

1-1-1984

Acanthohaustorius pansus, a New Species of Sand-Burrowing Amphipod from Looe Key Reef, Florida Keys, with Redescription and Distribution Data of *Acanthohaustorius bousfieldi* Frame, 1980 (Amphipoda: Haustoriidae)

James Darwin Thomas

Newfound Harbor Marine Institute, thomasjd@nova.edu

J. L. Barnard

Smithsonian Institution

Find out more information about [Nova Southeastern University](#) and the [Oceanographic Center](#).

Follow this and additional works at: http://nsuworks.nova.edu/occ_facarticles

 Part of the [Marine Biology Commons](#), and the [Oceanography and Atmospheric Sciences and Meteorology Commons](#)

NSUWorks Citation

James Darwin Thomas and J. L. Barnard. 1984. *Acanthohaustorius pansus*, a New Species of Sand-Burrowing Amphipod from Looe Key Reef, Florida Keys, with Redescription and Distribution Data of *Acanthohaustorius bousfieldi* Frame, 1980 (Amphipoda: Haustoriidae). *Proceedings of the Biological Society of Washington*, (4) : 909 -926. http://nsuworks.nova.edu/occ_facarticles/606.

This Article is brought to you for free and open access by the Department of Marine and Environmental Sciences at NSUWorks. It has been accepted for inclusion in Oceanography Faculty Articles by an authorized administrator of NSUWorks. For more information, please contact nsuworks@nova.edu.

ACANTHOHAUSTORIUS PANSUS, A NEW SPECIES
OF SAND-BURROWING AMPHIPOD FROM
LOOE KEY REEF, FLORIDA KEYS, WITH
REDESCRIPTION AND DISTRIBUTION DATA OF
ACANTHOHAUSTORIUS BOUSFIELDI FRAME, 1980
(AMPHIPODA: HAUSTORIIDAE)

J. D. Thomas and J. L. Barnard

Abstract.—A new species of sand-burrowing amphipod, *Acanthohaustorius pansus*, is described from carbonate sands of the Florida Keys Reef Tract. This is the first time the predominantly cold-water genus *Acanthohaustorius* has been reported south of Virginia coastal waters. *Acanthohaustorius bousfieldi* Frame, 1980, originally described from Long Island Sound, is refigured and reported from shell-hash sediments off the central Atlantic coast of Florida. A revised key to the species of *Acanthohaustorius* is presented.

Investigations by the authors have revealed a previously undescribed species of *Acanthohaustorius* from Looe Key Reef in the Florida Keys, and a range extension to Hutchinson Island, Florida, of *A. bousfieldi* Frame, 1980. To date, no species of *Acanthohaustorius* had been reported south of Virginia. This predominantly cold-water genus is found mostly in quartzose shallow water sediments and its occurrence in shell-hash sediments from central Florida and coralline sands of the Florida Reef Tract is significant.

The genus *Acanthohaustorius* was previously composed of six species: *A. spinosus* (Bousfield, 1962); *A. millsi* Bousfield, 1965; *A. intermedius* Bousfield, 1965; and *A. shoemakeri* Bousfield, 1965; all described from American North Atlantic waters. *Acanthohaustorius bousfieldi* Frame, 1980, and *A. similis* Frame, 1980, were described from offshore bottom sands of New York Bight and Long Island Sound. Reports of undescribed *Acanthohaustorius* species have been made by Camp *et al.* (1977) from Hutchinson Island, Florida (three species), and by Robertson and Shelton (1978) from the northwestern Gulf of Mexico. We believe that a number of undescribed haustoriids exist in the southern Atlantic and Gulf of Mexico waters, and that any major taxonomic treatment of the American Haustoriidae should be delayed until the southern Atlantic and Gulf of Mexico component species can be included.

Haustoriids are exceedingly spinose and setose and in the past the location and numbers of certain spines or spine groups have been used as species characters. However, the numbers of these spines and spine groups vary not only with size of the specimen (larger = more spinose) but with geographic distribution of a species (number of spines decreases with southerly distribution). One taxonomic difficulty is the determination of those characters or set of characters that will withstand the normal range of specific variation. Our studies show that spine morphology on pereopods 5-7, spination of uropod 1 (especially the peduncle), and the configuration of the telson are characters that vary little and thus offer

some help in sorting out the species. We examined a single character in selected haustoriids, the number of comb-setae on mandibular palp article 3, and found a direct correlation among genera and species between the number of comb-setae and specimen length, thus rendering this particular character of no use in separating species.

Explanation of Figure Legend.—Upper case letters refer to body parts as follows; lower case letters to left of capital letters refer to specimens mentioned in text; lower case letters to right of capital letters and in body of drawings are in following list: A, antenna; B, body; C, coxa; E, eye; G, gnathopod; H, head; I, inner plate or ramus; J, pleopod; K, seta or spine group; L, labium; M, mandible; N, palp; P, pereopod; R, uropod; S, maxilliped; T, telson; U, upper lip; W, pleon; X, maxilla; Y, epimeron; Z, molar; d, dorsal; f, flattened; l, left; o, other view; r, right.

Acanthohaustorius pansus, new species

Figs. 1–5

Holotype.—USNM 195103, female “a,” 4.82 mm, with 7 eggs.

Type-locality.—Looe Key Reef, Florida Keys, 24°32.5'N; 82°24.0'W, in coarse coralline sand in front of forereef, 8 m, 22 May 82, J. D. Thomas collector.

Diagnosis.—Posterior margin of coxa 3 deeply concave, posteroventral corner sharp and protuberant. Article 5 of pereopod 6 with horizontal ventral margin armed with about 4 spines evenly spaced, facial spines in 2 pairs forming square, posterior margin sparsely armed; posterior margin of article 6 with only one spine group proximal to group on apex. Coxa 7 blunt posteriorly. Peduncle of uropod 1 with 5 large dorsolateral spines, 2 ventral spines, 3 medial spines; inner ramus variable in size, short to subequally as long as outer ramus. Telson cleft to base, lobes separated by broad gape.

Material.—Female “a” 4.82 mm; female “b” 4.30 mm; male “g” 4.60 mm; juvenile “j” 2.11 mm.

Description of female (ovigerous), 4.82 mm.—Body broad, robust, barrel-shaped. Head 1.42 times wide as long, rostrum short. Eyes: in life white; in freshly preserved material (1–2 hours), clear with 4–5 pinkish-orange corneal inclusions; not discernible in preserved material.

Antenna 1: article 1 of peduncle as deep as wide, bearing 7 plumose setae on lateral margin; article 2 narrow, equal in length to article 1; flagellum 8-articulate; accessory flagellum with 2 long, subequal articles. Antenna 2: peduncular article 4 broad, with posterior lobe, posterolateral margin with 21 elongate glassy spines, medial margin with 7 elongate spines, entire posterior margin with long plumose setae, (not figured for clarity), 4 facial plumose setae near posterodistal margin; article 5 slightly expanded distally; flagellum composed of 6 articles, article 1 longest. Upper lip broad, apex smooth. Right mandible: incisor bifid, raker row with 6 elongate and 1 short spines; molar well developed, triturative, molar surface indented, bearing one jointed penicillate seta; palp article 2 with 3 setae; palp article 3 with 11 apical spines, and 11 marginal comb-spines. Left mandible: lacinia mobilis short; with 7 raker spines. Maxilla 1: inner plate with medial plumose setae, outer plate marginally pubescent, bearing 11 apical spines; palp slender, armed with spines and plumose setae. Maxilla 2: inner plate slender,

