

Gulf and Caribbean Research

Volume 6 | Issue 2

January 1978

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Recommended Citation

McKinney, L. 1978. Amphilochidae (Crustacea: Amphipoda) from the Western Gulf of Mexico and Caribbean Sea. *Gulf Research Reports* 6 (2): 137-143.

Retrieved from <https://aquila.usm.edu/gcr/vol6/iss2/4>

DOI: <https://doi.org/10.18785/grr.0602.04>

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AMPHILOCHIDAE (CRUSTACEA: AMPHIPODA) FROM THE WESTERN GULF OF MEXICO AND CARIBBEAN SEA

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ABSTRACT Two new species of *Amphilocheus*, *Amphilocheus casahoya* and *Amphilocheus delacaya*, and one new species of *Gitanopsis*, *Gitanopsis laguna*, are described. Relationships within these genera, particularly *Amphilocheus*, are difficult to determine. The new species, however, are similar to some eastern Pacific forms. One known species, *Amphilocheus neapolitanus* is also reported as occurring in both the Gulf and Caribbean.

INTRODUCTION

The Amphilocheidae are a group of ubiquitous amphipods which are often overlooked because of their small size (2-4 mm). Only one species, *Gitanopsis tortugae* Shoemaker, 1933, has been reported from the Gulf of Mexico (Shoemaker 1933). J. L. Barnard (1969) erroneously reported *Cyclotelson purpureum* Potts, 1915, from the Gulf of Mexico. *C. purpureum* was described by Potts (1915) from the Torres Straits near Murray Island in the Coral Sea.

ILLUSTRATIONS

Figures follow the format established by J. L. Barnard (1970). Capital letters on the figures designate a specific structure. Lower case letters preceding the capital letter identifies a specific individual. Lower case letters or numbers following the capital letter modifies the description of the part: B = labrum (upper lip); C = coxa; G = labium (lower lip); H = head; L = palp; M = mandible; N = gnathopod; O = outer plate or outer ramus; P = pereopod; Q = mandibular molar; S = maxilliped; T = telson; U = uropod; X = maxilla; Z = mandibular incisor; a = anterior; b = without; h = holotype; l = left; r = right; w = palm; x = medial; and y = article.

Amphilocheidae

Diagnosis. Accessory flagellum absent; coxa 1 reduced, partly hidden by a following coxa.

Amphilocheus Bate, 1862

Diagnosis. Mandibular molar small, nontritulative or with few ridges; gnathopod 2 large, subchelate.

Key to *Amphilocheus*

- 1a. Mandible nontritulative but armed with a spine; anterior edge of article 6, gnathopod 2 without submarginal spines. *A. neapolitanus*

- 1b. Mandible reduced but with ridges; gnathopod 2, article 6 anterior edge with 1-4 submarginal spines 2
- 2a. Gnathopod 2, article 6 with 1-2 submarginal spines. *Amphilocheus casahoya*
- 2b. Gnathopod 2, article 6 with 4 marginal spines. *Amphilocheus delacaya*

Amphilocheus neapolitanus Della Valle, 1893

Stebbing 1906:150; Chevreux and Fage 1925:

112-113, figs. 106-108; J. L. Barnard 1962:126, fig. 3

Diagnosis. Eyes small, round to slightly oval; antenna 1 reaching beyond antenna 2; mandible nontritulative with a single spine; outer face of gnathopod 2, article 6 without submarginal spines.

Material. Texas stations: NT:NMFS-106A, 29°30'N 95°0'W; NT:NMFS-13A, 29°0'N 95°30'W. Other material was taken at Ascension Bay, Mexico, and Nicchehabin reef, Allen Point, and Santa Maria point on Cozumel Island, Mexico.

Distribution. Circumtropical and warm-temperate.

