

A NEW SEA-CAVE AMPHIPOD FROM BERMUDA (DULICHIIDAE)

J. L. Barnard and Janice Clark

Abstract. — *Podobothrus bermudensis* is described from a sea-cave in Bermuda. It lacks body pigment but retains well developed eyes; its principal anomaly within the Dulichiidae is the immensity of the antennae. The new genus differs from its closest congener, *Podocerus*, in the smaller disjunct coxae 3–7, feeble gnathopods, much more elongate apical spination on the rami of uropods 1–2, thin mandibular palp, and the poorly setose immense antennae.

The new genus and new species, *Podobothrus bermudensis*, described herein, occurs in Green Bay Cave, Bermuda. It has close resemblance to *Podocerus*, a genus with many species that occurs in shallow tropical and temperate waters. It was apparently collected from hydroids infesting a derelict rope found inside the unlighted cave. The eyes of the new genus are as well developed as in *Podocerus*, but the body and eyes lack pigment. In contrast to *Podocerus*, the coxae of segments 3–7 on the new genus are especially small, the gnathopods are feeble, the antennae are immense and sparsely setose, the apical spines on the rami of uropods 1–2 are elongate, and the mandibular palp is very thin.

References assisting in the identification of this amphipod are as follows: J. L. Barnard (1969), Laubitz (1977, 1979, 1983).

Master Legend

Capital letters as follows refer to parts; lower case letters to left of capital letters refer to specimens noted in legends; lower case letters to right of capitals refer to adjectival modifications in list below:

A, antenna; B, body; D, dactyl; E, epimera; F, accessory flagellum; G, gnathopod; I, inner plate or ramus; K, prebuccal, lateral; L, labium; M, mandible; P, pereopod; R, uropod; S, maxilliped; U, labrum; V, palp; W, urosome; X, maxilla; d, dorsal; r, right; s, setae removed; t, left; v, ventral.

Family Dulichiidae Dana, 1849 *Podobothrus*, new genus

Diagnosis. — Dulichiidae with body depressed (versus cylindrical), rostrum absent, head cuboidal, lateral nacles with bulging eyes; antennae much longer than body, sparsely setose, antenna 1 shorter than 2, accessory flagellum present, 1-articulate; gnathopods feeble; pleonites 6–7 fused dorsally; all coxae strongly disjunct; urosomites 1–3 strongly developed and separate, telson partly fused dorsally to urosomite 3; uropods 1–2 well developed, both strongly biramous, uropod 3 composed of vestigial peduncle lacking rami; gills present only on coxae 3–6.

Type-species. — *Podobothrus bermudensis*, new species.

Etymology.—‘Podo’ from the Greek *pous* as, in Podoceridae, and ‘bothrus’ from the Greek *bothros*, a pit.

Relationship.—Probably closest to *Podocerus* but differing in the immense antennae, strongly disjunct coxae 2–7, and elongate apical spination of uropods 1–2.

According to Dr. Laubitz this genus does not fit the subfamily Podocerinae as described in Laubitz (1983). It is so strongly distinct from any of the other subfamilies, however, that we believe Podocerinae simply has to be emended to accept *Podobothrus*. Exceptions to the subfamilial diagnosis are gills absent on coxa 2; mandibular palp slender; coxae shorter than pereonites.

Differing from the *Dulichia* group (see Laubitz 1979) in the *Podocerus*-like head shape in contrast to the large and projecting keel-like condition of *Dulichia* and its congeners, and the presence of a third uropod.

Differing from *Cyrtophium* in the presence of an accessory flagellum and short antenna 1; from *Laetmatophilus* in the immense antennae, presence of an accessory flagellum, disjunct coxae 2–7, fully developed uropod 2 and presence of uropod 3; from *Leipsuropus* in the disjunct coxae and presence of uropods 2 and 3; from *Xenodice* (and Xenodicinae) in the short antenna 1, depressed body, lateral ocular bulges and more strongly disjunct coxae; and from *Neoxenodice* in the short antenna 1, much less disjunct coxae, long pereopods 3–4 and fused pereonites 6–7.

