

Copepods (Crustacea) Associated with Marine Invertebrates from New Caledonia

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ABSTRACT

Copepods associated with marine invertebrates are recorded from New Caledonia. Included are three new genera and 30 new species which are distributed in the poecilostomatoid and siphonostomatoid genera *Anchimolgus* (5 new species), *Jamescookina* (2), *Odontomolgus* (2), *Schedomolgus* (3), and *Scyphuliger* (5) in the Anchimolgidae; *Pterioidicola* n. gen. (1) in the Lichomolgidae; *Critomolgus* (3), *Doridicola* (1), *Paramolgus* (1), and *Pachysericola* n. gen. (1) in the Rhynchomolgidae; *Ruhtra* n. gen. (1) in an uncertain family; and *Asteropontius* (5) in the Asterocheridae. Copepods new to New Caledonia and new host records are also included. Lists of 251 species of copepods known hitherto from New Caledonia and their 163 species of invertebrate hosts are provided, as well.

Key words: Copepoda, associations, new species, New Caledonia

INTRODUCTION

Although various copepods associated with marine invertebrates have been recorded, it is likely that the number of species of this kind known today represents only a small fraction of the species actually living with marine invertebrates (Humes, 1994b). Associations of copepods with marine invertebrates are common, especially in tropical waters (Humes, 1982a).

New Caledonia is among the several tropical places where the associated copepods are relatively

well known, along with Madagascar, the Moluccas, and Eniwetok Atoll. In 1971, the late Dr. Arthur G. Humes made a collecting trip to New Caledonia for two months. Through this survey he collected more than 200 species in 284 collections of copepods associated with various marine invertebrates (Humes, 1994b, 1997b). The majority of these copepods have been described by him through the various publications, with some remainings left unexamined.

After the passing away of Dr. Humes in 1999, his collections of copepods, including those collected in New Caledonia, were soon moved to the National Museum of Natural History, Smithsonian Institution, Washington, D. C. While my short visiting at the Museum in 2002, Mr. T. Chad Walter, a copepodologist in the Museum, suggested me to study some of Humes' collections. Then, the New Caledonian copepods contained in more than a hundred vials were loaned to me for a research. Most of these vials turned out to contain few specimens those remained as private references after picking out of type material. However, about 10% of the vials were of untouched. This paper deals with the descriptions of these copepod material remained unrecorded, including the species new to New Caledonia and the new host records, as the following list.

Order Poecilostomatoida

Family Anchimolgidae

- Anchimoligus maximus* n. sp. from the scleractinian coral *Fungia concinna*.
Anchimoligus tenuipes n. sp. from the scleractinian coral *Seriatopora hystrix*.
Anchimoligus tridentatus n. sp. from the scleractinian coral *Echinopora lamellosa*.
Anchimoligus multidentatus n. sp. from the scleractinian coral *Alveopora catalai*.
Anchimoligus noumensis n. sp. from the scleractinian coral *Seriatopora hystrix*.
Anchimoligus convexus Humes, 1978 from the scleractinian coral *Parahalomitra irregularis*.
Anchimoligus gratus Humes, 1996 from the scleractinian coral *Parahalomitra irregularis*.
Anchimoligus latens Humes, 1978 from the scleractinian coral *Fungia fungites*.
Anchimoligus punctilis Humes, 1978 from the scleractinian coral *Fungia fungites*.
Ecpophysarion lobophorum (Humes and Ho, 1968) from the scleractinian coral *Acropora convexa*.
Jamescookina palmata n. sp. from the scleractinian coral *Echinopora lamellosa*.
Jamescookina exigua n. sp. from the scleractinian coral *Echinopora lamellosa*.
Odontomoligus exilipes n. sp. from the scleractinian coral *Psammocora samoensis*.
Odontomoligus geminus n. sp. from the scleractinian coral *Psammocora samoensis*.
Odontomoligus bulbalis Humes, 1991 from the scleractinian coral *Merulina ampliata*.
Schedomoligus tener (Humes, 1973) from the scleractinian coral *Parahalomitra irregularis*.
Schedomoligus walteri n. sp. from the scleractinian coral *Lobophyllia corymbosa*.
Schedomoligus tenuicaudatus n. sp. from the scleractinian coral *Acropora rosaria*.
Schedomoligus dumbensis n. sp. from the scleractinian coral *Fungia fungites*.
Scyphuliger longicaudatus n. sp. from the scleractinian coral *Acropora convexa*.
Scyphuliger latus n. sp. from the scleractinian coral *Acropora exilis*.
Scyphuliger paucisurculus n. sp. from the scleractinian coral *Acropora exilis*.
Scyphuliger pennatus n. sp. from the scleractinian coral *Acropora corymbosa*.
Scyphuliger pilosus n. sp. from the scleractinian coral *Acropora corymbosa*.

Family Kelleriidae

Kelleria australiensis Bayly, 1971 from the sea star *Pentaceraster regulus*.

Family Lichomolgidae

Pteriodicola antennatus n. gen., n. sp. from the pteriod bivalves.

Family uncertain

Ruhtra humesi n. gen., n. sp. from the alcyonacean coral *Stereonephthya inordinata*.

Family Rhynchomolgidae

Acanthomolgus gentilis (Humes and Ho, 1968) from the gorgonacean coral *Siphonogorgia variabilis*.

Acanthomolgus variostracus (Humes and Ho, 1968) from the gorgonacean coral *Siphonogorgia variabilis*.

Critomolgus linguifer n. sp. from the alcyonacean coral *Cladiella humesi*.

Critomolgus mandoensis n. sp. from the sea anemone *Cryptodendrum adhaesivum*.

Critomolgus brevifurcatus n. sp. from a sea anemone of unknown species.

Critomolgus antennulus Humes, 1990 from the alcyonacean coral *Cladiella humesi*.

Critomolgus cladiellae Humes, 1990 from the alcyonacean coral *Cladiella humesi*.

Doridicola parvicuadatus n. sp. from the alcyonacean coral *Stereonephthya inordinata*.

Doridicola inaequalis (Humes and Ho, 1966) from a zoanthid of *Palythoa* sp.

Doridicola mimicus (Humes, 1975) from the alcyonacean coral *Cladiella humesi*.

Paramolgus galeatus n. sp. from the alcyonacean coral *Sarcophyton ehrenbergi*.

Paramolgus clavatus (Humes and Ho, 1968) from the alcyonacean coral *Sinularia polydactyla*.

Paramolgus nephthaenus Humes, 1980 from the alcyonacean coral *Stereonephthya inordinata*.

Paramolgus promiculus Humes, 1980 from the alcyonacean coral *Stereonephthya inordinata*.

Pachysericola compressus n. gen., n. sp. from the scleractinian coral *Pachyseris rugosa*.

Order Siphonostomatoida

Family Asterocheridae

Asteropontius brevioris n. sp. from the scleractinian coral *Acropora hyacinthus*.

Asteropontius acroporus n. sp. from the scleractinian coral *Acropora rosaria*.

Asteropontius caledoniensis n. sp. from the scleractinian coral *Echinopora lamellosa* and *Fungia concinna*.

Asteropontius minutus n. sp. from the scleractinian coral *Pocillopora damicornis caespitosa*.

Asteropontius dissimilis n. sp. from the scleractinian coral *Pocillopora damicornis caespitosa*.

MATERIALS AND METHODS

All copepod specimens studied in the present work were collected by the late Dr. Arthur G. Humes from New Caledonia during June to August, 1971. Most specimens were collected in the

shallow water from the intertidal to 2 m depth, with very few cases in the water as deep as 30 m. Specimens have been preserved in ethanol.

In the description, paragnath is not described due to its low taxonomical value. Collection data, including names of hosts from which the copepods were derived, are followed from Dr. Humes' collection note. Before dissection and microscopic observation, specimens were immersed in lactic acid for at least 30 minutes. Lengths of copepod specimens were measured from the anterior apex to the caudal rami, excluding caudal setae, of a selected, relatively large, dissected specimens. Dissections of specimens were done using the reversed slide method (Humes and Gooding, 1964). All figures were drawn with the aid of a drawing tube attached to the light microscope. Abbreviations used on the figures are: A1 = antennule, and A2 = antenna. Type specimens have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C., United States.

SYSTEMATIC ACCOUNTS

Order Poecilostomatoida Thorell, 1859

Family Anchimolgidae Humes and Boxshall, 1996

Genus *Anchimoligus* Humes and Stock, 1972

***Anchimoligus maximus* n. sp. (Figs. 1-3)**

Material examined. 10 ♀♀, 7 ♂♂ from the scleractinian coral *Fungia (Verrillofungia) concinna* (Verrill), west side of Maître Island, Noumea, New Caledonia, 20 June 1971, collected by A. G. Humes. Holotype (♀; USNM 1016255), Allotypes (♂; USNM 1016256), and Paratypes (8 ♀♀, 5 ♂♂; USNM 1016257) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 1A) large, 2.25 mm long. Prosoma narrow, 1.33 mm long, with greatest width 667 µm. First pedigerous somite separated from cephalosome by weak dorsal transverse suture. Epimera of second somites pointed posteriorly. That of fourth pedigerous somite tapering posteriorly. Fifth pedigerous somite 298 µm wide. Ratio of length to width of prosoma 1.99 : 1. Ratio of length of prosoma to that of urosome 1.45 : 1. Genital double-somite 346 × 229 µm (ratio 1.51 : 1); anterior four-sevenths moderately expanded; posterior part with parallel margins; genital areas located dorsolaterally in middle of anterior part (Fig. 1B). Each genital area with 2 minute setae. Three abdominal somites from anterior to posterior 125 × 137, 88 × 117, and 125 × 129 µm.

Caudal ramus (Fig. 1C) 177 × 63 µm, ratio 2.81 : 1, with fine spinules on posterior margin; caudal setae short and plumose; inner one of 2 median terminal setae expanded basally and longest, slightly longer than twice length of caudal ramus. Egg sac (Fig. 1D) 608 × 308 µm.

Rostrum small, produced ventrally (Fig. 1E). Antennule (Fig. 1F) 7-segmented, 552 µm long; armature: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc (positions of 3 aesthetascs added in male shown by dots); one of 4 setae on first segment distinctly large, 205 µm long, slightly longer than second segment. Antenna (Fig. 1G) slender, 4-segmented, with armature formula: 1, 1, 1, and 1 claw; setae on first and second segments obscure; seta on third segment

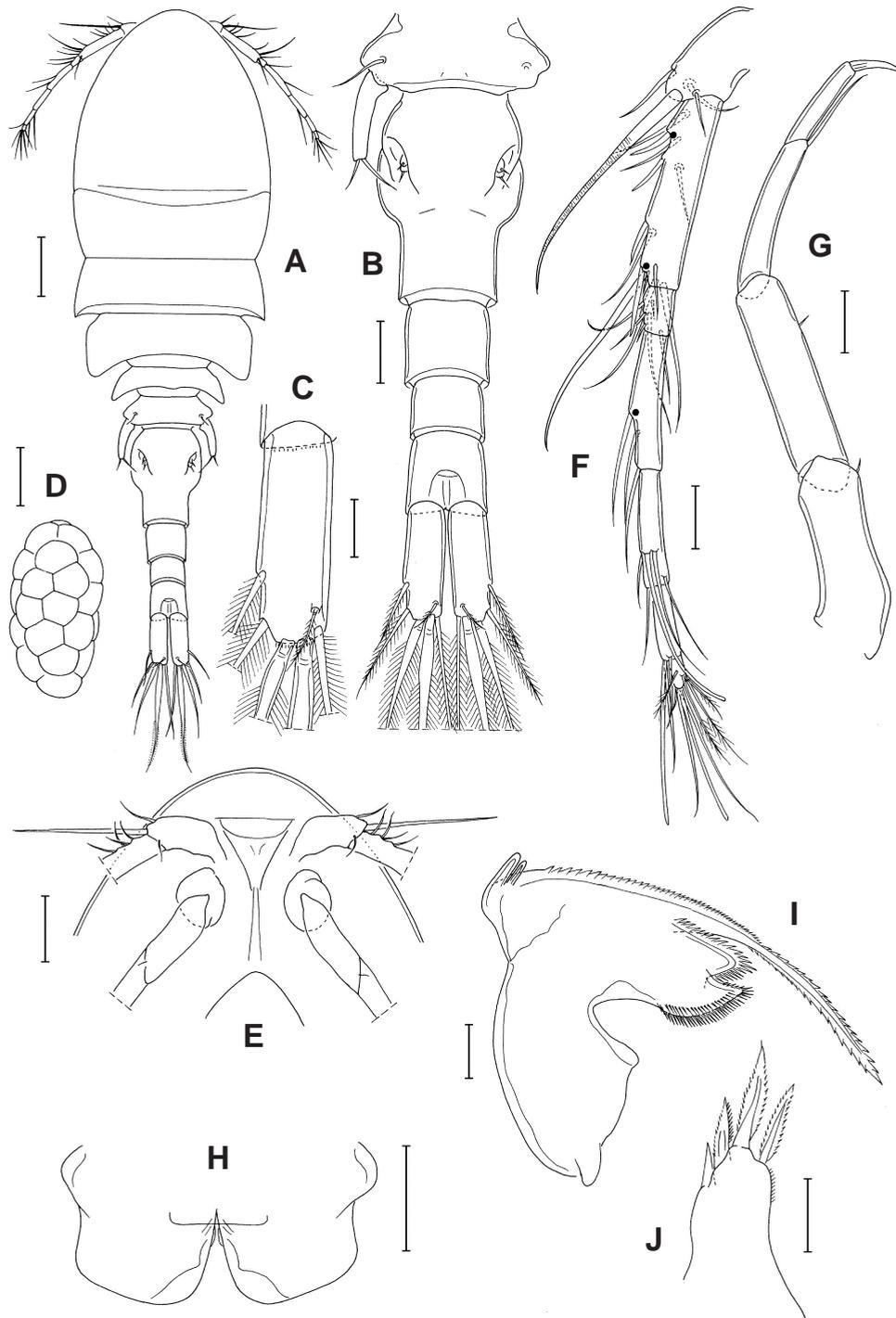


Fig. 1. *Anchimolgus maximus* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus, dorsal; D, egg sac; E, anterior part of cephalothorax, ventral; F, antennule; G, antenna; H, labrum; I, mandible; J, maxillule. Scale bars = 0.02 mm (I, J), 0.05 mm (C, F-H), 0.1 mm (B, E), 0.2 mm (A, D).

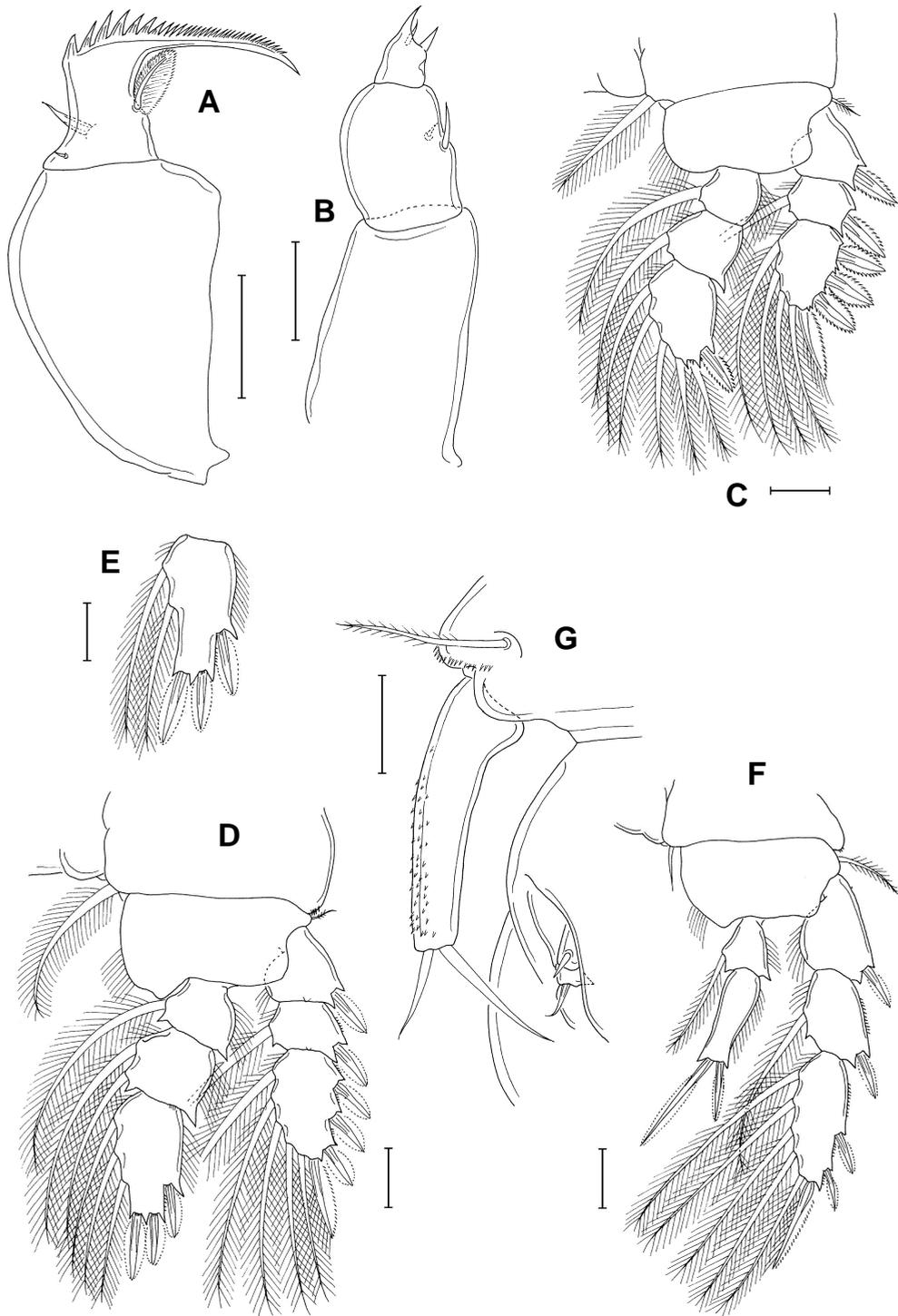


Fig. 2. *Anchimolgus maximus* n. sp., female. A, maxilla; B, maxilliped; D, leg 1; D, leg 2; E, third segment of leg 3 endopod; F, leg 4; G, leg 5 and genital area. Scale bars = 0.05 mm (A-G).

distinct, slightly longer than terminal segment; lengths of segments from basal to terminal 156, 166, 115, and 73 μm , measured along midline; terminal claw small, about half as long as terminal segment.

Labrum (Fig. 1H) with 2 broad posteroventral lobes. Mandible (Fig. 1I) with 2 distinct digitiform processes on convex side of base; proximal notch distinct; inner margin distinctly bilobed; lash moderately long. Maxillule (Fig. 1J) with 3 leaf-like setae and 1 setiform subdistal process. Maxilla (Fig. 2A) with unornamented first segment. Second segment with 3 setae on base; inner seta (seta I) leaf-like, marginated with broad hyaline membrane; distal lash originated from basal part in right angle, with spinules, including proximal 6 or 7 larger ones, along outer margin. Maxilliped (Fig. 1B) 3-segmented; first segment unarmed but longest; second segment with 2 unequal inner setae; terminal segment small, with acutely pointed terminal process, 1 spiniform and 1 small setae.

Legs 1-4 with 3-segmented rami, except for 2-segmented endopod of leg 4. Outer seta on basis of legs 1 and 2 very small (Fig. 2C, D). Armature formula of legs 1-4 as follows:

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Leg 4 (Fig. 2F) with short, smooth inner coxal seta short. Inner seta on first segment of endopod as long as second segment. Second segment $79 \times 31 \mu\text{m}$; 2 terminal spines 94 and 52 μm respectively.

Leg 5 with elongate free segment 140 μm long, width 41 μm at slight proximal inner expansion, spinules on outer surface (Fig. 2G). Terminal setae 72 (inner one) and 50 (outer one) μm . Leg 6 represented by 2 small setae on genital area (Fig. 2G).

Male. Body (Fig. 3A) slender as in female. Length 1.64 mm and greatest width 460 μm . Ratio of length to width of prosome 1.91 : 1. Fifth pedigerous somite 176 μm wide. Genital somite $297 \times 262 \mu\text{m}$. Four abdominal somites from anterior to posterior 71×100 , 76×97 , 53×91 , and $74 \times 97 \mu\text{m}$. Caudal ramus $132 \times 50 \mu\text{m}$, ratio 2.64 : 1.

Rostrum as in female. Antennule like that of female, but 3 aesthetascs added: 2 on second segment and 1 on fourth segment, at locations of opposite side shown by dots in Fig. 1F. These aesthetascs longer than combined 3 terminal segments. Antenna showing sexual dimorphism in having small spinules (or scales) on second segment.

Labrum, mandible, maxillule, and maxilla like those of female. Maxilliped (Fig. 3C) with second segment bearing 2 setae of similar lengths (proximal one weakly serrate along proximal side) and 1 row of spinules. Claw long, having conspicuous terminal lamella and bearing 2 very unequal proximal setae.

Legs 1-4 segmented and armed as in female except for sexual dimorphism in endopod of leg 1 (Fig. 3D), with formula 0-1; 0-1; I, I, 4. Leg 5 with free segment $47 \times 22 \mu\text{m}$, ratio 2.35 : 1, with convex outer margin. Its 2 terminal setae 44 μm and 33 μm ; smaller inner seta spiniform, weakly serrate. Leg 6 as posteroventral flap on genital somite bearing 2 setae (Fig. 3B).

Etymology. The specific name *maximus* (“large” in Latin) is derived from the large body size of the species.

