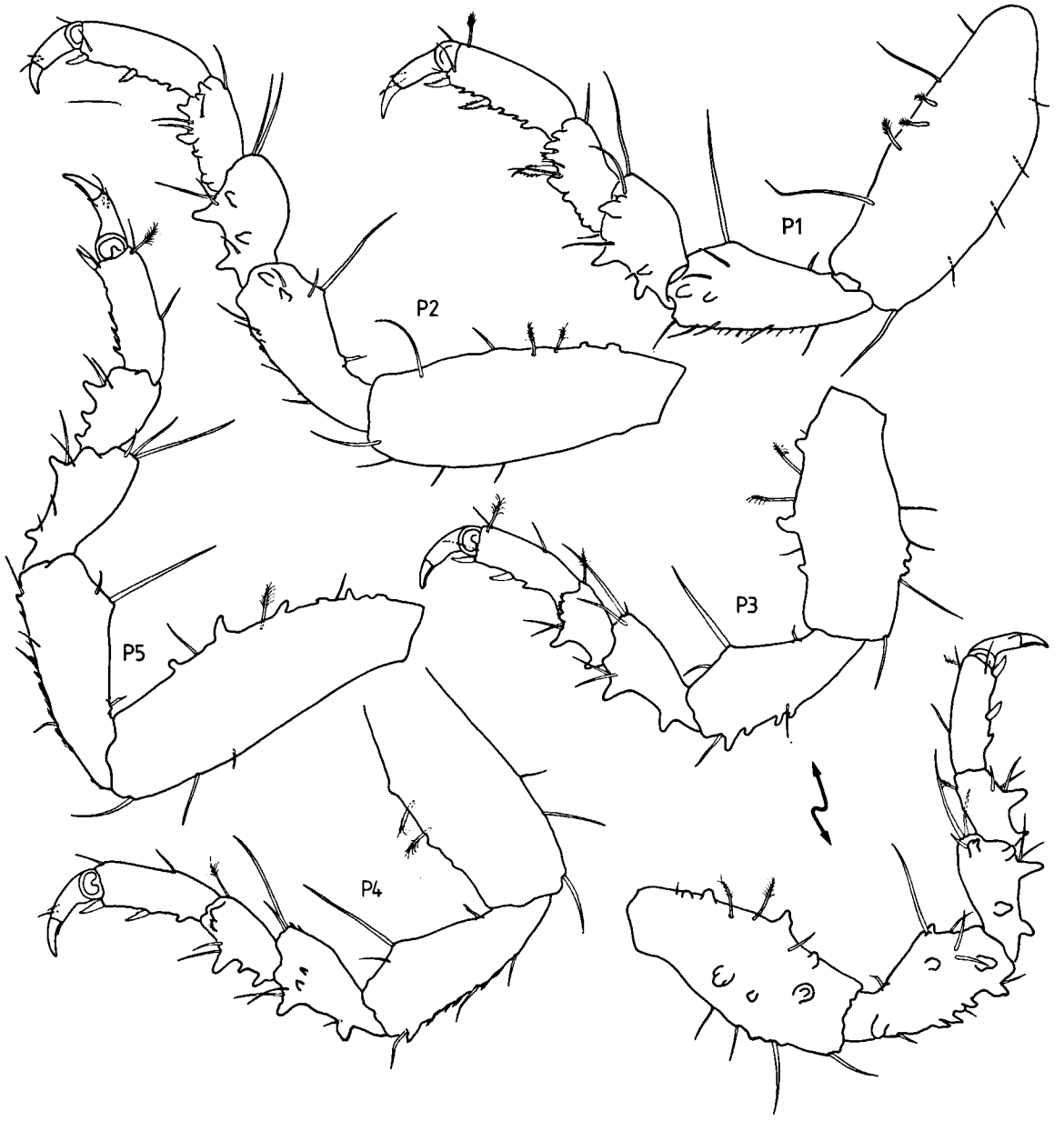

Fig. 11. *Gnathia vellosa* n. sp., ♂, holotype; P 1-5.

setae at convex medial margin; penultimate segment nearly circular, apically with 2 simple setae; terminal segment minute, with 1 very small, simple seta (fig. 10). P 1-5 relatively short, with long tubercles at ventral and lateral margins, of carpus and merus in particular; a leaflike serrate spine on carpus of P 1, close to it tridentate narrow lobe (fig. 11).

