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J. L. Barnard
Smithsonian Institution

James Darwin Thomas
Newfound Harbor Marine Institute, thomasjd@nova.edu
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A NEW SPECIES, *AMPELISCA BURKEI,* (CRUSTACEA, AMPHIPODA) FROM FLORIDA

J. L. Barnard and James Darwin Thomas

Abstract.—A new species *Ampelisca burkei,* from Florida, is described. This species appears to be very close to *A. lobata* Holmes, from the eastern Pacific Ocean, but differs in the shape and setation of article 4 on pereopod 7, and the presence of an anteroventral spine-seta on article 5 of pereopod 7.

The new species, *Ampelisca burkei* described herein is a twin of *A. lobata* Holmes from the eastern Pacific. The differences between the two species are very small but recognition of both is justified by the trend for taxonomists to find and validate at the specific level small differences between Pacific and Atlantic amphipods. Small morphological characters are extremely consistent over wide geographic areas in the family Ampeliscidae. This consistency is not widely shared by amphipod groups, and care must be taken to document variation in particular characters before incorporating them into a taxonomic treatment. For example, Barnard (1980) separated the Pacific *Metharpinia oripacifica* from the Atlantic *M. floridana* by the presence or absence of a single spine on the inner plate of the maxillipeds (2 spines in Pacific, one in Atlantic populations). Dickinson (1982) separated the Pacific *Ampelisca fageri* from the Atlantic *A. schellenbergi* on subtle shapes and setation patterns of coxa 1, pereopod 7 and uropod 3.

Ampelisca burkei, new species
Figs. 1–5

?*Ampelisca lobata.*—J. L. Barnard, 1954b: 2 (not Holmes, 1908, possible misidentified specimens from Colombia and Aruba).

Description of holotype, male, 4.92 mm.—Body smooth; urosomite 1 elevated, with thick keel, urosomites 2–3 coalesced, with strong dorsal saddle.

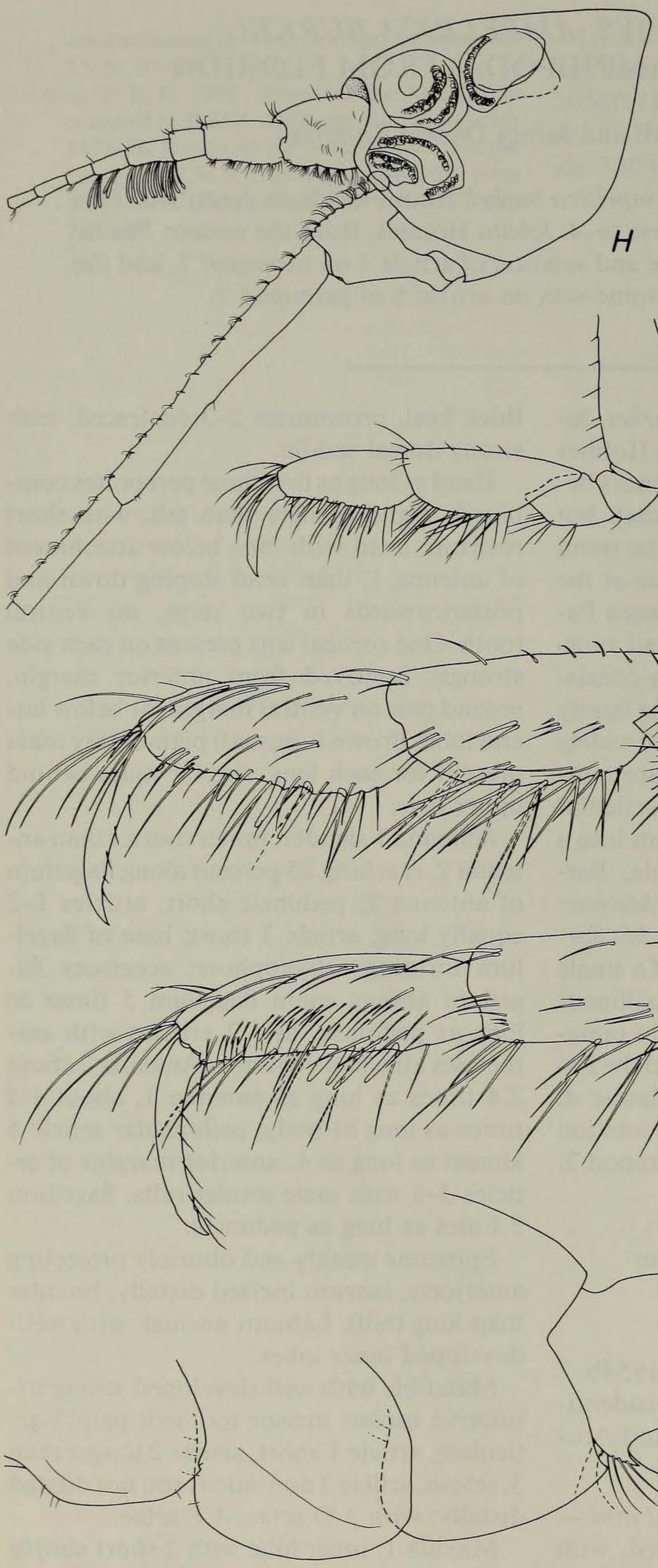
Head as long as first three pereonites combined, slightly longer than tall, with short rostrum; head with lobe below attachment of antenna 1, then head sloping down and posteriorwards in two steps, no ventral tooth. One corneal lens present on each side strongly removed from anterior margin, second pair on ventral margin far below lateral lobe. Brown (unusual) pigmentary mass present for each lens, similar mass behind upper pair.

Antenna 1 slender, much shorter than antenna 2, reaching 25 percent along flagellum of antenna 2; peduncle short, articles 1–2 equally long, article 3 short; base of flagellum forming callynophore; accessory flagellum absent; main flagellum 5 times as long as peduncle, first 2 articles with aesthetascs attached ventrally. Antenna 2 about 2.4 times as long as antenna 1, about 1.4 times as long as body, peduncular article 5 almost as long as 4, anterior margins of articles 3–5 with male setular tufts, flagellum 3 times as long as peduncle.

Epistome weakly and obtusely projecting anteriorly, labrum incised distally, broader than long (tall). Labium normal, with well-developed inner lobes.

Mandible with well-developed strong triturative molar, incisor toothed; palp 3-articulate, article 1 short, article 2 longer than 3, setose, article 3 non-falciform, not dilated distally, with 3 D setae, 4 E setae.

Maxilla 1: inner lobe with 2 short simple


H
G1
G1m
G2
G2m
kE3
W

setae, outer lobe with 11 spines, three of these provided with 2–4 lateral teeth each; palp 2-articulate, symmetrical on both sides, second article barely dilated distally, provided with 4 distal sharp cusps accompanied by 4 spines, 4 subdistal setae and 2 apicomedial setae. Maxilla 2 with narrow lobes, inner lobe shorter than outer, without oblique facial row of setae, all medial setae marginal. Maxilliped: inner lobe of ordinary length, with 2 distal spines intermixed with several plumose setae; outer lobe reaching apex of palp article 2, bearing row of thick spines along medial margin and 2–3 apical setae; palp 4-articulate, article 3 not lobed, article 4 with main nail about as long as remaining part of article.

Coxae 1–4 much longer than broad, coxa 1 dilated distally, with convex distal (=ventral) margin provided with one row of tiny setae, lacking posteroventral notch; coxae 2–4 with increasingly truncate distal margins, coxae 2–4 with increasingly sparse setules, coxa 4 with small posteroproximal lobe produced bluntly in proximal part, otherwise apposite margins almost parallel.