Amphilocheus casahoya, new species (Figures 1 and 2)

Description. Female 3.15 mm. Head and body normal for genus, eyes circular with black center bordered with numerous opaque ommatidia. Antenna 1: Article 2 of peduncle 1.3 times as long as article 1, and 3 times as long as article 3; flagellum with 8 articles, distoventral corner of each article with 1-2 elongate, flattened setae; accessory flagellum uniarticulate, subequal in length to first article of flagellum. Antenna 2: Article 5 of peduncle 1.3 times as long as article 4, articles 4 and 5 with distal spines, article 5 with medial row of 4 short spines; flagellum with 11 articles. Upper lip: Normal for genus. Mandible: Molar conical, right molar with 3 elongate spinelike ridges, left similar to right but lacking any oversized ridges; accessory blades 11-12; incisor produced forward and medially, distal part V-shaped, toothed, palp with 3 articles of length ratios 12:46:57, otherwise normal for genus. Maxilla 2: Inner plate with medial row of submarginal spines; outer plate longer than inner, with 4 terminal spines. Maxilliped: Article 3 of palp

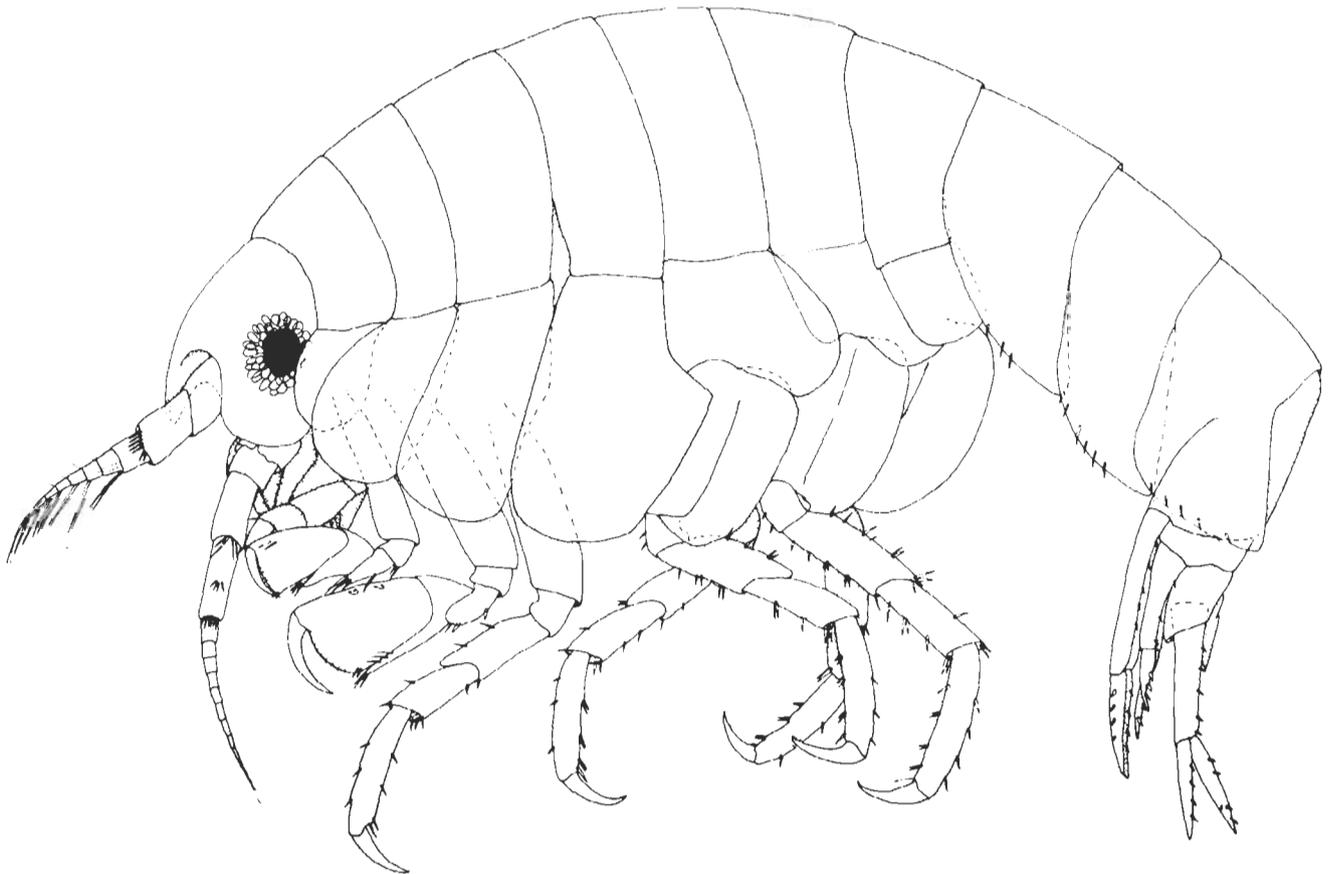


Figure 1. *Amphilochus casahoya*, n. sp., female 3.15 mm.

produced medially, with a number of complex spines and 4 short, rounded teeth, otherwise normal for genus. Gnathopod 1: Coxa suboval, partly hidden by following coxa; article 2 elongate; article 4 with 1 medial spin on posterior margin and 6 distal spines; article 5 with spinose posterior lobe; article 6 with 1 anterodistal, 2 mediofacial spines and serrate, transverse palm lined with 6 slender spines and defined by 2 stout spines; inner margin of dactyl serrate. Gnathopod 2: Article 4 with stout mediomarginal and 2 distal spines; article 5 with elongate posterior lobe reaching edge of palm, outer margin of lobe with 3 basal spines, distal part spinose; article 6 distally expanded with 1-2 submarginal spines on outer face, palm transverse, serrate, lined with slender spines, corner defined by 2 stout spines; inner