Affinities. — *G. vellosa* n. sp. seems to be related to *Gnathia virginalis* Monod, 1926 in having a granular body surface, three projections at the anteromedial border of the head and no inner mandibular lobe. The differences between both species are listed under *G. virginalis*.

Derivatio nominis. — Derived from the

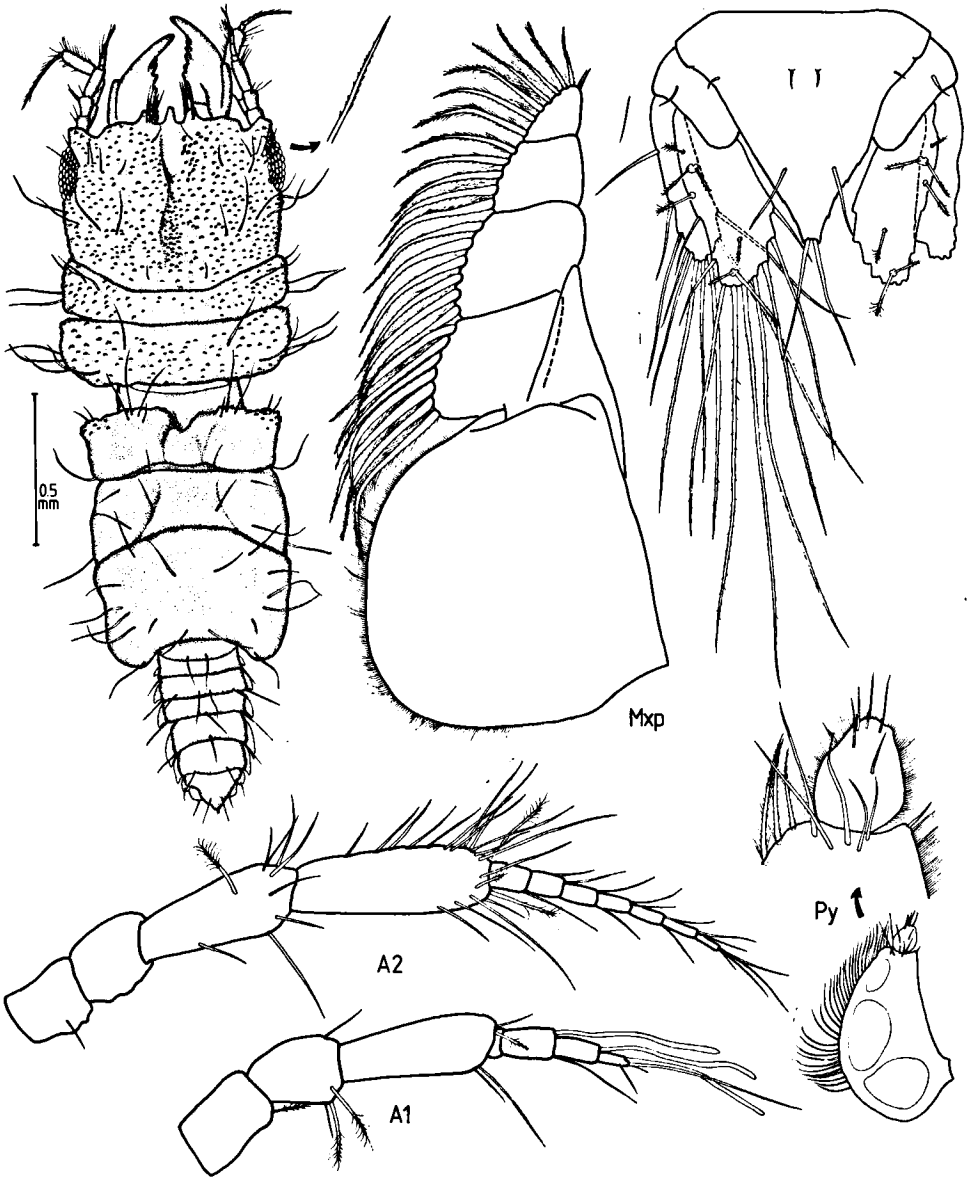

Fig. 12. *Gnathia virginalis* Monod, 1926, ♂; dorsal view, tail fan and appendages.

Spanish "velloso", referring to the many setae covering the body of this species.

Distribution. — Northern Colombia.

Gnathia virginalis Monod, 1926
(Figs. 12-13)

Gnathia virginalis Monod, 1926: 552-554, fig. 251 (♂).