Podobothrus is not assignable to the Iciliidae which Laubitz (1983) places in the superfamily Eusiroidea because the gnathopods of that family are simple and elongate, the coxae are medium sized, acuminate, and coxae 3–4 are much larger than coxae 1–2.

Podobothrus bermudensis, new species

Figs. 1–3

Diagnosis.—Having the generic characters.

Description of holotype, male, 1.76 mm.—Length of antenna 1; 2.37 mm, of antenna 2: 3.20 mm; articles 2 and 3 of antenna 1 immensely longer than article 1, ratio of articles 1–3 and flagellum = 5:19:22:29, primary flagellum 5-articulate (apical article vestigial), accessory flagellum 1-articulate. Ratio of articles 3, 4, 5 and flagellum of antenna 2 = 7:22:36:36, flagellum 4-articulate (apical article vestigial).

Epistome rounded anteriorly, upper lip evenly incised below. Right and left incisors with 5 and 4 teeth, right lacinia mobilis principally bifid but with accessory teeth, left with 4 teeth, rakers 2 plus accessory minor raker and accessory setules, molar triturative, with facial flake and seta; palp immense, slender, article 2 poorly setose, article 3 shorter than 2, slender, setal formula = A, 2D, 6E. Mandibular lobes of lower lip sharp. Inner plate of maxilla 1 vestigial, outer plate with 9 spines, palps symmetrical, with 5 apical spines and 2 facial setae. Inner plate of maxilla 2 narrower and shorter than outer, medial margin with 3 weak setae. Inner plate of maxilliped with 2 thick apical spines, one ventral coupling spine and 4 apical setae, 3 mediofacial setae, outer plate with 2 medial spines and 3 apicomедial spine-setae (plumose), palp slender, dactyl stubby, with 3 apical setae.