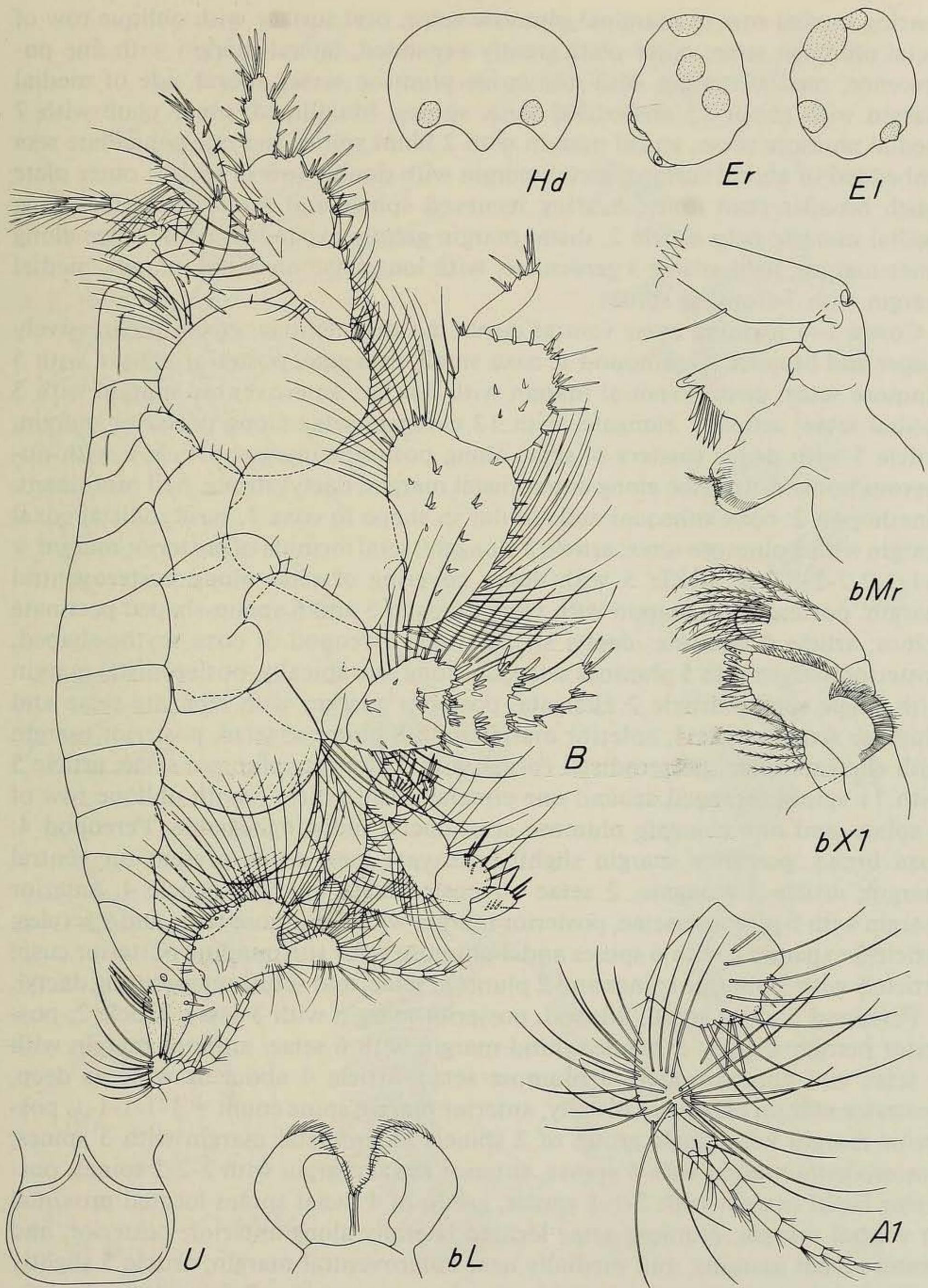


Fig. 1. *Acanthohaustorius pansus*, unattributed figures, female "a" holotype, 4.82 mm; b = female "b" 4.30 mm.

bearing medial row of marginal plumose setae, oral surface with oblique row of facial plumose setae; outer plate greatly expanded, lateral margin with fine pubescence, medial margin with numerous plumose setae, aboral side of medial margin with about 15 embedded thick spines. Maxilliped: inner plate with 7 medial plumose setae, apical margin with 2 blunt spines and one penicillate seta embedded in aboral surface, distal margin with double row of spines; outer plate much broader than inner, bearing recurved spines and numerous setae along medial margin; palp article 2, distal margin greatly expanded, dense setae along inner margin; palp article 3 geniculate, with long setae on distal margin, medial margin with 7 elongate spines.

Coxae 1-4 forming even ventral curve, no disjunctions, coxae progressively longer and broader. Gnathopod 1: coxa small, excavate, posterior margin with 5 plumose setae, posteroventral margin with 3 setae, anteroventral margin with 3 medial setae; article 2 elongate, with 12 elongate setae along posterior margin; article 5 with dense clusters of setae along posterior margin; article 6 with numerous hooked-tip setae along anterodistal margin; dactyl strong, nail prominent. Gnathopod 2: coxa subequal and similar in shape to coxa 1, posterodistal coxal margin with 8 plumose setae; article 2 elongate, setal formula of posterior margin = 1-1-1-2-2-2-3-2-5; article 5 with dense covering of setae along posteroventral margin, posterodistal margin with two groups of 5 and 6 spoon-shaped pectinate spines; article 6 elongate; dactyl short, stout. Pereopod 3: coxa scythe-shaped, posterior margin with 5 plumose setae, one long seta apically, posterodistal margin with single setule; article 2 elongate, posterior margin with elongate setae and plumose setae; article 4, anterior margin with 8 plumose setae, posterior margin with elongate setae, posterodistal corner with 3 elongate plumose setae; article 5 with 11 spines arranged around one circular cusp; article 6 with oblique row of 8 spines and one elongate plumose seta, dactyl indistinguishable. Pereopod 4: coxa broad, posterior margin slightly excavate, one setule present on ventral margin; article 2 elongate, 2 setae on posterodistal margin; article 4, anterior margin with 6 plumose setae, posterior margin with 8 plumose setae and 9 setules; article 5 expanded, with 6 spines and 3 plumose setae surrounding posterior cusp; article 6 with 9 oblique spines and 2 plumose setae, and setule representing dactyl.

Pereopod 5: coxa small, bilobed, posterior margin with 3 setae; article 2, posterior margin slightly expanded, hind margin with 6 setae, anterior margin with 2 setae and approximately 8 plumose setae; article 4 about as wide as deep, posterior margin expanded distally, anterior margin spine count = 1-1-1-1-1, posterior margin with single group of 2 spines, anterodistal margin with 5 spines, posterodistal margin with 6 spines, anterior facial margin with 2-2-2 spines, posterior facial margin with 2-1-1 spines, group of 4 facial spines located proximal to ventral margin, plumose setae located laterally along anterior, posterior, and posterodistal margins; and medially near anteroventral margin; article 5 slightly expanded posteroventrally, anterior margin spine count = 7-5, posterior margin spine count 3-5, 2 groups of facial spines = 7-4; article 6, anterior margin spine count = 3-3-3, apex with 4 spines and one embedded penicillate seta, representing dactyl. Pereopod 6: coxa small, rounded posteriorly, with 5 short setae along posterior margin and one seta near posteroventral margin (not shown in figure); article 2 quadrate, deeper than wide, posteroproximal margin with 5 short setae,

