

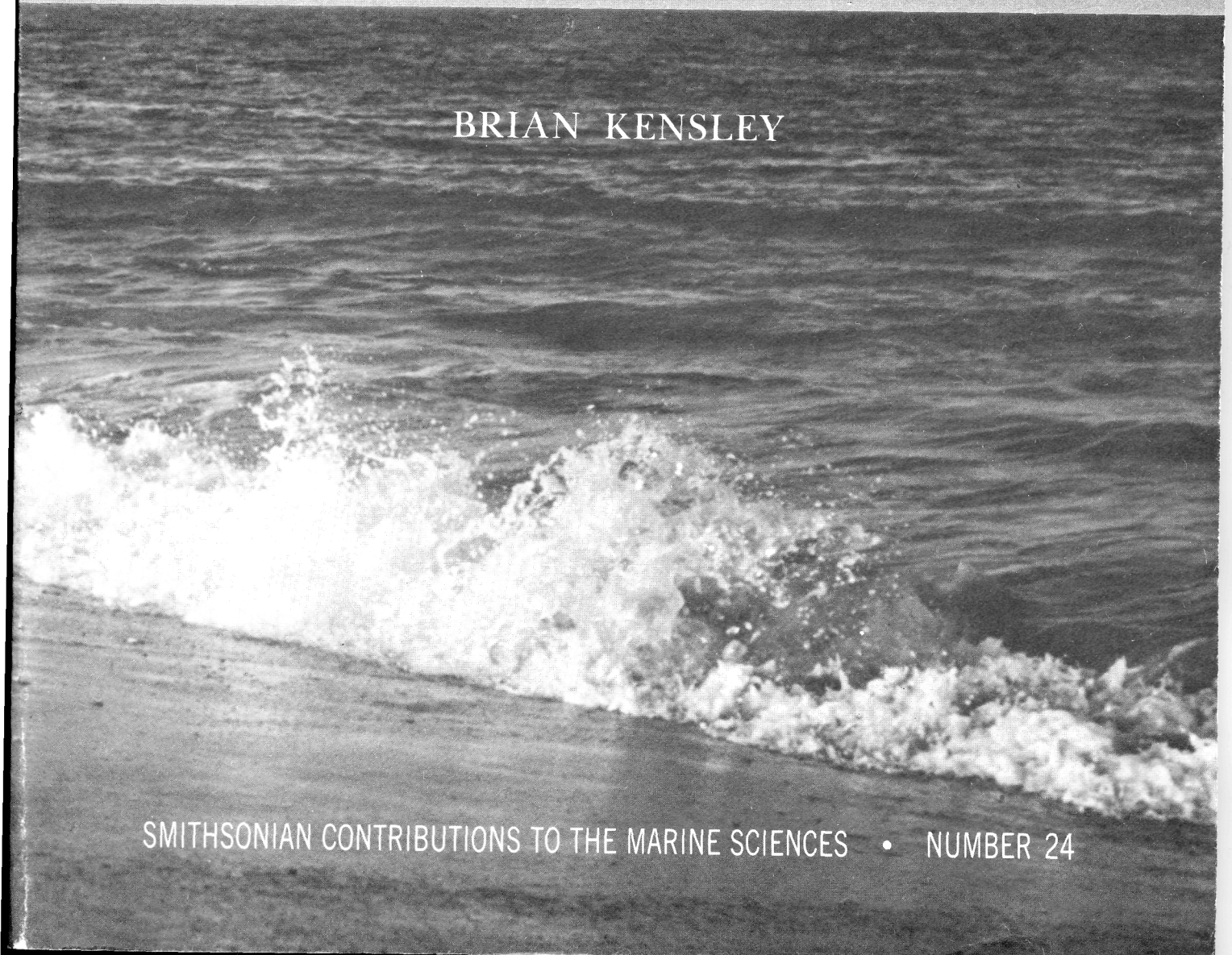
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Kensley 1984

The Atlantic Barrier Reef
Ecosystem at Carrie Bow Cay,
Belize, III: New Marine Isopoda

BRIAN KENSLEY

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The Atlantic Barrier Reef
Ecosystem at Carrie Bow Cay,
Belize, III: New Marine Isopoda

Brian Kensley



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ABSTRACT

Kensley, Brian. The Atlantic Barrier Reef Ecosystem at Carrie Bow Cay, Belize, III: New Marine Isopoda. *Smithsonian Contributions to the Marine Sciences*, number 24, 81 pages, 48 figures, 1984.—One new genus, *Chalixanthura*, and twenty-four new species of isopods are described and figured. These include *Chalixanthura scopulosa*, *Eisothistos petrensis*, *Accalathura setosa*, *Apanthura cracenta*, *Pendantthura hendleri*, *Cymodoce ruetzleri*, *Dynamenella quadrilirata*, *Paracerceis cohenae*, *Paracerceis glynni*, *Metacirolana agaricicola*, *Metacirolana halia*, *Metacirolana menziesi*, *Gnathia rathi*, *Astacilla regina*, *Stenetrium bowmani*, *Stenetrium patulipalma*, *Stenetrium spathulicarpus*, *Bagatus punctatus*, *Angliera psamathus*, *Microcharon sabulum*, *Joeropsis bifasciatus*, *Joeropsis personatus*, *Munna petronastes*, and *Microcerberus syrticus*. Figures and/or descriptions are also provided for *Stenetrium minocule* Menzies and Glynn, *Stenetrium stebbingi* Richardson, *Joeropsis coralicola* Schultz and McCloskey, and *Joeropsis rathbunae* Richardson. With a few exceptions, all material comes from the coral reef system at Carrie Bow Cay, Belize. Depth and ecological data, where available, are provided.