Gnathopods 1–2 linear, simple, gnathopod 1 shorter than gnathopod 2; gnathopod 1: article 5 scarcely longer than 6, densely setose along posterior margins, article 6 tapering distally with dactyl shorter than article 6, bearing 5 setules along inferior margin and 1 seta on outer margin. Gnathopod 2: article 5 linear, long, moderately setose; article 6 much shorter than 5, tapering distally, dactyl like that of gnathopod 1.

Pereopod 3 of medium stoutness, with articles 4–6 bearing long plumose setae along both margins, except posteriorly on article 6 and anteriorly on article 5; article 4 not inflated; dactyl slender, almost straight, slightly longer than article 6. Pereopod 4 like that of pereopod 3, but much longer, article 4 setose on both sides to base.

Pereopod 5: article 2 ovoid, with large posterior flangehump, anterior margin with one row of plumose setae, article 5 scarcely produced distoposteriorly, bearing row of spines on apex; article 6 with few long distal setae, dactyl short, unguiform, with 2 outer cusps. Pereopod 6: article 2 subquadrate, with strong posterior lobe and poorly setose anterior margin; articles 3–7 like those of pereopod 5. Pereopod 7: almost as long as pereopod 6 but article 2 large, scarcely expanding distalwards, lobe reaching middle of article 4, bearing sparse plumose setae along ventral margin in two disjunct groups; article 3 short; article 4 slightly longer than 3, weakly produced at posterodistal apex and bearing one short spine and posterior setae; article 5 narrow, with weak posterodistal spination and one anterior subdistal spine-seta, article 6 weakly tumid, scarcely longer than 5, dactyl tumid, tapering rapidly and apically pointed, much shorter than article 6.

Strongly plaited large gills on coxae 1–6, gills generally with 20+ pleats. Pleopods well developed, normal, with 2 retinacula and one simple accessory retinaculum each.

Epimera 1–2 weakly convex behind, epimeron 1 with posteroventral setule at subsharp corner, epimeron 1 with 3 ventral setae; epimeron 3 not larger than 2, posterior margin almost straight, posteroventral corner sharply protuberant or obtuse (variable).

Uropods 1–2 of ordinary length, uropod 1: peduncle slender, outer face of peduncle with 5 spines, dorsolateral margin with 3 spines, apex with cusp, medial corner with