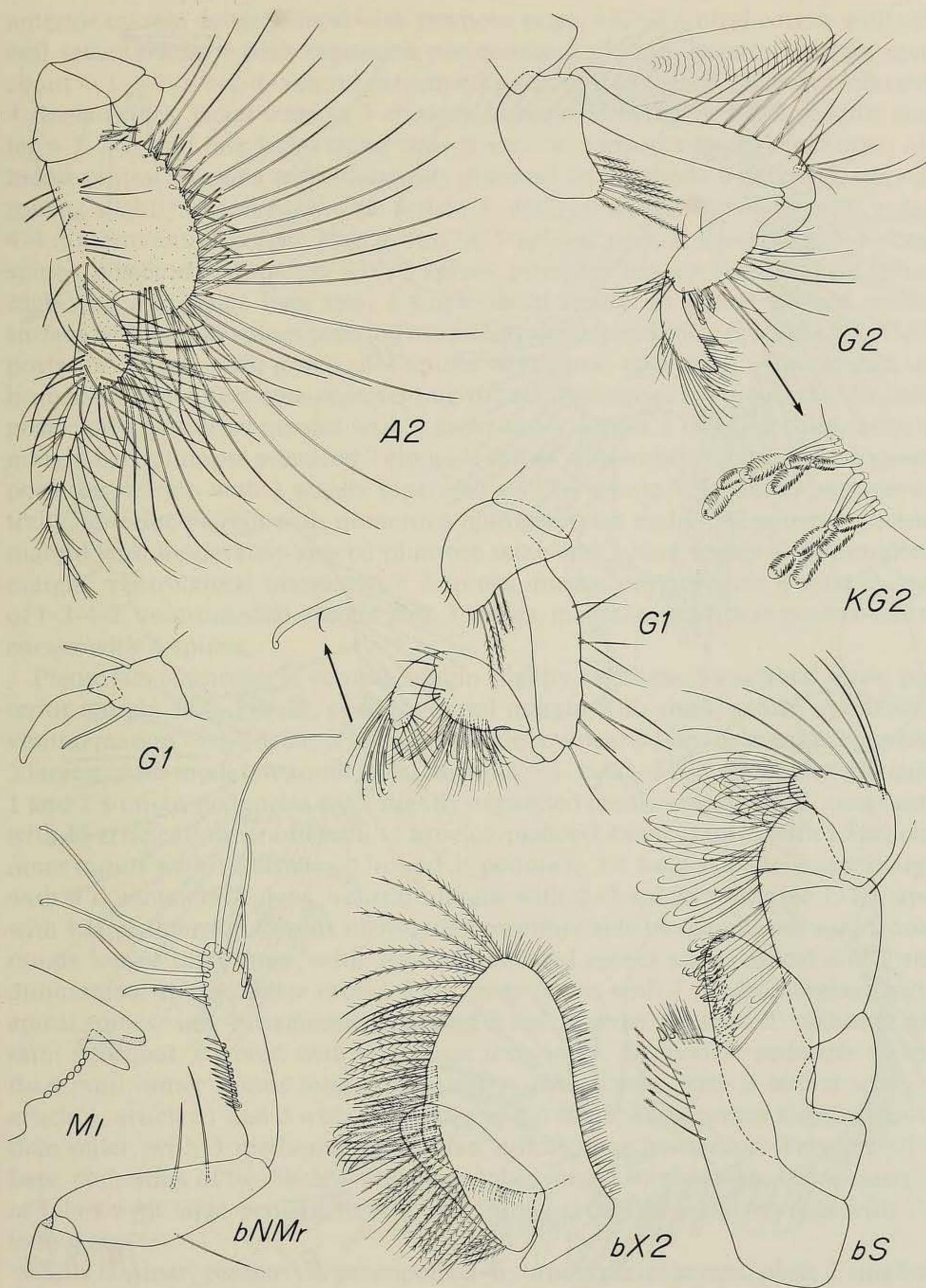


Fig. 2. *Acanthohaustorius pansus*, unattributed figures, female "a," holotype, 4.82 mm; b = female "b" 4.30 mm.

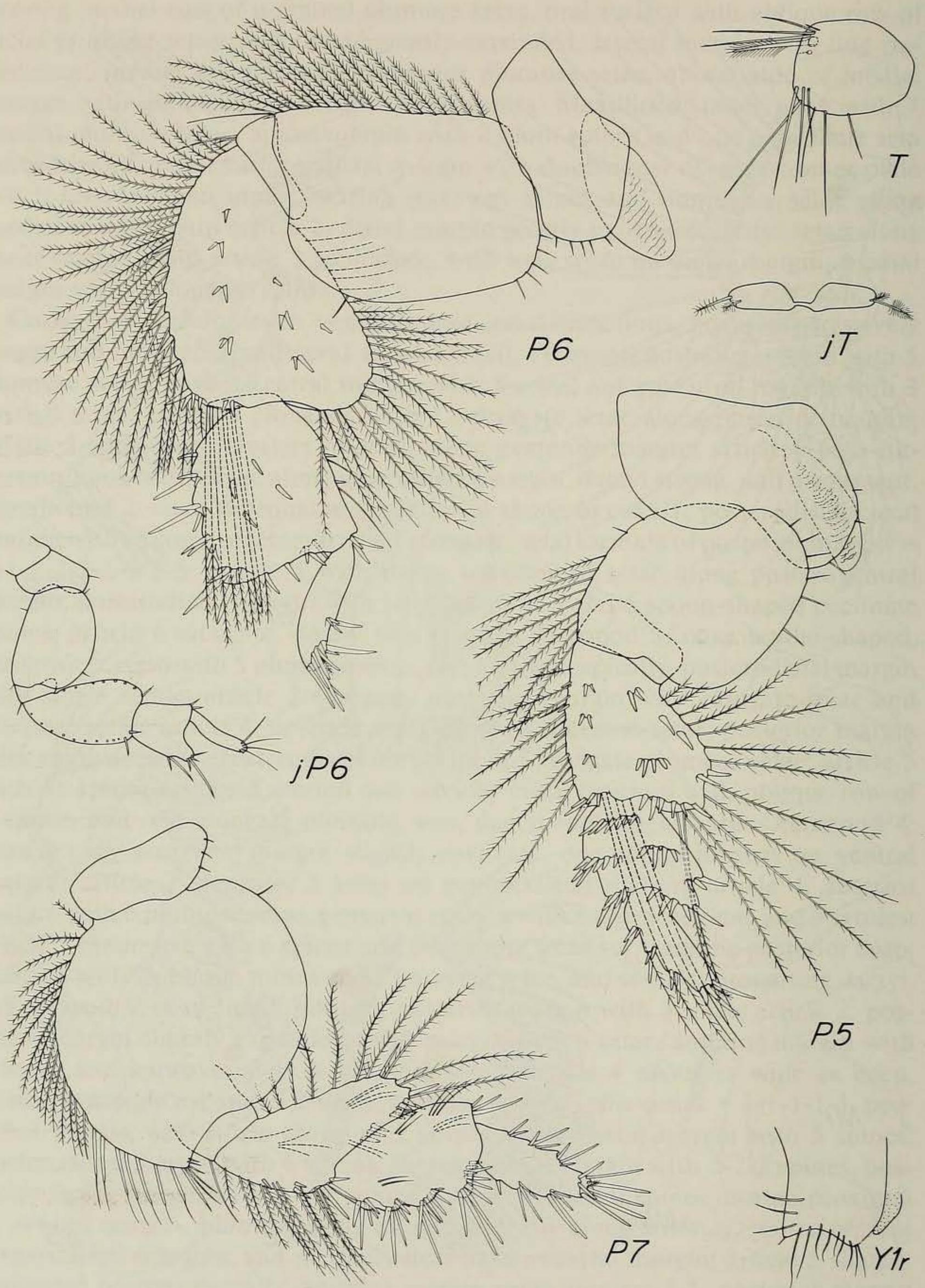


Fig. 3. *Acanthohaustorius pansus*, unattributed figures, female "a" holotype, 4.82 mm; j = juvenile "j" 2.11 mm.

anterior margin densely lined with plumose setae, anteroventral corner with several setae; article 4 with expanded posterodistal margin, anterior margin spine count = 1-1-1-1-2-2-4, ventral margin with cluster of 2 spines, posterior lobe with 4 single spines, facial setae in 3 clusters, anterior cluster = 1-2-2-2, middle cluster = 1-2-2, and one facial spine near posterior margin; anterior, posterior, and medioventral margins with numerous plumose setae; article 5 subquadrate, narrowing slightly at insertion with article 4, anterior margin spine formula = 1-3-4-4, anteroventral corner with group of 5 spines, ventral margin with 3 single spines, posterodistal margin with 3 spines, posterior margin with 2 single spines, each with one single long seta, 4 single facial spines on lateral surface, medial surface with pair of spines inserted near ventral margin; article 6, length $4 \times$ width, posterior margin with group of 4 spines near apex, apex with 9 spines and one immersed penicillate seta representing dactyl. Pereopod 7: coxa small, rounded posteriorly, posterior margin with 3 short setae; article 2 large, circular, anterior margin with plumose setae and 7 elongate spines, anterodistal corner with 6 spines, posterior margin with 2 widely separated setules; article 4 produced posteroventrally, anterior margin with numerous plumose setae and 1-2-3 spines, posterior margin with moderately spaced plumose setae and 3 long spines at posterodistal margin, ventrolateral margin with 2 spines, medial surface with 4 setal clusters of 1-3-4-2, ventromedial margin with 3 spines, medial margin near posteroventral corner with 4 spines.