Gnathopod 1 slender, feeble, barely subchelate, carpus scarcely lobed, dactyl

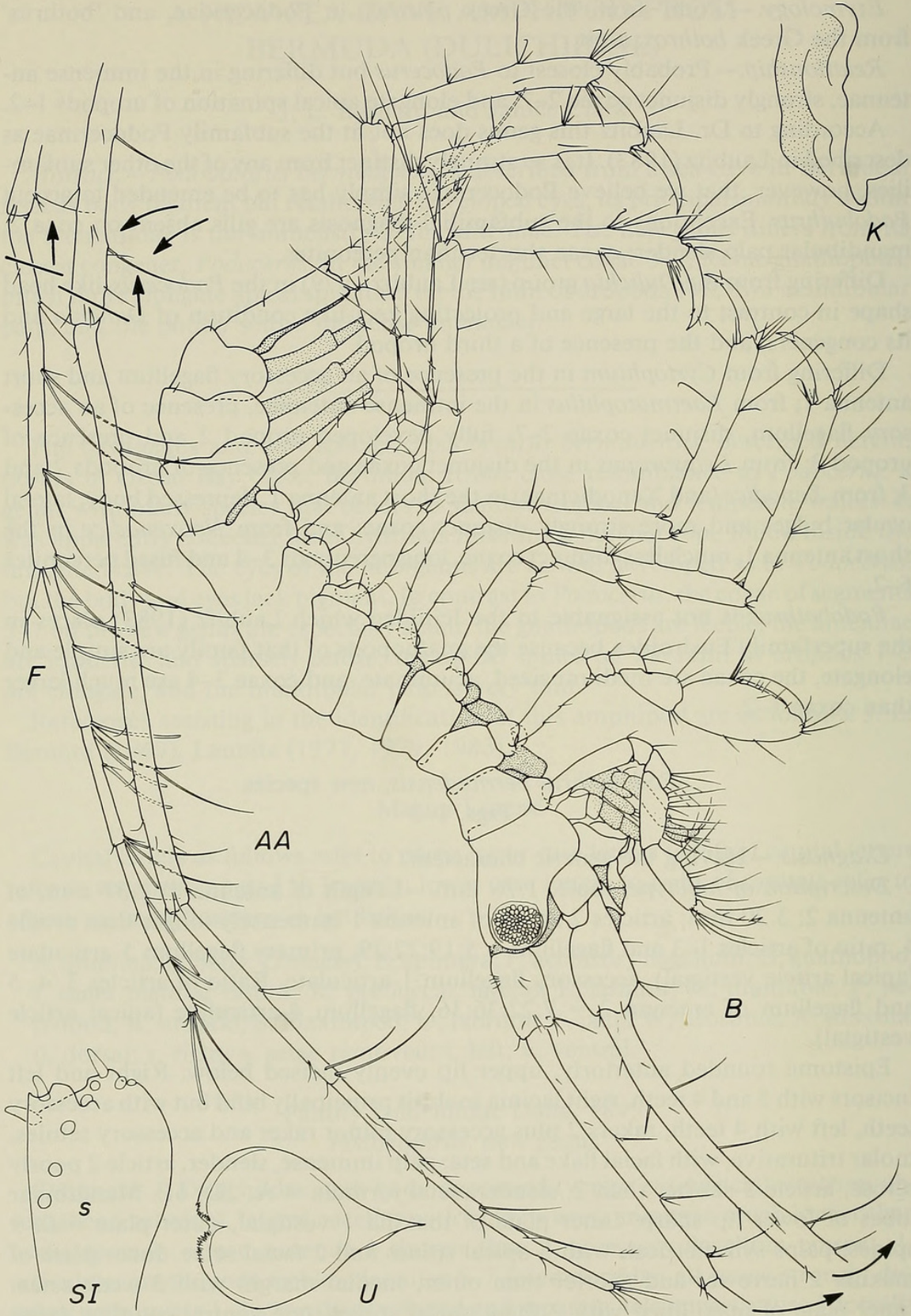


Fig. 1. *Podobothrus bermudensis*, holotype male 1.76 mm.