margin of dactyl serrate, distally attenuate. Pereopod 3: Coxa longer than wide; articles poorly spinose; anterior margin of article 4 with 2 spines, posterodistal corner with 1; article 5 with 1 spine on either margin, distally spinose; article 6 with 3 anteromarginal and 4 posteromarginal spines; dactyl attenuate. Pereopod 4: Coxa large, quadrate, posterior margin excavate; margins of articles with short spines; posterior spine formula of article 6—2,2,2,1; anterior margin of article 6 with 3 spines; dactyl attenuate. Pereopod 5: Coxa with rounded posterior lobe; article 2 expanded; articles spinose; anterior spine formula of article 6—2,2,2,1;

dactyl attenuate. Pereopod 6: Coxa like 5 but smaller; longer than preceding pereopods; anterior spine formula of article 6—1,2,2,2,1; posterior margin with 4 spines; dactyl attenuate. Pereopod 7: Coxa subquadrate; pereopod otherwise like pereopod 6. Epimera: Ventral margin of epimeron 1 with 3 spines; epimeron 2 with 6 ventral spines and epimeron 3 with 5 ventral spines; posterior margins unproduced. Uropod 1: Peduncle elongate, inner margin with 3 slender spines, outer margin with 5 short spines; inner ramus with 4 inner marginal spines; ramal spines inserted in incisions on margins. Uropod 2: Peduncle with 1 distal spine on inner margin and 4 outer marginal spines; inner ramus with 3 inner marginal and 4 outer marginal spines and setulose basal margins; outer ramus 0.6 times as long as inner; inner margin setulose, outer margin with 2 stout, slightly hooked spines and 1 normal distal spine, tip somewhat attenuate; uropod shorter than either 1 or 3. Uropod 3: Peduncle longer than uropod 2; outer margin with 5 spines; rami lanceolate, inner margin of inner ramus with 4 spines and outer margin with 1 spine; outer margin of outer ramus with 4 spines; opposing margins of rami setulose. Telson: normal for genus.

Male. unknown.

Type. Holotype, USNM 170756, female 3.15 mm; paratype female 2.96 mm, USNM 170757.

Type-locality. 7.5 fm reef, Texas, 26°50'N 95°40'W.