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The Atlantic Barrier Reef Ecosystem at Carrie Bow Cay, Belize, III: New Marine Isopoda

Brian Kensley

Introduction

The Smithsonian Institution's Investigations of Marine Shallow-Water Ecosystems program at Carrie Bow Cay, Belize, started in 1972. (For a full report on this program, see Rützler and Macintyre, 1982.) From that time on, samples of isopod crustaceans were accumulated, usually incidental to other projects. I started collecting at Carrie Bow Cay in 1978, with an initial interest in anthuridean isopods. Later, an ecological project involving numerous quantitative samples from the reef crest revealed a number of common but undescribed species of isopods. It was eventually decided to identify all the Carrie Bow isopod material and, in the course of this project, even more undescribed species came to light, until a total of 24 new species had been recognized.

One reason that so many new species have been found at a single location is that much of the collecting was done with the aid of SCUBA, allowing fine-scale sampling of microhabitats. In this area, Gordon Hendler of the Smithsonian Oceanographic Sorting Center, in particular, has produced many valuable samples incidental to

his echinoderm research. Other workers who provided useful samples include Anne Cohen, Kristian Fauchald, and Klaus Rützler.

The purpose of this paper is to record only the undescribed species from Carrie Bow Cay. In a few cases, it has been necessary to include descriptions and figures of earlier species, to resolve taxonomic tangles. Two new genera and seven new species from Carrie Bow Cay were previously described in *Smithsonian Contributions to the Marine Sciences*, number 12 (see Kensley, 1982). The bulk of the material listed in the "Material Examined" sections comes from Carrie Bow Cay, Belize (16°48'N, 88°05'W). Specific data are provided for material from other localities. The collecting stations are provided with prefixes that indicate both the collector and his/her field station numbers; these prefixes and collectors are

AC Anne Cohen
CBC Klaus Rützler
F Kristian Fauchald
H Gordon Hendler
K Brian Kensley
RC Brian Kensley (quantitative reef crest samples)

All material has been incorporated into the Smithsonian Institution's collection and given USNM catalog numbers. In the accompanying figures, a scale (in millimeters) is given only for the entire animal in dorsal view.

Brian Kensley, Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560.

Other abbreviations used are

juv(s) juveniles
 ovig ovigerous
 TL total length

ACKNOWLEDGMENTS.—In addition to the collectors mentioned above, I am also very grateful to the many collectors of isopod material from Carrie Bow, who have not been specifically mentioned. I would like to thank Klaus Rützler, coordinator of the IMSWE project, for his help in making several of my collecting trips possible and for identifying sponge material and also Ted Bayer, who identified gorgonacean material. My thanks are due to a number of people who assisted me with fieldwork and collecting, including Marilyn Schotte (who also drew the whole-animal illustrations in Figures 21, 23, 30, and 38), Michael Carpenter, Tony Rath, and David Russell. The tedious task of sorting hundreds of samples was carried out by Marilyn Schotte, Deborah Robertson, and Lee Benner, to whom I am very grateful. Dr. Jean Just, of the Zoological Museum, Copenhagen, made the loan of type material possible. Three trips to Belize were made possible by Fluid Research Fund grants from S. Dillon Ripley, Secretary of the Smithsonian Institution.

Drs. Thomas E. Bowman, Richard C. Brusca, and George D. Wilson read the manuscript. Their numerous comments led to an immeasurably improved paper, and I owe them my sincere thanks.

This paper is contribution number 134 of the Smithsonian Institution's Investigations of Marine Shallow-Water Ecosystems.

Suborder ANTHURIDEA

Family HYSSURIDAE

Chalixanthura, new genus

DIAGNOSIS.—Eyes present. Antenna 1, flagellum of 3 articles in female, 7 in male. Antenna 2, flagellum of 7 articles. Mandibular palp 3-articulate. Maxilliped of 7 articles; short endite

present. Pereopod 1, propodus barely expanded, similar to pereopods 2 and 3. Pereopods 4–7 with triangular carpus. Pleopod 1 operculiform, both rami forming operculum. Pleonites 1–5 short, free; pleonite 6 free. Telson lacking statocysts.

TYPE-SPECIES.—*Chalixanthura scopulosa*, new species, by present designation.

COMPOSITION.—*Chalixanthura scopulosa*, new species.

GENDER.—Feminine.

REMARKS.—Of the group of hyssurids with pleonites 1–5 short and free, only *Coralanthura* and *Panathura* also have a maxilliped of seven articles and an endite and lack telsonic statocysts. *Coralanthura*, however, possesses a differentiated subchelate pereopod 1, i.e., the propodus is expanded far more than in pereopods 2 and 3. *Chalixanthura*, by contrast, has pereopods 1–3 undifferentiated. *Panathura* is characterized by a larger maxillipedal endite than is seen in *Chalixanthura*, by the anterior three pereopods having peg-like or spine-like teeth on the propodal palms, and by having a more squat body form (7–8 times longer than wide; 13–14 times longer than wide in *Chalixanthura*).