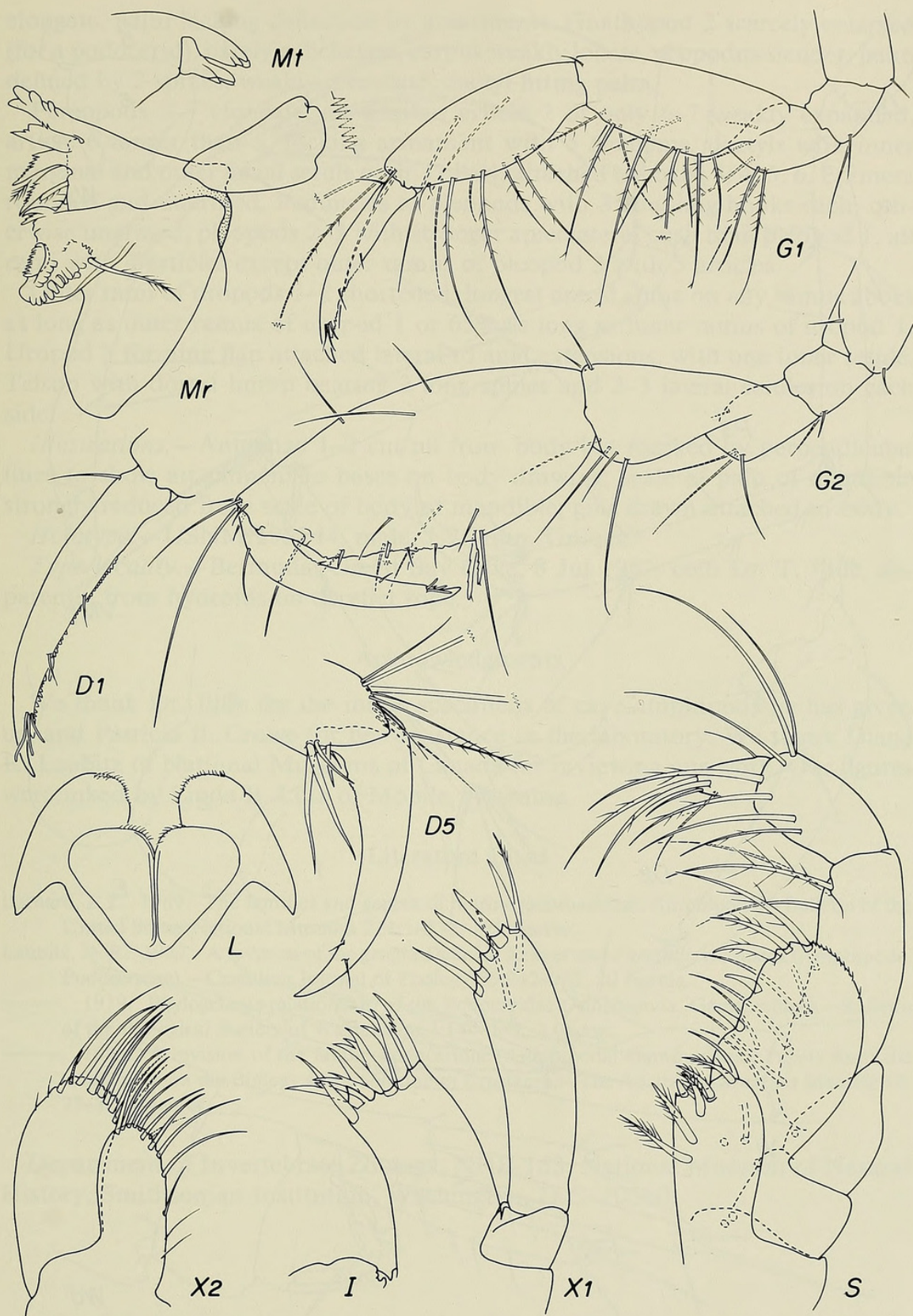


Fig. 2. *Podobothrus bermudensis*, holotype male 1.76 mm.