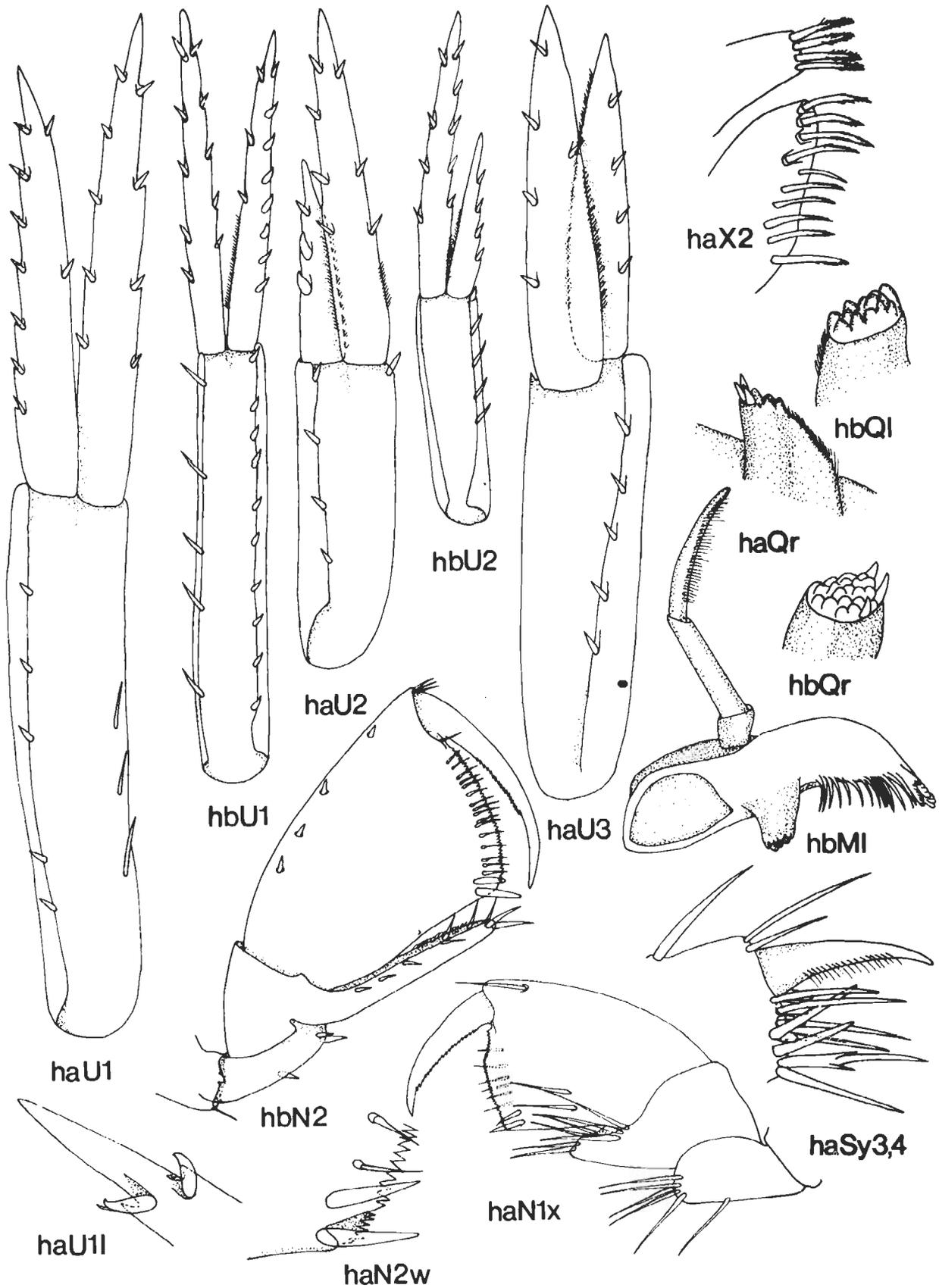


Figure 2. *Amphilochnus casahoya*, n. sp., female 3.15 mm = ha; *Amphilochnus delacaya*, n. sp., female 2.55 mm = hb.

Material examined. Specimens from the type-locality and the jetty complex at Port Isabel, Texas. Size range: 2-3.5 mm.

Distribution. Gulf of Mexico, offshore waters from intertidal to 15 m.

Relationships. *Amphilochus casahoya* is most closely related to *Amphilochus delacaya*, n. sp., which is also described in this paper. *Amphilochus casahoya* differs chiefly in having only 1-2 submarginal spines on article 6 of gnathopod 2 rather than 4 as in *A. delacaya*. Uropods of *A. casahoya* are less spinous than in *A. delacaya*.