Pleosome: epimeron 1, ventral margin slightly excavate, 8 marginal setae, posterior margin with 3 setae, posteroventral margin with single setule; epimeron 2 ventral margin with 8 setae, 3 setae in oblique row near posterior margin; epimeron 3 largest, with moderate tooth, setal formula = 1-1-4-5-4-3-4; Pleopods: pleopods 1 and 2 similar, peduncles with slightly expanded medioventral lobes, outer rami with 15 articles, inner rami with 11 articles; pleopod 3 outer ramus with 15 articles, inner ramus with 12 articles. Uropod 1: peduncle $3 \times$ long as wide, outer margin with 3 dorsolateral spines, ventral margin with 2-3 spines (variable L-R), apex with 1 large interramal spine surrounded on either side by one shorter spine; outer ramus longer than inner, with 1-2-2 dorsofacial spines and 5 apical and 2 mediomarginal spines; inner ramus 0.66 times outer, with 1 mediomarginal and 3 apical spines, and 4 mediomarginal and 3 apical setae. Uropod 2: peduncle and rami subequal, covered with numerous long setae. Uropod 3: peduncle shorter than rami; outer ramus longer than inner, 2 articulate, with 2 lateral setae on article 1, articles 1 and 2 with numerous apical setae; inner ramus slightly shorter than outer, with 3 mediomarginal setae, apical setae numerous. Telson cleft to base, consisting of two widely separated lobes joined by thin web, lateral margins of lobes with large penicillate seta and 2 long setae, posterior margin with 7-9 long setae.

Gills laminar, present on pereopods 2-6; brood plates setose, plate 2 smallest, plates 3-5 larger, subequal.

Male "c," 4.30 mm.—Similar to female in most respects but generally having more plumose setae, and clusters of facial spines on articles 4 and 5 of pereopods 5, 6, and 7. Pereopod 5: article 2 with 7 posterior setae; article 4 with 2-2-3 anterior facial spines, 2-4 middle facial spines, and 2-1 posterior facial spines; article 5 with 7-8-6 anterior facial/marginal spines, and 4-3-4 posterior facial/

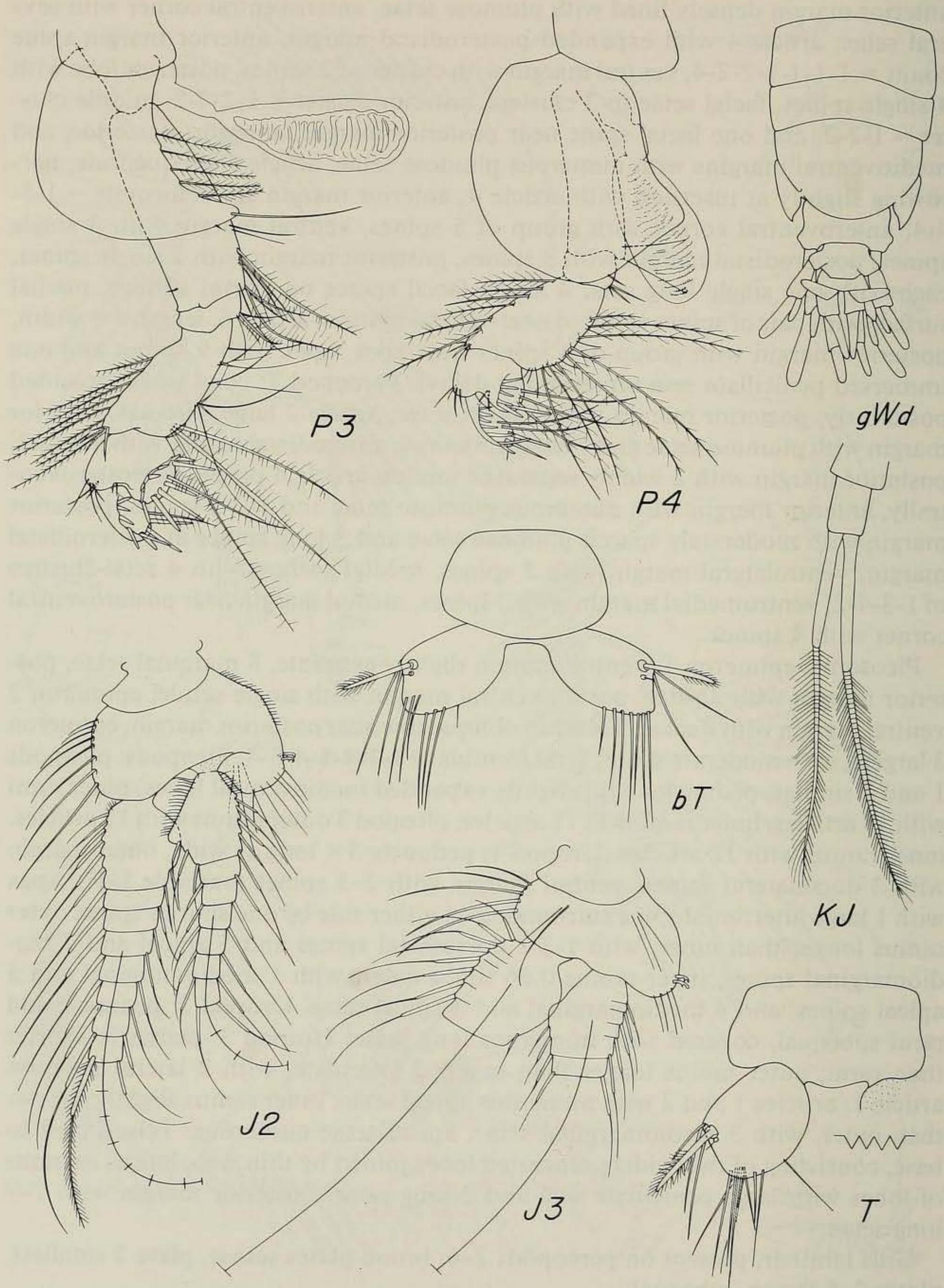


Fig. 4. *Acanthohaustorius pansus*, unattributed figures, female "a" holotype, 4.82 mm; b = female "b" 4.30 mm; g = male "g" 4.60 mm.

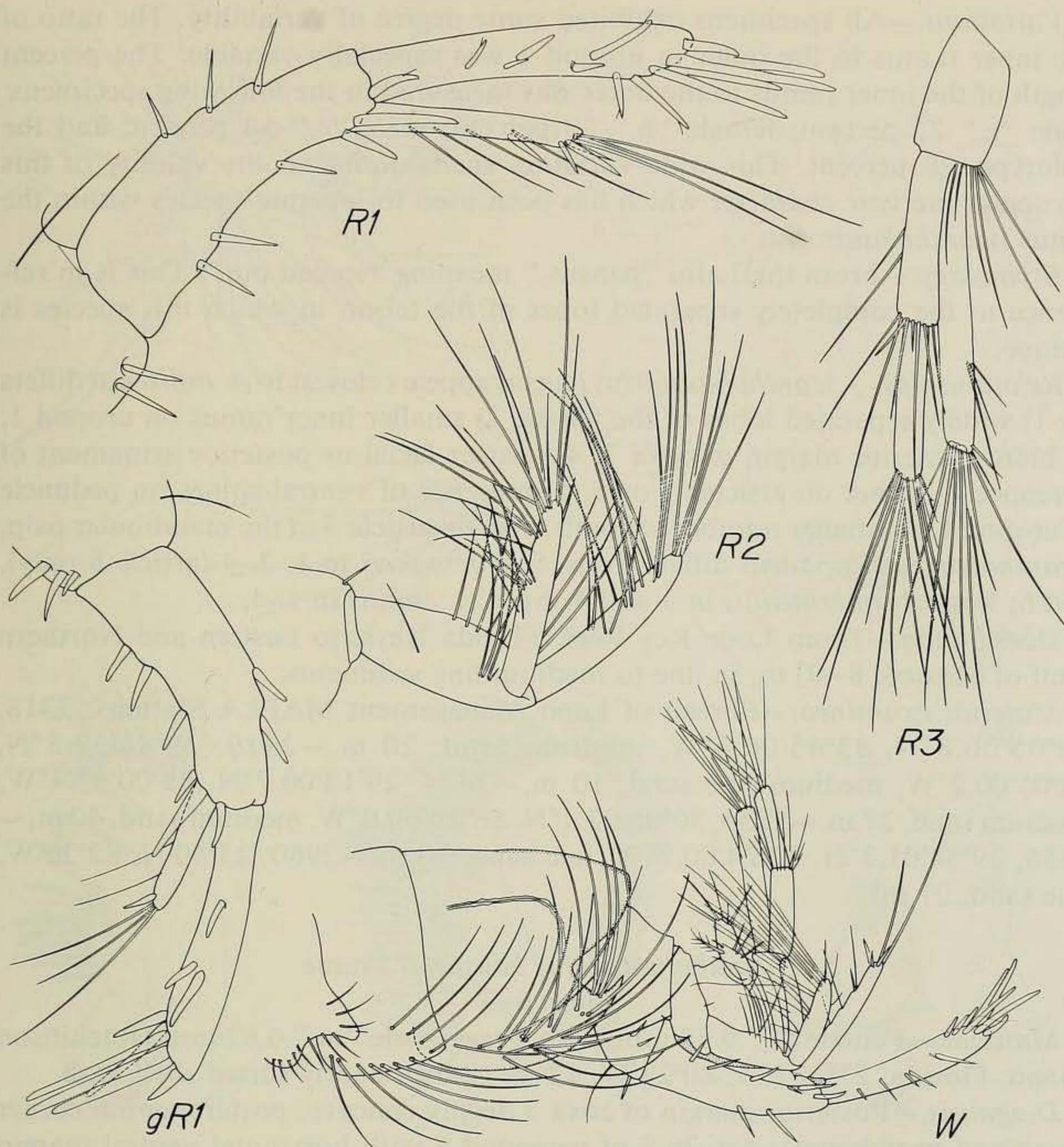


Fig. 5. *Acanthohaustorius pansus*, unattributed figures, female "a" holotype, 4.82 mm; g = male "g" 4.60 mm.