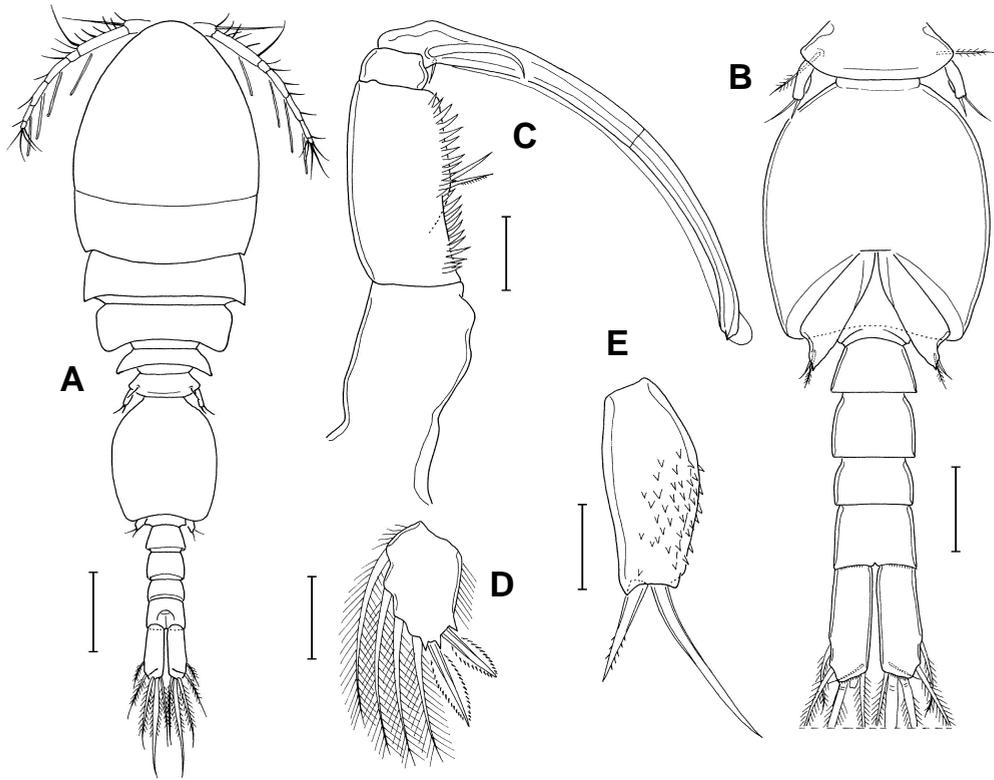


Fig. 3. *Anchimolgus maximus* n. sp., male. A, habitus, dorsal; B, urosome, ventral; C, maxilliped; D, first endopodal segment of leg 1; E, free segment of leg 5. Scale bars = 0.02 mm (E), 0.05 mm (C, D), 0.1 mm (B), 0.2 mm (A).

Remarks. The most remarkable feature of *Anchimolgus maximus* n. sp. is its large body size. The recorded longest body in *Anchimolgus* is 2.19 mm long in *A. gigas* Humes, 1995 which is slightly shorter than that of *A. maximus*. Unless the body size is considered, *A. maximus* differs from *A. gigas* in various points.

In *Anchimolgus maximus* the ratio of the length to width of caudal ramus is 2.81 : 1. Similar range of the ratio, i.e., 2.5-3.0 : 1, is shared by five species of the genus: *A. latens* Humes, 1978; *A. mimeticus* Humes, 1995; *A. orectus* Humes, 1978; *A. conformatus* Humes, 1995; and *A. prolixipes* (Humes and Ho, 1968). All these five species have body lengths shorter than 1.7 mm. Moreover, in *A. mimeticus*, *A. conformatus*, and *A. prolixipes*, the free segment of female leg 5 carries no proximal swelling.

Anchimolgus latens and *A. orectus* possess a slender free segment of male leg 5, with parallel lateral margins (expanded in the middle in *A. maximus*). Moreover, in *A. latens* the proximal swelling on the free segment of female leg 5 is less developed, and the third segment of antenna bears three setae (only a single seta in *A. maximus*). In *A. orectus*, the fourth segment of antenna is less than half length of the third segment (ratio 1 : 2.33, see Humes, 1978), unlike *A. maximus*

where the fourth segment is more than half length of the third segment (ratio 1 : 1.58).

***Anchimolgus tenuipes* n. sp. (Figs. 4-6)**

Material examined. 5 ♀♀, 8 ♂♂ from the scleractinian coral *Seriatopora hystrix* Dana, in 2 m, Maître Island near Noumea, New Caledonia, 21 June 1971, collected by A. G. Humes. Holotype (♀; USNM 1016258), allotype (♂; USNM 1016259), and paratypes (3 ♀♀, 6 ♂♂; USNM 1016260) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 4A) relatively small, 942 µm long. Prosome nearly oval, 557 µm long, with greatest width 373 µm. First pedigerous somite separated from cephalosome by weak dorsal transverse suture. Urosome (Fig. 4B) 5-segmented and 402 µm long. Ratio of length to width of prosome 1.55 : 1. Ratio of length of prosome to that of urosome 1.44 : 1. Fifth pedigerous somite 147 µm wide. Genital double-somite 167 × 150 µm (ratio 1.11 : 1), consisting of broad anterior three-fourths and narrower posterior one-fourth; lateral margins of anterior part becoming narrower posteriorly; genital areas located dorsally near middle of somite. Each genital area with 2 minute setae of subequal sizes. Three abdominal somites from anterior to posterior 42 × 71, 28 × 68, and 75 × 77 µm.

Caudal ramus (Fig. 4C) 71 × 37 µm, ratio 1.92 : 1, with fine spinules on posterior margin; caudal setae plumous except smooth dorsal and outer lateral setae; longest terminal seta as long as abdomen. Egg sac (Fig. 4D) 365 × 204 µm.

Rostrum discernible by lateral margins, but its posterior part fused with ventral surface of cephalothorax (Fig. 4E). Antennule (Fig. 4F) 7-segmented, 329 µm long; armature: 4, 13, 6, 3, 4 + 1 aesthetasc, 2 + 1 aesthetasc, and 7 + 1 aesthetasc (positions of 3 aesthetascs added in male shown by dots in Fig. 4F); all setae smooth. Antenna (Fig. 4G) 4-segmented, with armature formula: 1, 1, 3, and 1 + 1 claw; distal seta on fourth segment thick, blunt, and process-like; length of first to fourth segments 62, 65, 23, and 65 µm, measured along midline; setae on first and second segments obscure; all setae on third segment shorter than segment; terminal claw 48 µm, distinctly curved near middle.

Labrum (Fig. 4H) with 2 broad posterovetral lobes. Mandible (Fig. 4I) with 4 small digitiform processes on convex side of base; proximal notch distinct; inner margin distinctly bilobed; terminal lash slender and long. Maxillule (Fig. 4J) with 3 serrate, leaf-like terminal and smooth subterminal setae. Maxilla (Fig. 5A) with unornamented first segment. Second segment with 1 leaf-like, pectinated seta (seta I), 1 smooth lateral seta (seta II), and hyaline, distally pointed lamella near base of outer side. Proximal seta not seen. Distal lash long and serrated along outer margin. Maxilliped (Fig. 5B) 3-segmented. First segment unarmed but longest. Second segment with convex margins and 2 unequal inner setae. Terminal segment small, with acutely pointed terminal process bearing 2 rows of spinules, 1 spiniform seta and 1 small seta.

Legs 1-4 with 3-segmented rami, except for 2-segmented endopod of leg 4. Outer seta on basis of these legs smooth. Armature formula of legs 1-4 as follows:

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2

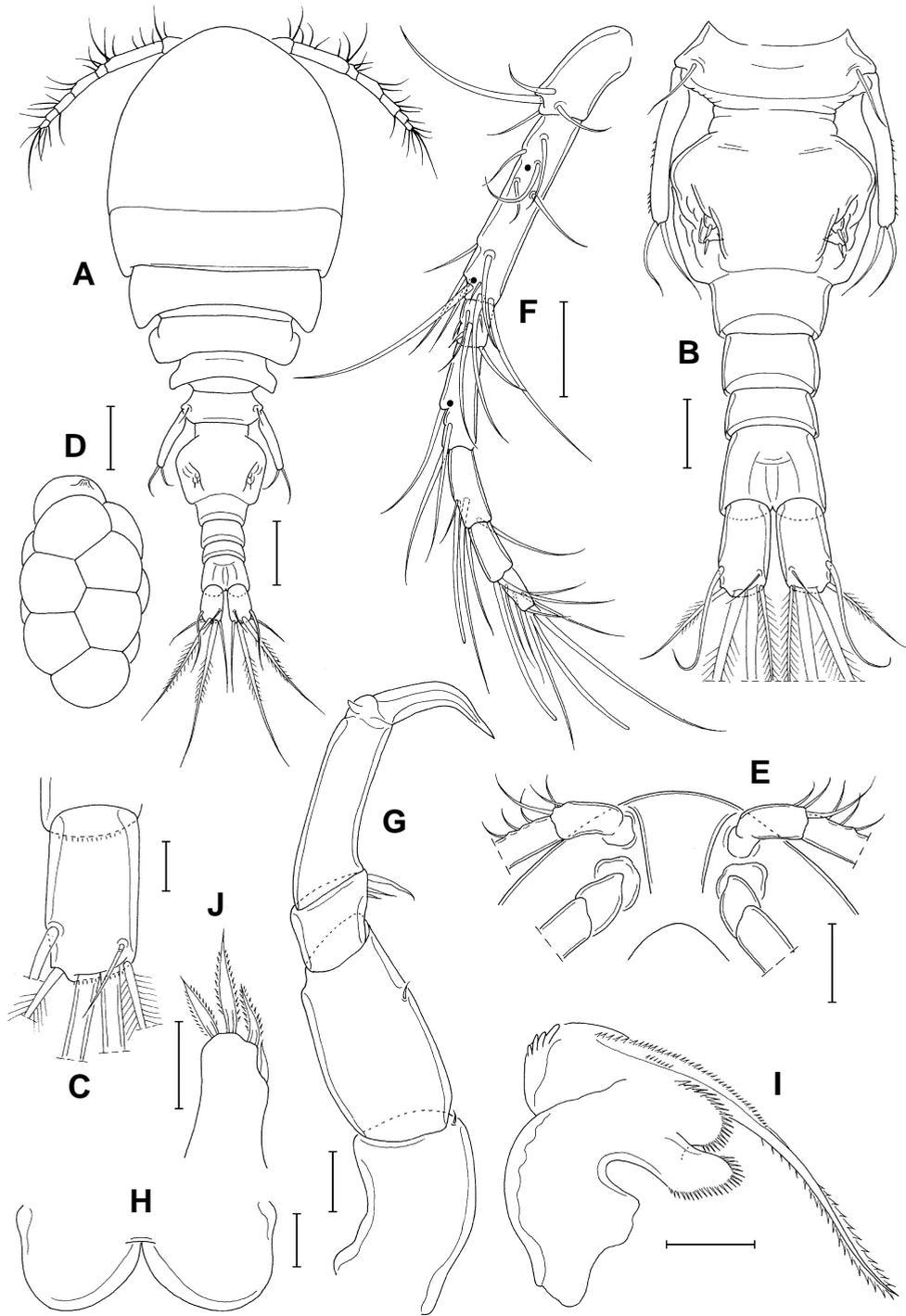


Fig. 4. *Anchimolgus tenuipes* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus; D, egg sac; E, rostral area, ventral; F, antennule; G, antenna; H, labrum; I, mandible; J, maxillule. Scale bars = 0.02 mm (C, G-J), 0.05 mm (B, E, F), 0.1 mm (A, D).

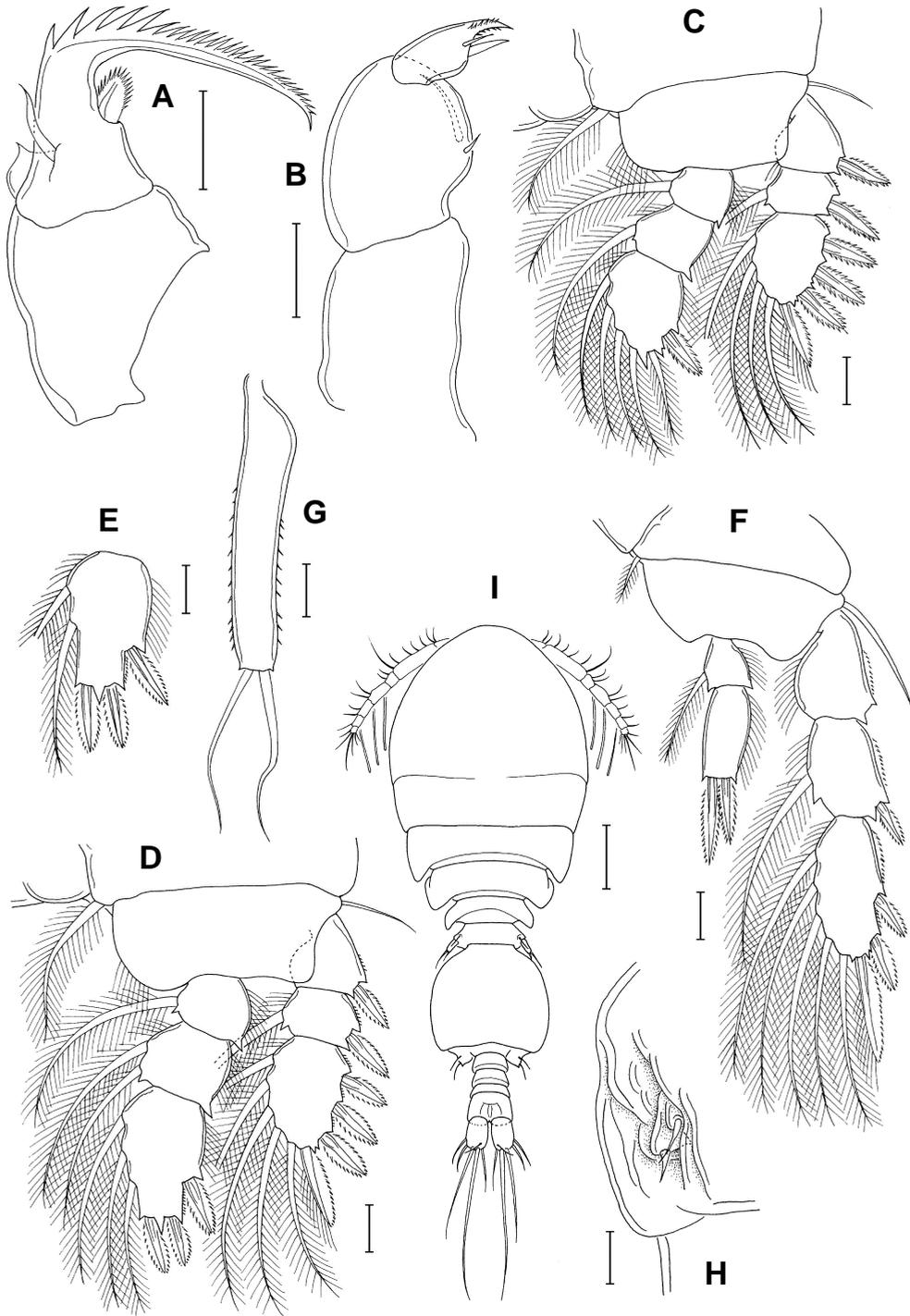


Fig. 5. *Anchimolgus tenuipes* n. sp. Female: A, maxilla; B, maxilliped; C, leg 1; D, leg 2; E, third segment of leg 3 endopod; F, leg 4; G, free segment of leg 5; H, genital area. Male: I, habitus, dorsal. Scale bars = 0.02 mm (A-H), 0.1 mm (I).

Leg 4: coxa 0-1; basis 1-0; exp I-0; I-1; II, I, 5; enp 0-1; II

Leg 4 (Fig. 5F) with short, plumous inner coxal seta. Endopod shorter than combined first and second segments of exopod. Inner seta on first segment of endopod slightly shorter than second segment. Second segment $39 \times 19 \mu\text{m}$; 2 terminal spines $38 \mu\text{m}$ (inner) and $28 \mu\text{m}$ (outer).

Leg 5 with elongate free segment (Fig. 5G), $112 \mu\text{m}$ long. Width $20 \mu\text{m}$ at weak proximal inner expansion; sparse spinules on both inner and outer surfaces; terminal setae nearly equal in length, $65 \mu\text{m}$ (inner) and $61 \mu\text{m}$ (outer). Leg 6 represented by 2 small setae on genital area (Fig. 5H).

Male. Body (Fig. 5I) resembling that of female. Length $819 \mu\text{m}$ and greatest width $308 \mu\text{m}$. Prosome $465 \mu\text{m}$ long. Ratio of length to width of prosome 1.51 : 1. Urosome (Fig. 6A) 6-segmented. Fifth pedigerous somite $115 \mu\text{m}$ wide. Genital somite $155 \times 178 \mu\text{m}$, with round corners. Four abdominal somites from anterior to posterior 26×57 , 25×58 , 18×60 , and $42 \times 67 \mu\text{m}$. Caudal ramus $50 \times 33 \mu\text{m}$, ratio 1.52 : 1.

Rostrum as in female. Antennule like that of female, but 3 aesthetascs added: 2 on second segment and 1 on fourth segment, at locations of opposite side shown by dots in Fig. 4F. Antenna as in female, without spinules or scales on inner side.

Labrum, mandible, maxillule, and maxilla like those of female. Maxilliped (Fig. 6B) with second segment bearing 2 setae of subequal lengths and 1 row of spinules. Claw long, with 2 very unequal proximal setae and characteristic papillary process at proximal one-fourth of inner margin.

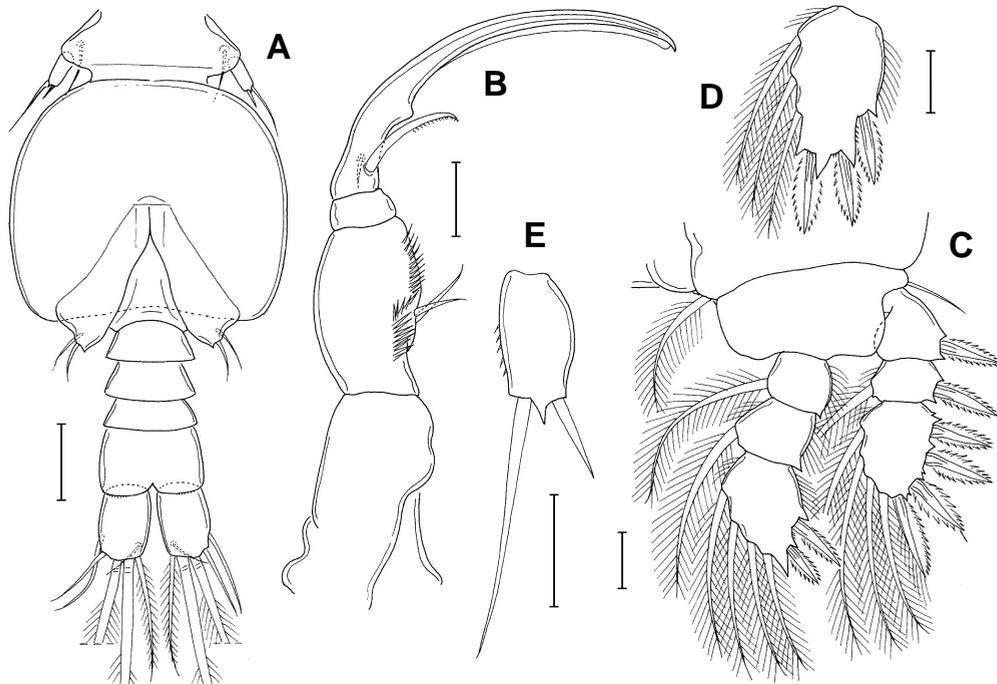


Fig. 6. *Anchimolgus tenuipes* n. sp., male. A, urosome, ventral; B, maxilliped; C, leg 1; D, third segment of leg 2 endopod; E, free segment of leg 5. Scale bars = 0.02 mm (B-E), 0.05 mm (A).

Legs 1-4 segmented and armed as in female except for sexual dimorphism in endopod of leg 1 (Fig. 6C), with formula 0-1; 0-1; I, I, 4. Terminal processes of third segment of leg 2 endopod more conspicuous. Leg 5 with free segment $23 \times 14 \mu\text{m}$, ratio 1.64 : 1, with convex inner margin, several spinules on outer margin, and pointed process on distal margin. Its 2 terminal setae very unequal, longer outer one more than 3 times as long as inner one. Leg 6 as posteroventral flap on genital somite bearing 2 setae.

Etymology. The specific name *tenuipes* is a combination of the Latin *tenuis* (slender) and *pes* (the foot). It alludes to the long, slender free segment of female leg 5.

Remarks. Twenty-two species are known in the genus *Anchimoligus*, excluding “*A. tener* Humes, 1973” that should be removed to *Schedomoligus*, because it has three-segmented antennae.

In most species of *Anchimoligus*, the third segment of antenna is longer than the fourth, except for *A. tenuipes* n. sp. and the following four species: *A. contractus* Humes, 1979; *A. exsertus* Humes, 1991; *A. moluccanus* Humes, 1996; and *A. nasutus* Humes, 1996.

Of these four species, *A. moluccanus* and *A. nasutus* are similar to *A. tenuipes* in having the elongated free segment of female leg 5 which is more than five times as long as wide. These two species are distinguished from *A. tenuipes* by their following features.

In *A. moluccanus*, the mandible bears only a single digitiform process on the convex side, the anterior part of the female genital double-somite is roundly expanded, the caudal rami are distinctly broadened distally, and the free segment of male leg 5 is slender and elongated.

In *A. nasutus*, the ratio of the length to width of the caudal ramus is 3.13 : 1 (see Humes, 1996b), the prosome is narrow, the female genital double-somite is roundly expanded laterally, the mandible bears two digitiform processes on the convex side, and the rostrum is elongated.

The presence of a blunt proximal process on the inner margin of the claw of the male maxilliped of *A. tenuipes* may be an outstanding feature within the genus *Anchimoligus*.

***Anchimoligus tridentatus* n. sp. (Figs. 7-9)**

Material examined. 5 ♀♀, 4 ♂♂ from the scleractinian coral *Echinopora lamellosa* (Esper), in 1 m, Baie Dumbea, Noumea, New Caledonia, 6 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016261), allotype (♂; USNM 1016262), and paratypes (3 ♀♀, 2 ♂♂; USNM 1016263) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 7A) moderately narrow, 1.15 mm long. Prosoma 725 μm long, with greatest width 483 μm . Posterolateral corners of second pedigerous somite pointed. First pedigerous somite separated from cephalosome by weak dorsal transverse suture. Urosome (Fig. 7B) 5-segmented. Ratio of length to width of prosoma 1.50 : 1. Fifth pedigerous somite 165 μm wide. Genital double-somite $183 \times 146 \mu\text{m}$ (ratio 1.25 : 1); consisting of broader anterior five-sevenths and narrower posterior two-sevenths; lateral margins of both anterior and posterior parts nearly parallel; genital areas located dorsolaterally near middle of somite.