This species appears very close to the Hawaiian species, *A. likelike* J. L. Barnard, 1970 and *A. menehune* J. L. Barnard, 1970. These two species as well as *A. casahoya* are also similar to *Gitanopsis vilordes* J. L. Barnard, 1962, in many aspects, except in the structure of the mandible.

Relationships among the amphilochiids are, in general, poorly known. They are a difficult group with which to work as they require extensive dissection for even generic determinations. The lack of detailed descriptions and figures of known species also makes it difficult to demonstrate relationships among the members of this genus.

Ecological information. This species was taken from a Serpulid reef (known as 7.5 fm reef) some 20 km off the south Texas coast and the intertidal margins of rock jetties of Port Isabel, Texas.

Amphilochus delacaya, new species (Figure 2)

Diagnosis. Female 2.55. Like *A. casahoya* in all but the following:

Outer margin of article 6 on gnathopod 2 with 4 submarginal spines; Peduncle of uropod 1 with 5 slender inner marginal and 10 stout outer marginal spines; inner ramus of uropod 1 with 5 spines on both inner and outer margins; subequal outer ramus with inner margin basally setulose and 3 distal spines, outer margin with 8 stout curved spines; inner ramus of uropod 2 armed with 4 inner marginal and 5 outer marginal spines, outer ramus with 4 outer marginal spines.

Types. Holotype, USNM 170754, female 2.55 mm.; paratype series of 4 specimens, USNM 170755.

Type-locality. Isla de Lobos Reef, Vera Cruz, Mexico.

Material examined. The types plus other specimens from the type-locality.

Distribution. Gulf of Mexico, Mexican coast, 5 m depth.

Relationships. Most closely related to *Amphilochus casahoya*; refer to discussion under that species.

Ecological information. This species was found only on coral reefs in the groove and buttress zones.

Gitanopsis Sars, 1895

Diagnosis. Mandibular molar large, tritulative, gnathopod 2 small, subchelate.

Gitanopsis laguna, new species (Figures 3 and 4)

Description. Female, 2.37 mm. Head and body normal for genus, eyes round. Antenna 1: Length ratio of peduncle articles 1,2,3—20:23:14; flagellum with 6 articles. Antenna 2: Articles 4 and 5 subequal in length; flagellum with 5 articles; antenna 2, 0.8 times the length of antenna 1. Upper lip: Bilobed, longer than wide. Mandible: Molar produced, tritulative, upper margin with elongate spines; 8 accessory blades on right and 9 on left mandible, blades increasing in width distally; left incisor typical, upper edge folded over and inward in an inverted "V"; right incisor normal and toothed; palp with 3 articles of length ratios 24:43:58, article 3 lanceolate, ventral margin spiculate. Lower lip: Inner lobes obsolescent, outer lobes with nearly vertical mandibular lobes. Maxilla 1: Inner plate rounded, with 1 terminal spine; outer with oblique distal edge and simple terminal spine teeth; palp biarticulate, distal article 2 times as long as basal with 3 chisel-shaped and 1 normal spines. Maxilla 2: Inner plate with 2 terminal and 1 mediomarginal spines, heavily setose; outer plate longer than inner, distally narrow with 3 terminal spines. Maxilliped: Inner plate with 2 distal facial spines and 2 terminal "pits"; outer plate with serrate inner margin and 1 terminal chisel spine; palp with 4 articles, inner margin of article 2 produced medially, spinose; palp and plates normal for genus. Gnathopod 1: Coxa suboval; article 2 elongate with 3 anteromarginal spines; article 4 with 2 posterodistal spines; article 5 with spinose posterior lobe reaching along half of hind margin on article 6; palm transverse, corner defined by 2 stout spines; inner margin of dactyl serrulate proximally. Gnathopod 2: Coxa subquadrate; posterior margin of article 4 with 2-3 stout spines, distal edge with 1 long spine; article 5 with elongate posterior lobe reaching 90% as long as hind margin on article 6; article 6 distally expanded, anterior edge of outer face with 1-2 submarginal spines, otherwise unarmed; palm transverse with a row of minute spines, corner defined by 2 stout spines; dactyl attenuate, inner margin serrate on upper half. Pereopod 3: Coxa quadrate, longer than wide; anterodistal corner produced, margin with 4 spines; length ratios of articles 4,5,6—31:35:56, poorly spinose; dactyl attenuate. Pereopod 4: Coxa much larger than preceding coxa, posterior margin excavate; otherwise like pereopod 3. Pereopod 5: Coxa wider than long, bifid, article 2 expanded, with 4 anteromarginal spines; article 3 with 2 anteromarginal spines; article 4 with sharp posterior lobe and 3 spines on either margin; article 5 with 2 single and 1 pair of anteromarginal spines; article 6 with anteromarginal spine formula of 1,2,2,1; length ratios of articles 4,5,6—40:40:57, dactyl attenuate. Pereopod 6: Coxa wider than long, with expanded posterior lobe; article 2 expanded with 5 anteromarginal spines; article 3 with 1 anteromarginal spine; article 4 with sharp posterior lobe, either margin with 3 spines; article 5 with a single and 1 pair of anteromarginal spines and distal cluster of spines on either margin; article 6 with anteromarginal spine formula