Material. — Punta de Betin, Sta. Marta: 1 ♂ (INVEMAR), coral rubble, 15 m, 1 July 1985; 2 ♂♂ (USNM 234094), coral rubble, 6 m, 4 July 1985; 2 ♂♂ (INVEMAR), coral rubble, 13 m, 15 September 1985; 1 ♂ (SMF 16280), coral rubble, 15-20 m, 27 November 1985; 1 ♂ (SMF 16279), coral rubble, 12-15 m, 15 December 1985; 1 ♂ (Coll. Müller), under stones, 2-3 m, 24 December 1985; 1 ♂ (SMF 16282), from fouling on harbour pilings, 0-2 m, 1 February 1986; 1 ♂ (SMF 16281), under stones, 1-2 m, 4 February 1986; 5 ♂♂ (Coll. Müller), coral rubble, 30 m, 10 February 1986. Isla de Morro Grande near Sta. Marta: 7 ♂♂ (ZMA), coral rubble, 18 m, 9 October 1985; 2 ♂♂ (ZMA), coral rubble, 25 m, 18 September 1985. Isla Morrito near Sta. Marta:

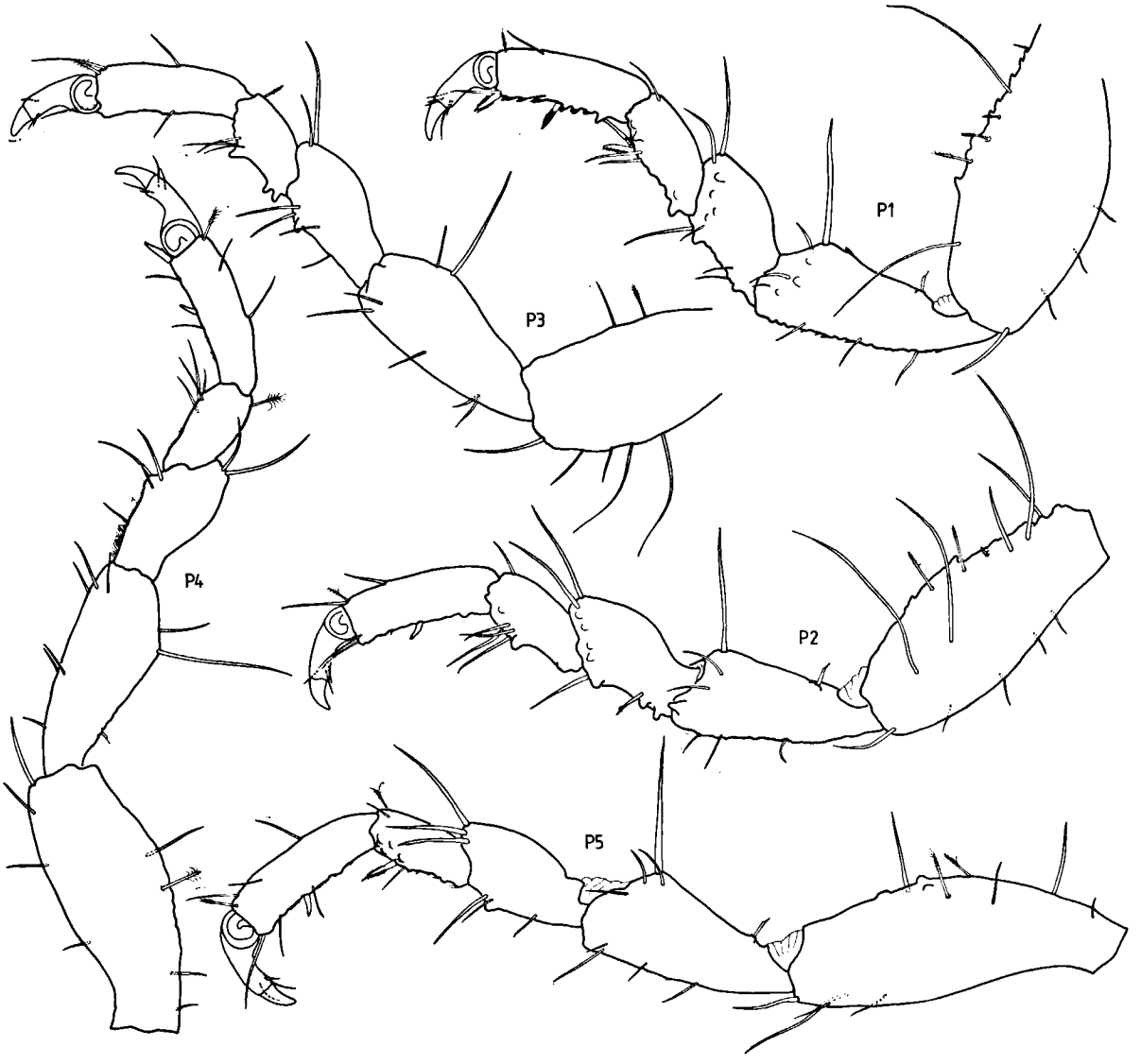

Fig. 13. *Gnathia virginalis* Monod, 1926, ♂; P 1-5.

4 ♂♂ (ZMC), coral rubble, 30 m, 18 February 1986. Punta Ancón near Taganga, about 3 km east of Sta. Marta: 5 ♂♂ (ZMA), coral rubble, 15 m, 2 August 1985. Punta de la Aguja, about 5 km north-east of Sta. Marta: 1 ♂ (ZMA), coral rubble, 20-25 m, 24 September 1985; 1 ♂ (ZMA), coral rubble, 18 m, 2 October 1985; 1 ♂ (ZMA), coral rubble, 21 m, 8 November 1985; 1 ♂ (ZMA), coral rubble, 20 m, 21 February 1986. Bahía Concha, about 10 km north-east of Sta. Marta: 2 ♂♂ (Coll. Müller), coral rubble, 2 m, 8 November 1985. Bahía de Chengue, about 15 km north-east of Sta. Marta: 1 ♂ (ZMA), coral rubble, 15-18 m, 20 September 1985; 1 ♂ (ZMA), coral rubble in *Thalassia*, 0.5 m, 13 September 1985; 1 ♂ (ZMA), coral rubble, 7-8 m, 27 September 1985; 2 ♂♂ (ZMC), coral rubble, 15-17 m, 21 January 1986; 1 ♂ (ZMA), under stones, 0.5 m, 4 April 1986.

Description of ♂. — Integument of head and Pn 2-4 indurate, finely granular, Pn 3 only at anterior margin; anteromedial part of cephalon excavated, anterior margin with three projections; medial projection apically blunt, lateral projections with two setae at dorsal surface and 3 setae projecting from ventral surface; lateral eyes well pigmented. Pn 1 not visible in dorsal view; Pn 2 slightly shorter than Pn 3. Pn