ETYMOLOGY.—The generic epithet is derived from the Greek *chalix* (pebble or rubble) plus the frequently used suffix *-anthura*.

Chalixanthura scopulosa, new species

FIGURES 1–3

MATERIAL EXAMINED.—*Holotype*: USNM 211200, non-ovig ♀, TL 2.5 mm, sta K-139, reef crest rubble, 0.1 m.

Paratype: USNM 211201, 1 non-ovig ♀, TL 2.0 mm, sta K-139, reef crest rubble, 0.1 m.

Additional Material: Seventeen specimens, taken during a quantitative survey of reef crest rubble isopods, were used in the description of this species. Included in this batch were one submale and three males (TL 2.5 mm). These specimens have since been lost.

DESCRIPTION.—*Non-ovigerous Female*: Body slender, about 13 times longer than wide. Inte-

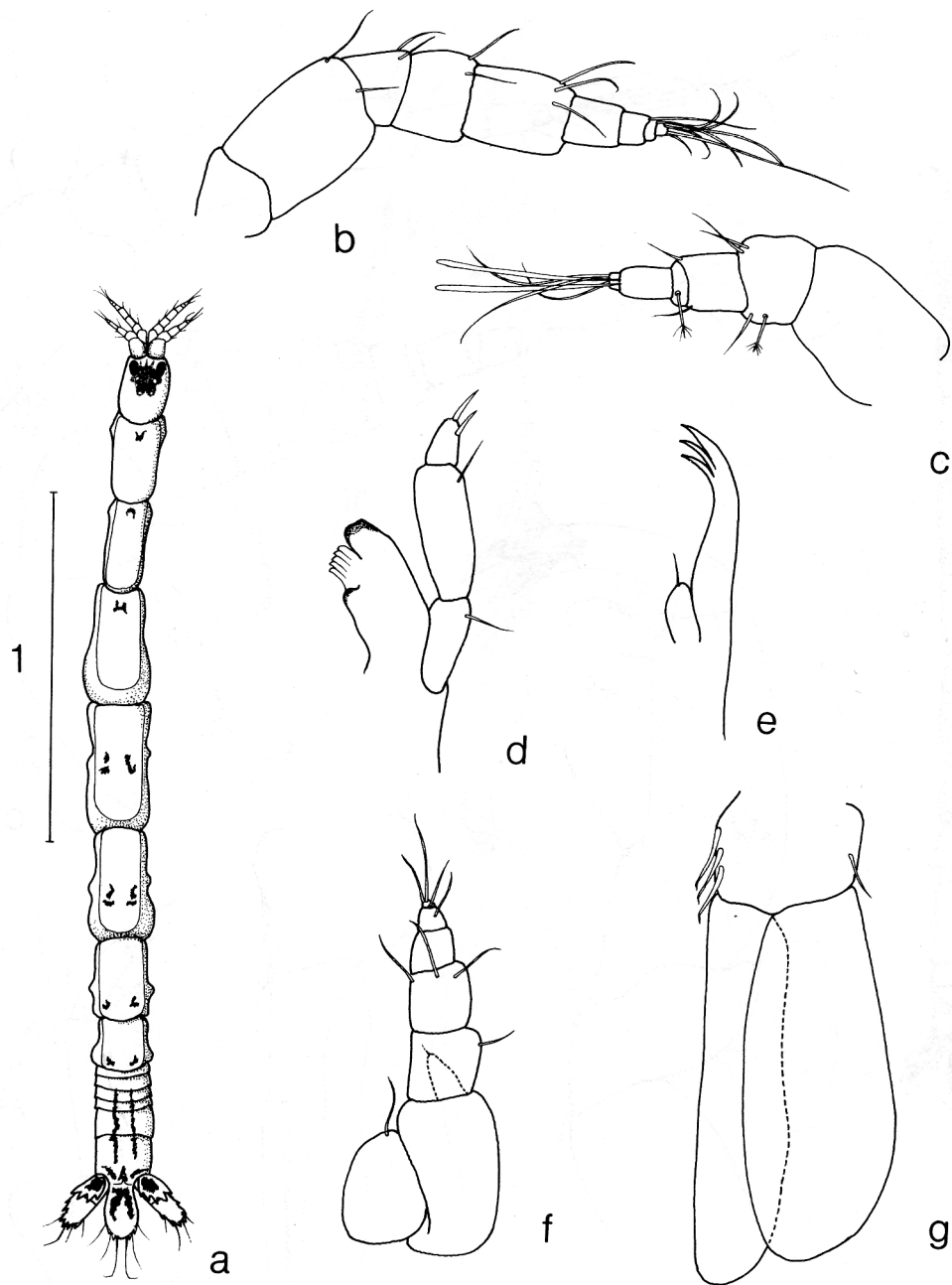


FIGURE 1.—*Chalixanthura scopulosa*, new species, ♀: a, whole animal, dorsal view; b, antenna 2; c, antenna 1; d, mandible; e, maxilla; f, maxilliped; g, pleopod 1.

gument thin, except for slightly indurate uropods and telson. Pigmentation: patch between eyes on dorsum of head; pereonites 1–3 with small middorsal anterior patch; pereonites 4–7 with pair of posterior submedian patches; pleon

with pair of submedian longitudinal stripes; telson with double anterior patch; uropodal exopod with broad patch. Body proportions: $C < 1 < 2 = 3 > 4 > 5 > 6 > 7$. Head with tiny rostral point. Pleonites 1–4 short, subequal; pleonite 5