Each genital area with 2 minute setae. Three abdominal somites from anterior to posterior 40×89 , 25×88 , and $73 \times 93 \mu\text{m}$. Caudal ramus $60 \times 42 \mu\text{m}$, ratio 1.43 : 1, with fine spinules on posterior margin; caudal setae plumose except smooth dorsal and outer lateral setae; longest

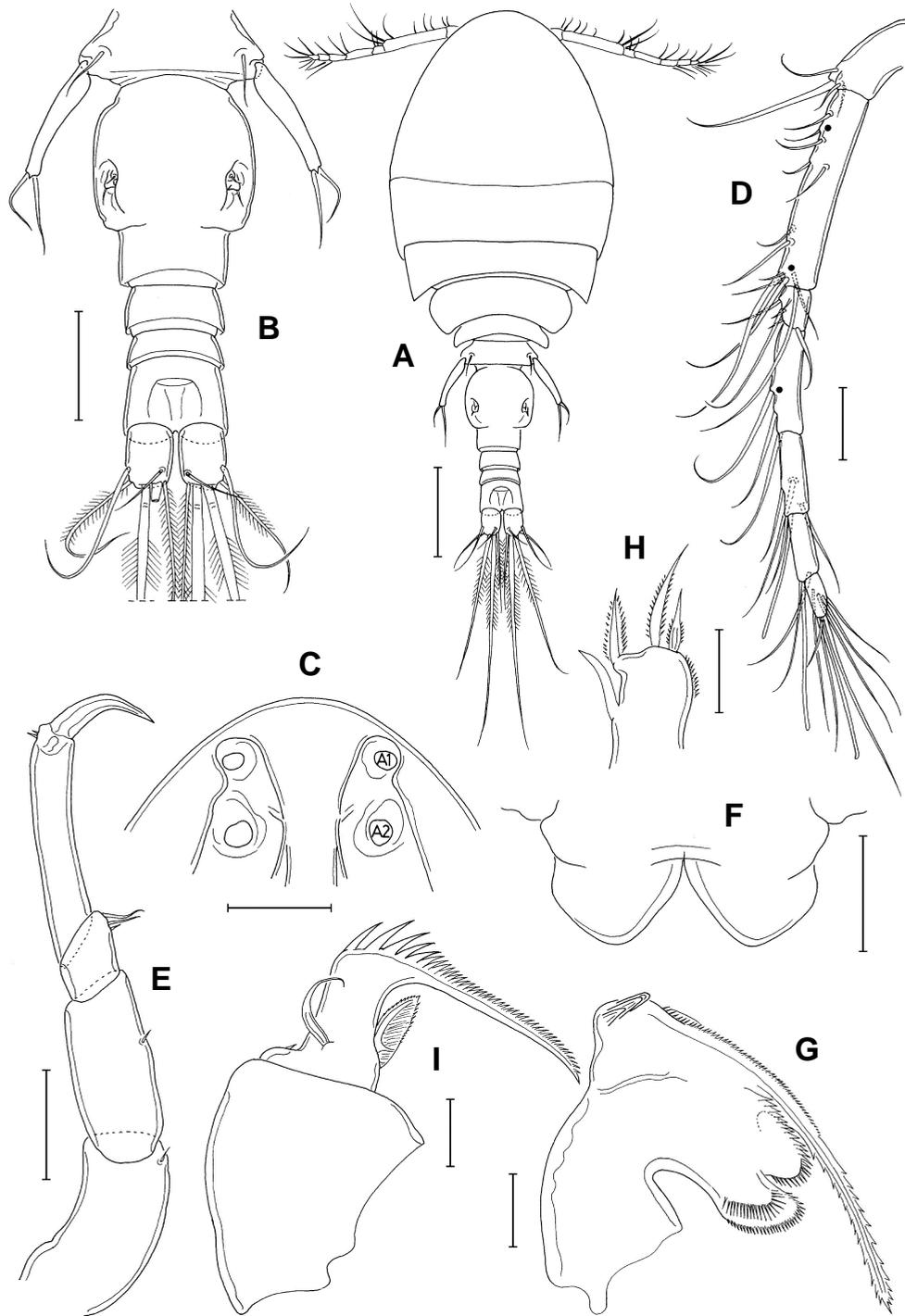


Fig. 7. *Anchimolgus tridentatus* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, rostral area, ventral; D, antennule; E, antenna; F, labrum; G, mandible; H, maxillule; I, maxilla. Scale bars = 0.2 mm (G-I), 0.05 mm (D-F), 0.1 mm (B, C), 0.2 mm (A).

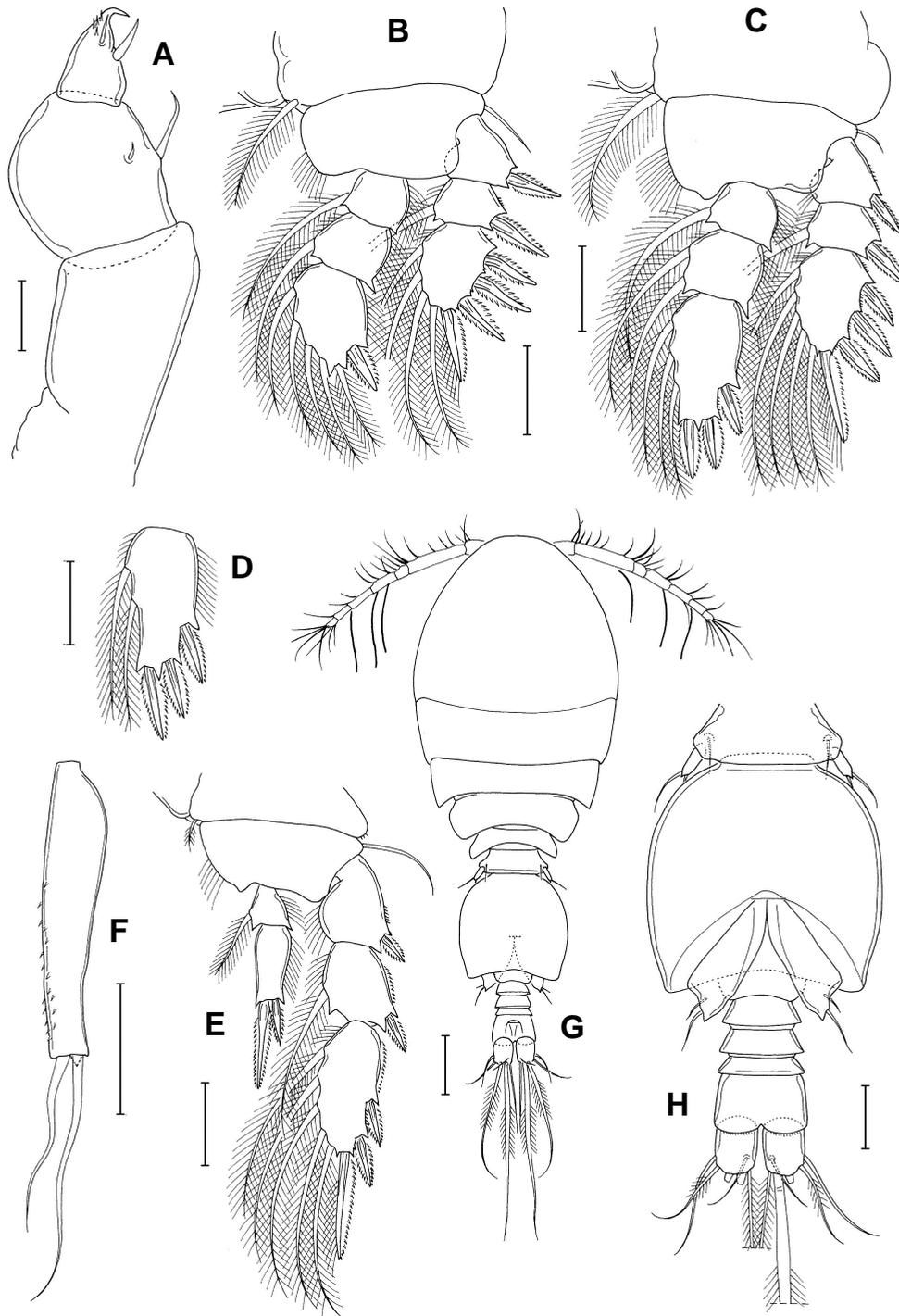


Fig. 8. *Anchimolgus tridentatus* n. sp. Female: A, maxilliped; B, leg 1; C, leg 2; D, third segment of leg 3 endopod; E, leg 4; F, free segment of leg 5. Male: G, habitus, dorsal; H, urosome, ventral. Scale bars = 0.02 mm (A), 0.05 mm (B-F, H), 0.1 mm (G).

terminal inner seta as long as abdomen. Egg sac not seen.

Rostrum with posterior part fused with ventral surface of cephalothorax (Fig. 7C). Antennule (Fig. 7D) 7-segmented, 417 μm long and slender; armature: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc (positions of 3 aesthetascs added in male shown by dots in Fig. 4F); all setae smooth. Antenna (Fig. 7E) 4-segmented, becoming narrower distally, with armature formula: 1, 1, 3, and 2+1 claw; distal setae on fourth segment minute; length of first to fourth segments 77, 76, 26, and 89 μm , measured along midline; setae on first and second segments obscure; all setae on third segment shorter than segment; terminal claw 51 μm , distinctly curved near middle.

Labrum (Fig. 7F) with 2 broad posterovetral lobes. Mandible (Fig. 7G) with 3 well-defined digitiform processes on convex side of base; proximal notch deep; inner margin distinctly bilobed; terminal lash moderately long. Maxillule (Fig. 7H) with 3 terminal and 1 subterminal setae; outer one of 3 terminal setae mounted on laterodistal process of maxillule. Maxilla (Fig. 7I) with unornamented first segment. Second segment with 1 minute outer proximal seta, 1 smooth lateral seta, and 1 leaf-like inner seta marginated with hyaline membrane. Distal lash long and finely denticulated on outer margin. Maxilliped (Fig. 8A) 3-segmented. First segment unarmed, longest and widened distally. Second segment with convex outer margin and 2 greatly unequal inner setae. Terminal segment tapering, with curved terminal process bearing several spinules near base, 1 thick and 1 small setae.

Legs 1-4 with 3-segmented rami, except for 2-segmented endopod of leg 4. Outer seta on basis of these legs smooth. Armature formula of legs 1-4 as follows :

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Leg 4 (Fig. 8F) with short inner coxal seta. Endopod slightly shorter than combined first and second segments of exopod. Inner seta on first segment of endopod slightly shorter than second segment. Second segment $45 \times 22 \mu\text{m}$; 2 terminal spines 53 μm (inner) and 28 μm (outer).

Leg 5 with elongate, weakly tapering free segment (Fig. 8F), 111 μm long. Width 23 μm at place of weak proximal inner expansion; sparse spinules on outer surfaces; terminal setae 98 μm (inner) and 72 μm (outer one). Leg 6 represented by 2 small setae in genital area.

Male. Body (Fig. 8G) resembling that of female. Length 892 μm and greatest width 338 μm . Prosome 529 μm long. Ratio of length to width of prosome 1.57 : 1. Urosome (Fig. 8H) 6-segmented. Fifth pedigerous somite 113 μm wide. Genital somite $192 \times 181 \mu\text{m}$, its posterolateral corners angular. Four abdominal somites from anterior to posterior 23×60 , 21×63 , 13×65 , and $44 \times 71 \mu\text{m}$. Caudal ramus $44 \times 33 \mu\text{m}$, ratio 1.33 : 1.

Rostrum as in female. Antennule like that of female, but 3 aesthetascs added: 2 on second and 1 on fourth segments, at locations of opposite side shown by dots in Fig. 4F. Antenna as in female, without spinules or scales on inner side.

Labrum, mandible, maxillule, and maxilla like those of female. Maxilliped (Fig. 9A) with second segment bearing 2 setae of equal lengths and 1 row of spinules. Claw long, with 2 very unequal

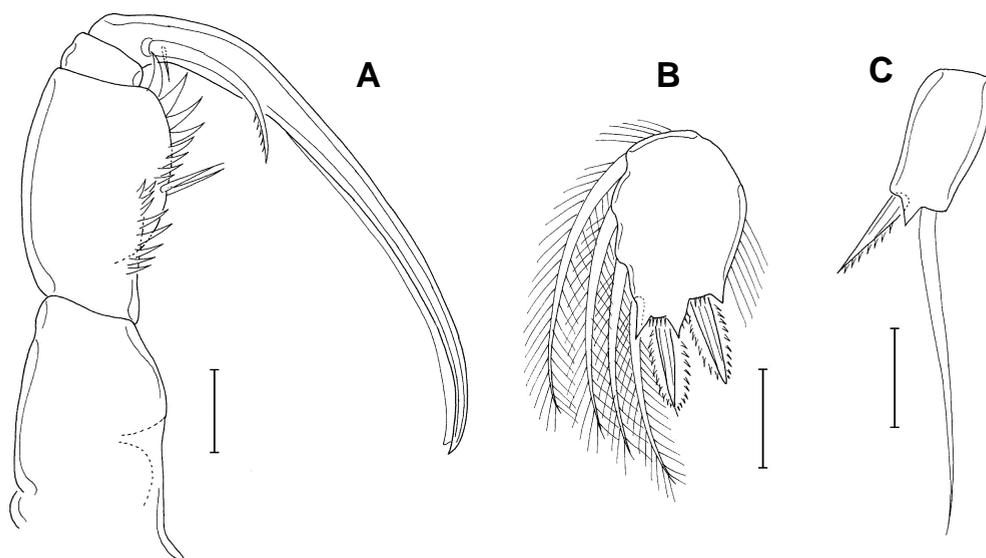


Fig. 9. *Anchimolgus tridentatus* n. sp., male. A, maxilliped; B, third segment of leg 1 endopod; C, free segment of leg 5. Scale bars = 0.02 mm (A-C).

proximal setae.

Legs 1-4 segmented and armed as in female except for sexual dimorphism in third segment of leg 1 (Fig. 9B), with formula I, I, 4. Leg 5 with free segment $23 \times 12 \mu\text{m}$, ratio 1.92 : 1, terminally with pointed process, 1 spine ($17 \mu\text{m}$) and 1 long, naked seta ($53 \mu\text{m}$). Leg 6 as posteroventral flap on genital somite bearing 2 setae (Fig. 8H).

Etymology. The specific name, *tridentatus*, is a combination of the Latin *tres* (three) and *dentatus* (provided with teeth). It alludes to the presence of the three digitiform processes on the convex side of the mandible.

Remarks. *Anchimolgus tridentatus* n. sp. has the antenna bearing the third segment distinctly shorter than the fourth segment, like *Anchimolgus tenuipes* and its four related species mentioned above. Of these five species, only *A. exsertus* Humes, 1991 possesses three digitiform processes on the convex side of the mandible, as the new species. However, *A. exsertus* is not related to *A. tridentatus*, because in *A. exsertus* the genital double-somite in the female is characteristically strongly tapering, the rostrum is elongated posteriorly, and the female caudal ramus is elongated, about five times as long as its width.

Anchimolgus tridentatus and *A. moluccanus* share the similar caudal ramus, in addition to the similar antenna. The ramus is 1.43 times as long as wide in *A. tridentatus* and 1.79 times as long as wide in *A. moluccanus*. However, *Anchimolgus tridentatus* differs from *A. moluccanus*, because the latter species has only a single digitiform process on the convex side of mandible, the slender free segment of male leg 5, and the distally broadened caudal ramus.

The shape of the maxillule in which one of distal setae is inserted on a blunt process may be a diagnostic characteristic of *A. tridentatus*.

***Anchimolgus multidentatus* n. sp. (Figs. 10-12)**

Material examined. 3 ♀♀, 1 ♂ from the scleractinian coral *Alveopora catalai* Wells, in 2 m, Serpents Island, Noumea, New Caledonia, 19 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016264), allotype (♂; USNM 1016265; antenna and maxilliped of left side dissected out), and paratype (1 ♀; USNM 1016266) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratype female and dissected antenna and maxilliped of allotype retained in the collection of the author.

Female. Body (Fig. 10) 1.31 mm long. Prosoma 853 µm long, with greatest width 600 µm wide. First pedigerous somite demarcated from cephalosome by weak dorsal suture line. Urosome (Fig. 10B) 5-segmented. Fifth pedigerous somite 198 µm wide, distinctly wider than genital double-somite. Genital double-somite 181 × 160 µm, ratio 1.13 : 1, with slightly broader anterior two-thirds, and narrower posterior one-third; lateral margins of wider anterior part weakly convex; genital area located laterally near posterior end of wider anterior part. Three abdominal somites 50 × 102, 42 × 96, and 79 × 94 µm. Posteroventral margin of anal somite rimmed with fine spinules.

Caudal ramus (Fig. 10C) 85 × 42 µm (ratio 2.02 : 1), with 6 caudal setae and fine spinules on posteroventral margin; lateral and dorsal setae naked, other setae plumose. Egg sac not seen.

Rostrum with obscure posterior margin (Fig. 10D). Antennule (Fig. 10E) long and slender, 517 µm; armature formula 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; all setae naked. Antenna (Fig. 10F) 4-segmented; lengths of segments 108, 100, 33, and 92 µm from proximal to distal; terminal segment slender and about 2.8 times as long as third segment; first 2 segments each armed with 1 obscure seta; third segment with 3 setae; setae on distal part of terminal segment obscure, about 5 in number; terminal claw 67 µm.

Labrum (Fig. 10G) with 2 broad posterovetral lobes bearing broad hyaline membrane on inner side of posterior margin. Mandible (Fig. 10H) with 6 or 7 small digitiform processes on convex side of base; proximal notch distinct; inner margin bilobed; terminal lash moderately long, tapering and denticulated along margins. Maxillule (Fig. 11A) with 3 terminal and 1 subterminal barbed setae. Maxilla (Fig. 11B) with unornamented first segment. Second segment with 1 minute outer basal seta, 1 smooth lateral seta, and 1 short, strongly tapering inner seta fused basally with segment. Distal lash long and with prominent denticles along outer margin. Maxilliped (Fig. 11C) 3-segmented. First segment unarmed and longest among segments. Second segment widest in middle, with 2 unequal, naked inner setae. Terminal segment tapering, with acutely pointed terminal process bearing several spinules near base, and 2 similar, spine-like, barbed setae.

Legs 1-4 with 3-segmented rami, except for 2-segmented endopod of leg 4. Armature formula of legs 1-4 as follows:

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Leg 4 (Fig. 11G) with short inner coxal seta; endopod slightly shorter than combined first and second segments of exopod; inner seta on first segment of endopod extending to terminal margin of second segment; second segment 47 × 21 µm; 2 terminal spines 60 µm (inner) and 28 µm

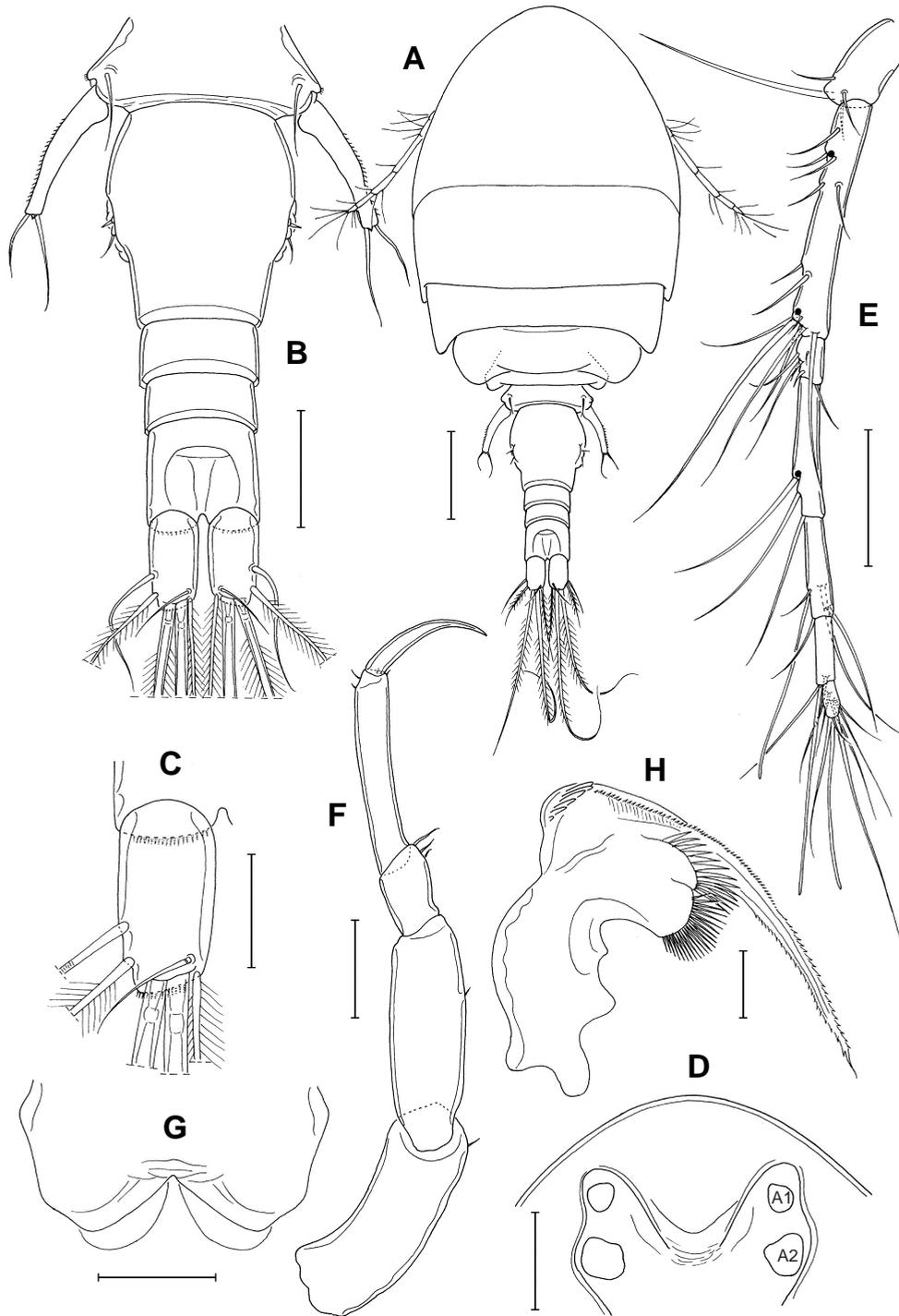


Fig. 10. *Anchimolgus multidentatus* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus, dorsal; D, rostral area, ventral; E, antennule; F, antenna; G, labrum; H, mandible. Scale bars = 0.02 mm (H), 0.05 mm (C, F, G), 0.1 mm (B, D, E), 0.2 mm (A).