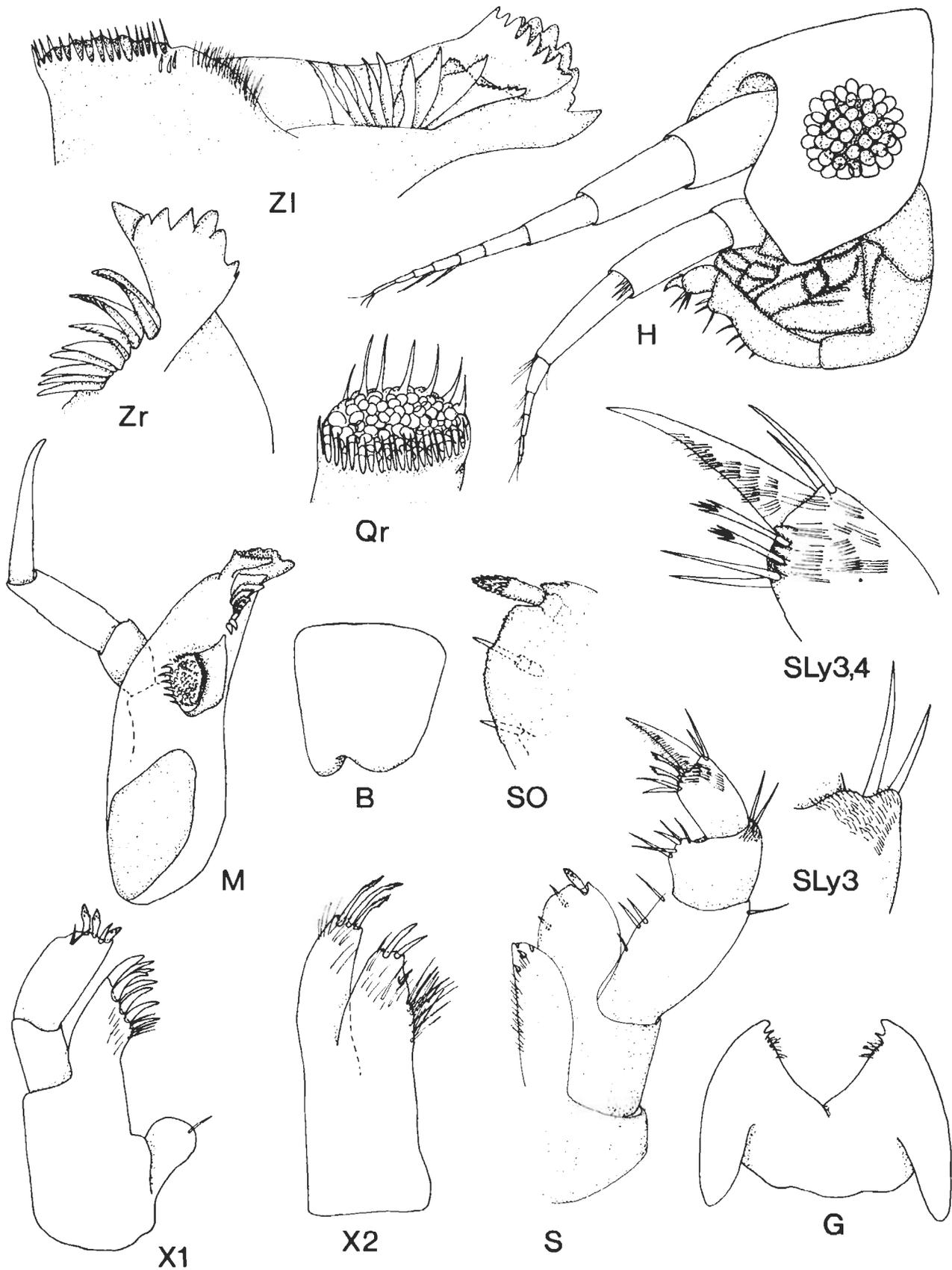


Figure 3. *Gitanopsis laguna*, n. sp., female 2.37 mm.