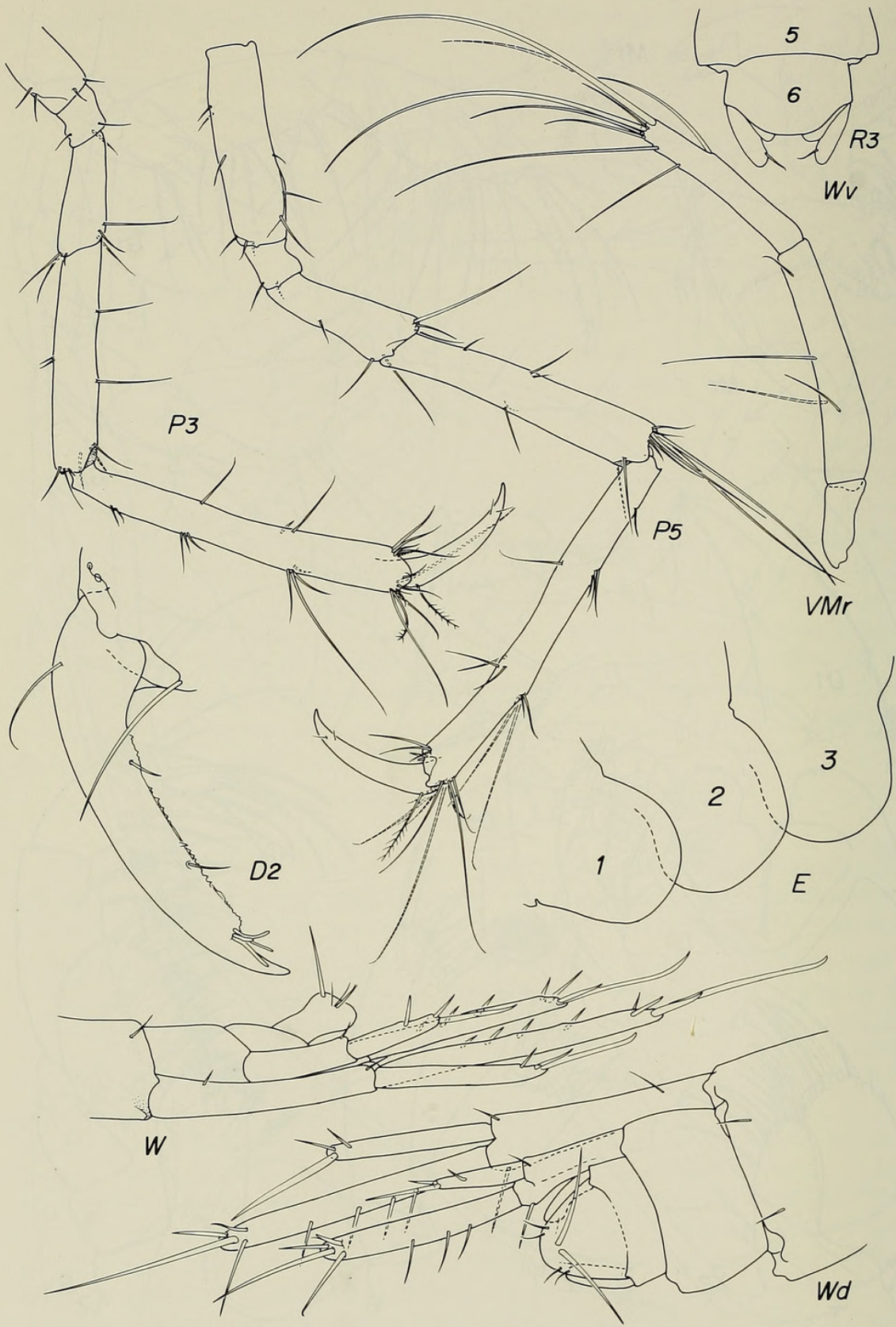


Fig. 3. *Podobothrus bermudensis*, holotype male 1.76 mm.

elongate, palm lacking definition by armaments. Gnathopod 2 scarcely enlarged (for a podocerid), barely subchelate, carpus weakly lobate, propodus slender, palm defined by 2 spines, weakly crenulate, dactyl fitting palm.

Pereopods 3–7 elongate, all similar, article 2 of only 6–7 weakly expanded, article 6 longer than 5, locking armament with 5 elements, dactyls with inner marginal and outer facial setule each. Gills 4, attached to coxae 3, 4, 5, 6. Epimera rounded and unarmed. Peduncles of pleopods with 3 coupling hooks each, otherwise unarmed, pleopods 2–3 with stronger apicolateral cusp than pleopod 1, all rami with 4 articles except outer ramus of pleopod 3 with 5 articles.

Outer rami of uropods 1–2 shortened, longest apical spine on any ramus about as long as outer ramus of uropod 1 or 65% as long as inner ramus of uropod 1. Uropod 3 forming flap attached lateral to anal extensions, with one inner setule. Telson with dorsal hump bearing 2 long spines and 2–3 lateral setules on each side.

Illustrations.—Antennae 1–2 cut off from body but marked by perpendicular lines to show attachment to bases on body drawing; scale of palp of mandible strongly reduced from scale of body of mandible; gills drawn attached to body.

Holotype.—USNM 195144, male, 1.76 mm. Unique.

Type-locality.—Bermuda, Green Bay Cave, 8 Jul 1982, coll. Dr. T. Iliffe, apparently from hydroids on derelict rope.

Acknowledgments

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Department of Invertebrate Zoology, NHB-163, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560.



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