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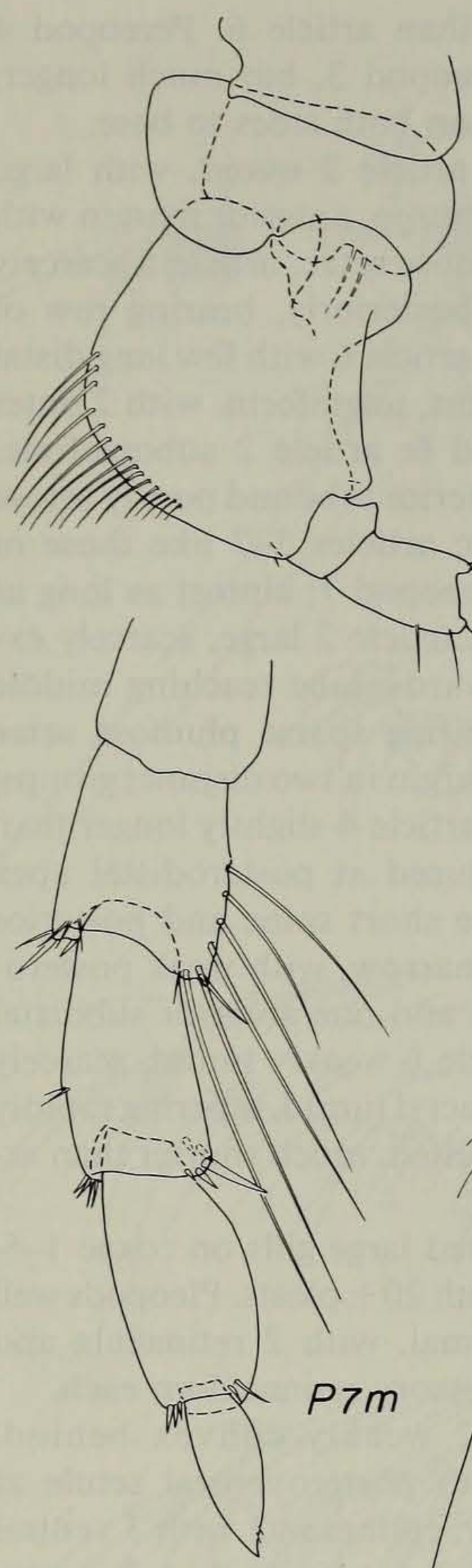
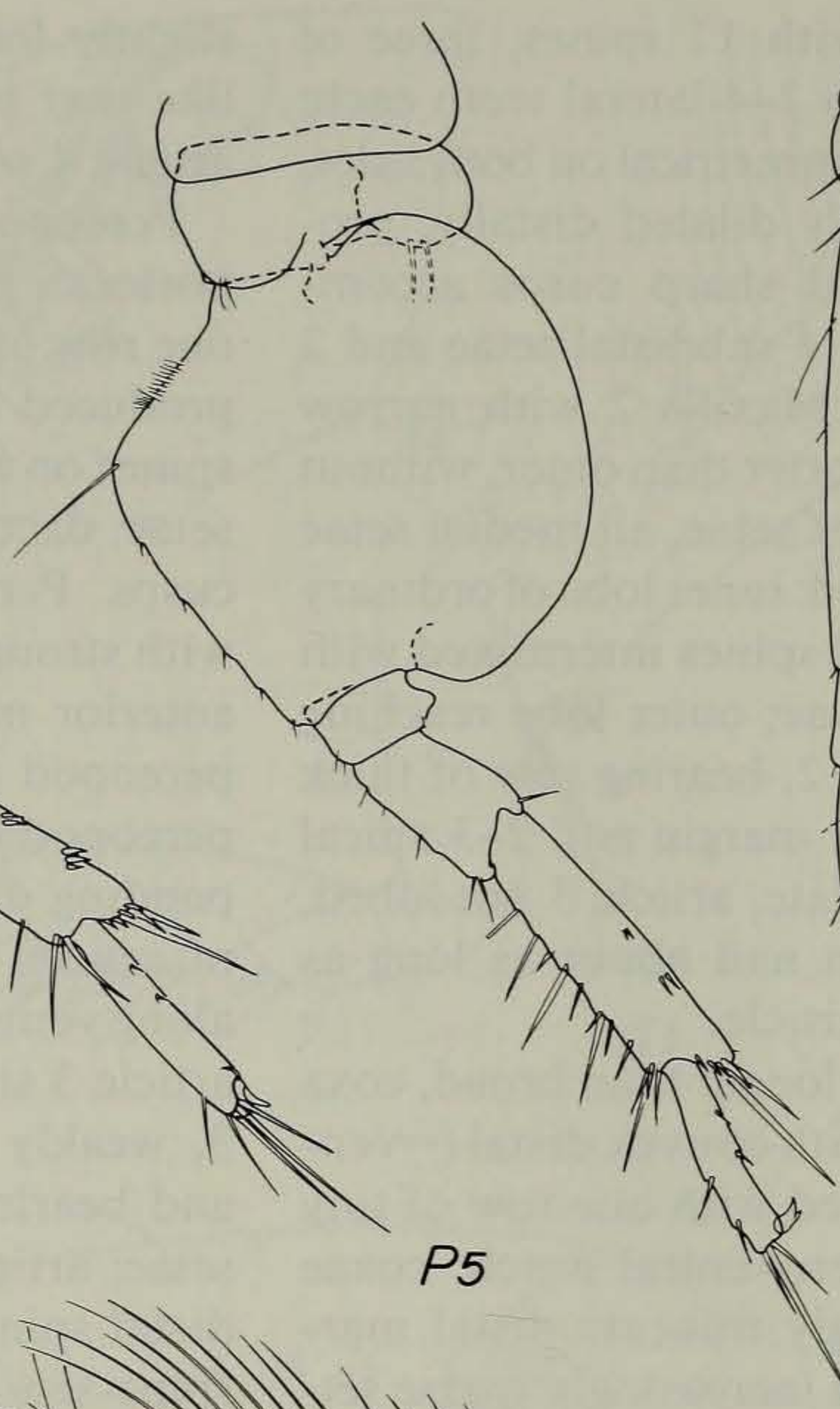
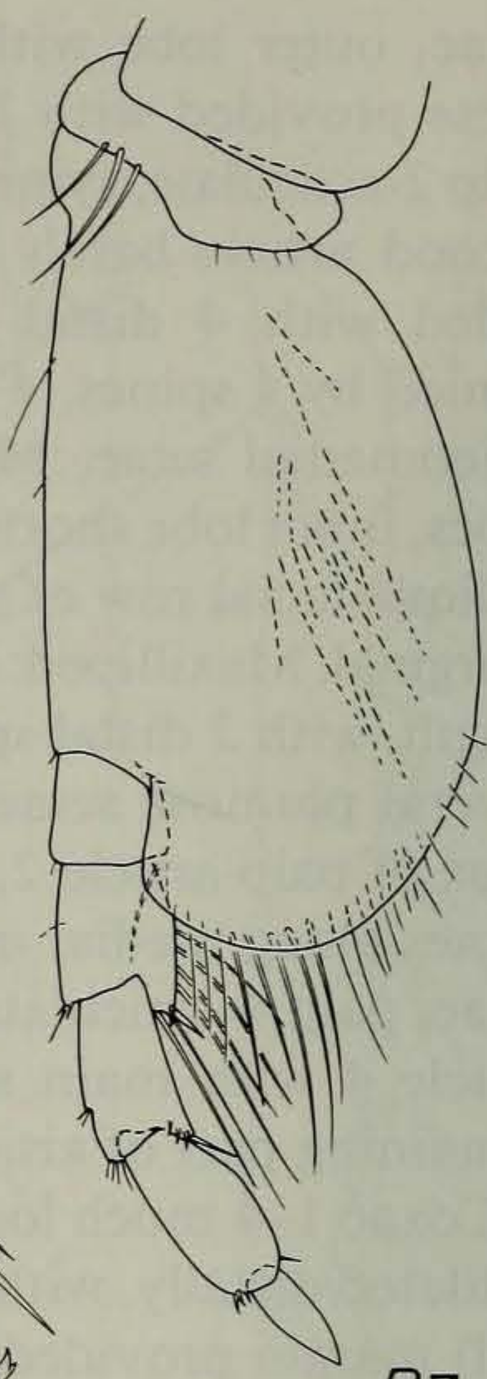
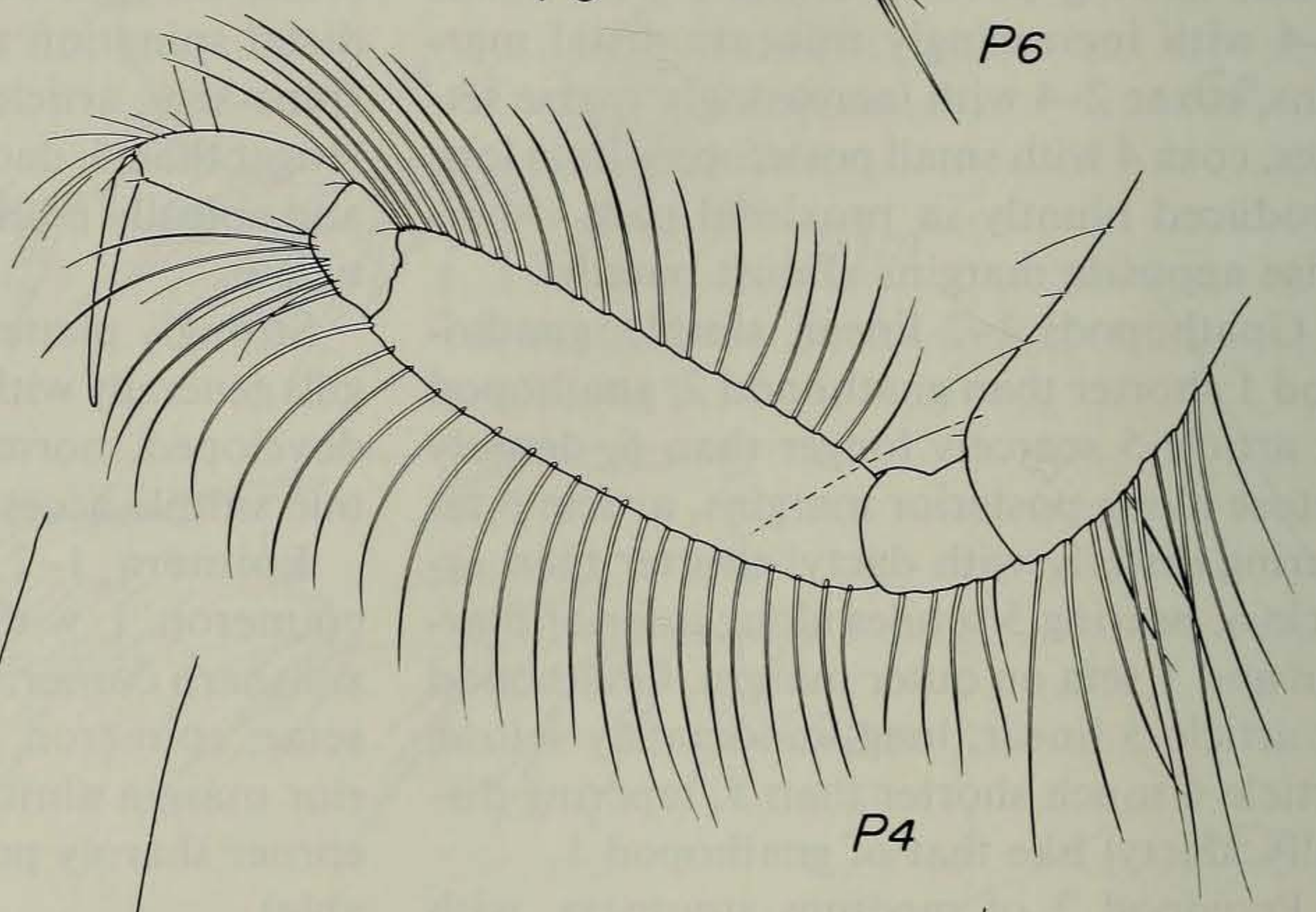
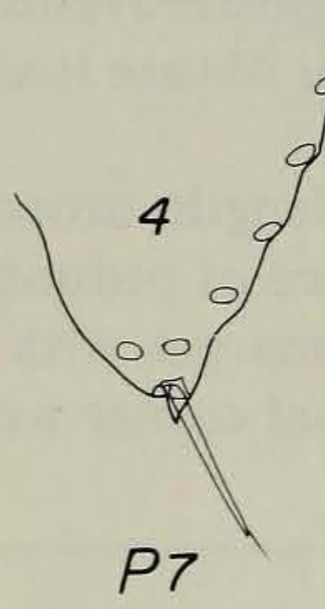
Fig. 1. *Ampelisca burkei,* n. sp., unattributed figures, holotype male "h" 4.92 mm; k = male "k" 4.66 mm. Capital letters denote main parts in following list; lower case letters to left of capital letters or in body of figure indicate modifications as per following list; lower case letters to right of capital letters indicate specimens described in captions: A, antenna; C, coxa; D, dactyl; E, epimera; G, gnathopod; H, head; L, lower lip; M, mandible; P, pereopod; R, uropod; S, maxilliped; T, telson; U, upper lip; W, pleon; X, maxilla; m, medial.