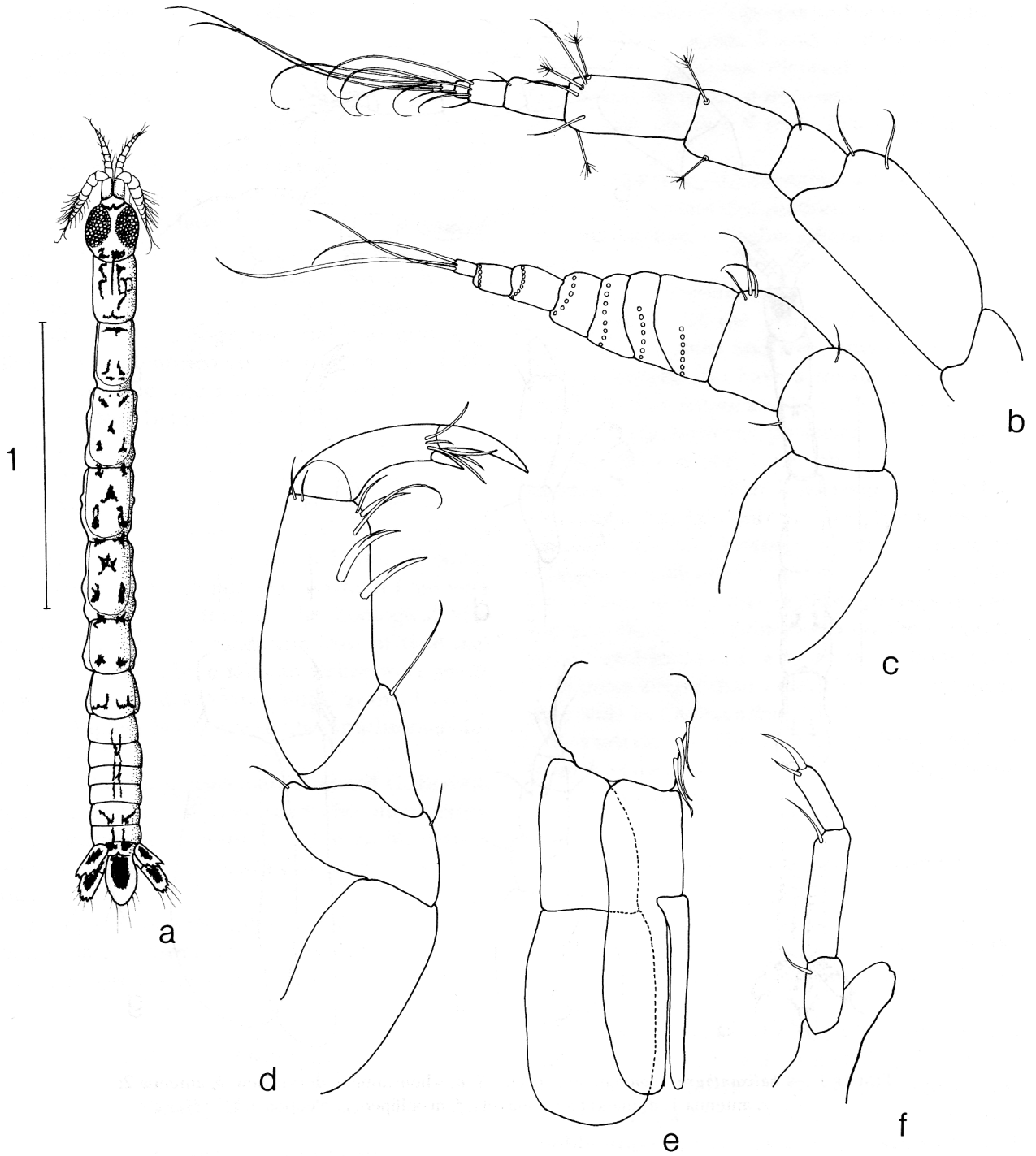


FIGURE 2.—*Chalixanthura scopulosa*, new species, ♂: a, whole animal, dorsal view; b, antenna 2; c, antenna 1; d, pereopod 1; e, pleopod 2; f, mandible.