marginal spines. Pereopod 6: article 4 facial spines = 2-2-2, 3-3, and 1. Pereopod 7: article 4 with group of 3 facial setae on lateral margin.

Specimens under 3 mm in length have fewer spines and spine groups, and fewer clusters of spines in each group. Mandibular palp article 3 shows reductions in number of comb setae and apical spines.

Juvenile "j," 2.11 mm.—Left mandibular palp article 3 with 1 comb seta and 4 apical setae; pereopod 6 article 5 lacking facial spines; article 6 lacking posterior spines.

Juvenile "k," 2.82 mm.—Left mandibular palp article 3 with 3 comb setae and 7 apical setae; pereopod 6 article 5 lacking facial spines; article 6 with a single posterior marginal spine.

Variations.—All specimens exhibited some degree of variability. The ratio of the inner ramus to the outer in uropod 1 was especially variable. The percent length of the inner ramus to the outer was measured in the following specimens: male “g,” 25 percent; female “b,” 50 percent; male “c,” 58 percent; and the holotype, 70 percent. This wide variation sheds doubt on the validity of this particular meristic character which has been used to separate species within the genus *Acanthohaustorius*.

Etymology.—From the Latin “pansus,” meaning “spread out.” This is in reference to the completely separated lobes of the telson in which this species is unique.

Relationships.—*Acanthohaustorius pansus* appears closest to *A. millsii* but differs in: 1) widely separated lobes of the telson, 2) smaller inner ramus on uropod 1, 3) blunt posterior margin of coxa 7, 4) sparser facial or posterior armament of pereopod 6, either on articles 5 or 6, 5) presence of ventral spines on peduncle of uropod 1, 6) smaller number of comb setae on article 3 of the mandibular palp. *Acanthohaustorius pansus* differs from *A. shoemakeri* in 1, 3, 4 (article 6 only), and 6; from *A. intermedius* in 1 and 4; from *A. similis* in 1–4.

Distribution.—From Looe Key Reef, Florida Keys, to Eastern and Northern Gulf of Mexico, 8–40 m, in fine to medium fine sediments.

Material examined.—Bureau of Land Management MAFLA Stations: 2318, 29°05'00.8"N, 83°45'00.5"W, medium sand, 20 m.—2419, 29°46'59.8"N, 84°05'00.2"W, medium fine sand, 10 m.—2424, 29°13'00.7"N, 85°00'01.4"W, medium sand, 27 m.—2855, 30°08'02.1"N, 86°30'00.0"W, medium sand, 40 m.—2856, 29°54'01.3"N, 87°24'00.2"W, fine sand, 30 m.—2960, 25°40'N, 82°20'W, fine sand, 27 m.

Acanthohaustorius bousfieldi Frame

Figs. 6–9

Material.—Female “f,” 9.50 mm, with 8 eggs; male “m,” 6.62 mm Hutchinson Island, Florida, 27°21.6'N, 80°28'W, 12 m, coarse, poorly sorted shell hash.

Diagnosis.—Posterior margin of coxa 3 deeply concave, posteroventral corner sharp and protuberant. Article 5 of pereopod 6 with horizontal ventral margin armed with about 3 unevenly spaced spines, facial spines in rectangle of pairs; and singles, posterior margin well armed; posterior margin of article 6 with more than 2 spine groups other than proximal group. Coxa 7 blunt posteriorly. Peduncle of uropod 1 with short dorsolateral spines along middle two-thirds of peduncle, basal, and distal spines stout, no ventral or medial spines (one medial setule); inner ramus as long as outer, not variable. Telson cleft to base, lobes not separated.

Description of Female, 9.50 mm.—Body large, barrel shaped. Head 0.71 × long as wide, rostrum short, eyes not visible. Antenna 1 article 1 of peduncle with mid-ventral margin slightly produced, oblique row of plumose setae on dorso-lateral face; article 2 shorter than article 1, dense growths of plumose setae on anterior and posteroventral margins; flagellum 11-articulate; accessory flagellum with 2 long, subequal articles. Antenna 2: article 3 of peduncle with 3 plumose setae and 3 spines on posterior margin; article 4 large, posterior margin expanded, anterodistal quadrant with 9 plumose setae, posterior margin with 24 blunt spines on lateral surface and 7 elongate spines on medial surface, 4 facial setae located proximally, distal face with 4 long, plumose setae, medial surface with 6 enlarged

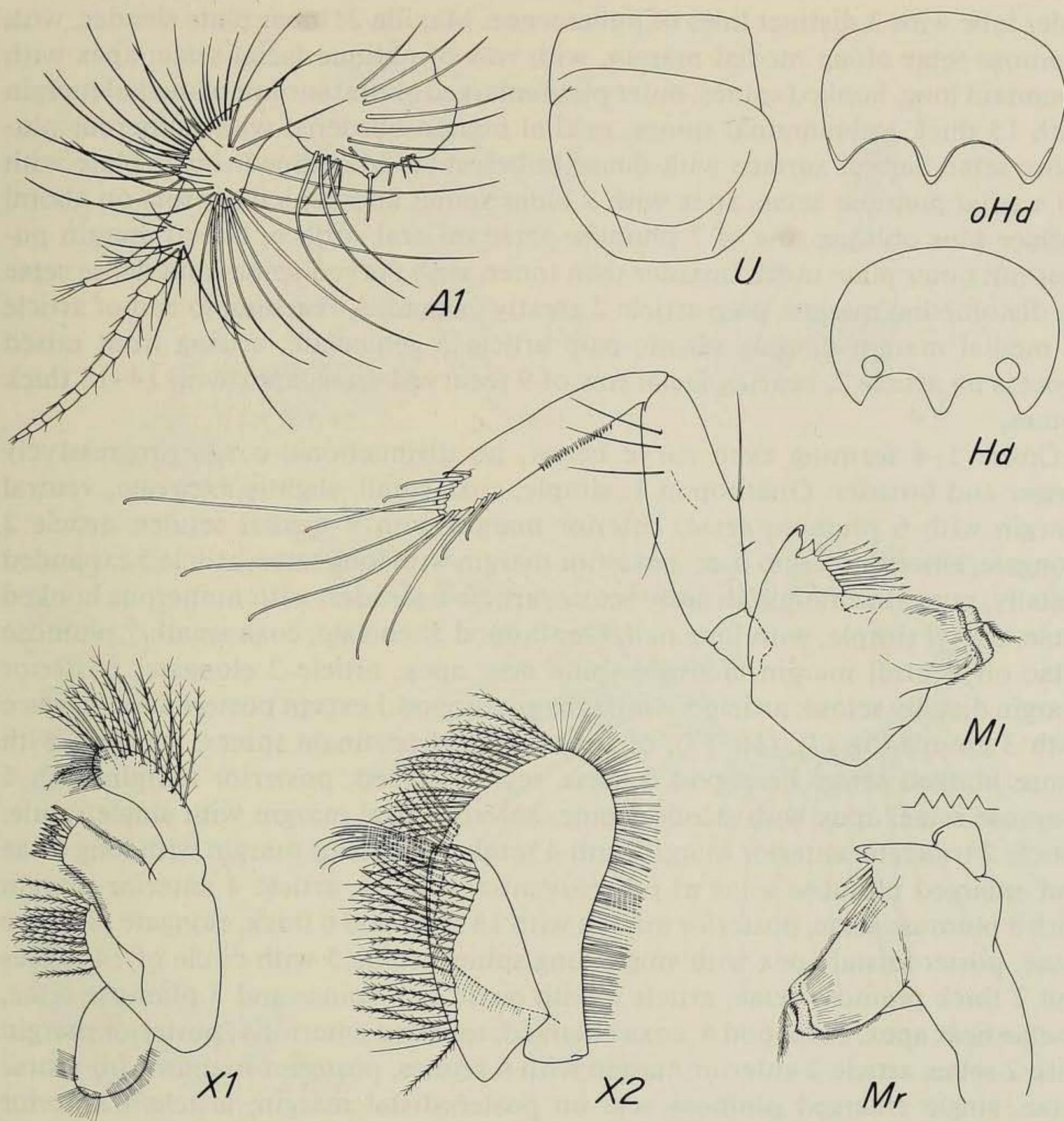


Fig. 6. *Acanthohaustorius bousfieldi* unattributed figures, female "f" 9.50 mm; m = male "m" 6.62 mm.

plumose spines embedded in sockets anteroproximally, posterior margin with numerous plumose setae; article 5 with 15 plumose setae near anterior margin, posteriorly lined abundantly with plumose setae, flagellum 8-articulate, article 1 longest.