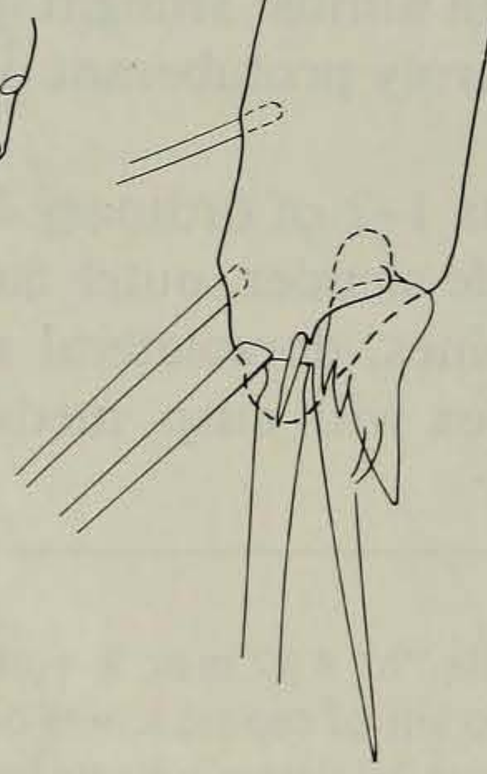












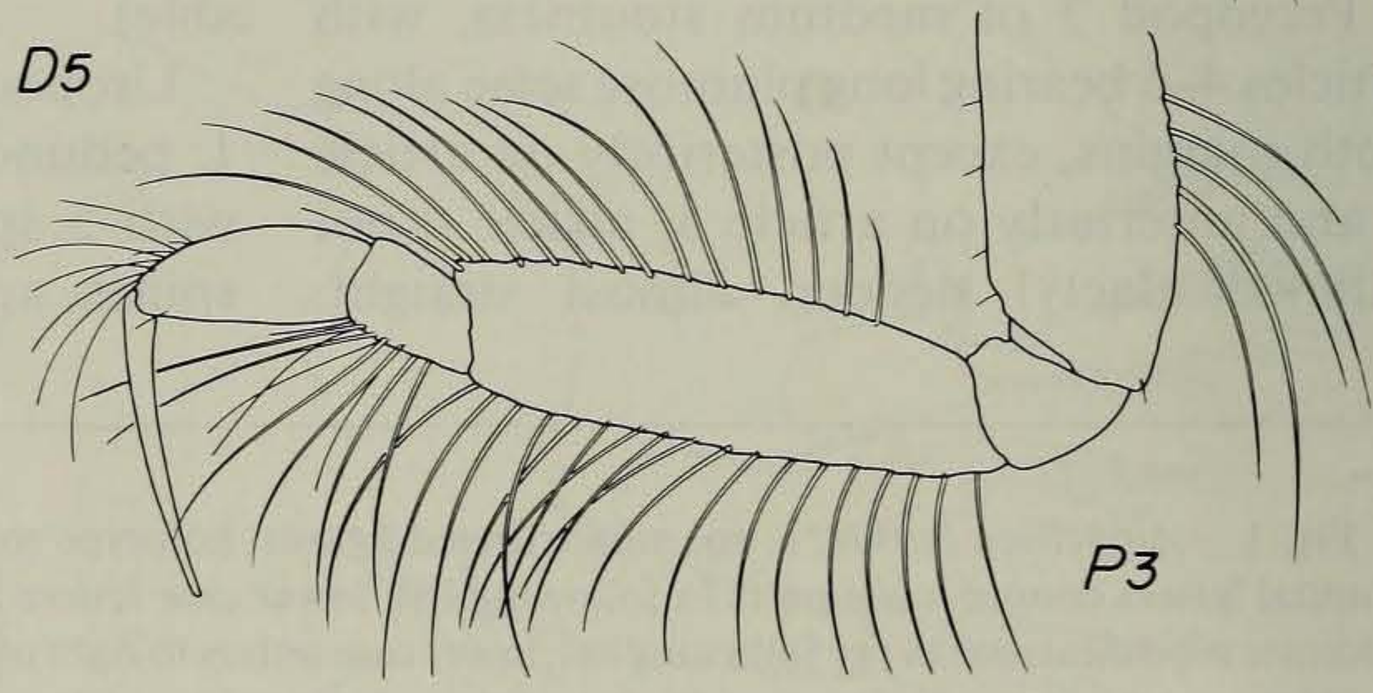


Fig. 2. *Ampelisca burkei,* n. sp., holotype male "h" 4.92 mm. Letter codes, see Fig. 1.