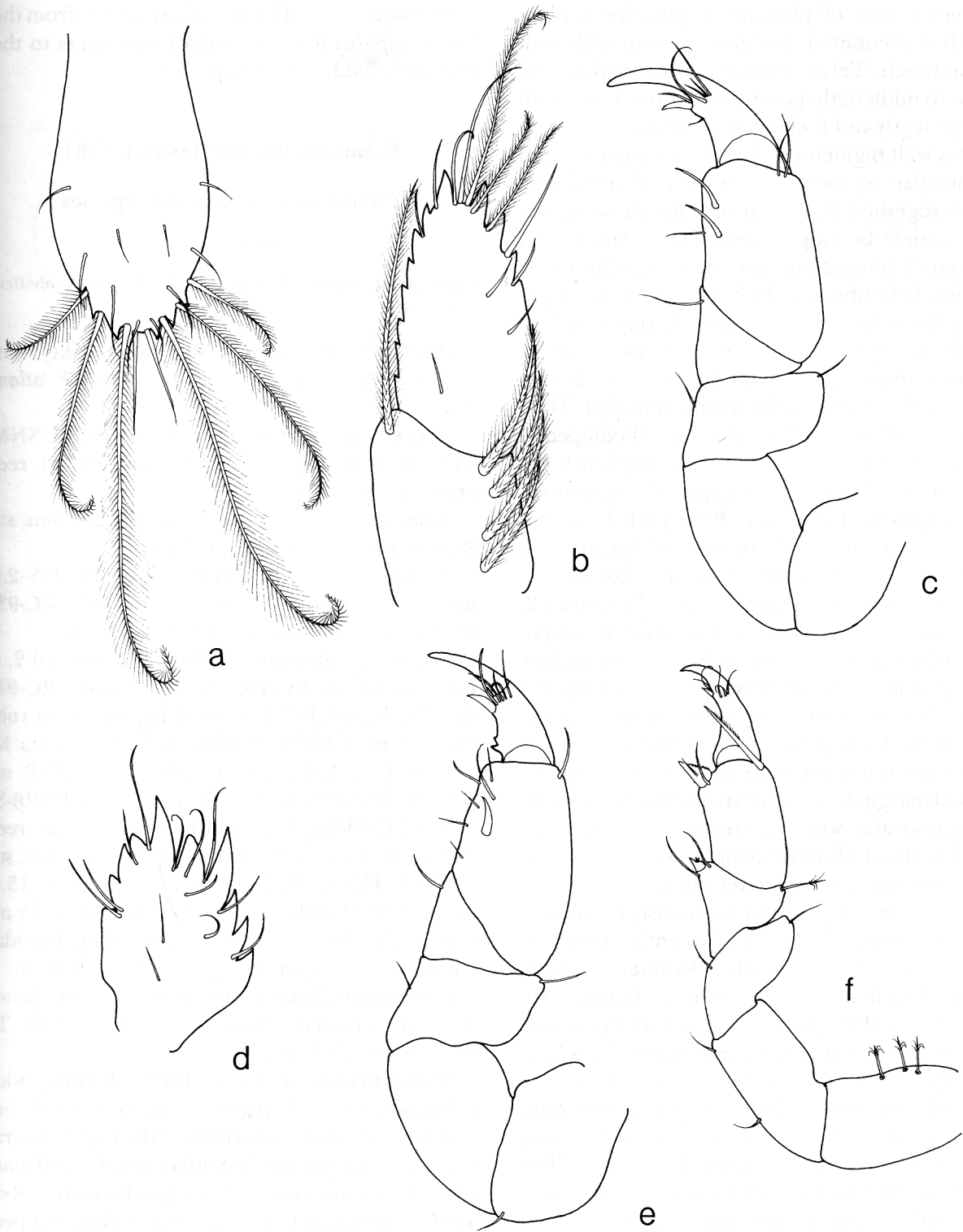


FIGURE 3.—*Chalixanthura scopulosa*, new species, ♀: a, telson; b, uropodal endopod and basis; c, pereopod 1; d, uropodal exopod; e, pereopod 2; f, pereopod 7.

3 times length of pleonite 4; pleonite 6 twice length of pleonite 5, posterior margin with mid-dorsal notch. Telson elongate-ovate, widest posterior to midlength; posterior margin armed with 6 large teeth and 6 elongate plumose setae.

Eyes well pigmented, dorsal. Antenna 1, basal peduncular segment longer than 2 distal segments together; flagellum of 3 articles, penultimate article bearing 2 aesthetascs. Antenna 2, segment 2 longest and broadest; flagellum of 4 articles. Mandibular palp 3-segmented, segment 2 $1\frac{1}{2}$ times length of segment 1; segment 3 $\frac{1}{3}$ length of segment 2, bearing 2 distal spines; incisor consisting of single broad cusp; lamina dentata of 5 teeth; molar small, rounded. Maxilla, exopod bearing 3 distal spines. Maxilliped 7-segmented (including fused basal segment); endite not reaching distal margin of segment 3, with single terminal seta. Pereopod 1, unguis almost equal in length to rest of dactyl, with strong accessory spine; propodus barely expanded, posterior margin straight. Pereopod 2, very similar to pereopod 1. Pereopod 7, propodus and triangular carpus each with short stubby dentate spine at posterodistal corner. Pleopod 1 operculiform, both rami forming operculum; basis with 3 coupling hooks; endopod slightly longer and 0.6 times width of exopod. Uropodal exopod margin bearing 10 strong teeth; endopod elongate-ovate, with 12 strong marginal teeth and few distal plumose setae; basis with several stout plumose setae on outer margin.

Male: Head with eyes enormously expanded, both dorsally and ventrally. Pigmentation on pereon stronger than in female. Pleonites 1–6 free, subequal in length, longer than in female. Antenna 1, flagellum of 7 articles, all except terminal article bearing ring of aesthetascs. Mandibular palp similar to female, rest of appendage reduced to rounded lobe. Pereopod 1, propodus more elongate than in female, with 3 strong sensory spines on or near posterior margin. Pleopod 2, exopod with transverse suture anterior to midlength; endopod with copulatory stylet articulating near midlength of median margin, not overreaching distal margin of ramus.

ETYMOLOGY.—The specific epithet is from the Latin *scopulus* (crest or ridge) and refers to the reef crest habitat of the species.