Upper lip broad, apex smooth. Lower lip: inner lobes truncate, setose anteriorly, outer lobes anteromedial margins armed with short spines, pubescence well developed on anterior and lateral margins. Right mandible: incisor bifid, lacinia mobilis small, subacute and serrate; raker row with 1 short and 8 elongate spines; molar triturative, with inserted penicillate seta; palp articles 1-3 with ratio 18:65:72, article 3 with 21 comb-spines and 11 apical spines. Left mandible with 8 long raker spines. Maxilla 1: inner plate small, 11 plumose setae on medial margin; outer plate marginally setose, with 16 apical spines; palp with numerous plumose setae on lateral margin, apex with thin spines and one thick penicillate seta; coxal

baler lobe with 3 distinct lines of pubescence. Maxilla 2: inner plate slender, with plumose setae along medial margin, with row of oblique facial setae, apex with abundant long, hooked spines; outer plate enlarged aboral surface of medial margin with 15 thick, submarginal spines, medial margin bordered with numerous plumose setae, lateral surface with dense pubescence. Maxilliped: inner plate with 10 medial plumose setae, apex with 2 blunt spines and penicillate seta on aboral surface plus oblique row of 7 plumose setae on oral surface, lateral margin pubescent; outer plate much broader than inner, with curved spines and dense setae on distomedial margin; palp article 2 greatly expanded, reaching to end of article 3, medial margin densely setose; palp article 3 geniculate, arising from raised process on article 2, bearing facial row of 9 recurved setae, apex with 14–15 thick spines.

Coxae 1–4 forming even curve below, no disjunctions, coxae progressively longer and broader. Gnathopod 1: simple; coxa small, slightly excavate, ventral margin with 6 plumose setae, anterior margin with 9 medial setules; article 2 elongate, anterior margin bare, posterior margin with long setae; article 5 expanded distally, posterior margin densely setose; article 6 slender, with numerous hooked setae; dactyl simple, with long nail. Gnathopod 2: chelate; coxa small, 7 plumose setae on ventral margin, a single spine near apex; article 2 elongate, posterior margin distally setose; article 5 similar to gnathopod 1 except posterodistal surface with 3 groups (5), (7), (16–17), of spoon-shaped pectinate spines; article 6 with dense hooked setae. Pereopod 3: coxa scythe-shaped, posterior margin with 5 plumose setae, apex with slender spine, anteroventral margin with single setule; article 2 truncate, anterior margin with 4 setules, posterior margin with long setae and enlarged plumose setae at posteroventral margin; article 4 anterior margin with 8 plumose setae, posterior margin with 18 setae and 6 thick, elongate plumose setae, posterodistal apex with single long spine; article 5 with circle of 14 spines and 2 thick plumose setae; article 6 with circle of 8 spines and 3 plumose setae, 2 setae near apex. Pereopod 4: coxa enlarged, rounded anteriorly, posterior margin with 2 setae; article 2 anterior margin with 6 setules, posterior margin with sparse setae, single enlarged plumose seta on posterodistal margin; article 4 anterior margin with 5 plumose setae, posterior margin with 10 plumose setae interspersed with short spines, posterodistal surface with oblique row of 5 plumose setae; article 5 with circle of 6 spines and 3 plumose setae; article 6 with circle of 10 spines and 2 plumose setae, one setule near apex representing dactyl.

Pereopod 5: coxa bilobed, hind margin with 18 plumose setae; article 2 sub-circular, anterior margin with plumose setae, 4 short setae on anteroproximal margin, posterior margin with 15 plumose setae and one setule; article 4 expanded posterodistally, posterodistal margin truncate, anterior margin with interspersed long and short plumose setae and single spines, ventral margin with 4 anterior and 7 posterior spines, posterior margin with plumose setae only, facial spine formulas = 1-3-3-4 anterior, and 2-6-3 posterior, mediofacial setae = 3-8-10 anterior and 2 posterior; article 5 similar in shape to 4, anterior margin lacking setae, facial spine formulas = 10-8-6 anterior and 6-3-6 posterior, 5 plumose setae embedded in posteroventral spine set; article 6 anterior spine formula = 2-4-3-3, posterior margin bare, apex with 5 spines and one penicillate seta. Pereopod 6: coxa small, bilobed, hind margin with 6 plumose setae; article 2 truncate, hind margin with 12 plumose setae and one setule, medial surface with 1-2-2-2 and 5

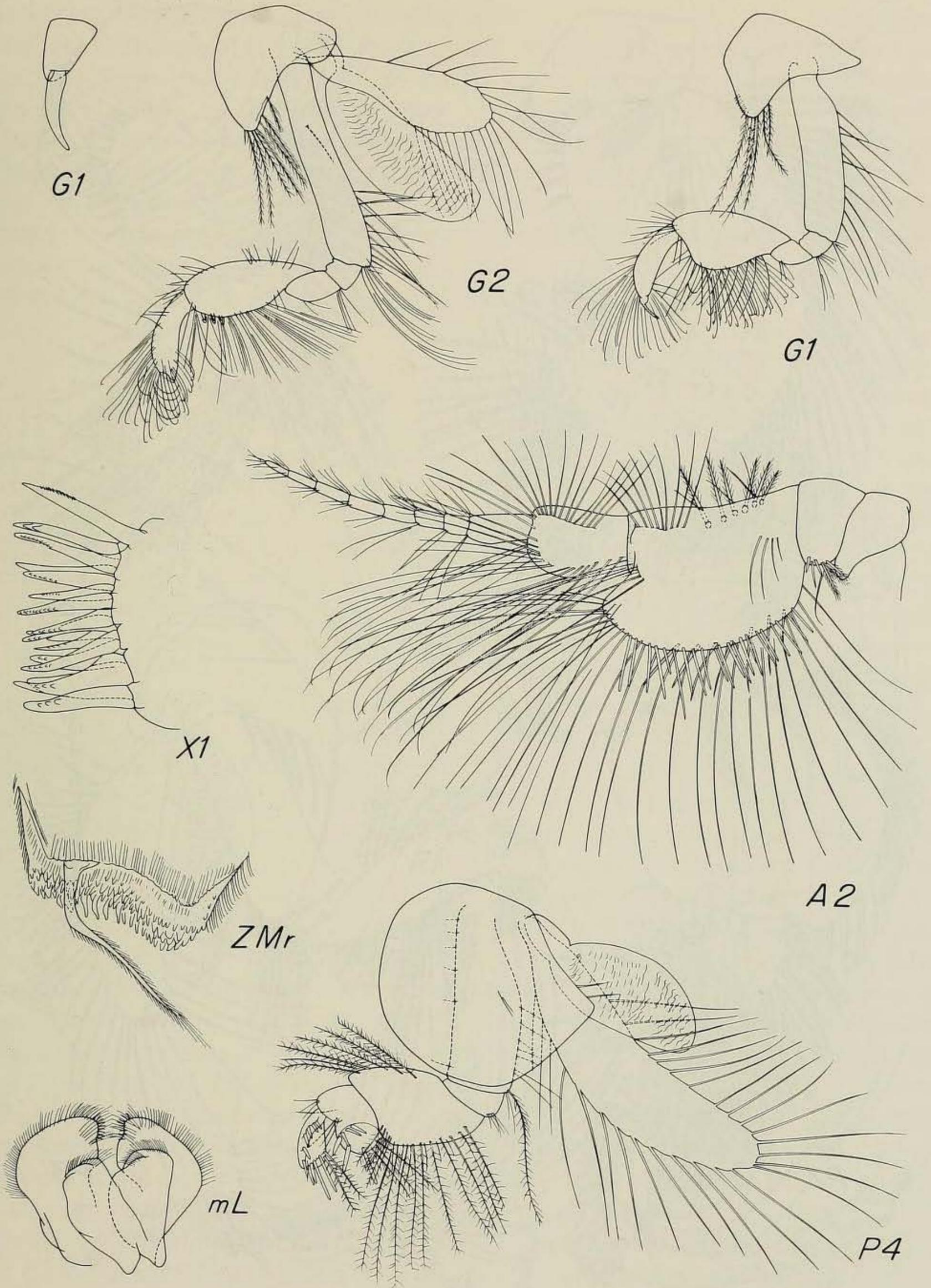


Fig. 7. *Acanthohaustorius bousfieldi*, unattributed figures, female "f" 9.50 mm; m = male "m" 6.62 mm.