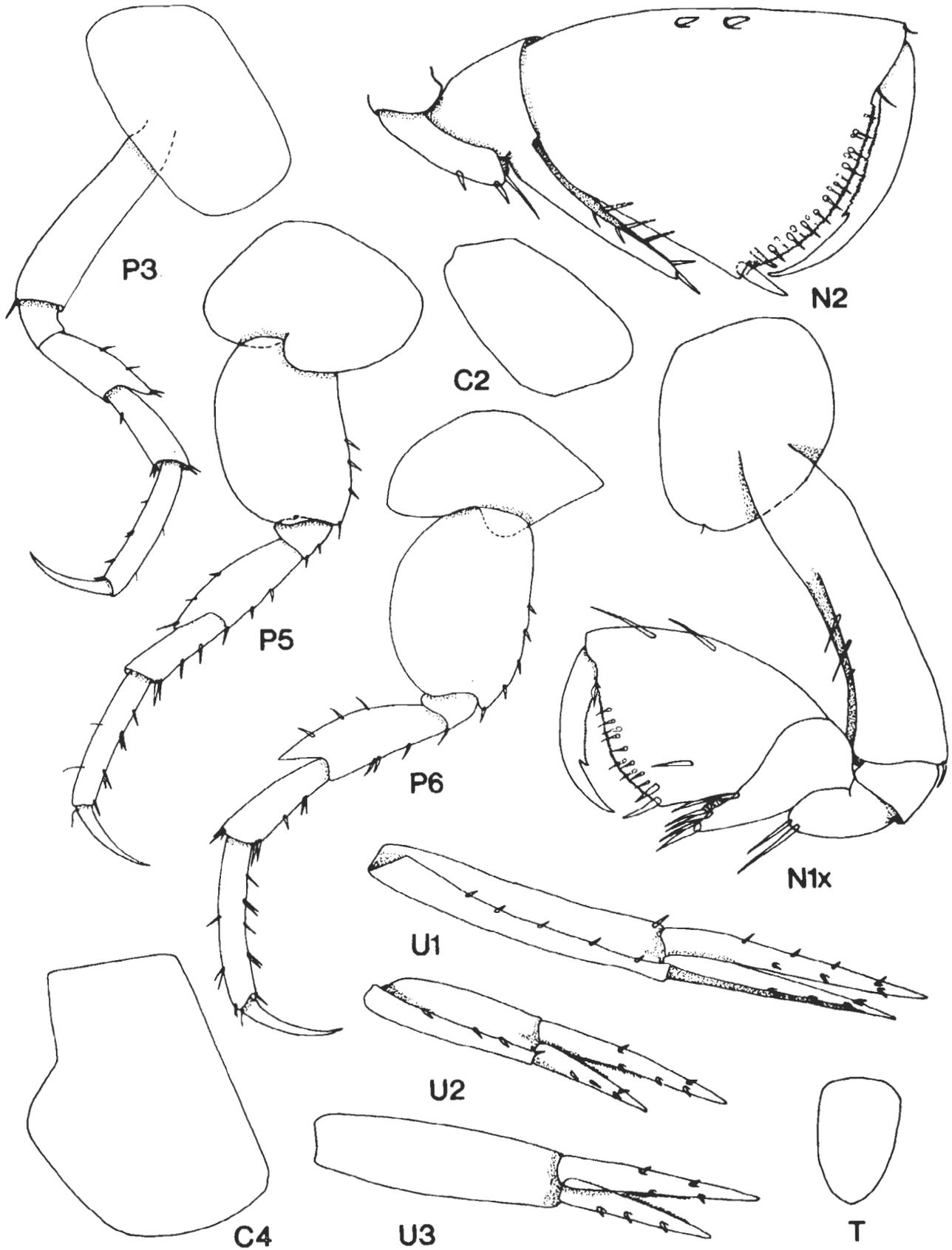


Figure 4. *Gitanopsis laguna*, n. sp., female 2.37 mm.

of 1,2,1,2,1; length ratios of articles 4,5,6-49:46:66, dactyl attenuate. Pereopod 7: Coxa like preceding one but reduced; pereopod longer than preceding one, otherwise similar. Epimera: Corners of plates unproduced, ventral margins of plates 2 and 3 with 2 spines each. Uropod 1: Peduncle longer than either 2 or 3, outer margin with 5 spines, inner with 1 distal spine; rami lanceolate, outer slightly shorter, with 3 outer and 1 inner marginal spines on distal part of ramus; inner ramus with 4 inner and 3 outer marginal spines; opposing margins of rami setulose. Uropod 2: Peduncle shorter than peduncles of uropods 1 or 3, armed with 4 outer marginal spines; outer ramus 0.6 times as long as the inner, with 3 outer and 1 inner marginal spines; inner ramus with 3 inner marginal and 2 outer marginal spines; opposing margins of rami setulose. Uropod 3: Peduncle elongate, unarmed; outer ramus slightly shorter than inner, outer margin with 3 spines; inner ramus with 2 spines on medial parts of either margin; opposing margins or rami setulose. Telson: longer than wide, tapering, apex rounded.

Male. unknown.

Types. Holotype, USNM 170758, female 2.37 mm; paratypes, 10 individuals, USNM 170759.

Type-locality. Holotype from West Bay, Galveston, Texas, 0.5 m depth. Paratype series from Laguna Madre, Texas, 1-2 m depth.