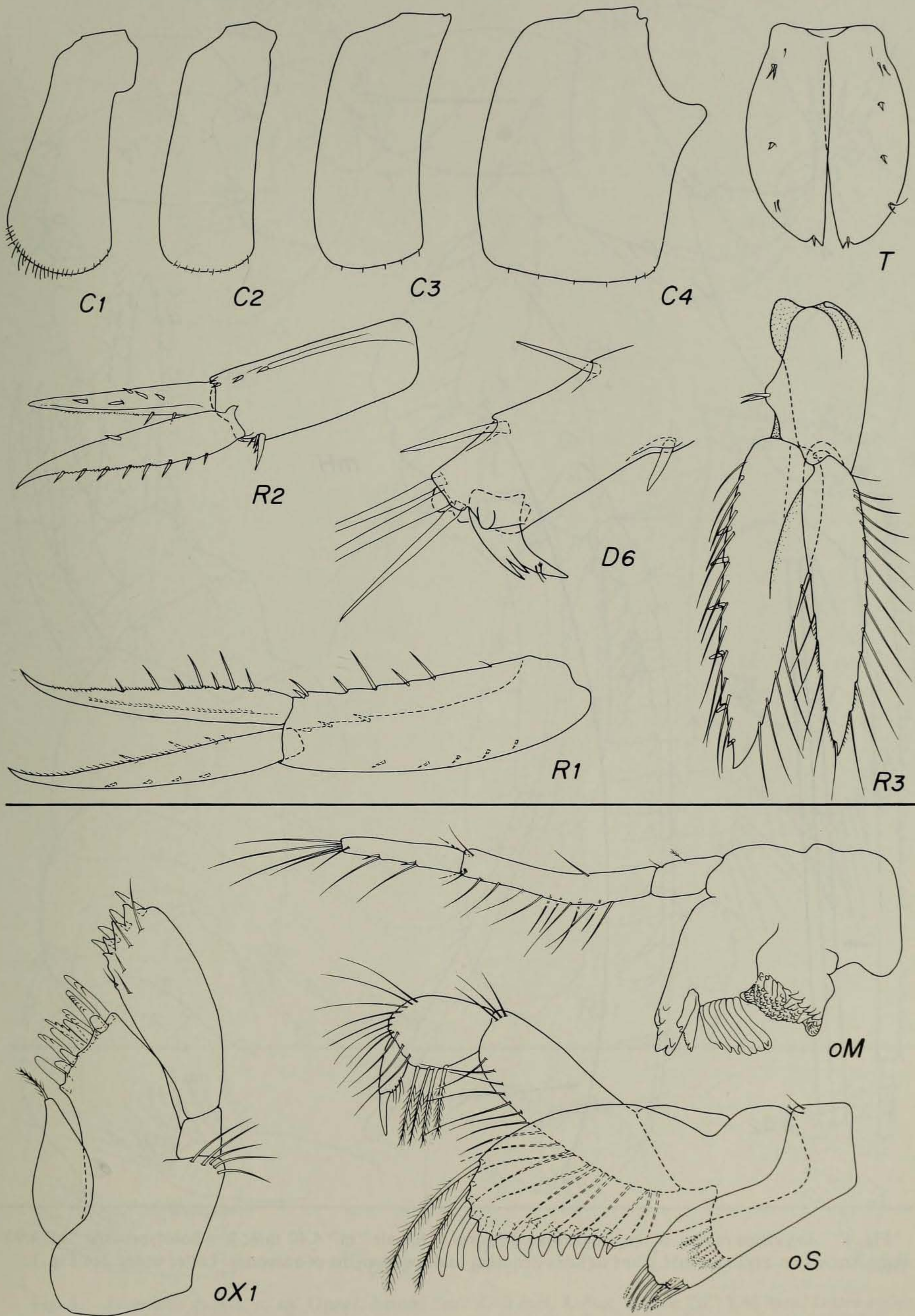
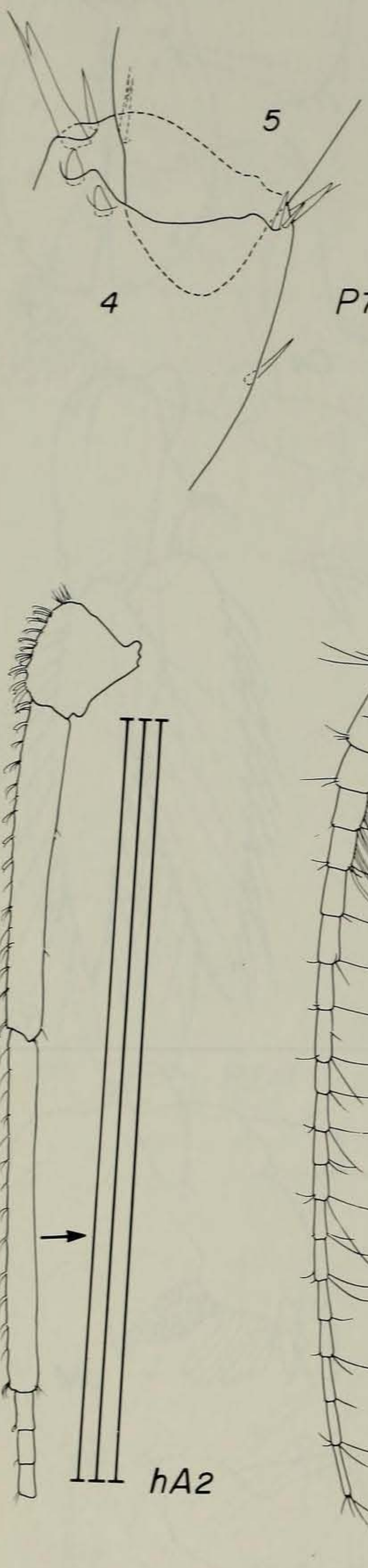
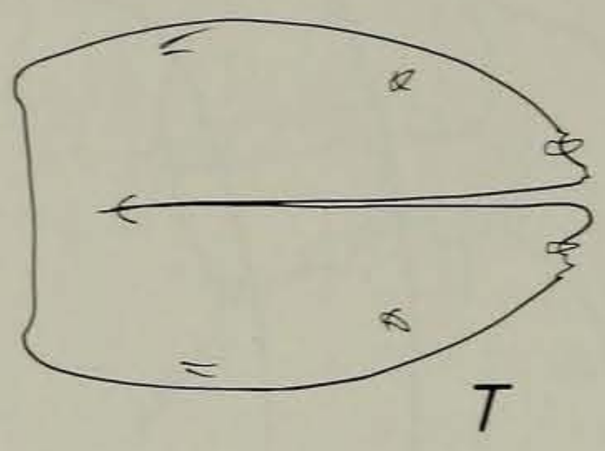
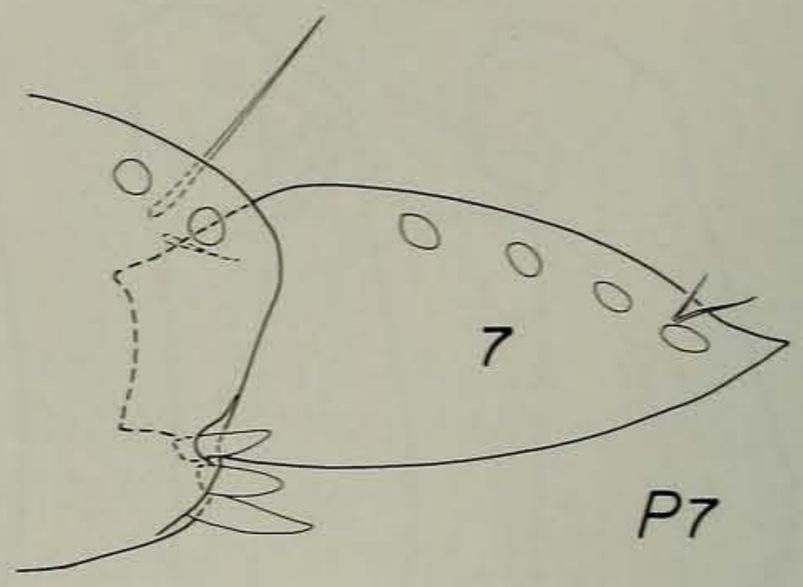
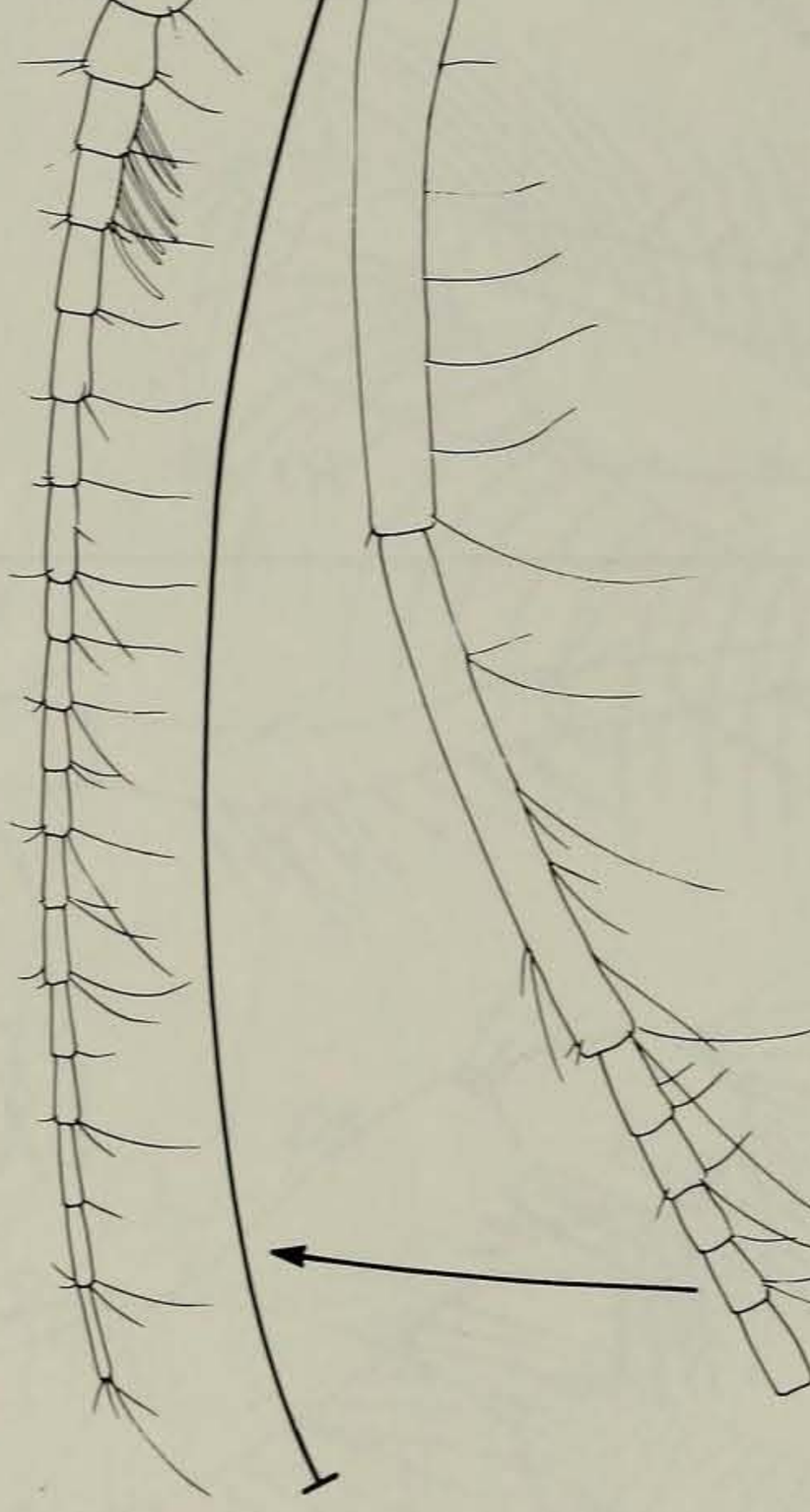