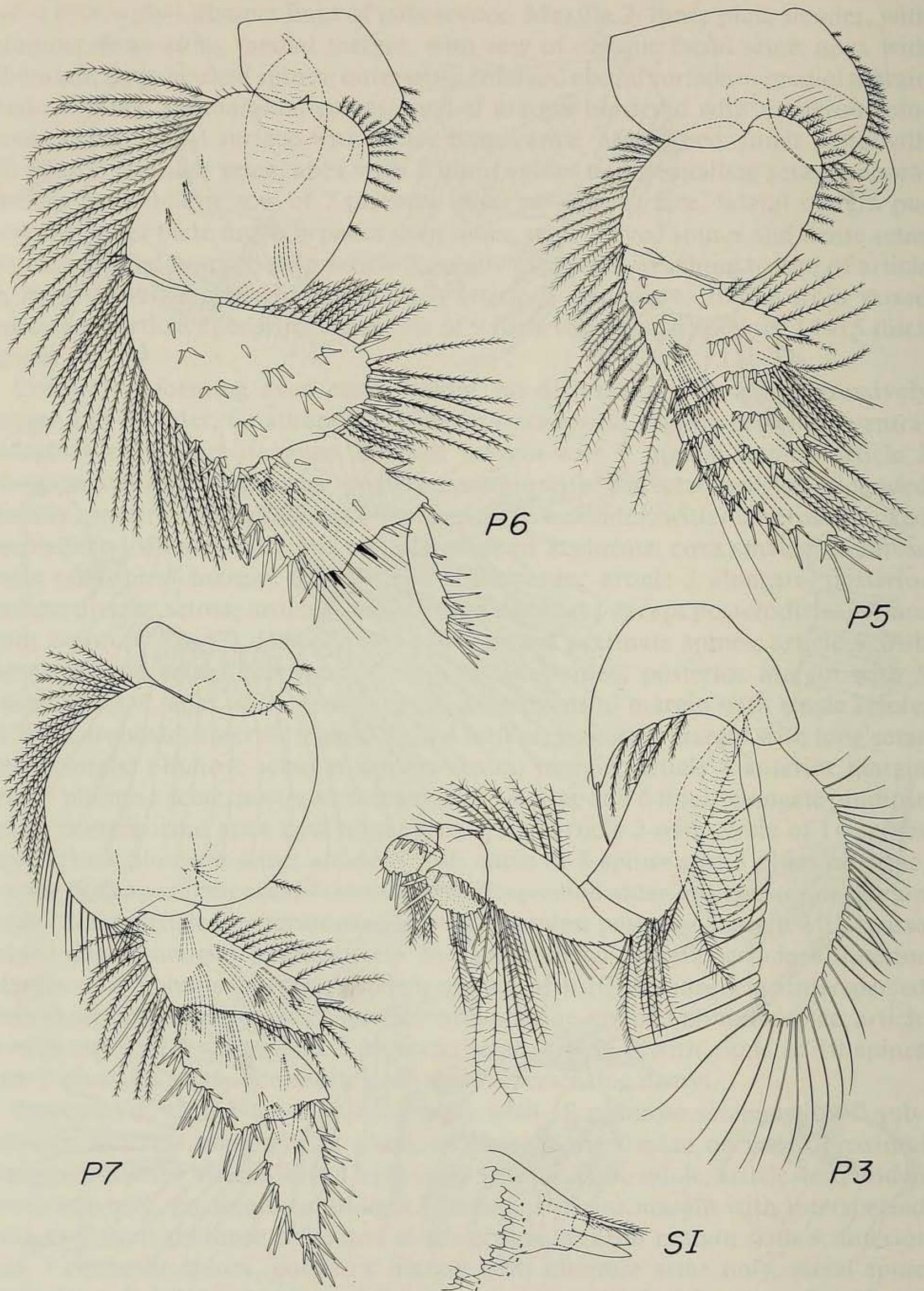


Fig. 8. *Acanthohaustorius bousfieldi*, unattributed figures, female "f" 9.50 mm.

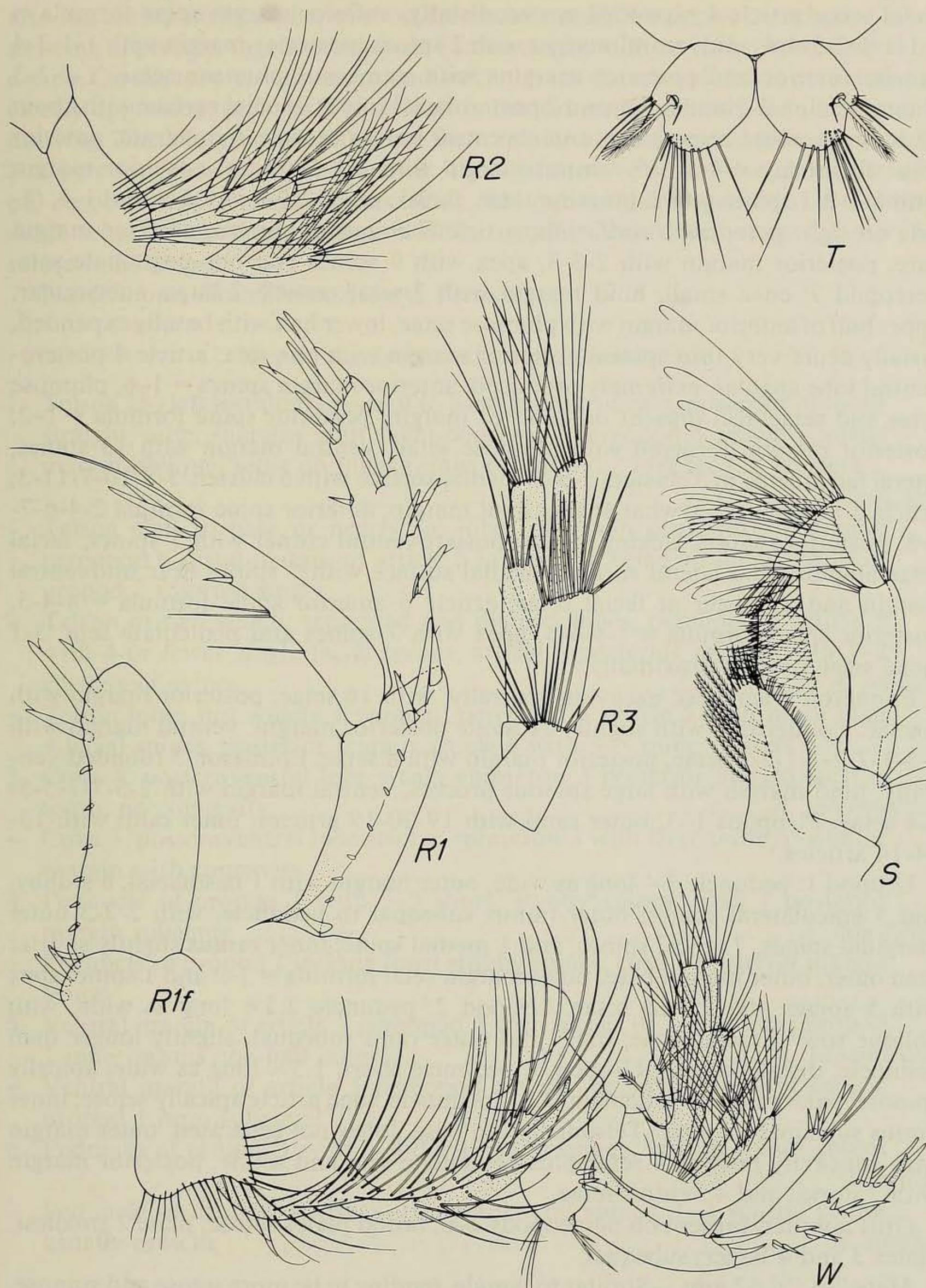


Fig. 9. *Acanthohaustorius bousfieldi*, unattributed figures, female "f" 9.50 mm.