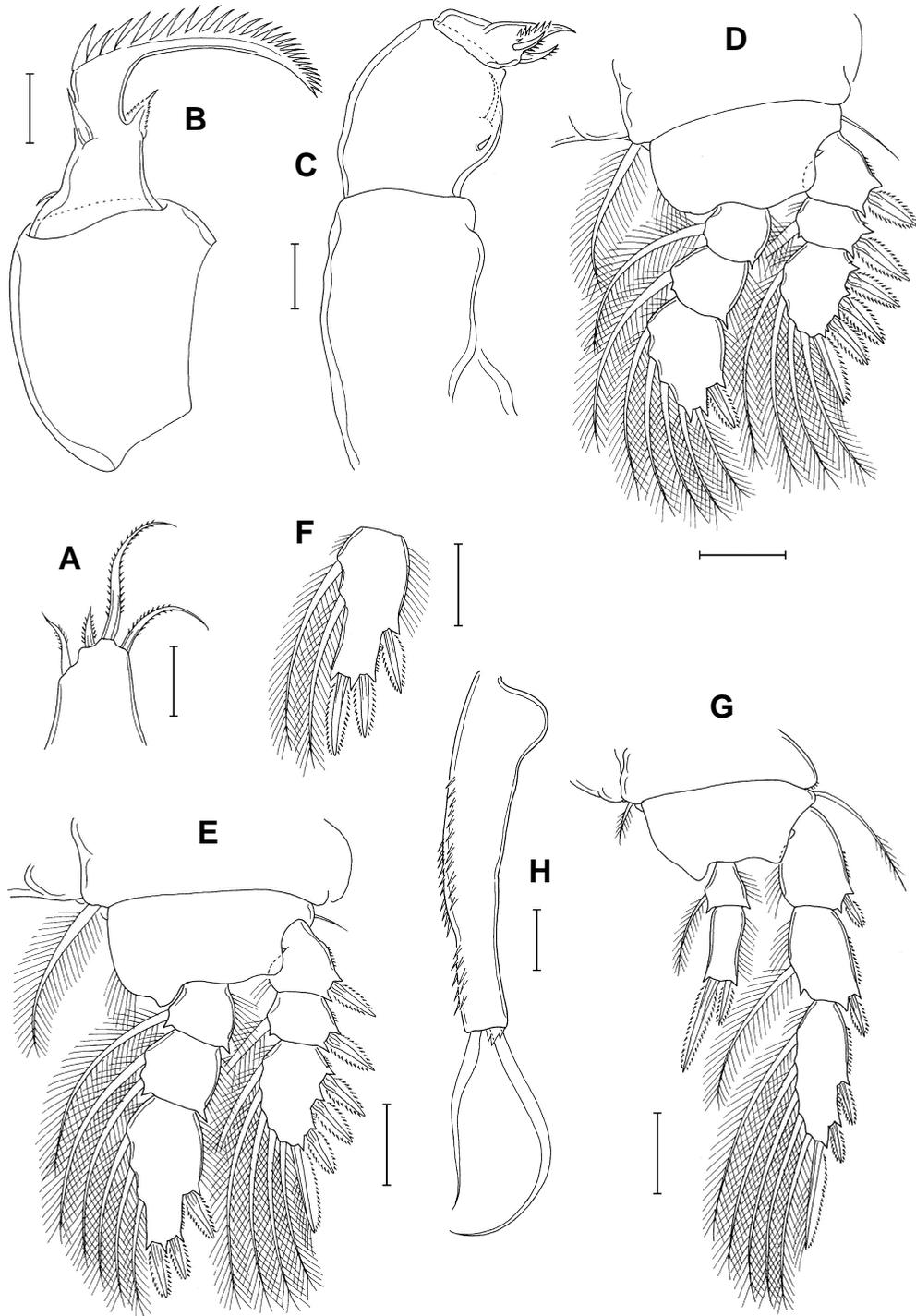


Fig. 11. *Anchimolgus multidentatus* n. sp., female. A, maxillule; B, maxilla; C, maxilliped; D, leg 1; E, leg 2; F, third segment of leg 3 endopod; G, leg 4; H, free segment of leg 5. Scale bars = 0.02 mm (A-C, H), 0.05 mm (D-G).

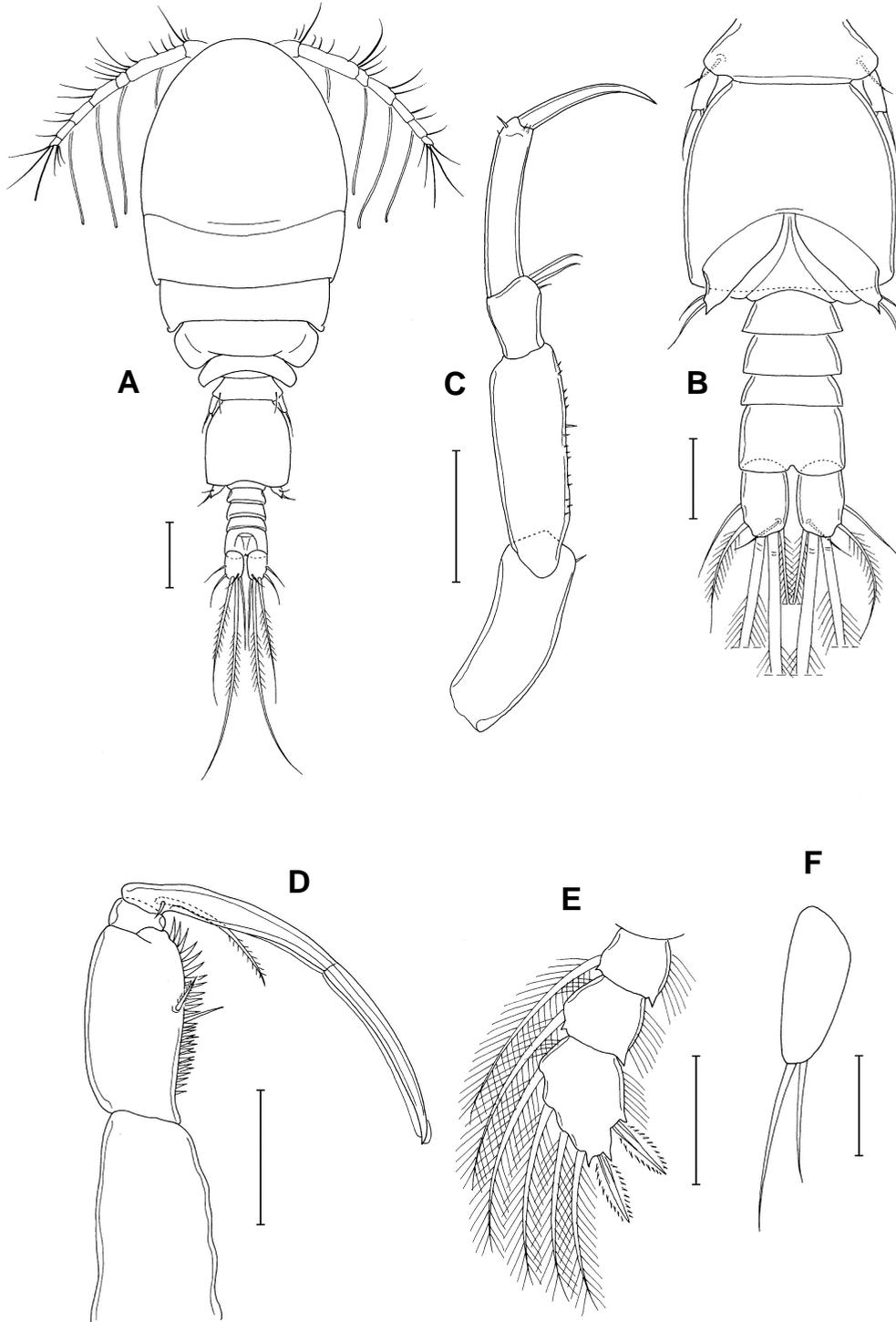


Fig. 12. *Anchimolgus multidentatus* n. sp., male. A, habitus, dorsal; B, urosome, ventral; C, antenna; D, maxilliped; E, endopod of leg 1; F, free segment of leg 5. Scale bars = 0.02 mm (F), 0.05 mm (B-E), 0.1 mm (A).

(outer).

Leg 5 consisting of elongate free segment and nearby seta. Free segment (Fig. 11F) 108 μm long, with distinct proximal expansion, 28 μm wide across this area, distal fourth narrowed; outer margin armed with spinules; two terminal setae naked, 60 μm (outer) and 87 μm (inner). Leg 6 represented by 2 small setae on genital area (Fig. 10B).

Male. Body (Fig. 12A) slender than in female. Length 842 μm and greatest width 317 μm . Prosome 529 μm long. Ratio of length to width of prosome 1.67 : 1. Urosome (Fig. 12B) 6-segmented. Fifth pedigerous somite 106 μm wide. Genital somite 134 \times 130 μm , its posterolateral corners slightly angular. Four abdominal somites from anterior to posterior 22 \times 61, 25 \times 59, 19 \times 61, and 39 \times 65 μm . Caudal ramus 48 \times 30 μm , ratio 1.60 : 1.

Rostrum as in female. Antennule like that of female, but 3 aesthetascs added : 2 on second segment and 1 on fourth segment, at locations of opposite side shown by dots in Fig. 10E. Antenna as in female but added by minute spinules on inner margin of second segment.

Labrum, mandible, maxillule, and maxilla like those of female. Maxilliped (Fig. 12D) with second segment bearing 2 setae of similar lengths and spinules along inner margin. Claw 150 μm , distinctly longer than combined second and third segments, with 2 very unequal proximal setae, larger one weakly plumous.

Legs 1-4 segmented and armed as in female except for sexual dimorphism in endopod of leg 1 (Fig. 12E), with formula 0-1; 0-1; I, I, 4. Leg 5 with free segment tapering, 28 \times 13 μm , ratio 2.15 : 1; 2 terminal setae naked. Leg 6 as posteroventral flap on genital somite bearing 2 setae and terminal point (Fig. 12B).

Etymology. The specific name *multidentatus* alludes to the multiple number of digitiform processes on the convex side of the mandible.

Remarks. Species of *Anchimolgus* are known to carry usually two digitiform or spiniform processes on the convex side of mandible. Therefore the presence of the six or seven processes on this area of the mandible of *A. multidentatus* is remarkable. The recorded largest number of the processes is five in *A. compressus* Humes, 1966 which is not similar to *A. multidentatus* in many respects.

Anchimolgus multidentatus has the third segment of antenna that is distinctly shorter than the fourth segment, like *Anchimolgus tridentatus* and other five relatives mentioned above. However, *A. multidentatus* can be distinguished from the six congeners by having the following features : the female genital areas are located laterally (not dorsolaterally), the caudal ramus is twice as long as wide (similar to that of *A. tenuipes*), the free segment of female leg 5 has a prominent proximal expansion, and the inner seta (seta I) on the second segment of the maxilla is fused with segment, without a demarcation between them.

***Anchimolgus noumensis* n. sp. (Figs. 13-15)**

Material examined. 5 ♀♀, 6 ♂♂ from the scleractinian coral *Seriatopora hystrix* Dana, in 1 m, west of Ngou Island, Noumea, New Caledonia, 3 August 1971, collected by A. G. Humes. Holotype (♀; USNM 1016267), allotype (♂; USNM 1016268), and paratypes (3 ♀♀, 4 ♂♂; USNM 1016269) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

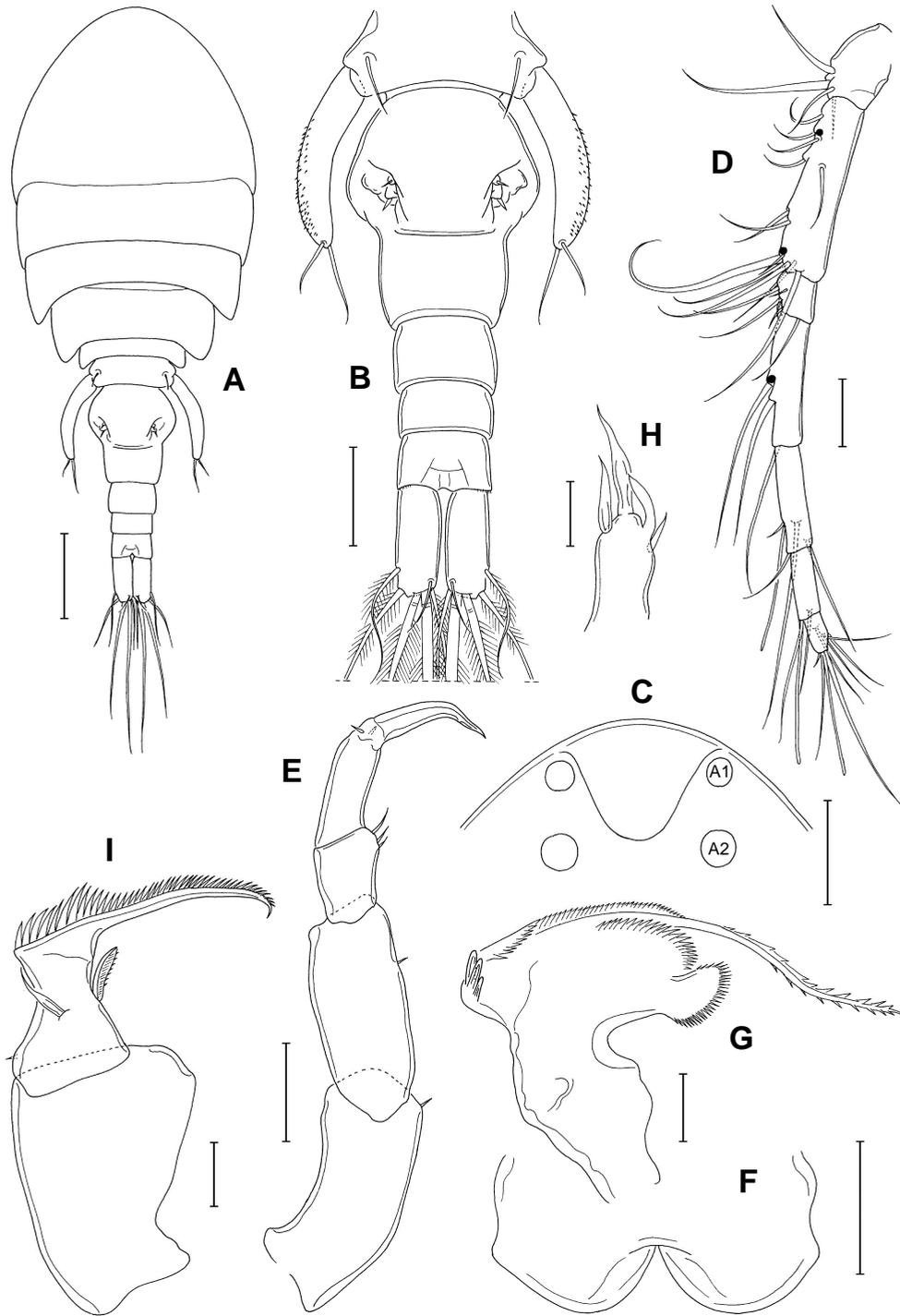


Fig. 13. *Anchimolgus noumensis* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, rostral area, ventral; D, antennule; E, antenna; F, labrum; G, mandible; H, maxillule; I, maxilla. Scale bars = 0.02 mm (G-I), 0.05 mm (D-F), 0.1 mm (B, C), 0.2 mm (A).

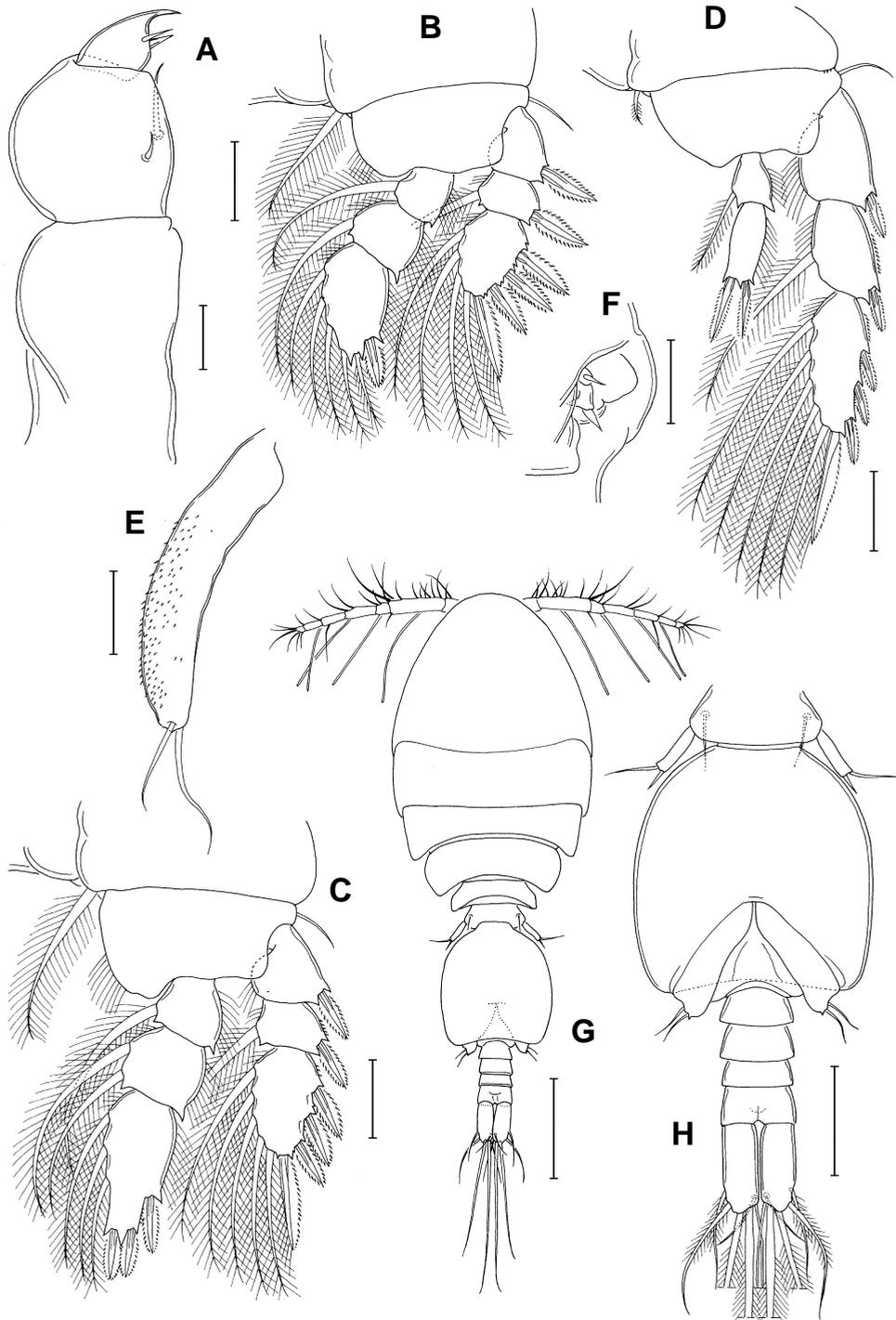


Fig. 14. *Anchimolgus noumensis* n. sp. Female: A, maxilliped; B, leg 1; C, leg 2; D, leg 4; E, free segment of leg 5; F, genital area. Male: G, habitus, dorsal; H, urosome, ventral. Scale bars = 0.02 mm (A), 0.05 mm (B-F), 0.1 mm (H), 0.2 mm (G).

Female. Body (Fig. 13A) moderately wide, 1.39 mm long. Prosome 815 μm long, with greatest width 560 μm . First pedigerous somite demarcated from cephalosome by dorsal suture line. Urosome (Fig. 13B) 5-segmented. Fifth pedigerous somite 203 μm wide. Genital double-somite 233 \times 193 μm (ratio 1.21 : 1), consisting of broader anterior and narrower posterior parts, with dorsal suture delimiting each part; broader anterior part gradually widened posteriorly and widest at level of genital areas; genital areas located dorsally. Three abdominal somites from anterior to posterior 65 \times 103, 50 \times 95, and 62 \times 93 μm . Caudal ramus 115 \times 45 μm , ratio 2.56 : 1; dorsal one of 6 caudal setae smallest and naked, other setae plumous. Egg sac not seen.

Rostrum with strongly convex posterior margin (Fig. 13C). Antennule (Fig. 13D) 7-segmented, 462 μm long, with armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; all setae naked. Antenna (Fig. 13E) 4-segmented, relatively stout, becoming narrower distally, with armature formula: 1, 1, 3, and 2+1 claw; 2 distal setae on fourth segment minute; length of first to fourth segments 113, 100, 37, and 58 μm , measured along midline; setae on first and second segments obscure; terminal claw 59 μm , distally curved and slightly undulated.

Labrum (Fig. 13F) with 2 broad posterovetral lobes. Mandible (Fig. 13G) with 3 well-defined digitiform processes on convex side of base; proximal notch distinct; inner margin distinctly bilobed, proximal lobe produced; terminal lash long and very slender. Maxillule (Fig. 13H) with 3 broad terminal and 1 subterminal setae, all these setae smooth. Maxilla (Fig. 13I) with unornamented first segment. Second segment with minute outer basal seta, smooth lateral seta, and inner seta marginated with hyaline membrane along inner margin. Distal lash long and densely spinulated on outer margin. Maxilliped (Fig. 14A) 3-segmented. First segment unarmed, longest among segments. Second segment inflated, with strongly convex outer margin and 2 unequal, naked inner setae. Terminal segment tapering, with acutely pointed, slender terminal process and 1 spine-like and 1 plain setae.

Legs 1-4 with 3-segmented rami, except for 2-segmented endopod of leg 4. Outer seta on basis of these legs smooth. Armature formula of legs 1-4 as follows:

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Leg 4 (Fig. 14D) with short inner coxal seta. Endopod slightly shorter than combined first and second segments of exopod. Inner seta on first segment of endopod as long as second segment. Second segment 50 \times 21 μm ; 2 terminal spines 43 μm (inner) and 37 μm (outer).

Leg 5 consisting of free segment and nearby seta on fifth pedigerous somite. Free segment (Fig. 14E) elongate, curved inwards, 185 \times 35 μm , ratio 5.97 : 1, with fine spinules on outer side and 2 naked terminal setae of 55 μm (outer) and 83 μm (inner); proximal part of free segment not expanded. Leg 6 represented by 1 small seta, 1 spine-like seta and 1 small process in genital area.

Male. Body (Fig. 14G) resembling that of female. Length 1.08 mm and greatest width 383 μm . Prosome 608 μm long. Urosome (Fig. 14H) 6-segmented. Fifth pedigerous somite 120 μm wide. Genital somite 229 \times 215 μm , nearly quadrate. Four abdominal somites from anterior to posterior 31 \times 65, 31 \times 67, 21 \times 63, and 33 \times 67 μm . Caudal ramus 83 \times 32 μm , ratio 2.59 : 1.