Fig. 3. *Ampelisca burkei,* n. sp. Upper, holotype male "h" 4.92 mm. Lower, female "o" 5.66 mm. Letter codes, see Fig. 1.









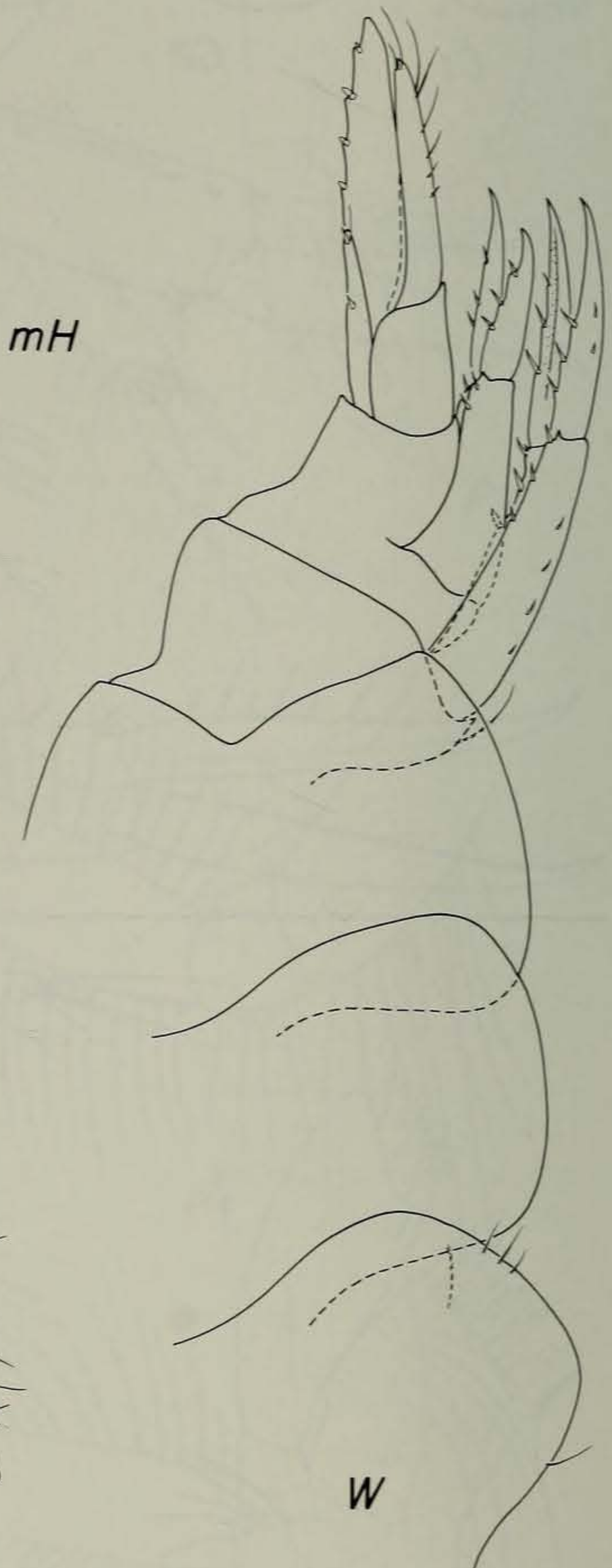
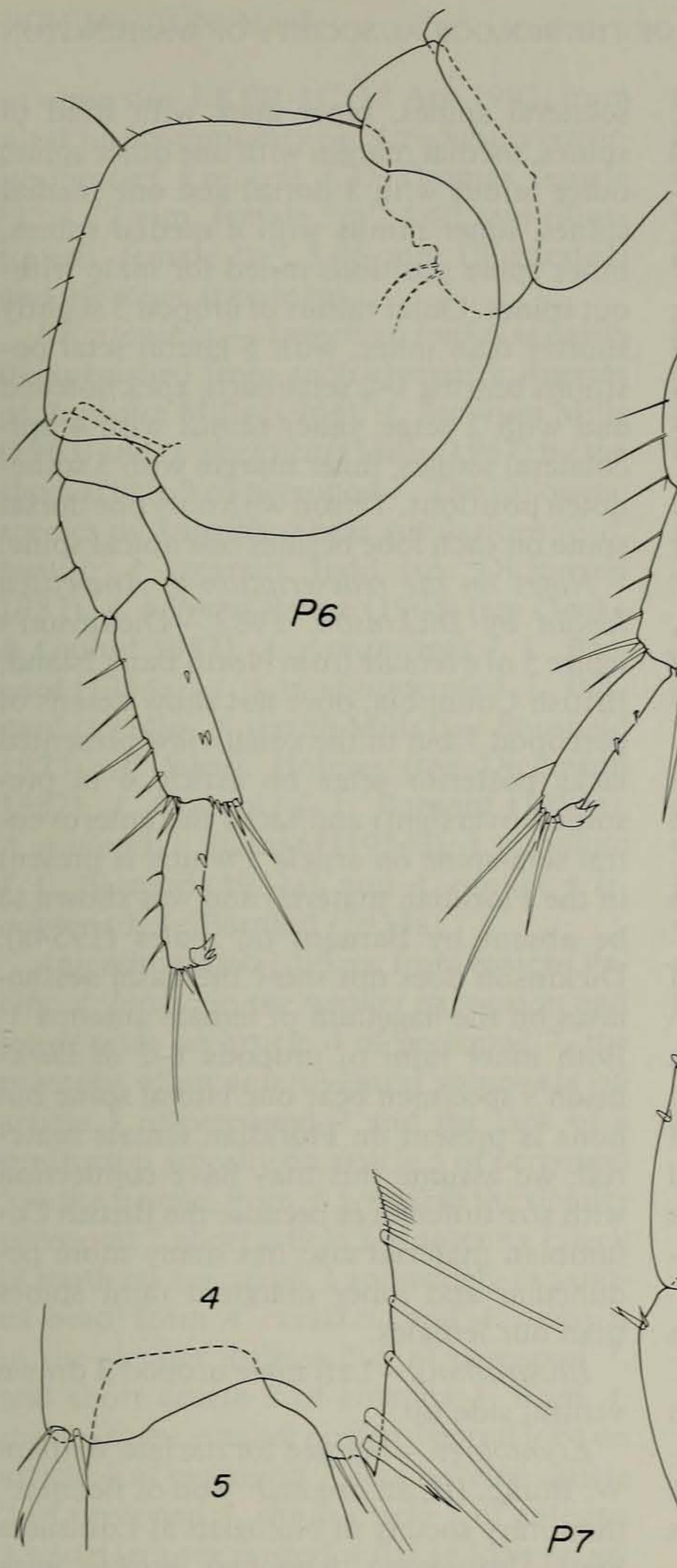
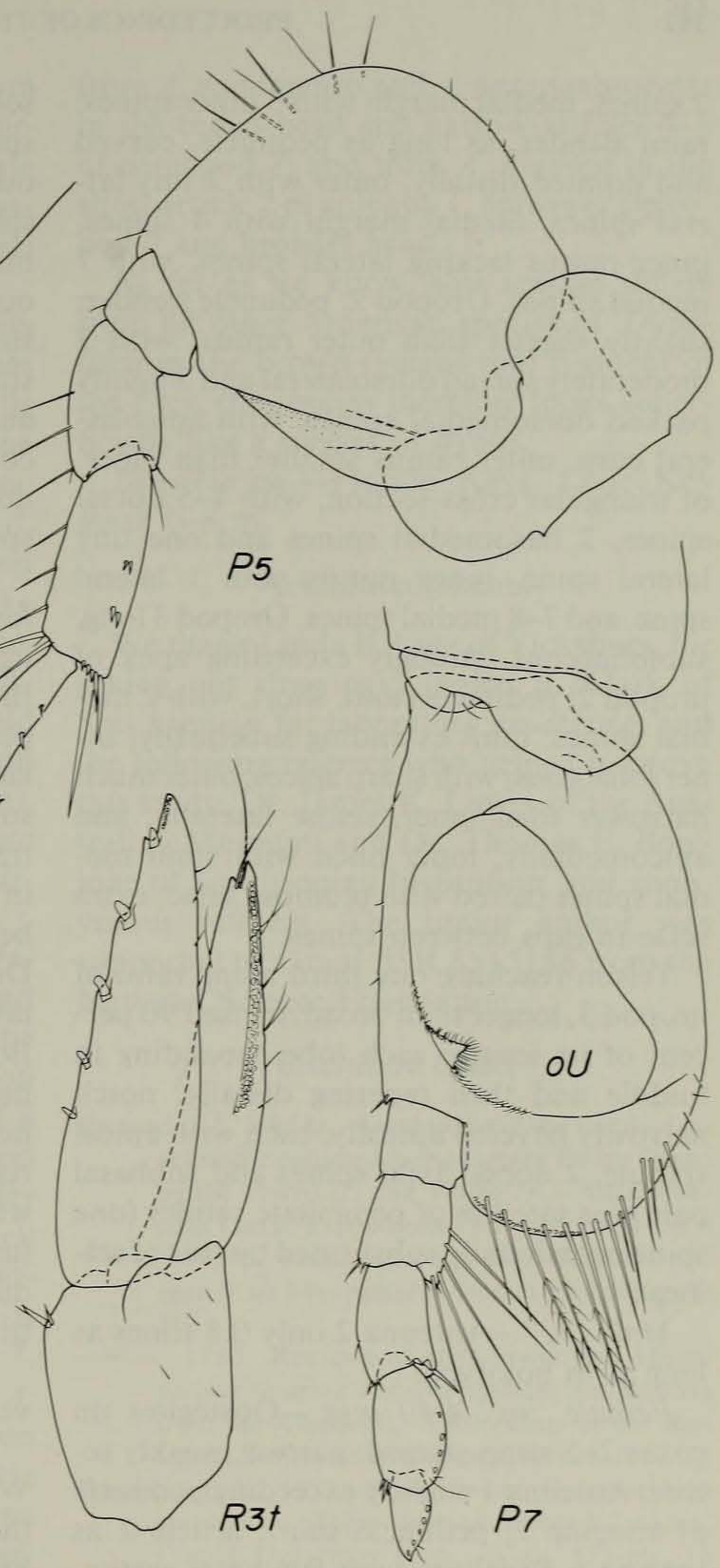
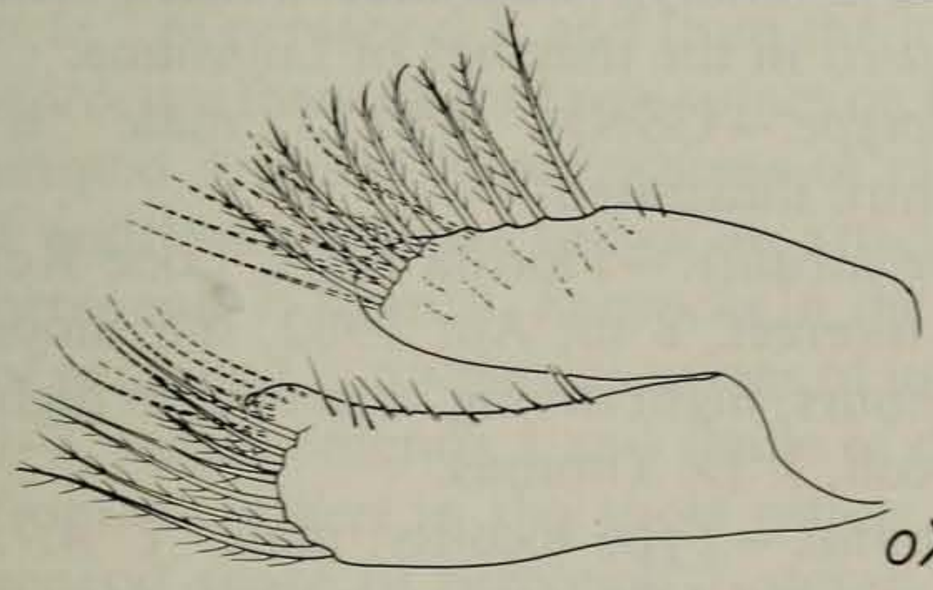