Genus *Eisothistos* Haswell, 1884

Eisothistos petrensis, new species

FIGURES 4–6

Eisothistos atlanticus.—Barnard, 1925:134 [not Vanhöffen, 1914:494].

PREVIOUS RECORDS.—St. James Bay, St. Thomas, West Indies, 10 m (5 fms) (as *E. atlanticus*).

MATERIAL EXAMINED.—*Holotype:* USNM 211202, non-ovig ♀, TL 4.0 mm, sta RC-94, reef crest rubble, 0.1 m.

Allotype: USNM 211203, ♂, TL 2.0 mm, sta RC-96, reef crest rubble, 0.1 m.

Paratypes: USNM 211204, 4 ♂, TL 1.5–2.0 mm, 4 ♀, TL 2.0–4.3 mm, sta RC-91, RC-93, RC-97, RC-120, reef crest rubble, 0.1 m.

Additional Material: USNM 211205, 10 ♀, 3 juvs, sta RC-8, RC-10, RC-40, RC-59, RC-94, RC-96, RC-99, RC-100, RC-119, reef crest rubble, 0.1 m. USNM 211206, 2 ♀, 2 juvs, sta K-70a, K-139, K-150, reef rubble, 0.1–36.0 m. USNM 211207, 1 ♂, 4 ♀, 1 juv, sta H(80)-8, H(80)-31, H(80)-32, H(80)-39, H(80)-49, reef rubble, 0–15.0 m. USNM 211208, 4 ♀, 1 juv, sta H(81)-8, H(81)-12, H(81)-40, H(81)-41, 1–15.2 m. USNM 211209, 1 ♂, sta F-4, rubble, 0.25 m. USNM 211216, 1 non-ovig ♀, Looe Key, Florida, coral rubble in spur and groove zone, 5–6 m.

Copenhagen Museum Collection: 4 ♀, St. James Bay, St. Thomas, West Indies, 7 m, coll. T. Mortensen, 19 Dec 1905.

DESCRIPTION.—*Female:* Body slender, widening posteriorly. Integument anteriorly soft, becoming indurate posteriorly. Head with lateral eyes consisting of 6 ommatidia each; frontal margin between antennular bases gently convex. Relative proportions of pereonites variable, but pereonites 1–3 generally subequal, longer than pereonites 4–7; latter decreasing in length poste-