Material examined. The types and specimens from the following locations: Corpus Christi Bay, Texas; San Antonio

Bay, Texas; Southern Laguna Madre near La Pesca, Mexico; and Laguna de Tamiaha near Cucharos, Mexico.

Distribution. Gulf of Mexico, bays and lagoons; shallow depths.

Relationships. *Gitanopsis laguna* is most closely related to two species: *G. vilordes* J. L. Barnard, 1962, from the California coast, and *G. tortugae* Shoemaker, 1933, from Tortugas, Florida. *Gitanopsis laguna* differs from *G. tortugae* in having a more rounded first coxa and a less rounded second coxa. *G. tortugae* also lacks the submarginal facial spines found on article 6 of gnathopod 2. *Gitanopsis laguna* differs from *G. vilordes* in having a more spinose lobe on article 5 of gnathopod 2 and in lacking the stout postero-distal spine on article 2 of that gnathopod. The eyes are more rounded in *Gitanopsis laguna* and the telson is shorter than in *G. vilordes*.

Ecological information. This species was found in shallow depths, 0.5 m, generally associated with algae. It appears to be restricted to higher salinity bays and lagoons as it was not found in offshore samples.

ACKNOWLEDGMENTS

The author wishes to thank Dr. J. L. Barnard, U.S. National Museum, for the loan of Caribbean material from the 1960 Smithsonian-Bredin Expedition; Dr. Wayne Price, University of Tampa, Florida, and Dr. Wes Tunnel, Texas A&I University, for additional material.

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