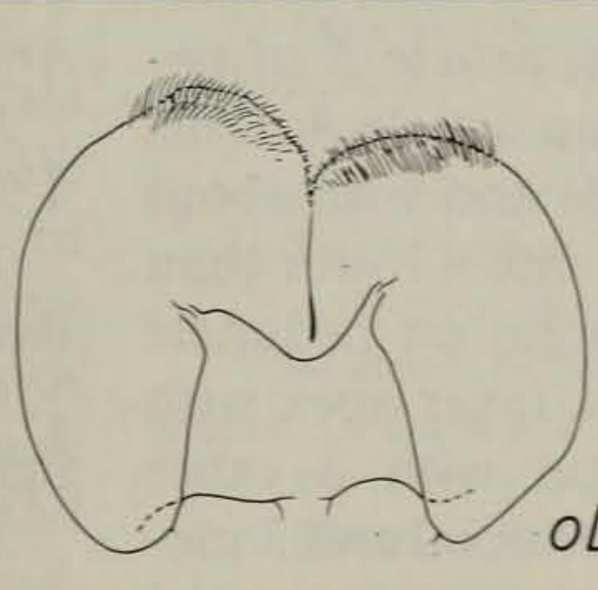


Fig. 4. *Ampelisca burkei,* n. sp., unattributed figures = female "m" 4.40 mm; h = holotype male "h" 4.92 mm. Arrows on hA2 and mH point to lines denoting undrawn lengths of antennae. Letter codes, see Fig. 1.