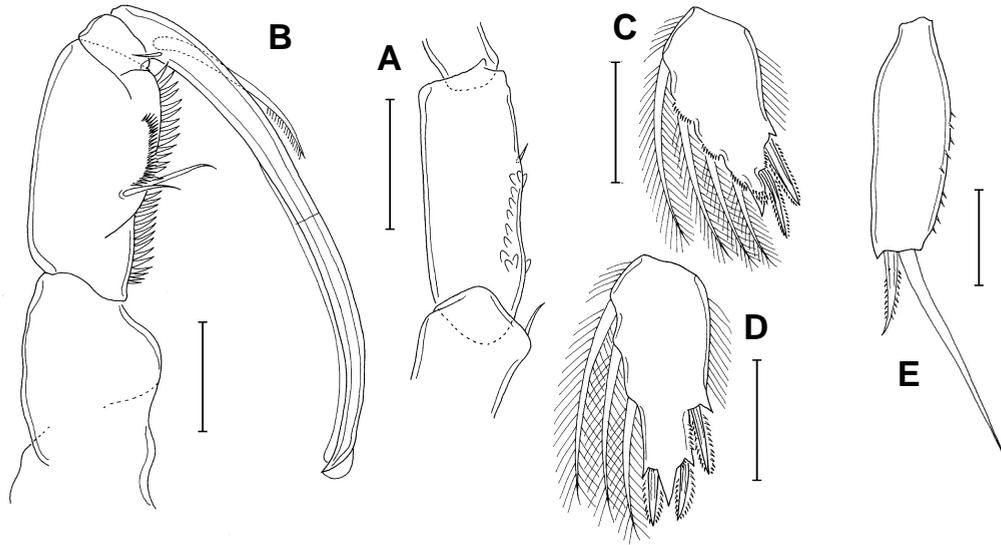


Fig. 15. *Anchimolgus noumensis* n. sp., male. A, second segment of antenna; B, maxilliped; C, third segment of leg 1 endopod; D, third segment of leg 2 endopod; E, free segment of leg 5. Scale bars = 0.02 mm (E), 0.05 mm (A-D).

Rostrum as in female. Antennule like that of female, but 3 aesthetascs added: 2 on second segment and 1 on fourth segment at locations of opposite side shown by dots in Fig. 13D. Antenna as in female but added by scale-like ornamentation on proximal inner side of second segment (Fig. 15A).

Labrum, mandible, maxillule, and maxilla like those of female. Maxilliped (Fig. 15B) with second segment bearing 2 setae of unequal lengths and 1 row of larger spinules along whole inner margin and row of smaller spinules on area distal to setae. Claw long, as long as three segments combined, with 2 very unequal proximal setae.

Legs 1-4 segmented and armed as in female except for sexual dimorphism in third segment of leg 1 endopod (Fig. 15C) bearing 2 spines, 4 setae, and prominent, barbed terminal process. Median terminal process on third segment of leg 2 endopod more prominent than in female (Fig. 15D).

Free segment of leg 5 (Fig. 15E) $49 \times 16 \mu\text{m}$, ratio 3.06 : 1, with minute spinules on outer margin; inner one of 2 terminal seta spine-like, $17 \mu\text{m}$, with spinules on margins; outer seta $47 \mu\text{m}$ and naked. Leg 6 as posteroventral flap on genital somite bearing 2 setae and small process (Fig 14H).

Etymology. The specific name, *noumensis*, is taken after Noumea, the capital city of New Caledonia, where the type locality of the new species is located.

Remarks. *Anchimolgus noumensis* n. sp. is similar to the following seven species in having the similar form of antenna in which the fourth segment is longer than the third. It can be differentiated from the seven congeners by the following characters possessed by these congeners.

In *Anchimolgus contractus* Humes, 1979, the female genital double-somite is tapering; the

second segment of the antenna is distinctly longer than the other segments; the posteroventral margin of anal somite bears two large spines; the maxillule is armed with only two setae; and the free segment of female leg 5 is small, only 53 μm long (see Humes, 1979a; 185 μm long in *A. noumensis*)

In *Anchimolgus exsertus* Humes, 1991, the female genital double-somite is tapering; the caudal ramus is elongated, 5.08 times as long as wide (see Humes, 1991c); and the second segment of the antenna is distinctly longer than other segments; and the rostrum extends to a long, slender posterior process.

In *Anchimolgus moluccanus* Humes, 1996, the caudal ramus is relatively short, 1.79 times as long as wide, and distally broadened; and the mandible bears only a single digitiform process on the convex side.

In *Anchimolgus nastus* Humes, 1996, the prosome is distinctly narrow; the seta near base of the free segment of leg 5 is longer than the segment; the rostrum is longer than wide; the mandible bears two digitiform processes on the convex side; and the second segment of antenna is distinctly longer than other segments.

In *Anchimolgus tenuipes* described above, the caudal ramus is relatively short, 1.92 times as long as wide; the mandible bears four digitiform processes on the convex side; and the free segment of male leg 5 is short, only 23 μm long and less than twice as long as wide.

In *Anchimolgus tridentatus* described above, the caudal ramus in the female is distinctly short, only 1.43 times as long as wide; the fourth segment of the antenna is longest among segments; and the free segment of female leg 5 is short, less than twice as long as wide.

In *Anchimolgus multidentatus* described above, the caudal ramus is relatively short, 85 μm long and 2.02 times as long as wide; the mandible bears six or seven small processes on the convex side; the inner seta (seta I) on the second segment of maxilla is short and fused with segment; the free segment of female leg 5 bears a proximal expansion; and two terminal setae on the free segment of male leg 5 is subequal in length.

***Anchimolgus convexus* Humes, 1978**

Material examined. 5 ♀♀, 10 ♂♂ from the scleractinian coral *Parahalomitra irregularis* (Gardiner), in 1.5 m, west of Isle of Mando, New Caledonia, 3 July 1971; 25 ♀♀, 16 ♂♂ from *Parahalomitra irregularis* (Gardiner), in 4 m, west of Isle of Mando, New Caledonia, 15 July 1971. All the specimens collected by A. G. Humes.

Remarks. This species is new to New Caledonia, and the above coral is a new host record.

***Anchimolgus gratus* Humes, 1996**

Material examined. 5 ♀♀, 8 ♂♂ from the fungid coral *Parahalomitra irregularis* (Gardiner), in 4 m, west of Isle of Mando, New Caledonia, 15 July 1971; 2 ♀♀, 3 ♂♂ from the fungid coral *Fungia (Heliofungia) actiniformis* (Quoy and Gaimard), in 1 m, Baie Dumbea, New Caledonia, 6 July 1971; 2 ♀♀, 5 ♂♂ from *Fungia (Ctenactis) echinata* (Pallas), Baie Dumbea, New Caledonia, 9 July 1971. All the specimens collected by A. G. Humes.

Remarks. Humes (1996d) reported this species as an associate of the coral *Lithactinia novaehiberniae* Lesson from New Caledonia. The three species of the scleractinian corals

mentioned above are new host records for this copepod.

The examined specimens show minor differences from the original description, for example, the fourth pedigerous somite is angular in posterolateral corners, the number of digitiform processes on the convex side of mandible is two or three, the inner seta (seta I) on the second segment of maxilla is pectinated, and the third segment of antenna is twice as long as the fourth and armed with two distal and one middle setae on inner margin. Otherwise the specimens are not different from the original description.

***Anchimolgus latens* Humes, 1978**

Material examined. 1 ♀, 2 ♂♂ from the scleractinian coral *Fungia fungites* (L.), in 2 m, west end of Ricaudy Reef, New Caledonia, 6 June 1971; 7 ♀♀, 11 ♂♂ from *Fungia fungites*, in 2 m, Maître Island, New Caledonia, 20 June 1971; 8 ♀♀, 29 ♂♂ from *Fungia fungites*, in 2 m, Baie Dumbea, New Caledonia, 6 July 1971. All the specimens collected by A. G. Humes.

Remarks. This species is new to New Caledonia.

***Anchimolgus punctilis* Humes, 1978**

Material examined. 3 ♀♀, 1 ♂ from the scleractinian coral *Fungia fungites* (L.), in 2 m, Baie Dumbea, New Caledonia, 6 July 1971, collected by A. G. Humes.

Remarks. This species is new to New Caledonia.

Genus *Ecphysarion* Humes, 1993

***Ecphysarion lobophorum* (Humes and Ho, 1968)**

Material examined. 4 ♀♀, 9 ♂♂ from *Acropora convexa* (Dana), in 1 m, 100 m north of Pt. Pontillon, Noumea, New Caledonia, 28 June 1971, collected by A. G. Humes.

Remarks. *Acropora convexa* is new host record for *Ecphysarion lobophorum*. As hosts of this copepod, various species of the scleractinian coral genus *Acropora* have been reported: *A. cytherea*, *A. scherzeriana* and *Acropora* sp. by Humes and Ho (1968a) from Madagascar; *A. florida* by Humes and Stock (1973) from Eniwetok Atoll; *A. cymbicyathus* by Humes (1990b) from New Caledonia; *A. exigua*, *A. formosa*, *A. gravaida*, *A. humilis*, *A. hyacinthus*, *A. palifera*, *A. rambleri*, and *A. squamosa* by Humes (1993b) from New Caledonia. Therefore, at least 13 species of *Acropora* are known to be hosts of this copepod, ten of which known from New Caledonia.

Genus *Jamescookina* Humes, 1991

***Jamescookina palmata* n. sp. (Figs. 16-18)**

Material examined. 12 ♀♀, 16 ♂♂ from the scleractinian coral *Echinopora lamellosa* (Esper), in 1 m, Baie Dumbea, New Caledonia, 6 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016270), allotype (♂; USNM 1016271), and paratypes (10 ♀♀, 14 ♂♂; USNM 1016272) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 16A) with moderately swollen prosome. Length 1.13 mm and greatest width 504 µm. Prosome 679 µm long, occupying 60% of body length. First pedigerous somite separated

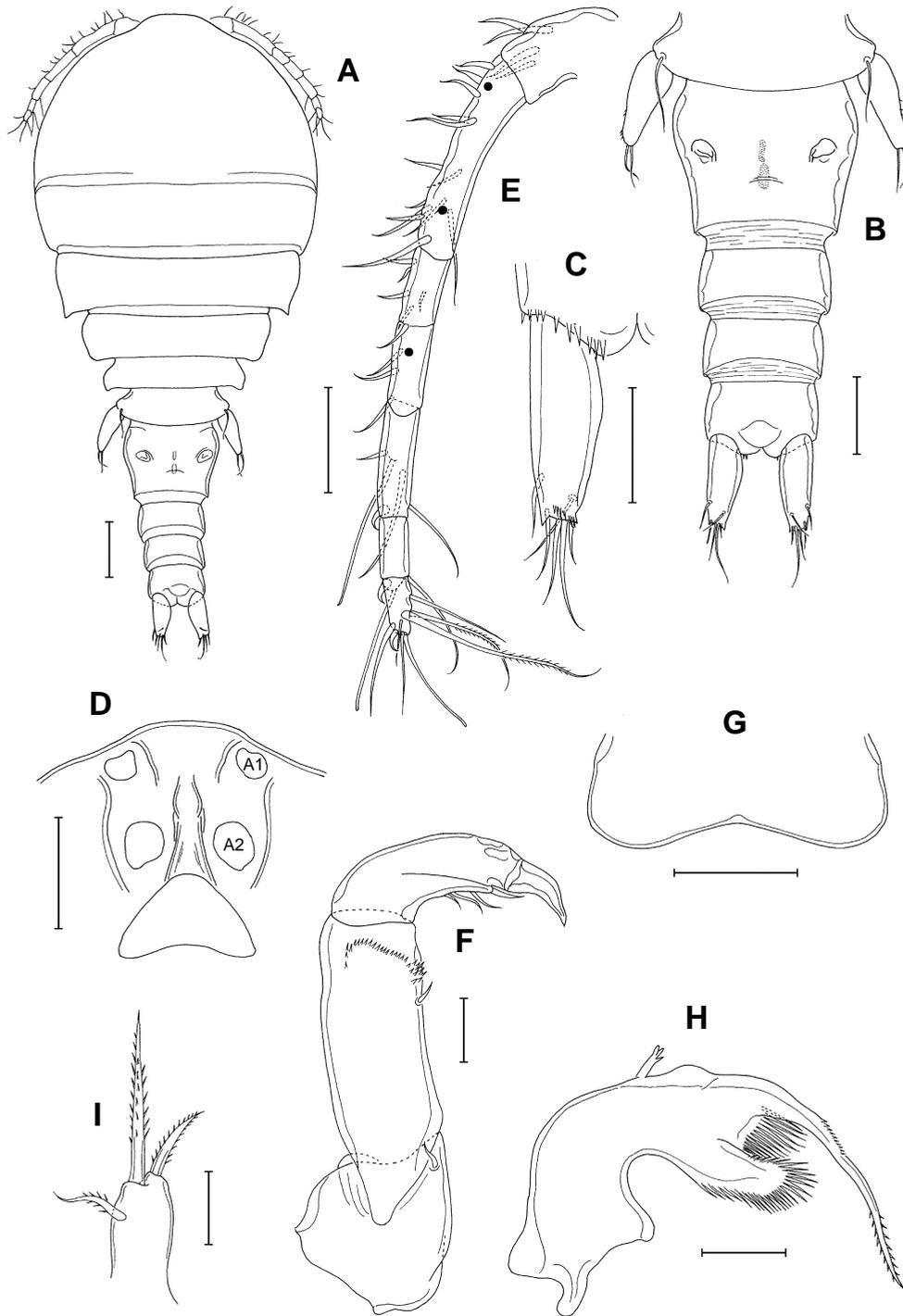


Fig. 16. *Jamescookina palmata* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus, ventral; D, rostral area, ventral; E, antennule; F, antenna; G, labrum; H, mandible; I, maxillule. Scale bars = 0.02 mm (F, H, I), 0.05 mm (C, E, G), 0.1 mm (A, B, D).

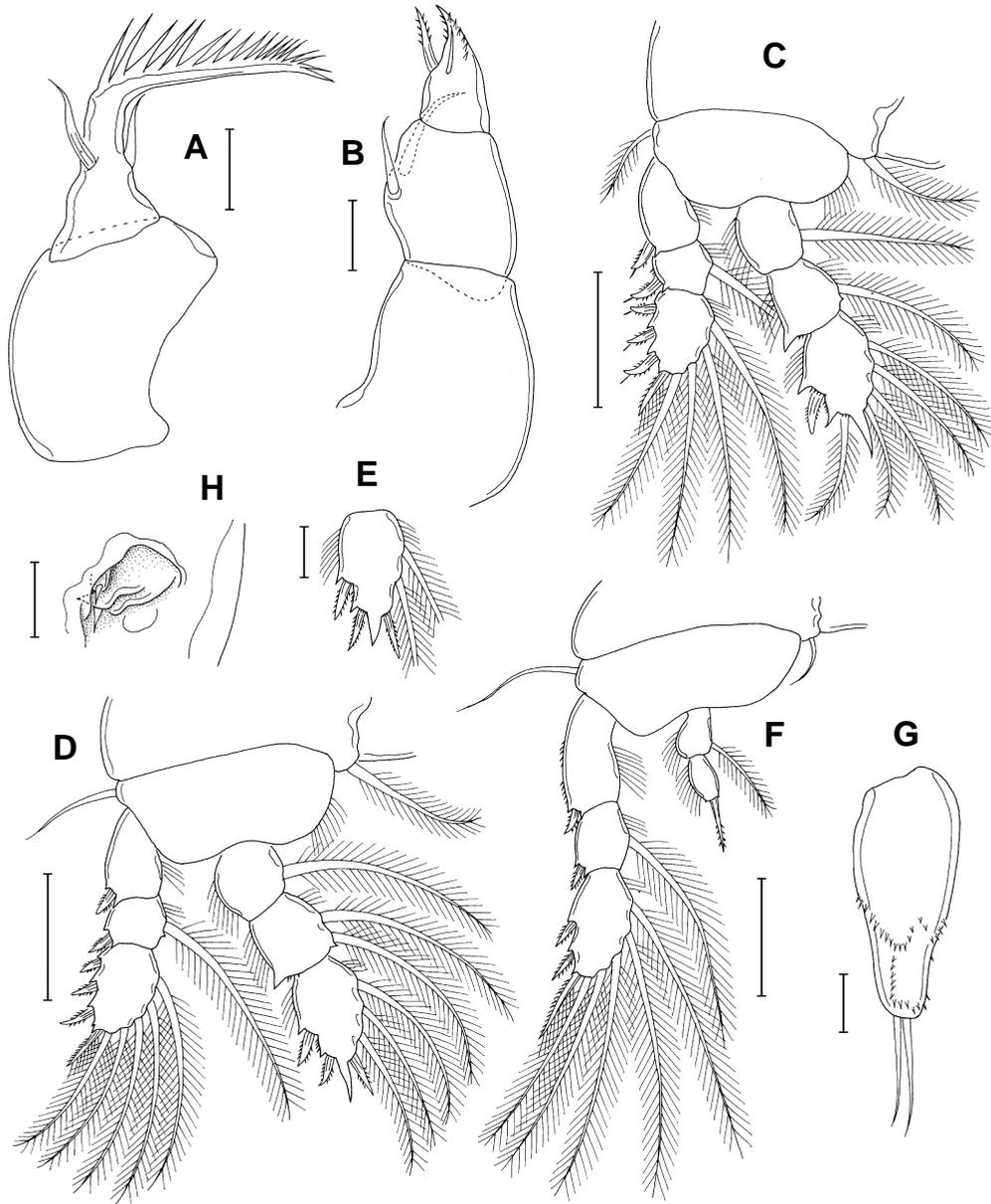


Fig. 17. *Jamescookina palmata* n. sp., female. A, maxilla; B, maxilliped; C, leg 1; D, leg 2; E, third segment of leg 3 endopod; F, leg 4; G, free segment of leg 5. Scale bars = 0.02 mm (A, B, E, G, H), 0.05 mm (C, D, F).

dorsally from cephalosome by distinct dorsal suture line. Posterolateral corners of second pedigerous somite pointed. Urosome (Fig. 16B) 5-segmented. Fifth pedigerous somite 198 μ m wide. Genital double-somite slightly expanded anteriorly, 156 \times 165 μ m, wider than long, widest in anterior one-fourth, dorsally with sclerotized area in middle. Genital areas located dorsally. Three abdominal somites 63 \times 119, 56 \times 108, and 65 \times 101 μ m. Anal somite with spinules along

posteroventral margin.

Caudal rami widely separated from each other. Each ramus (Fig. 16C) $87 \times 31 \mu\text{m}$, ratio 2.81 : 1, with slightly convex inner margin, pointed posterior corners, and several minute spinules near posteroventral margin; 6 caudal setae short and naked; inner one of 2 median terminal setae largest, $51 \mu\text{m}$ long. Egg sac not seen.

Rostrum extended to anterior part of labrum by broad ridge (Fig. 16D). Antennule (Fig. 16E) $305 \mu\text{m}$ long, and 7-segmented; armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; setae on proximal 4 segments short; anterodistal seta on fifth to terminal segments distally incurved, hook-like. Antenna (Fig. 16F) 3-segmented; armature 1, 1 and 4+1 claw; first segment slightly wider than long; second segment about $92 \mu\text{m}$ long (mean length of inner and outer margins), distally with transverse row of minute spinules; terminal segment $54 \mu\text{m}$ long, curved, with incomplete oblique furrow as vestige of segmentation; terminal claw stout, $25 \mu\text{m}$ long and slightly undulated.

Labrum (Fig. 16G) with weakly concave posterior margin, without posteromedian incision. Mandible (Fig. 16H) with distinct proximal notch; inner margin bilobed, proximal lobe markedly extended beyond distal lobe; convex margin with 1 digitiform hyaline process ramified distally with 3 or 4 knobs; terminal lash thin and long, with minute denticles on proximal part of convex side and spinules on both sides of distal part. Maxillule (Fig. 16I) armed with 1 lateral (drawn out laterally) and 2 terminal setae, all of them barbed. Maxilla (Fig. 17A) with unarmed first segment; second segment bearing 2 setae and continued to form lash with prominent spinules along convex margin. Maxilliped (Fig. 17B) 3-segmented; first segment unarmed; second segment with 2 setae of unequal lengths; third segment with 1 thin seta, 1 spine-like barbed seta, and attenuated tip bearing 4 spinules on inner side and 6 spinules on outer side.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod in leg 4. Armature formula as follows :

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; I

Spines on outer margin of leg 1 exopod with subterminal flagellum. Distal angle of terminal endopodal segment of legs 1 and 2 elongated and acutely pointed (Fig. 17C, D). Endopod of leg 4 small, as long as first segment of exopod; distal segment $20 \times 11 \mu\text{m}$; terminal spine $22 \mu\text{m}$ long and barbed. Coxa of leg 4 with inner seta short and naked (Fig. 17F).

Free segment of leg 5 (Fig. 17G) distinctly tapering, $87 \times 36 \mu\text{m}$, ratio 2.42 : 1, with spinules on distal half; two terminal setae naked, $40 \mu\text{m}$ (inner) and $44 \mu\text{m}$ (outer). Leg 6 represented by 2 spiniform setae in genital area (Fig. 17H).