facial setae; article 4 expanded posterodistally, anterior margin spine formula = 1-1-1-1-2-3-4-4, midventral margin with 2 spines, posterior margin with 1-1-2-4 spines, anterior and posterior margins with numerous plumose setae, 1-2-3-3 anterofacial, 1-3-3 midfacial, and 2 posterofacial spines, medial surface with about 13 long, plumose setae along anteroventral border; article 5 quadrate, anterior spine formula = 4-4-5-5-6, ventral margin with 1-1-1 spines, posterior margin with 1-1-2-3 spines plus 2 plumose setae, facial spines 2-2-1 anterior and 1-1, (1-1-1, on right pereopod) midfacials; article 6 elongate, narrow, anterior margin bare, posterior margin with 2-3-3, apex with 9 spines and one penicillate seta. Pereopod 7: coxa small, hind margin with 3 setae; article 2 large, subcircular, upper half of anterior margin with plumose setae, lower half with basally expanded, distally acute very thin spines, posterior margin with one seta; article 4 posteroventral lobe angular, extremely produced, anterior margin spines = 1-6, plumose setae and setae also present on anterior margin, posterior spine formula = 1-2, posterior margin bordered with plumose setae, ventral margin with 13 spines, lateral facial setae in 3 clusters 3-6-5, medial surface with 6 clusters 5-8-10-7-11-3; article 5 tapering somewhat at proximal margin, anterior spine formula 2-4-6-7-7-6, posterior margin lacking spines, posteroventral corner with 7 spines, facial setae abundant on lateral surface, medial surface with 5 spines near midventral margin and 1 cluster of facial setae; article 6 anterior spine formula = 4-4-5, posterior spine formula = 1-4-4-5, apex with 7 spines and penicillate seta, 3-1 facial setae present proximally.

Epimeron 1 smallest, excavate ventrally, with 16 setae, posterior margin with 7 setae. Epimeron 2 with slightly excavate posterior margin, ventral margin with 1-3-1-2-2-1-1-2-1 setae, posterior margin with 8 setae. Epimeron 3 rounded ventrally, hind margin with large spinous process, ventral margin with 2-5-7-7-5-5-4-4 setae. Pleopods 1-3, outer rami with 19-20-19 articles; inner rami with 13-14-14 articles.

Uropod 1: peduncle $3 \times$ long as wide, outer margin with 1 basofacial, 6 stubby, and 3 apicolateral spines; outer ramus subequal to peduncle, with 2-2-3 outer marginal spines, 7 apical spines, and 1 medial spine; inner ramus slightly shorter than outer, outer margin bare, inner margin setal formula = 1-2 and 1 spine, apex with 5 spines and 2 long setae. Uropod 2: peduncle $2.5 \times$ long as wide, with oblique row of facial setae; inner and outer rami subequal, slightly longer than peduncle, distally setose. Uropod 3: peduncle short, $1.5 \times$ long as wide, apically spinose; outer ramus 2-articulate, $2.8 \times$ peduncle, each article apically setose; inner ramus subequal to outer. Telson: cleft to base, lobes not separated, outer margin with concavity bearing 4 setae plus penicillate seta and setule, posterior margin with 7 dorsal and 4 ventral setae.

Gills laminar, present on peraeopods 2-6; brood plates setose, plate 2 smallest, plates 3 and 4 larger, subequal.

Male "m," 6.62 mm.—Similar to female, tending to be more setose and spinose, especially articles 4 and 5 of pereopods 5-7.

Ecology.—Found in coarse, poorly sorted shell hash, 12 m.

Remarks.—We have compared our specimens with the type-material of *A. bousfieldi* in Smithsonian collections and answered our questions. Although our specimens seemed to have fewer short spines on the peduncle of uropod 1 than did the original illustrations, the allotype male of *A. bousfieldi* (USNM 172428)

also has the smaller number of short spines we noted. We depict the telsonic lobes as being appressed together, whereas Frame depicted them as being separated by a gape. On the type-specimens in undissected form the telsonic lobes are relatively closely appressed, perhaps less so than in our drawing but more than in Frame's drawing. The allotypic male also has the small number of ventral spines on article 5 of pereopod 6 seen in our material. The sharpness of coxa 7 matches closely in our respective specimens. We conclude that our southern specimens are identifiable with the northern *A. bousfieldi* but smaller and slightly less spinose and setose in all stages.

Distribution.—Hutchinson Island, Florida.

Key to the species of *Acanthohaustorius*

1. Telson U-cleft less than one-half to base, lobes truncate, posterior margins straight, outer margins with slight concavity; pereopod 6 article 5, distal margin oblique; setae on inner ramus of uropod 2 arranged in clusters...
..... *A. spinosus*
- Telson cleft to base or nearly so; lobes of telson posteriorly rounded; pereopod 6 distal margin of article 5 horizontal; setae on inner ramus of uropod 2 inserted singly 2
2. Telson of two widely separated and distinct lobes; pereopod 6 article 5 with 4 or fewer single facial spines, article 6 posterior margin with 1–2 clusters of spines *A. pansus*
- Telson lobes not widely separated; pereopod 6 article 5 with more than 4 facial spines, posterior margin article 6 with 3–5 spine clusters 3
3. Coxa 3, posteroventral lobe weak; epimeron 3 posterior margin lacking tooth, no concavity *A. intermedius*
- Coxa 3, posteroventral lobe strong; epimeron 3 with large tooth, posterior margin with concavity 4
4. Peduncle of uropod 1 with 5–9 short, stubby spines; coxa 7 posterior margin subacute *A. bousfieldi*
- Peduncle of uropod 1 lacking short stubby spines; coxa 7 posterior margin acute 5
5. Ventral margin of article 5 pereopod 6 with spines in 3–4 groups; uropod 1 inner ramus one-half outer *A. shoemakeri*
- Ventral margin of article 5 pereopod 6 with continuous row of spines; uropod 1 rami subequal 6
6. Peduncle of uropod 1 with 3–4 dorsolateral spines, ventral spines absent
..... *A. millsi*
- Peduncle of uropod 1 with 8–10 dorsolateral spines, 1–2 ventral spines usually present *A. similis*

Acknowledgments

Both authors were supported by a grant from the Scholarly Studies Program of the Smithsonian Institution. The first author was also supported by grant DEB 8121128 from the National Science Foundation, and contract NA82AAA01157 from the Sanctuary Program Division of the Office of Ocean and Coastal Resource Management. We would like to thank Sara LeCroy of Applied Biology, Inc. for

supplying the Hutchinson Island material which was collected under a contract from Florida Power and Light. Gary Goeke and Richard Heard of the Gulf Coast Research Lab kindly provided the Bureau of Land Management MAFLA material. Carolyn Cox Lyons of New York City inked the plates.

Literature Cited

- Bousfield, E. L. 1962. New haustoriid amphipods from the Canadian Atlantic region.—*Bulletin of the National Museums of Canada* 183:63–75.
- . 1965. Haustoriidae of New England (Crustacea:Amphipoda).—*Proceedings of the United States National Museum* 117:159–240.
- Camp, D. K., N. H. Whiting, and R. E. Martin. 1977. Nearshore marine ecology at Hutchinson Island, Florida: 1971–1974. V. Arthropods.—*Florida Marine Research Publications* 25:1–63.
- Frame, A. B. 1980. Two new species of sand-burrowing amphipod crustaceans from Long Island Sound and the New York Bight (Amphipoda:Haustoriidae).—*Estuaries* 3:75–83.
- Robertson, P. B., and C. R. Shelton. 1978. Two new species of haustoriid amphipods (Crustacea: Amphipoda) from the northwestern Gulf of Mexico.—*Contributions in Marine Science* 21: 47–62.