4 anteromedially notched; Pn 5 and 6 longest, smooth; all Pn well defined, with several, partly serrate setae of irregular arrangement; Pn 7 very short, hidden beneath posterior margin of Pn 6,with 2 simple setae at posterior margin. Tel triangular, slightly broader than long, lateral margins distally shallowly serrate, sinuous. A 1 with 3 peduncle segments, third longest, first and second of equal length; flagellum of 4 segments, second third and fourth segment with 1 aesthetasc. A 2 with 4 peduncle segments, fourth segment longest; flagellum of 7 segments. Md without seta at inner dorsal margin, inner edges with teeth of nearly equal size. Mxp of 5 segments, basal segment broad, semicircular with pointed lobe at inner distal corner; 4 distal segments bearing finely fringed setae. Py with broad basal segment bearing finely fringed setae at convex medial margin, furthermore 5 simple apical setae and 1 short simple seta at inner distal corner; terminal segment ovate, small, bearing five simple setae of nearly equal length. UEx narrower than but subequal in length to UEn, both rami with elongate setae; UEn dorsally with 7 sensory setae (fig. 12). P 1-5 long and slender, as in fig. 13; 2 serrate spines at propodus and 1 serrate spine at carpus of P 1.

Affinities. — *G. virginalis* seems to be closely related to *Gnathia vellosa* n. sp., described above. The most striking differences are as follows: *G. virginalis* is much larger than *G. vellosa* and has its pleon never downcurved. The setae covering the body of *G. virginalis* are serrate, not sparsely fringed as in *G. vellosa*. The mandibular carina of *G. vellosa* is distally notched, in *G. virginalis* it is rounded. The fourth peduncle segment of A 2 bears only a few setae in *G. vellosa*, in *G. virginalis* several simple setae of different length are present. The Pn 6 of *G. vellosa* is about 2 times wider than long, in *G. virginalis* it is about 1.5 times wider than long.

Distribution. — Northern Colombia, Virgin Islands.

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