Male. Body (Fig. 18A) resembling that of female. Length $888 \mu\text{m}$ and greatest width $362 \mu\text{m}$. Prosome $465 \mu\text{m}$ long. Rostral area produced anteriorly beyond anterior margin of cephalosome, with truncate apex. First pedigerous somite fused with cephalosome, leaving short dorsal line as rudiment of dorsal suture. Urosome (Fig. 3B) 6-segmented. Fifth pedigerous somite $156 \mu\text{m}$ wide. Genital somite roughly quadrangular, $145 \times 210 \mu\text{m}$, wider than long, ratio 1 : 1.45. Four

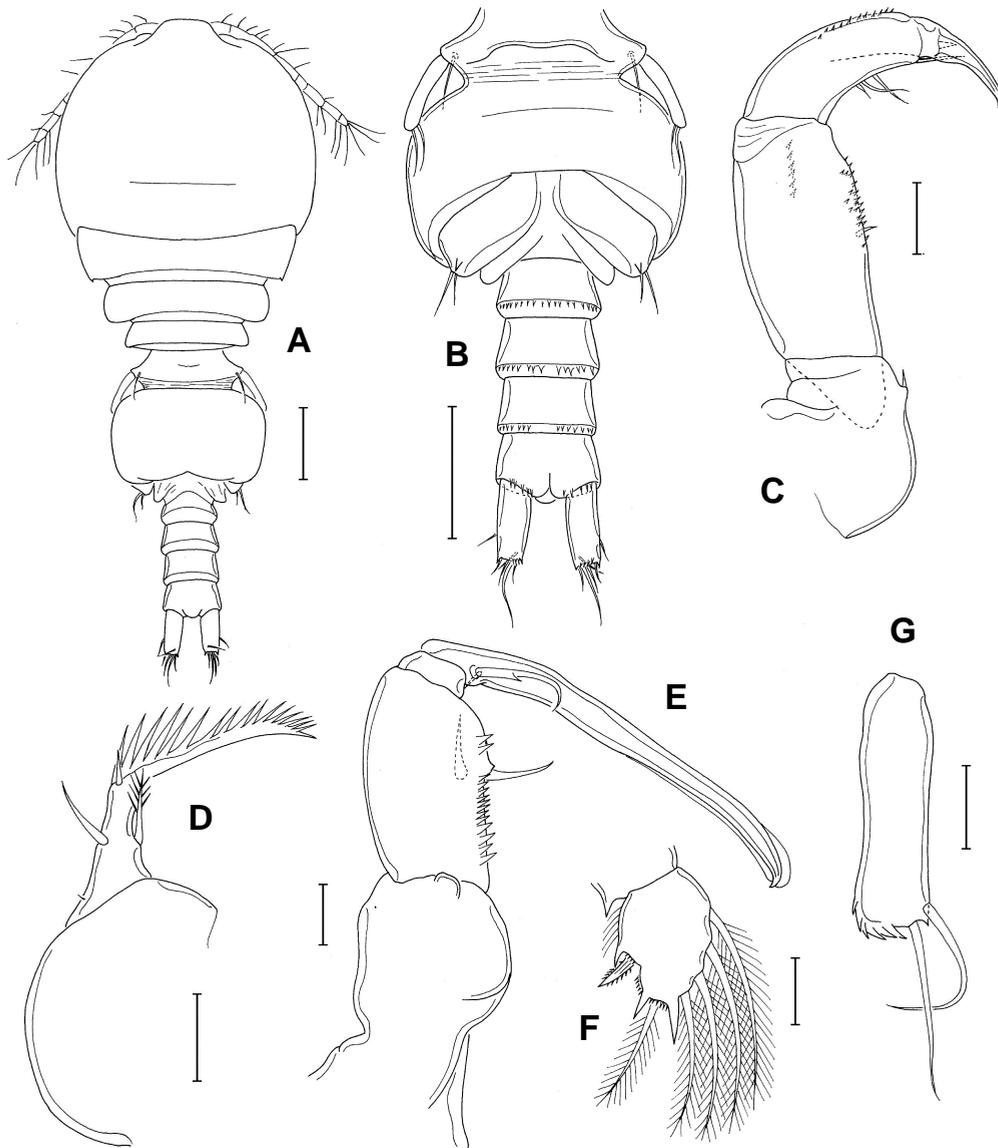


Fig. 18. *Jamescookina palmata* n. sp., male. A, habitus, dorsal; B, urosome, ventral; C, antenna; D, maxilla; E, maxilliped; F, third segment of leg 1 endopod; G, free segment of leg 5. Scale bars = 0.02 mm (C-G), 0.1 mm (A, B).

abdominal somites 42×79 , 44×77 , 42×75 , and 50×79 μm , each with spinules along posteroventral margin (in female these spinules present only in anal somite). Caudal ramus quadrangular, 63×25 μm , ratio 2.52 : 1.

Rostrum as in female. Antennule with 3 long aesthetascs (slightly longer than antennule) added at opposite side of locations indicated by dots in Fig. 16E, with formula: 4, 13+2 aesthetascs, 6,

3+1 aesthetasc, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc. Third segment of antenna (Fig. 18C) with 3 setae on inner margin and 2 setae near base of claw. Claw longer and more slender than that of female.

Labrum, mandible, and maxillule as those of female. Second segment of maxilla with 3 setae (Fig. 18D); inner seta on concave side plumose; proximal seta hardly visible. Maxilliped (Fig. 18E) 3-segmented, with terminal claw; first segment unarmed, longest among segments, and distally broadened; second segment with row of spinules and 2 equal setae on inner margin; third segment unarmed; claw 87% as long as three proximal segments combined, basally with 2 setae, one on each side, larger one with 1 barb at one-third of length.

Legs 1-4 resembling those of female, without sexual dimorphism. Leg 5 with elongate free segment quadrangular, $61 \times 18 \mu\text{m}$, ratio 3.39 : 1, with serrate outer distal corner and 2 equal naked setae (both $43 \mu\text{m}$) at inner distal corner (Fig. 18G). Leg 6 as posteroventral flap on genital somite bearing 2 small setae and 1 barb (Fig. 18B).

Etymology. The specific name *palmata* (Latin meaning “palmated”) refers to the palmated process on the convex side of the mandible.

Remarks. *Jamescookina* has been remained as a monotypic genus until now, represented by *J. redacta* Humes, 1991. *Jamescookina palmata* n. sp. may be differentiated from *J. redacta* by the following ways.

The free segment of female leg 5 is distinctly tapering in *J. palmata*, while it is rod-shaped with parallel lateral margins in *J. redacta*. The process on the convex margin of mandible is distally palmate in *J. palmata* but it is broad and leaf-like in *J. redacta*. The terminal process on the third endopodal segment of legs 2 and 3 in *J. palmata* is elongated and acute, a feature not observable in *J. redacta*.

***Jamescookina exigua* n. sp. (Figs. 19-21)**

Material examined. 37 ♀♀, 32 ♂♂ from the scleractinian coral *Echinopora lamellosa* (Esper), in 1 m, Baie Dumbea, New Caledonia, 6 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016273), allotype (♂; USNM 1016274), and paratypes (35 ♀♀, 30 ♂♂; USNM 1016275) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 19A) $756 \mu\text{m}$ long. Greatest width $271 \mu\text{m}$. Prosome $432 \mu\text{m}$ long, occupying 57% of body length. Rostral area slightly produced anteriorly. First pedigerous somite separated dorsally from cephalosome by dorsal suture line. Posterolateral corners of fourth pedigerous somite angular; those of other prosomal somites rounded. Urosome (Fig. 19B) 5-segmented. Fifth pedigerous somite $140 \mu\text{m}$ wide. Genital double-somite $100 \times 151 \mu\text{m}$, wider than long, and tapering. Genital areas located dorsally. Three abdominal somites 42×76 , 40×75 , and $40 \times 78 \mu\text{m}$; first 2 abdominal somites unornamented; anal somite with spinules on posteroventral border near base of caudal rami (Fig. 19C).

Caudal rami widely separated from each other. Each ramus (Fig. 19C) $71 \times 26 \mu\text{m}$, ratio 2.73 : 1, with slightly convex inner margin, concave outer margin, angular inner distal corner, and minute spinules near posteroventral margin; 6 caudal setae naked, inner one of 2 median terminal setae largest, $79 \mu\text{m}$ long. Egg sac not seen.

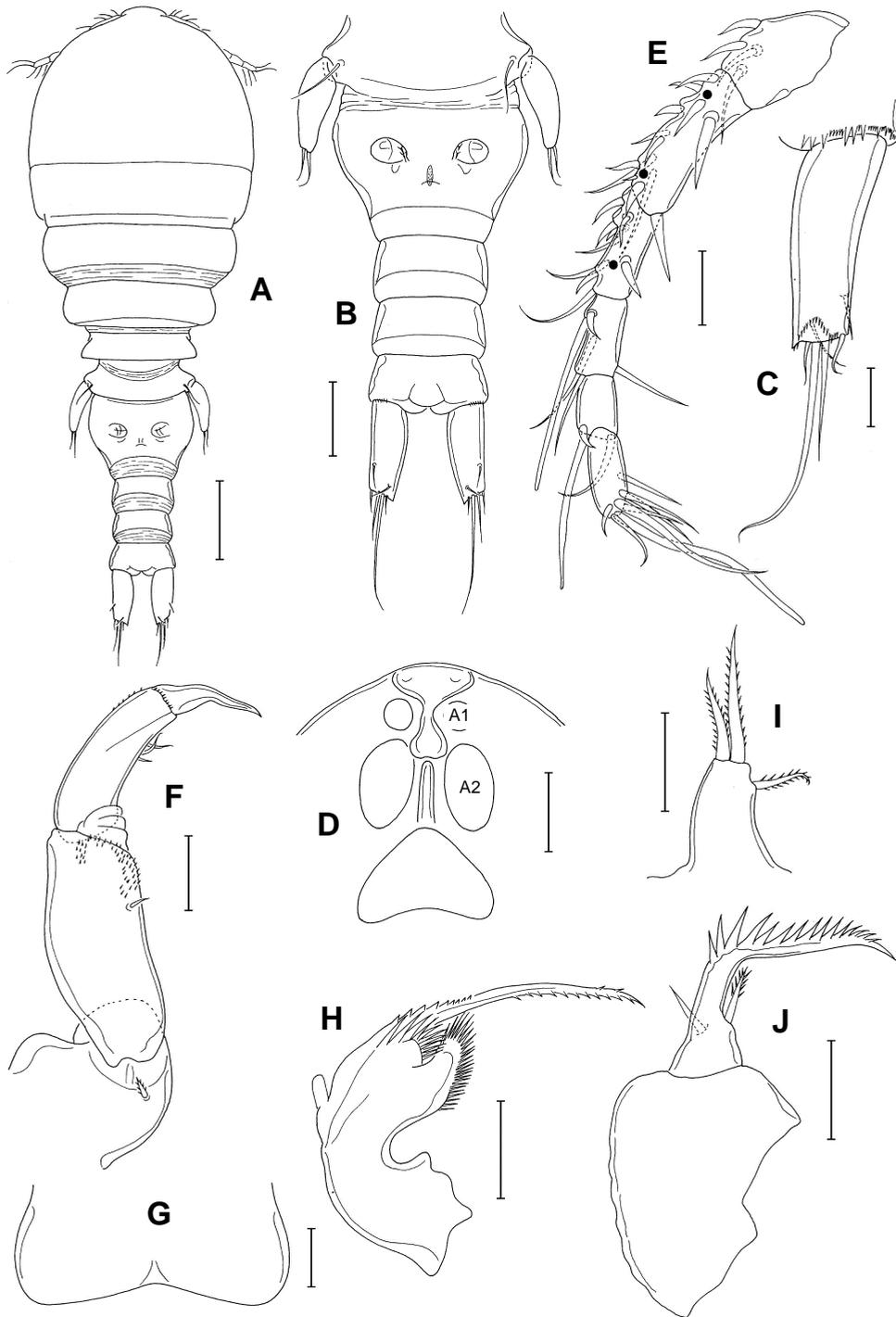


Fig. 19. *Jamescookina exigua* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus, ventral; D, rostral area, ventral; E, antennule; F, antenna; G, labrum; H, mandible; I, maxillule; J, maxilla. Scale bars = 0.02 mm (C, E-J), 0.05 mm (B, D), 0.1 mm (A).

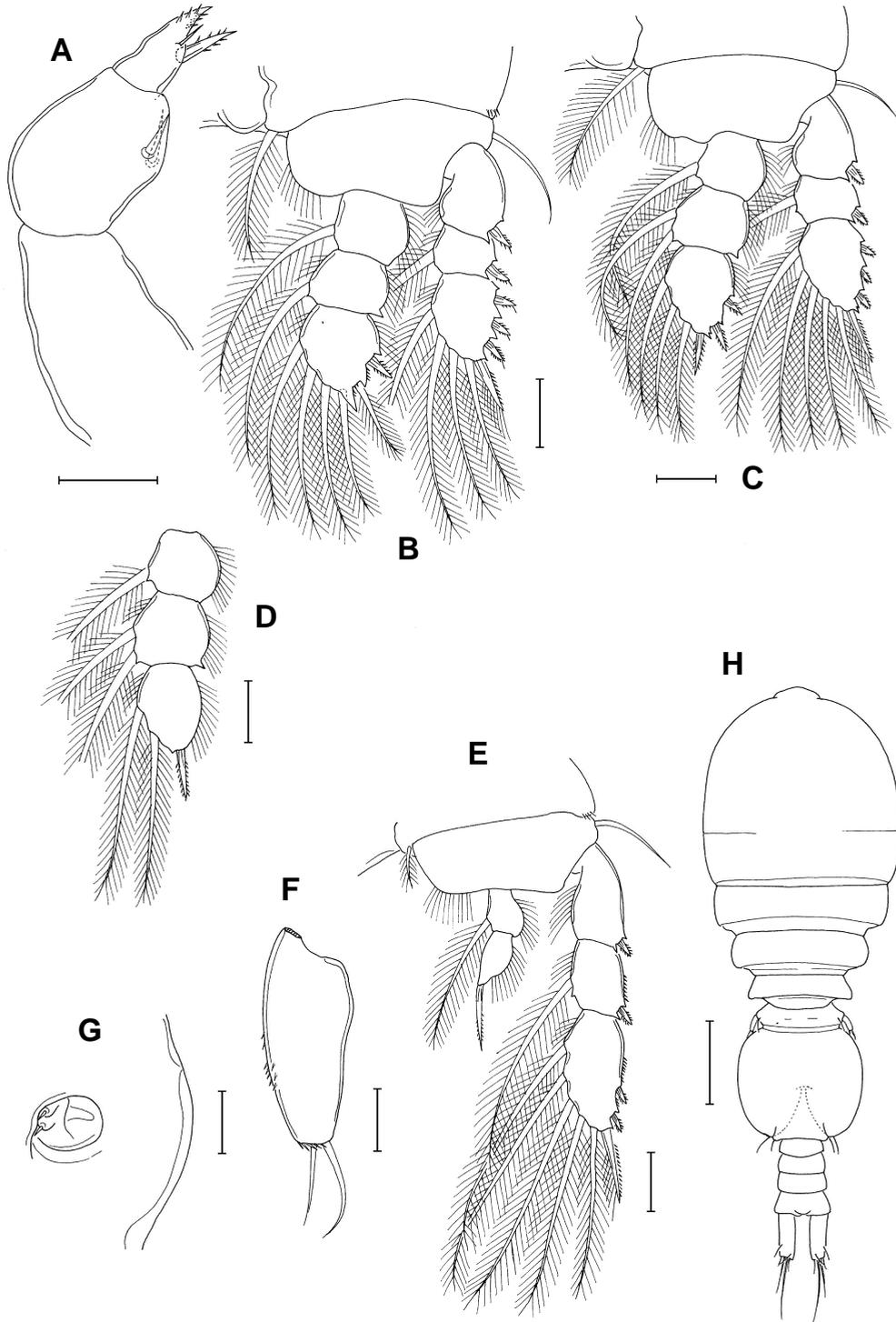


Fig. 20. *Jamescookina exigua* n. sp. Female: A, maxilliped; B, leg 1; C, leg 2; D, leg 3 endopod; E, leg 4; F, free segment of leg 5; G, genital area. Male: H, habitus, dorsal. Scale bars = 0.02 mm (A-G), 0.1 mm (H).

Rostrum as in Fig. 19D. Antennule (Fig. 19E) 145 μm long, and 7-segmented; armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; setae on 4 proximal segments stocky. Antenna (Fig. 19F) 3-segmented; armature 1, 1 and 3+1 claw; first segment wider than long, seta on this segment barbed; second segment with minute spinules on distal part; terminal segment about 70% as long as second segment, with minute spinules on distal margin and distal part of outer margin; claw about 60% length of terminal segment and undulated.

Labrum (Fig. 19G) with weakly concave posterior margin, without posteromedian incision. Mandible (Fig. 19H) with distinct proximal notch; inner margin bilobed, proximal lobe markedly extended beyond distal lobe; convex margin with 1 digitiform hyaline process bearing blunt tip; lash long, with denticles on proximal part of convex side and spinules on distal part of concave side. Maxillule (Fig. 19I) armed with 1 subterminal (directed laterally) and 2 terminal setae, all of these 3 setae barbed. Maxilla (Fig. 19J) with unarmed first segment; second segment with 2 setae, inner one of which with spinules in distal half, and continued to form lash bearing prominent spinules along convex margin. Maxilliped (Fig. 20A) 3-segmented; first segment unarmed; second segment with 2 setae of equal lengths; third segment with 1 thin seta and 1 spine-like seta bearing barbs, and attenuated tip bearing 3 barbs on both sides.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod in leg 4. Armature formula as follows :

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; I

Spines on outer margin of leg 1 exopod with subterminal flagellum. Outer seta on basis of legs 1-4 naked. Endopod of leg 4 as long as first segment of exopod; distal segment tapering, 18 \times 10 μm ; terminal spine 23 μm long and weakly barbed. Coxa of leg 4 with inner seta short but plumous (Fig. 20E).

Free segment of leg 5 (Fig. 20F) tapering, 68 \times 28 μm , ratio 2.43 : 1, with several spinules on outer and distal margins; two terminal setae naked, 26 μm (outer) and 32 μm (inner). Leg 6 represented by 2 small setae in genital area (Fig. 20G)

Male. Body (Fig. 20H) resembling that of female. Length 697 μm and greatest width 236 μm . Prosome 380 μm long. First pedigerous somite obscurely separated from cephalosome. Urosome (Fig. 21A) 6-segmented. Fifth pedigerous somite 108 μm wide. Genital somite circular, 138 \times 152 μm , wider than long, ratio 1 : 1.10. Four abdominal somites 25 \times 55, 25 \times 57, 22 \times 58, and 30 \times 67 μm . Caudal ramus 56 \times 21 μm , ratio 2.67 : 1.

Rostrum as in female. Antennule with 3 long aesthetascs (slightly longer than whole antennule) added at opposite side of locations indicated by dots in Fig. 19E, with formula: 4, 13+2 aesthetascs, 6, 3+1 aesthetasc, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc. Antenna as in female.

Labrum, mandible, maxillule, and maxilla as those of female. Maxilliped (Fig. 21B) 3-segmented, with terminal claw; first segment unarmed, longest among segments, and constricted in middle; second segment with row of spinules and 2 setae on inner margin; proximal one of latter 2 setae

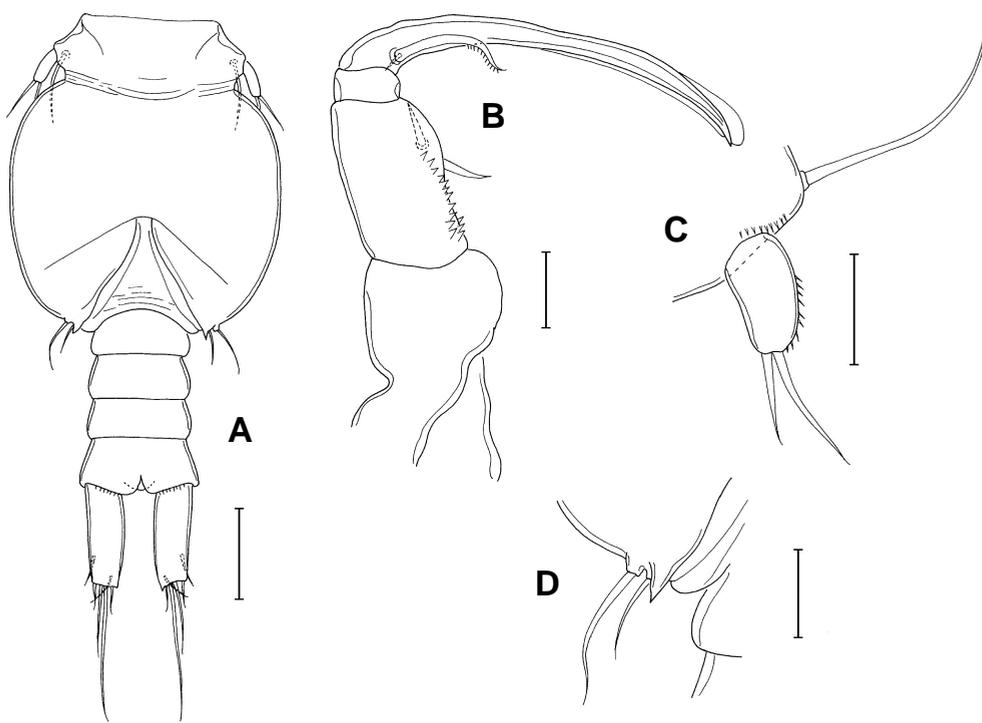


Fig. 21. *Jamescookina exigua* n. sp., male. A, urosome, ventral; B, maxilliped; C, leg 5; D, leg 6. Scale bars = 0.02 mm (B-D), 0.05 mm (A).

Table 1. Differentiation of three species of *Jamescookina*

Characters	<i>J. redacta</i>	<i>J. palmata</i>	<i>J. exigua</i>
Body length	♀ 1.17 mm ♂ 1.11 mm	♀ 1.13 mm ♂ 0.89 mm	♀ 0.76 mm ♂ 0.70 mm
Size of genital double-somite	160 × 187 μm	156 × 165 μm	100 × 151 μm
Ratio of length to width of female caudal ramus	2.36	2.81	2.73
Armature on terminal segment of leg 3 endopod	III, 2	III, 2	I, 2
Ratio of length to width of free segment of leg 5	♀ 4.50 ♂ 6.39	♀ 2.42 ♂ 3.39	♀ 2.43 ♂ 1.75

directed proximally and distal one directed distally; small third segment unarmed; claw as long as basal three segments combined, basally with 2 unequal setae, one on each side, larger one with minute barbs in distal part.

Legs 1-4 resembling those of female, without sexual dimorphism. Leg 5 (Fig. 21C) with small

free segment $21 \times 12 \mu\text{m}$, ratio 1.75 : 1, with spinules on outer margin; 2 terminal setae smooth, $24 \mu\text{m}$ (outer) and $17 \mu\text{m}$ (inner). Leg 6 posteroventral flap on genital somite bearing 2 small setae and 1 pointed process (Fig. 21D).

Etymology. The specific name *exigua* ("small" in Latin) alludes to the small body of the new species.

Remarks. The body of *Jamescookina exigua* is distinctly smaller than that of two congeners. In addition, the possession of one spine and two setae (formula I, 2) on the terminal endopodal segment of leg 3 is also a characteristic differentiating *J. exigua* from the congeners in which the armature is three spine and two setae (II, 3). Three species of *Jamescookina* can be differentiated more precisely using the Table 1.

Genus *Odontomolgus* Humes and Stock, 1972

***Odontomolgus exilipes* n. sp. (Figs. 22–24)**

Material examined. 4 ♀♀, 2 ♂♂ from the scleractinian *Psammocora samoensis* Hoffmeister, in intertidal pool, Ricaudy Reef, New Caledonia, 21 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016276), allotype (♂; USNM 1016277), and paratypes (2 ♀♀; USNM 1016278) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 22A) with broad prosome and narrow urosome. Length 1.33 mm. Greatest width $630 \mu\text{m}$. Prosome $830 \mu\text{m}$ long, occupying about 64% of body length. First pedigerous somite separated dorsally from cephalosome by dorsal furrow. Posterolateral corners of second pedigerous somite angular. Fourth pedigerous somite narrow, with short membrane on lateral apices. Urosome (Fig. 22B) 5-segmented. Fifth pedigerous somite $210 \mu\text{m}$ wide. Genital double-somite roundly expanded anteriorly, with short narrower posterior part and dorsal sclerotized area in middle, $150 \times 176 \mu\text{m}$, ratio 0.85 : 1. Genital areas located dorsally at anterior third. Three abdominal somites 85×90 , 70×85 , and $73 \times 83 \mu\text{m}$; all abdominal somites unornamented.

Caudal ramus (Fig. 22C) slightly narrowed posteriorly, $72 \times 35 \mu\text{m}$, ratio 2.06 : 1, with fine spinules along posteroventral margin and 6 caudal setae; outer lateral seta naked and located near distal 0.2 length of outer margin; dorsal seta naked; other setae plumous. Egg sac small, $310 \times 250 \mu\text{m}$, containing about 10 eggs.