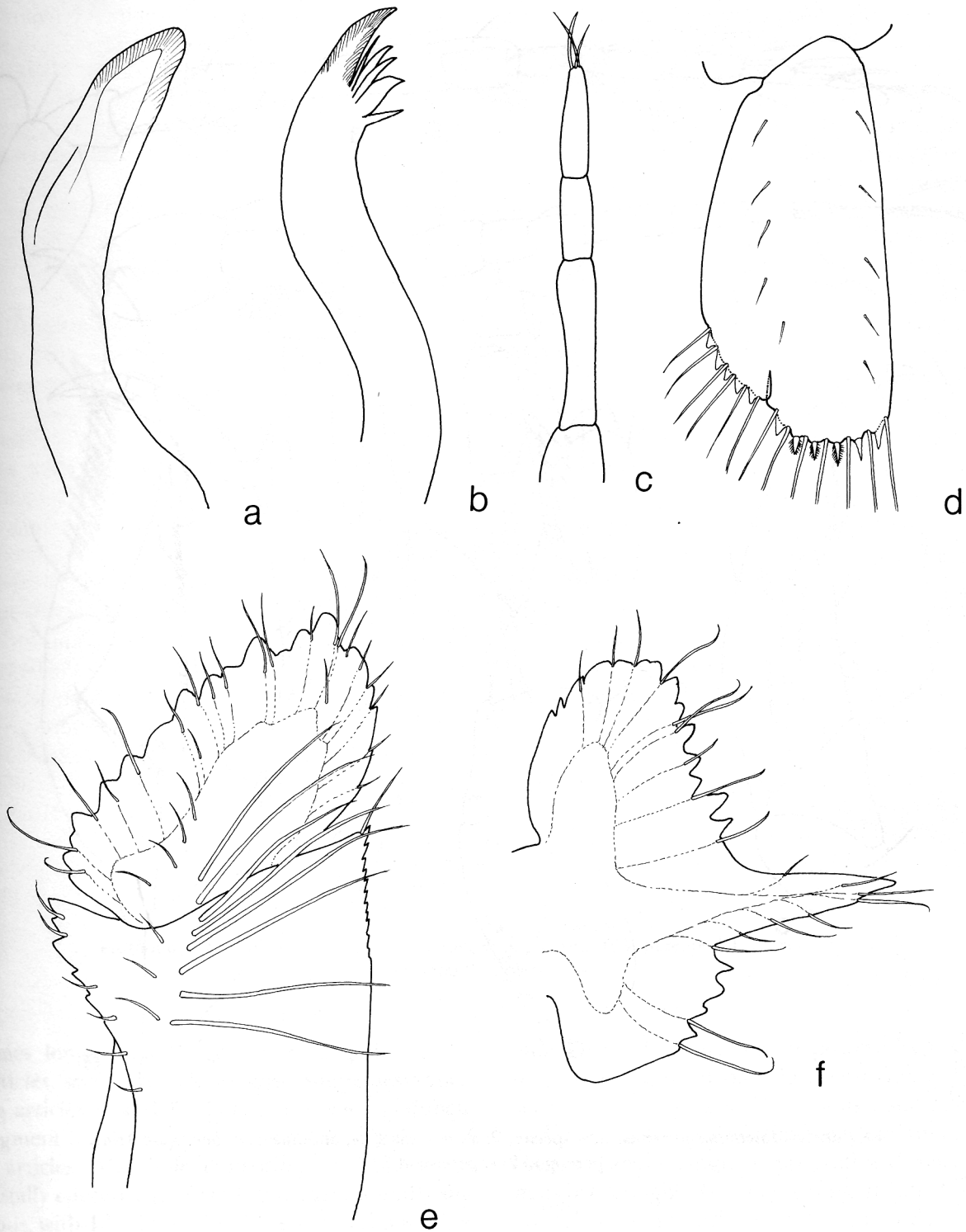


FIGURE 4.—*Eisothisos petrensis*, new species, ♀: *a*, mandible; *b*, maxilla; *c*, maxilliped; *d*, pleopod 1; *e*, uropodal protopod and endopod; *f*, uropodal exopod.

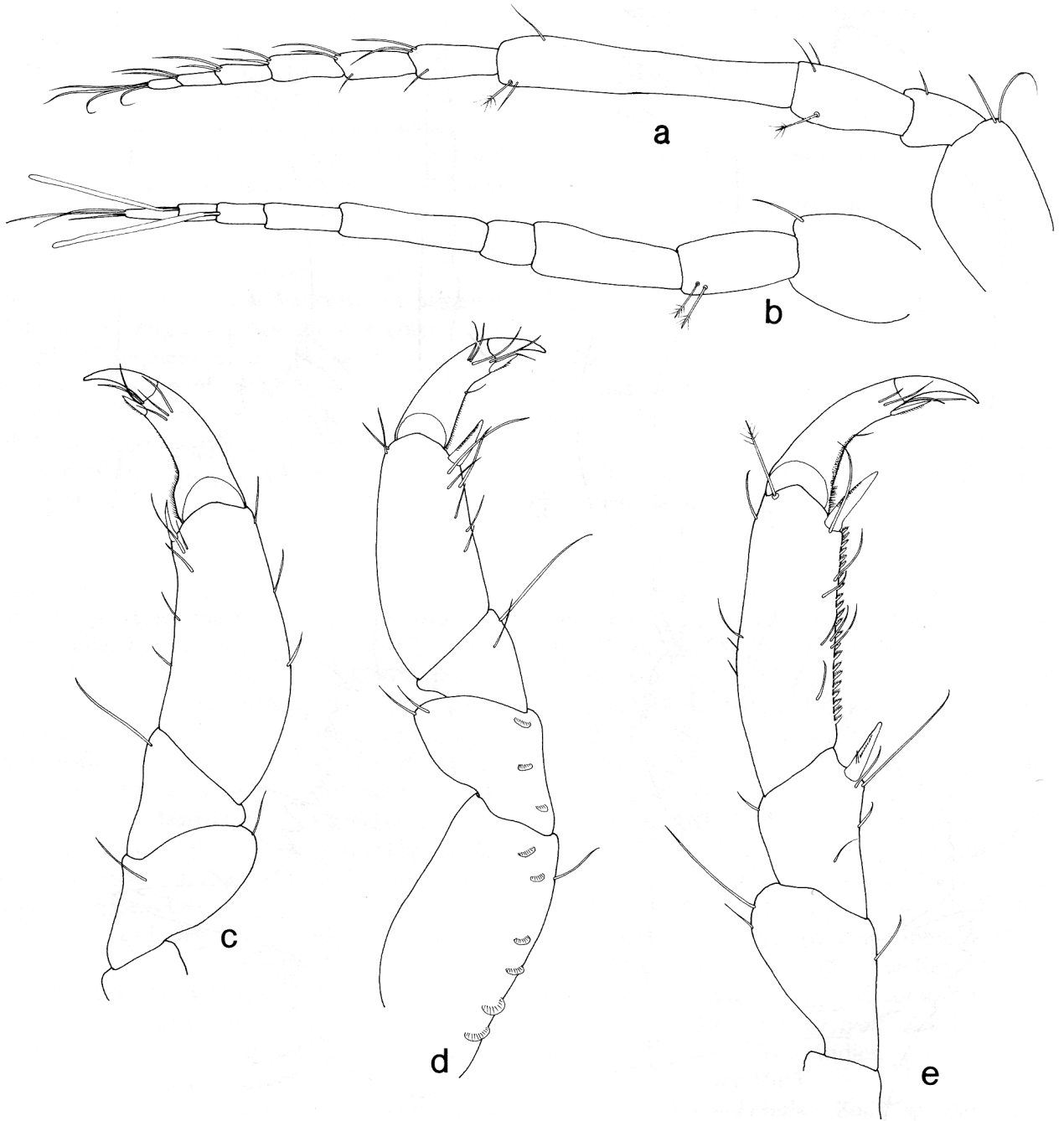


FIGURE 5.—*Eisothistos petrensis*, new species, ♀: a, antenna 2; b, antenna 1; c, pereopod 1; d, pereopod 2; e, pereopod 7.

riorly. Pleonites 1-5 short, pleonite 6 slightly longer; pleonites bearing plumose lateral setae. Telson with posterior margin faintly bilobed, margin strongly serrate; posterior half dorsally

somewhat spooned; faint middorsal ridge anteriorly.