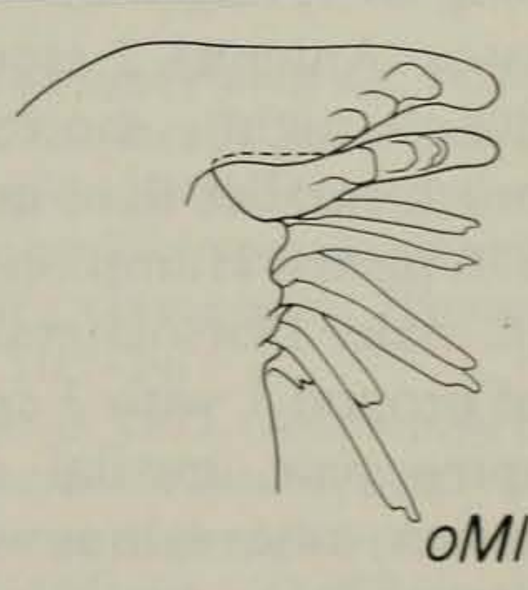


Fig. 5. *Ampelisca burkei*, n. sp. Upper, female "m" 4.40 mm. Lower, female "o" 5.66 mm. Letter codes, see Fig. 1.

2 spines, medial margin with 5 other spines, rami slender, as long as peduncle, curved and pointed distally, outer with 2 tiny lateral spines, medial margin with 4 spines, inner ramus lacking lateral spines, with 7 medial spines. Uropod 2: peduncle slender, slightly shorter than outer ramus, with 3 moderately spread dorsolateral and 3 tightly packed dorsomedial spines, with apicolateral cusp, outer ramus smaller than inner, of triangular cross-section, with 4–5 dorsal spines, 2 basomedial spines and one tiny lateral spine, inner ramus with 1 lateral spine, and 7–8 medial spines. Uropod 3 long, subfoliaceous, strongly exceeding apex of uropod 2: peduncle stout, short, with 2 medial spines; rami extending subequally, inner foliaceous, with sharp apices, outer much narrower than inner, setose laterally, and apicomedially, inner lined with stout medial spines paired with plumose setae, extra setae in gaps between spines.

Telson reaching one third along rami of uropod 3, longer than broad, incised 90 percent of its length, each lobe expanding in middle and then tapering distally, notch narrowly beveled apically, each with apical spinule, 2 dorsal axial spines and subbasal pair plus satellite of penicillate setules (one spine occasionally substituted by pair of setules).

Male "k."—Antenna 2 only 0.8 times as long as in holotype.

Female "m" 4.40 mm.—Oostegites on coxae 2–5 strap-shaped, narrow, weakly setose. Antenna 1 slightly exceeding peduncle of antenna 2, peduncle short, article 2 as long as 1, flagellum with few basal aesthetascs. Antenna 2 elongate, article 5 of peduncle slightly shorter than article 4. Gills much smaller than in male and with about 5–6 pleats. Hump on pleonite 4 lower than in male. Dorsolateral margin on peduncle of uropod 1 with 3 spines, inner apex with spine pair, medial margin with 3 other spines, outer ramus with 2 lateral and 3 medial spines, inner ramus with 3 medial spines; peduncle of uropod 2 with 2 dorsolateral spines, inner apex with triad of spines, medial margin with one other spine, outer ramus with 3 dorsal and one medial spines, inner ramus with 4 medial spines, other spine positions noted for male without spines. Outer ramus of uropod 3 slightly shorter than inner, with 5 lateral setal positions bearing 1–2 setae each, apex notched and with 2 setae; inner ramus with 4 apicolateral setules, inner margin with 5 spine-notch positions. Telson with only one dorsal spine on each lobe besides one apical spine.

Notes on the redescription of Ampelisca lobata by Dickinson, 1982.—Dickinson's figure 5 of a female from North Bank Island, British Columbia, does not show details of pereopod 7 but in the small view presented lacks posterior setae on article 6 (a presumed oversight) and lacks the anteroventral seta-spine on article 5 which is present in the Floridian material and was shown to be absent by Barnard on males (1954a). Dickinson does not show the basal aesthetascs on the flagellum of female antenna 1. Both inner rami of uropods 1–2 of Dickinson's specimen bear one lateral spine but none is present on Floridian female material; we assume this may have connection with size differences because the British Columbian material also has many more peduncular and inner marginal rami spines than our females.

Illustrations.—Left male uropod 3 drawn ventral side up.

Etymology.—Named for the late William W. Burke, III, an original "Son of Bennett" (honorary society of biologists at Louisiana State University), who first worked with *Ampelisca* in the marshes of Louisiana.

Holotype.—USNM 195153, male "h" 4.92 mm, illustrated.

Type locality.—Florida Keys, Looe Key Reef, forereef, 8 m, Apr 1982, full moon 2200 hours, night diving, attracted to night light, coll. J. D. Thomas.

Material.—Type locality, male "i" 4.72 mm, male "j" 4.84 mm, male "k" 4.66 mm and 29 other specimens. Females collected

at same site, LKFR-1C, 18 Apr 1982, from algal turf community on *Acropora cervicornis* forereef, 8 m, coll. J. D. Thomas, female "l" 4.69 mm, female "m" 4.40 mm (illustrated), female "o" 5.66 mm (illustrated) and 10 other specimens.

Relationship.—*Ampelisca burkei* is easily distinguished from such sympatric species as *A. abdita* Mills (1964), *A. vadorum* Mills (1963) and *A. declivititis* Mills (1967) by the short article 3 of pereopod 7. The following species of *Ampelisca* bear similarities to *A. burkei*: *A. agassizi* Judd (see Dickinson 1982), *A. holmesi* Pearse (1908) (see Goeke & Gathof 1983), *A. panamensis* J. L. Barnard (1954a), *A. parapanamensis* J. L. Barnard (1954b), *A. verrilli* Mills (see Bousfield 1973), *A. lobata* Holmes (see Dickinson 1982), *A. hancocki* J. L. Barnard (1954a), *A. milleri* J. L. Barnard (1954a), *A. cucullata* J. L. Barnard (1954a), and *A. romigi* = *isocornea* J. L. Barnard (1954a).

Ampelisca burkei differs: from eastern Pacific *A. lobata* in the weaker expansion and fewer setae on article 4 of pereopod 7, the presence of an anteroventral spine-seta on article 5 of pereopod 7 and the lack of a protrusion apically on article 5 of pereopod 5 in the female; from *A. verrilli* in the slender pereopod 7, short article 2 of antenna 1, lack of tooth on epimeron 3 and widely expanded head; from *A. cucullata* and *A. agassizi* in the slender articles 2–6 of pereopod 7, and short article 2 of antenna 1; from *A. romigi* in the smaller posteroventral lobe on article 4 of pereopod 7, less beveled article 2 of pereopod 7, short article 2 of antenna 1 and narrower posterior flange-lobe on article 2 of pereopod 5; and from the male *A. isocornea* form by the large spines on female uropod 3, much larger process of pleonite 4 and lack of facial spines on article 6 of pereopod 7; from *A. hancocki* in the shape of pereopod 7, numerous spines of uropods 1–2, longer antenna 1 and shape of coxa 4; from *A. milleri* in the short article 3 and general shape of pereopod 7, dense spination of uropods 1–2, and shape of coxa 4; from *A. panamensis* and *A. parapanamensis* in the broad head and narrow articles 4–5 of pereopod 7; and from *A. holmesi* in the short article 2 of antenna 1, narrower pereopod 7 and broader head.

As far as we know, this species differs from all other American species of *Ampelisca* in the brown (versus red) pigment of the eyes; the species therefore looks superficially like a species of *Byblis*.

Distribution.—Florida Keys, Looe Key Reef, 0–8 m.

Acknowledgments

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(JLB) NHB-163, Department of Invertebrate Zoology, Smithsonian Institution, Washington, D.C. 20560; (JDT) Newfound Harbor Marine Institute, Rt. 3, Box 170, Big Pine Key, Florida 33043.