Rostrum extending to anterior border of mandible (Fig. 22E). Antennule (Fig. 22F) slender, $319 \mu\text{m}$ long, and 7-segmented; armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; setae naked and relatively long. Antenna (Fig. 22G) 4-segmented and stout; armature formula 1, 1, 2, and 1+1 claw; first segment massive, distinctly wider than long. Length of 4 segments from proximal to distal 50, 110, 35, and $30 \mu\text{m}$. Terminal claw $40 \mu\text{m}$ and twisted.

Labrum (Fig. 22H) with broad hyaline membrane along posterior margin of both lobes. Mandible (Fig. 22I) with distinct proximal notch; inner margin bilobed and clearly demarcated from terminal lash; convex margin with large, strongly tapering hyaline process; terminal lash long, slender, denticulated along proximal third of convex side, and serrate along both margins of distal two-thirds. Maxillule (Fig. 22J) armed with 3 terminal plumous setae. Maxilla (Fig. 23A) with unarmed basal segment. Distal segment with 3 setae (inner seta marginated by hyaline membrane along inner margin), and continued to lash bearing prominent spinules along convex margin. Maxilliped

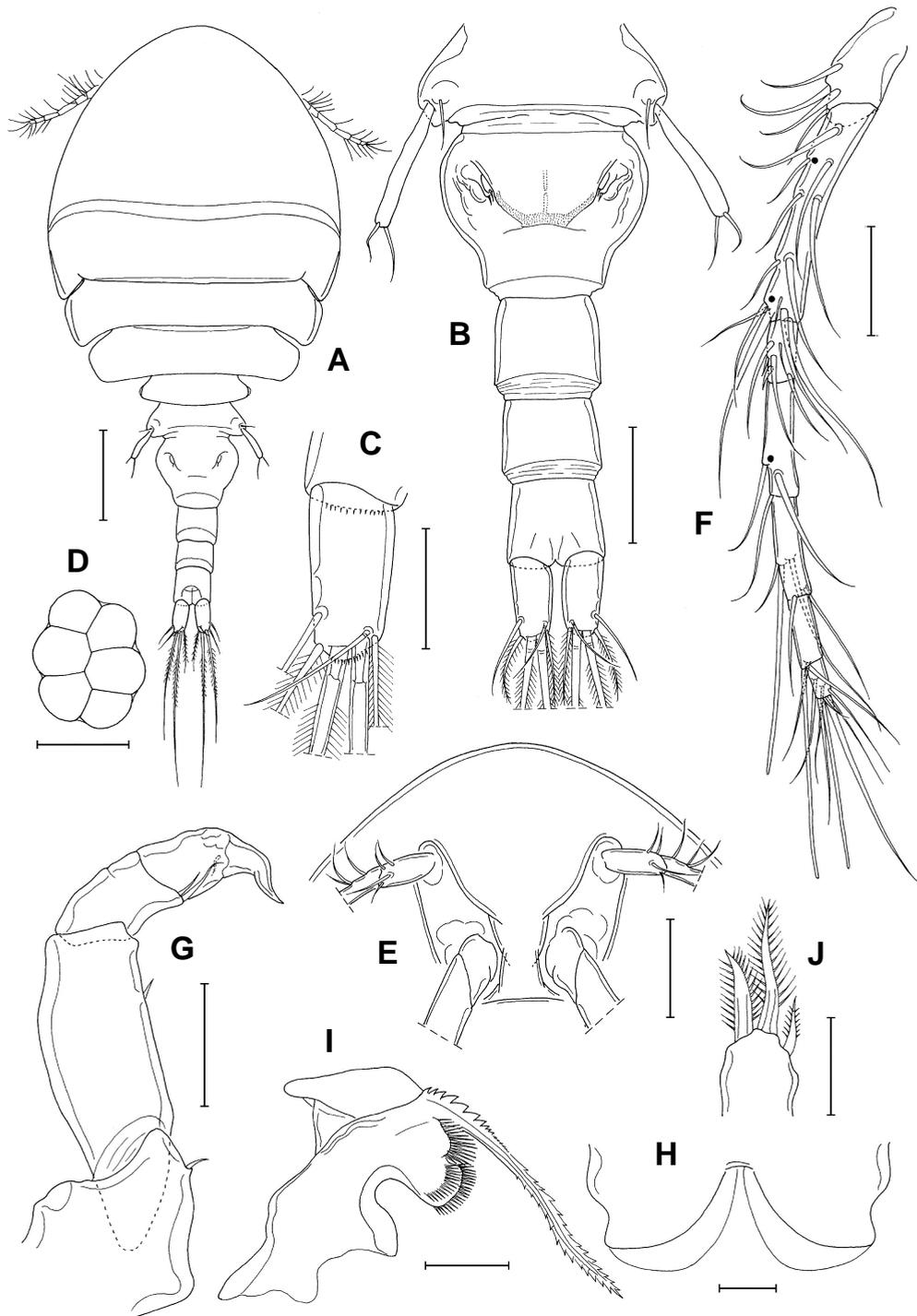


Fig. 22. *Odontomolgus exilipes* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus, dorsal; D, egg sac; E, rostral area, ventral; F, antennule; G, antenna; H, labrum; I, mandible; J, maxillule. Scale bars = 0.02 mm (H-J), 0.05 mm (C, F, G), 0.1 mm (B, E), 0.2 mm (A, D).

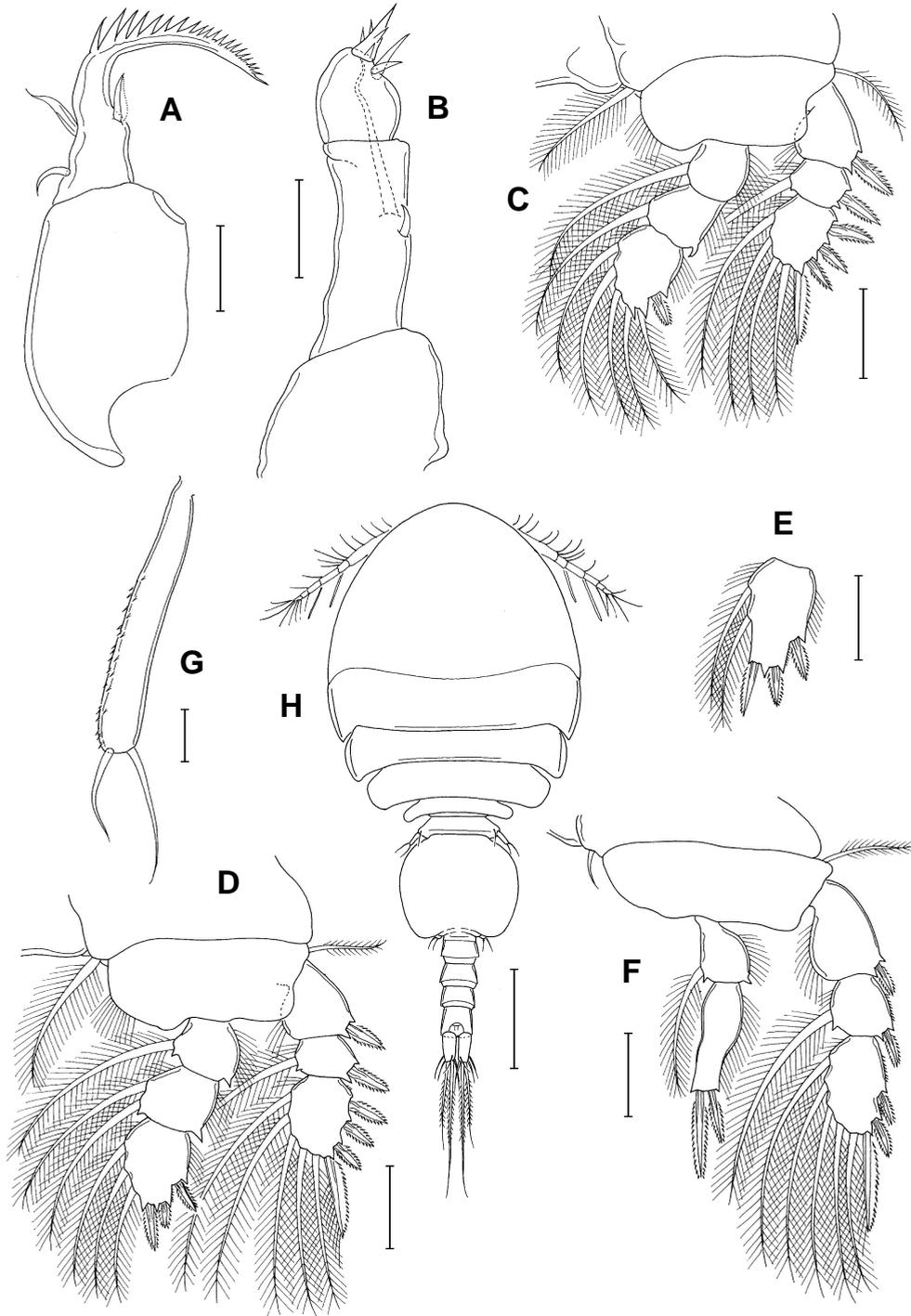


Fig. 23. *Odontomolgus exilipes* n. sp. Female: A, maxilla; B, maxilliped; C, leg 1; D, leg 2; E, third segment of leg 3 endopod; F, leg 4; G, free segment of leg 5. Male: H, habitus, dorsal. Scale bars = 0.02 mm (A, B, G), 0.05 mm (C-F), 0.2 mm (H).

(Fig. 23B) 3-segmented. First segment unarmed and wider than long. Longest second segment slender, with 1 small and 1 long setae, longer one extending to distal margin of terminal segment. Terminal segment nearly globular, slightly longer than wide, armed distally with 2 setae and 1 spine-like element bearing 2 barbs on both sides.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod in leg 4. Armature formula as follows :

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Inner seta on coxa of leg 4 small and smooth. Second segment of leg 4 endopod $66 \times 24 \mu\text{m}$, ratio 2.75 : 1; terminal spines $55 \mu\text{m}$ (inner) and $31 \mu\text{m}$ (outer).

Free segment of leg 5 (Fig. 23G) long and slender, gradually widened distally, $108 \times 16 \mu\text{m}$, ratio 6.75 : 1, with scattered minute spinules on outer side, with 2 terminal setae of $52 \mu\text{m}$ (inner) and $38 \mu\text{m}$ (outer). Leg 6 represented by 2 minute setules in genital area (Fig. 22B).

Male. Body (Fig. 23H) resembling that of female. Length 1.12 mm. Greatest width $510 \mu\text{m}$. Prosome $635 \mu\text{m}$ long. Urosome (Fig. 24A) 6-segmented. Fifth pedigerous somite $163 \mu\text{m}$ wide, narrower than genital somite. Genital somite nearly circular, $195 \times 235 \mu\text{m}$, wider than long, ratio 1 : 1.21. Four abdominal somites 47×76 , 55×75 , 45×68 , and $57 \times 65 \mu\text{m}$. Caudal ramus $65 \times 22 \mu\text{m}$, ratio 2.32 : 1.

Rostrum as in female. Antennule with 3 long aesthetascs added at opposite side of locations indicated by dots in Fig. 22F, with armature formula: 4, 13+2 aesthetascs, 6, 3+1 aesthetasc, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc. Antenna (Fig. 24B) added by 1 small spinule on first segment near base of seta and several spinules on inner margin of second segment. Segmentation line between third and terminal segments oblique, with extremely minimized inner margin of fourth segment.

Labrum, mandible, maxillule, and maxilla as those of female. Maxilliped (Fig. 24C) 3-segmented, with terminal claw; first segment unarmed, expanded in distal half. Second segment as long as first segment, with spinules along inner margin and 2 equal setae at place slightly distal to middle of inner margin. Third segment short and unarmed. Terminal claw with 2 unequal setae proximally.

Endopod of leg 1 (Fig. 24D) with third segment armed with 2 spines and 4 setae (formula II,4); 2 terminal spines very unequal in length. Inner one of two terminal processes blunt. Legs 2-4 as in female.

Free segment of leg 5 (Fig. 24E) $35 \times 12 \mu\text{m}$, ratio 2.92 : 1, 2 terminal setae smooth, $40 \mu\text{m}$ (inner) and $43 \mu\text{m}$ (outer). Leg 6 represented by 2 small equal setae on genital flap (Fig. 24A).

Etymology. The specific name *exilipes* is derived from the Latin *exilis* (slender) and *pes* (foot), alluding to the slender free segment of female leg 5.

Remarks. This species has a markedly slender free segment of leg 5 in the female with a ratio of the length to width 6.75 : 1. Such a slender free segment was previously reported for only one species, *O. pumilus* Humes, 1992, from the Great Barrier Reef, Australia. *Odontomolgus exilipes* differs from *O. pumilus*, since the latter species has a very narrow prosome which is 2.11

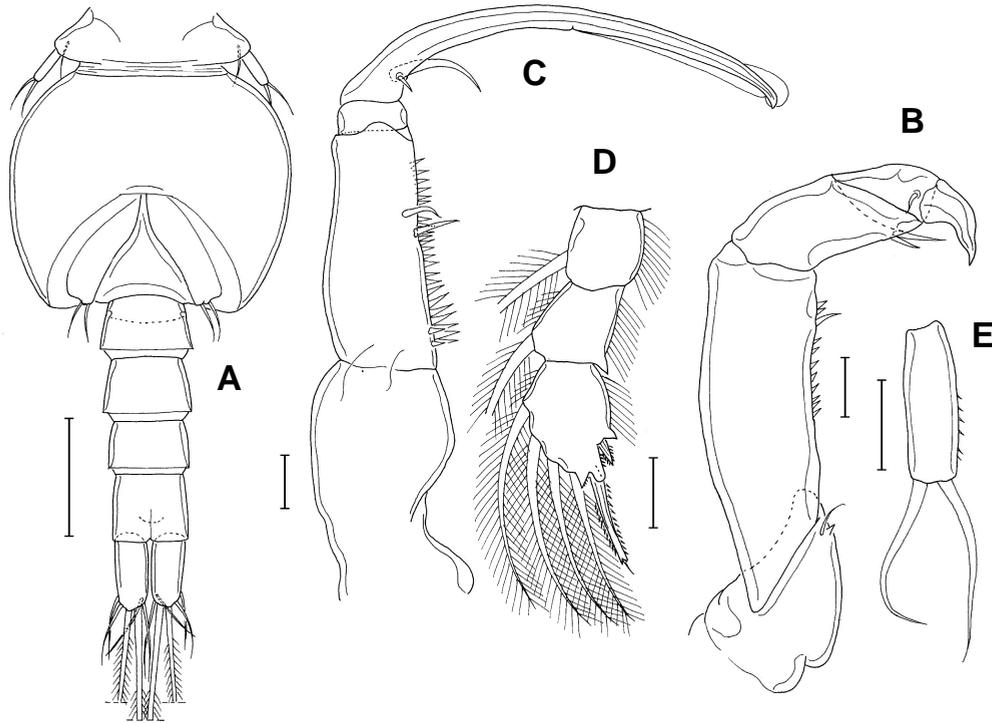


Fig. 24. *Odontomolgus exilipes* n. sp., male. A, urosome, ventral; B, antenna; C, maxilliped; D, leg 1 endopod; E, free segment of leg 5. Scale bars = 0.02 mm (B-E), 0.1 mm (A).

times as long as wide in the female (Humes, 1992), in contrast to 1.32 times as long in *O. exilipes*.

The ratio of the length to width of the female caudal ramus of *O. exilipes* is 2.06 : 1. Similar range of the ratio, for example, 1.50-2.5 : 1 is recorded for *O. decens* Humes, 1978, *O. fultus* Humes, 1978, and *O. bulbalis* Humes, 1991. But *O. decens* and *O. fultus*, both recorded from the Moluccas, have four spines and five setae (with formula III, I, 5) on the third exopodal segment of leg 4, unlike that of *O. exilipes* (formula II, I, 5). *Odontomolgus bulbalis* is distinguished from *O. exilipes* by the possession of narrow prosome, the fourth segment of antenna which is distinctly longer than third segment, and the distally narrowed free segment of female leg 5.

***Odontomolgus geminus* n. sp. (Figs. 25-27)**

Material examined. 3 ♀♀, 3 ♂♂ from the scleractinian *Psammocora samoensis* Hoffmeister, in intertidal pool, Ricaudy Reef, New Caledonia, 21 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016279), allotype (♂; USNM 1016280), and paratypes (1 ♀, 1 ♂; USNM 1016281) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 25A) with moderately broad prosome and narrow urosome. Length 1.11 mm. Greatest width 429 μm. Prosome 683 μm long, occupying about 62% of body length. First pedigerous somite separated dorsally from cephalosome by faint dorsal suture line. Posterolateral

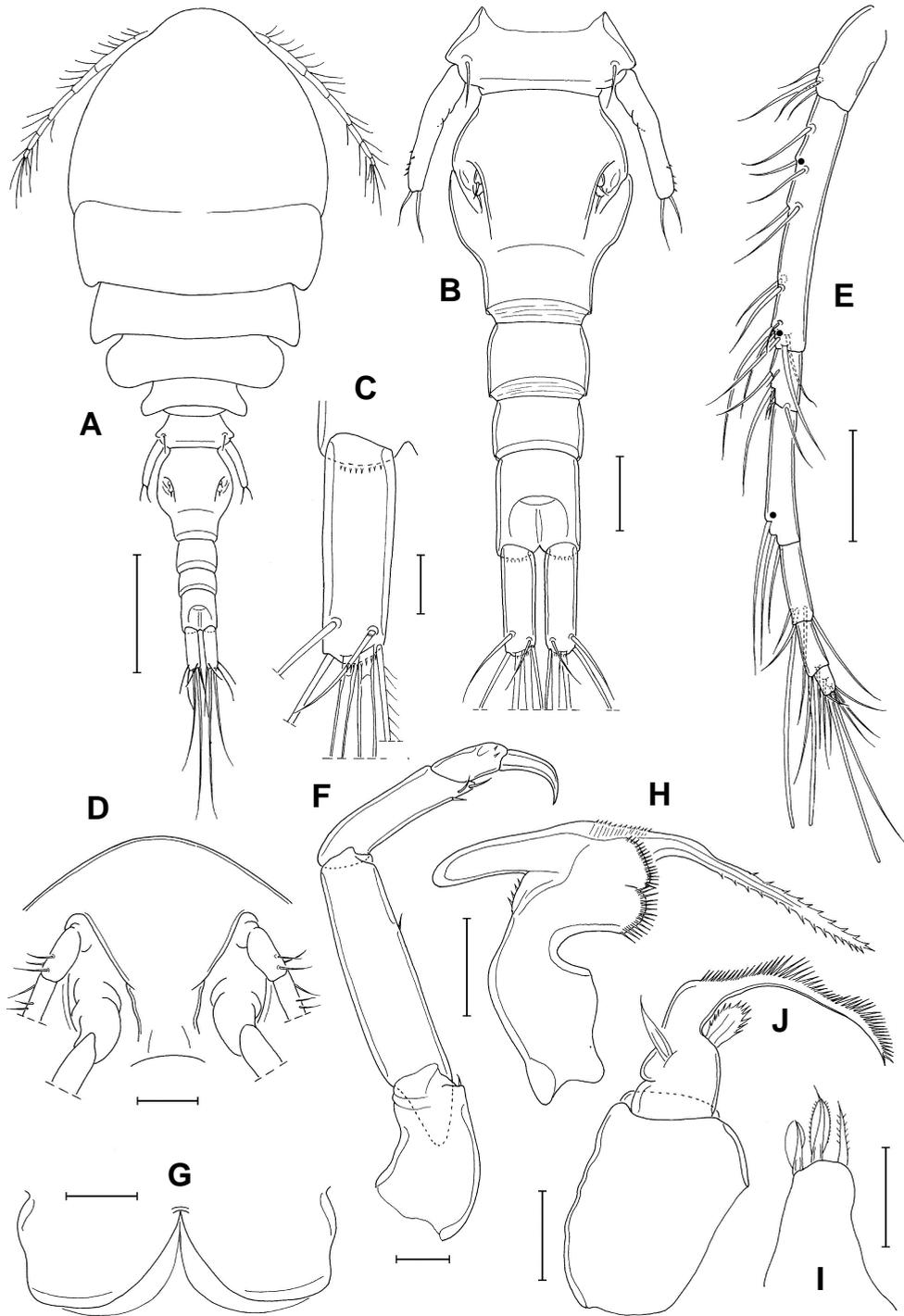


Fig. 25. *Odontomolgus geminus* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus, dorsal; D, rostral area, ventral; E, antennule; F, antenna; G, labrum; H, mandible; I, maxillule; J, maxilla. Scale bars = 0.02 mm (C, F–J), 0.05 mm (B, D, E), 0.2 mm (A).