Antenna 1, basal segment subequal in length to segment 2, $1\frac{1}{2}$ times as wide; segment 3, $1\frac{1}{3}$

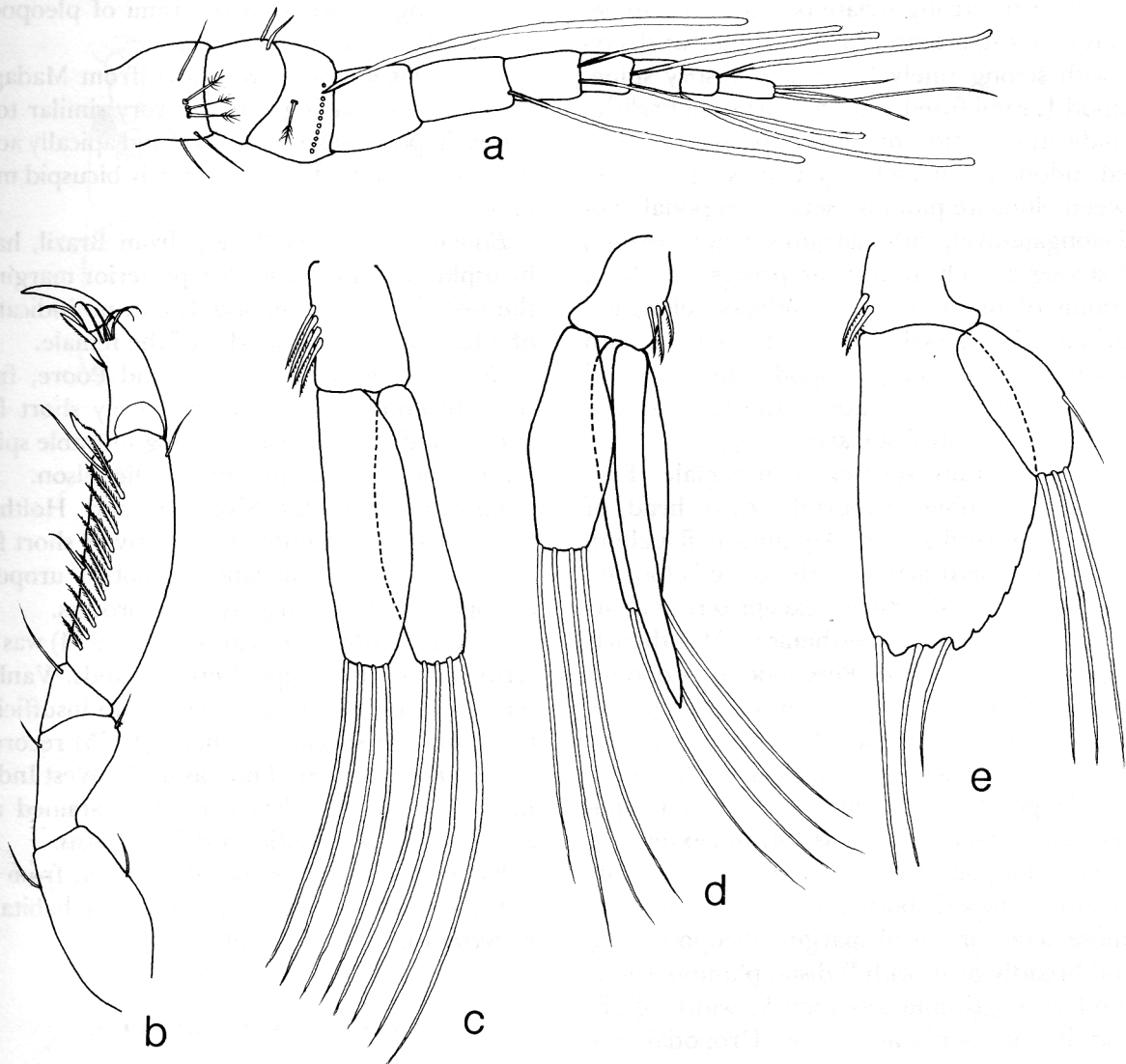


FIGURE 6.—*Eisothisτος petrensis*, new species, ♂: *a*, antenna 1; *b*, pereopod 1; *c*, pleopod 1; *d*, pleopod 2; *e*, pleopod 3.

times longer than segment 2; flagellum of 6 articles, second article longest; single aesthetasc on articles 4 and 5. Antenna 2 with peduncle segment 5 $2\frac{1}{2}$ length of segment 4; flagellum of 6 articles. Mandible consisting of single stout distally curved sclerotized structure. Maxilla sinuous, with 1 large sclerotized spine and 5 smaller spines. Maxilliped slender, of 4 segments, terminal segment with 3 simple apical setae. Pereopod 1, carpus triangular; propodus relatively longer than in pereopods 2 and 3, posterior margin

almost straight, with slender posterodistal spine; unguis $\frac{1}{3}$ length of dactylus, with strong finely serrate accessory spine. Pereopods 2 and 3, ischia and meri with rounded peg-like spines on medial surface; carpi triangular, propodi with posterior margins straight, bearing strong striate posterodistal spine; strong accessory spine of dactylus finely serrate. Pereopods 4–7 with carpi becoming more elongate, bearing strong serrate posterodistal spine; propodi becoming more elongate posteriorly, posterior margin lined with fringed