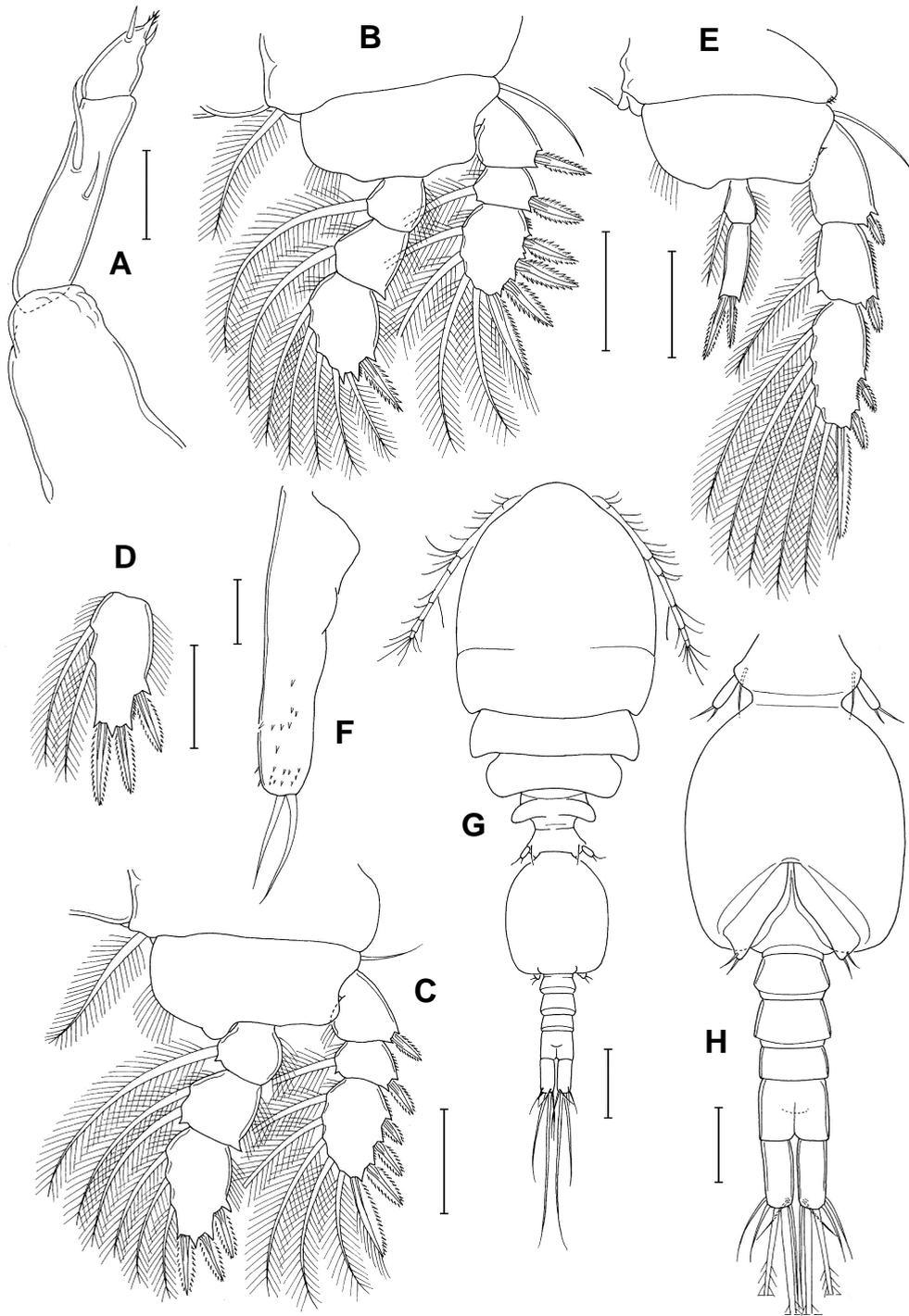


Fig. 26. *Odontomolgus geminus* n. sp. Female: A, maxilliped; B, leg 1; C, leg 2; D, third segment of leg 3 endopod; E, leg 4; F, free segment of leg 5. Male: habitus, dorsal; H, urosome, ventral. Scale bars = 0.02 mm (A, F), 0.05 mm (B-E, H), 0.1 mm (G).

corners of second and third pedigerous somite angular but not pointed. Urosome (Fig. 25B) 5-segmented. Fifth pedigerous somite 127 μm wide, with angular lateral corners. Genital double-somite moderately expanded, with narrower posterior part, 165 \times 123 μm , ratio 1.34 : 1. Genital areas located dorsally. Three abdominal somites 50 \times 68, 37 \times 61, and 70 \times 56 μm . Anal somite with fine spinules along posteroventral margin. Caudal ramus (Fig. 25C) 76 \times 24 μm , ratio 3.17 : 1, with parallel lateral margins, fine spinules along posteroventral margin and 6 caudal setae; outer lateral seta located at distal 0.17 length of ramus; outer lateral, dorsal and outermost terminal setae naked, other 3 setae plumous. Egg sac not seen.

Rostrum broad but with obscure posterior border (Fig. 25D). Antennule (Fig. 25E) slender, 311 μm long, and 7-segmented; armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; all setae smooth and relatively short. Antenna (Fig. 25F) slender and 4-segmented; armature 1, 1, 3, and 2+1 claw; all setae minute. Lengths of 4 segments from proximal to distal 55, 95, 50, and 33 μm , measured along midline. Terminal claw 35 μm and strongly curved distally.

Labrum (Fig. 25G) with hyaline membrane along posterior margin of both lobes. Mandible (Fig. 25H) with distinct proximal notch; inner margin bilobed and clearly demarcated from terminal lash; convex margin with large, digitiform process; terminal lash long, slender, serrate along both margins. Maxillule (Fig. 25I) armed with 3 terminal setae, 2 of them marginated with broad membrane. Maxilla (Fig. 25J) with unarmed basal segment. Distal segment with 2 setae; inner seta foliated, with serrate margins. Lash long, with wavy row of fine spinules along convex margin. Maxilliped (Fig. 26A) 3-segmented, all segments longer than wide. First segment unarmed, slightly narrowed distally. Longest second segment slender, with 2 unequal setae, larger one extending over distal border. Terminal segment tapering, with 2 small setae and tipped with spine-like process bearing 2 barbs on both sides.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod in leg 4. Armature formula as follows :

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-0;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Outer seta on basis of legs 1-4 smooth. Endopod of leg 4 shorter than combined first 2 segments of exopod; second segment 35 \times 12 μm , ratio 2.92 : 1; terminal spines 32 μm (inner) and 26 μm (outer).

Free segment of leg 5 (Fig. 26F) elongate, 92 \times 26 μm , ratio 3.54 : 1, weakly tapering, with proximal expansion, and minute spinules on distal third; 2 terminal seta naked and subequal in length. Leg 6 represented by 2 minute setules in genital area (Fig. 25B).

Male. Body (Fig. 26G) resembling that of female. Length 885 μm . Greatest width 288 μm . Prosome 500 μm long. Urosome (Fig. 26H) 6-segmented. Fifth pedigerous somite 85 μm wide, distinctly narrower than genital somite. Genital somite 168 \times 146 μm , longer than wide, with round corners. Four abdominal somites 28 \times 50, 28 \times 50, 22 \times 47, and 42 \times 47 μm . Caudal ramus 47 \times 21 μm , ratio 2.24 : 1.

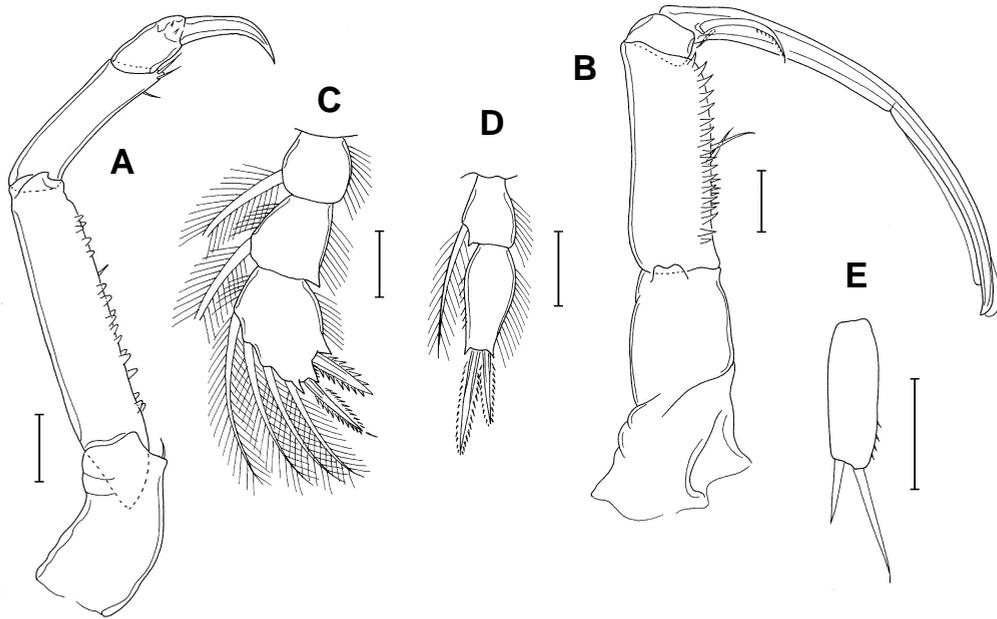


Fig. 27. *Odontomolgus geminus* n. sp., male. A, antenna; B, maxilliped; C, leg 1 endopod; D, leg 4 endopod; E, free segment of leg 5. Scale bars = 0.02 mm (A-E).

Rostrum as in female. Antennule with 3 aesthetascs added at opposite side of locations indicated by dots in Fig. 25E, with armature formula: 4, 13+2 aesthetascs, 6, 3+1 aesthetasc, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc. Antenna (Fig. 27A) added by scale-like spinules along inner margin of second segment.

Labrum, mandible, maxillule, and maxilla as those of female. Maxilliped (Fig. 27B) 3-segmented, with terminal claw. First segment unarmed. Second segment nearly as long as first segment, with spinules along inner margin and 2 subequal setae near middle of inner margin. Third segment short and unarmed. Terminal claw long and slender, with 2 unequal setae proximally.

Endopod of leg 1 (Fig. 27C) with third segment armed with 2 spines and 4 setae (formula II,4); 2 terminal spines nearly equal in length. Second segment of leg 4 with convex margins (Fig. 27D). Free segment of leg 5 (Fig. 27E) nearly rectangular, $27 \times 9 \mu\text{m}$, ratio 3.0 : 1, with 2 terminal naked setae of $11 \mu\text{m}$ (inner) and $22 \mu\text{m}$ (outer). Leg 6 represented by 2 equal, smooth setae on posterior tip of genital flap (Fig. 26H).

Etymology. The specific name *geminus* (“twin” in Latin) alludes to the close resemblance of the new species with *O. forhani* Humes in the shape of female abdomen.

Remarks. *Odontomolgus geminus* n. sp. is similar to *O. rhadinus* (Humes and Ho, 1967) known from Madagascar. Both species have moderately long caudal rami, slender free segment of female leg 5 bearing proximal expansion, and similar antenna. These species are also associated with the same genus of coral host, *Psammocora*. Differences between the two species are in the shape of female genital double-somite which is distinctly longer than wide ($165 \times 123 \mu\text{m}$, ratio 1.34 : 1) and the broader anterior part in *O. geminus* is gently rounded, whereas that of *O. rhadinus* is as long

as wide ($110 \times 108 \mu\text{m}$, ratio 1.02 : 1; see Humes and Ho, 1967) and its anterior part is angular near posterior corners. A row of slender spinules on the inner surface of the second segment of antenna distal to seta recorded in *O. rhadinus* is absent in *O. geminus*. The difference in size of the male caudal ramus is distinct between the two species: it is $47 \times 21 \mu\text{m}$ (ratio 2.24 : 1) in *O. geminus*, but is $28 \times 18 \mu\text{m}$ (ratio 1.55 : 1) in *O. rhadinus*.

***Odontomolgus bulvalis* Humes, 1991**

Material examined. 2 ♀♀, 2 ♂♂ from the scleractinian coral *Merulina ampliata* (Ellis and Solander), in 2 m, Maître Island near Noumea, New Caledonia, 21 June 1971, collected by A. G. Humes.

Remarks. This copepod is new to New Caledonia.

Genus *Schedomolgus* Humes and Stock, 1972

***Schedomolgus tener* (Humes, 1973)**

Material examined. 5 ♂♂ from the scleractinian coral *Parahalomitra irregularis* (Gardiner), in 1.5 m, west of Isle of Mando, New Caledonia, 3 July 1971; 9 ♀♀, 13 ♂♂ from *Parahalomitra irregularis*, in 4 m, west of Isle of Mando, New Caledonia, 15 July 1971. All the specimens collected by A. G. Humes.

Remarks. This species was named originally as *Anchimolgus tener* by Humes (1973b), but is herein reallocated to the genus *Schedomolgus*, since it possesses three-segmented antenna. The above coral is new host record.

***Schedomolgus walteri* n. sp. (Figs. 28–30)**

Material examined. 11 ♀♀, 3 ♂♂ from the scleractinian coral *Lobophyllia corymbosa* (Forskål), in 1 m, near Noumea, New Caledonia, 29 June 1971, collected by A. G. Humes. Holotype (♀; USNM 1016282), allotype (♂; USNM 1016283), and paratypes (9 ♀♀, 1 ♂♂; USNM 1016284) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 28A) with moderately broad prosome and narrow urosome. Length 1.41 mm. Greatest width 540 μm . Prosome 800 μm long, occupying about 57% of body length. First pedigerous somite separated dorsally from cephalosome by faint dorsal suture line. Urosome (Fig. 28B) 5-segmented. Fifth pedigerous somite 205 μm wide, wider than genital double-somite, with minute spinules on lateral tip. Genital double-somite $213 \times 178 \mu\text{m}$, ratio 1.20 : 1, consisting of expanded anterior part bearing gently rounded lateral margins and narrower posterior part, with dorsal demarcation line delimiting these parts. Genital area located dorsally. Three abdominal somites 65×98 , 50×89 , and $95 \times 93 \mu\text{m}$. Caudal ramus $135 \times 41 \mu\text{m}$, ratio 3.29 : 1, with 6 caudal setae; smallest dorsal setae naked, other setae plumous.

Rostrum tapering posteriorly, with obscure posterior margin (Fig. 28C). Antennule (Fig. 28D) markedly slender and elongate, 519 μm long, and 7-segmented; armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; all setae naked. Antenna (Fig. 28E) 3-segmented. First segment 110 μm long, with small distal seta. Second segment about 90 μm long with minute seta on inner margin. Third segment 82 μm long with rudimentary segmentation line

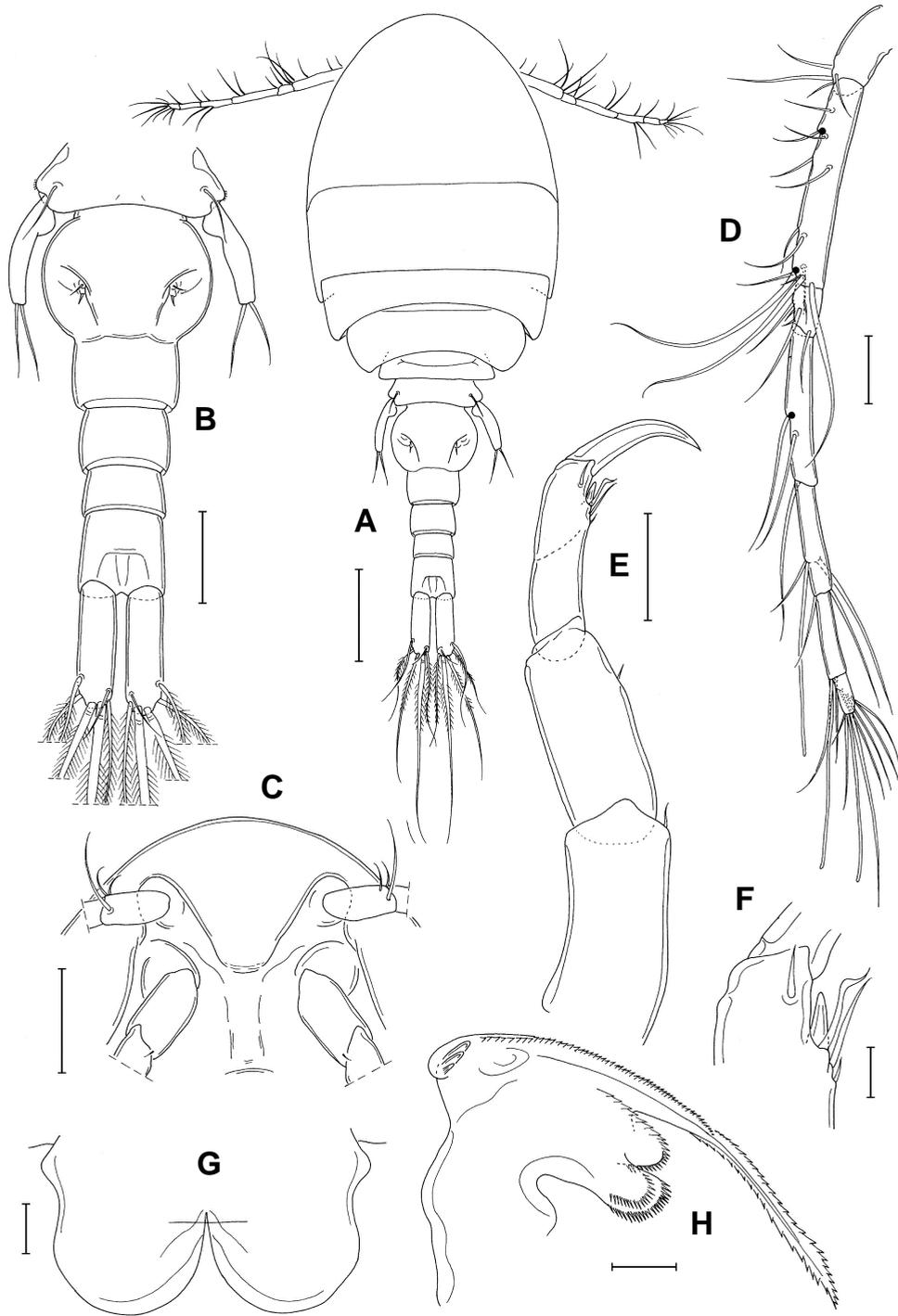


Fig. 28. *Schedomolgus walteri* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, rostral area, ventral; D, antennule; E, antenna; F, distal part of terminal segment of antenna; G, labrum; H, mandible. Scale bars = 0.01 mm (F), 0.02 mm (G, H), 0.05 mm (D, E), 0.1 mm (B, C), 0.2 mm (A).

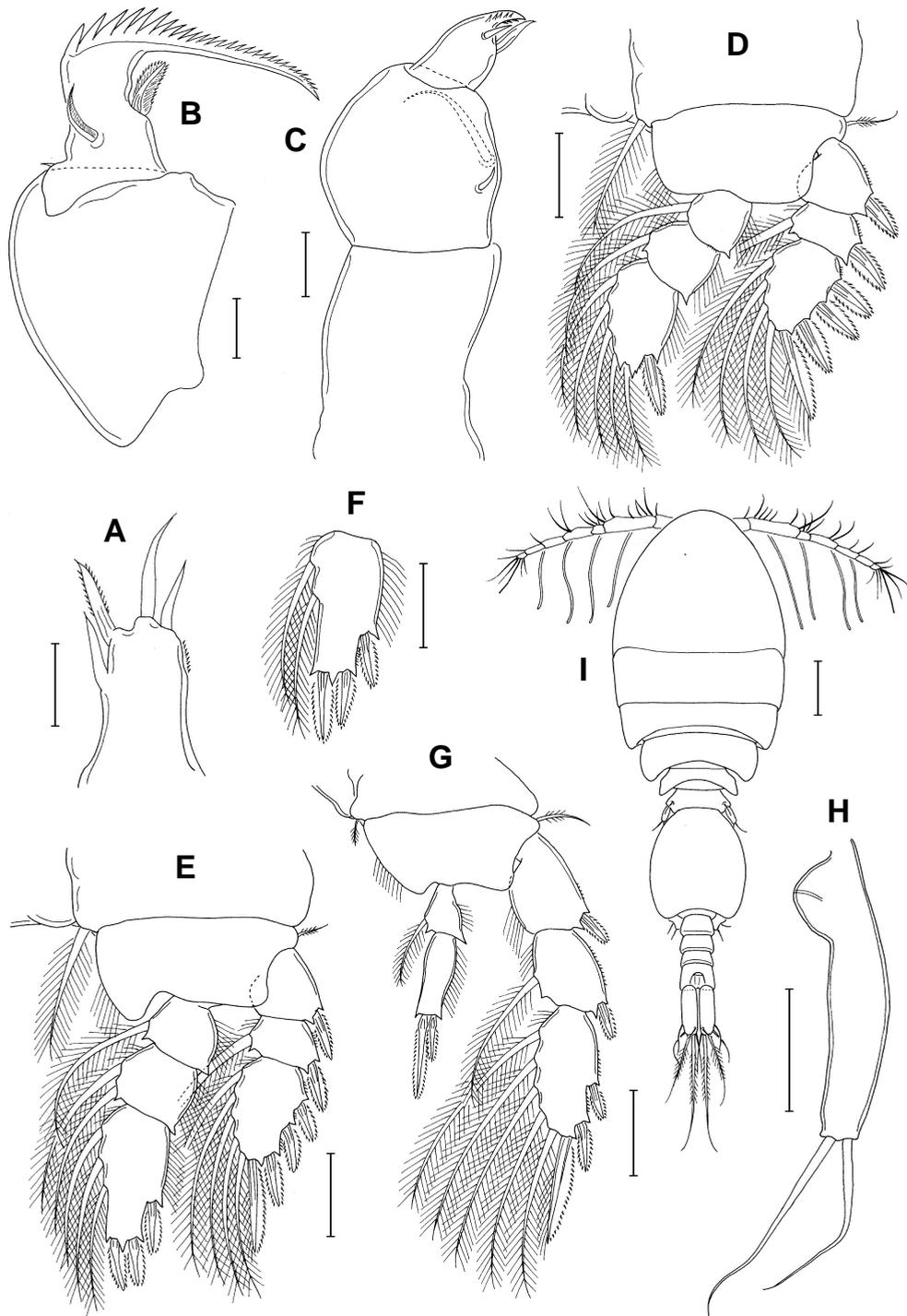


Fig. 29. *Schedomolgus walteri* n. sp. Female: A, maxillule; B, maxilla; C, maxilliped; D, leg 1; E, leg 2; F, third segment of leg 3 endopod; G, leg 4; H, free segment of leg 5. Male: I, habitus, dorsal. Scale bars = 0.02 mm (A-C), 0.05 mm (D-H), 0.1 mm (I).

in middle, characteristically with 4 setae and 1 spiniform process at distal part of inner side, one of setae flame-shaped (Fig. 28F). Terminal claw 62 μm long, distally curved.

Labrum (Fig. 28G) bilobed, each lobe with round posterior margin. Mandible (Fig. 28H) with distinct proximal notch; inner margin distinctly bilobed; convex margin with 3 unequal, digitiform processes, and followed by minute teeth. Terminal lash stiff, with serrate margins. Maxillule (Fig. 29A) armed with 1 lateral, setiform process and 3 terminal setae, one of latter broad with barbed margins. Maxilla (Fig. 29B) with unarmed basal segment. Distal segment with 3 setae: outer proximal seta minute; anterior setae marginated with membrane along inner margin; inner setae marginated on both margins with serrate membrane. Lash forming right angle from segment, with serrate convex margin. Maxilliped (Fig. 29C) 3-segmented. First segment longest among segments, about 1.4 times as long as wide and unarmed. Second segment expanded, as long as wide, with convex outer margin and 2 unequal setae on inner margin. Terminal segment with 1 seta and 1 spine-like seta and terminated by spine-like process bearing 2 rows of spinules.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod in leg 4. Armature formula as follows:

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Outer seta on basis of legs 1-4 small but plumous. Inner seta on coxa of leg 4 minute. Inner side of posterior margin in legs 1-4 with setules. Second segment of leg 4 endopod 53 \times 20 μm ; terminal spines 53 μm (inner) and 28 μm (outer).

Free segment of leg 5 (Fig. 29H) 120 \times 29 μm in maximum size, ratio 4.14 : 1, slightly curved, with distinct proximal expansion; terminal setae naked, 90 μm (inner) and 79 μm (outer). Leg 6 represented by 2 minute setules in genital area (Fig. 28B).

Male. Body (Fig. 29I) similar to that of female, but with narrow prosome. Length 954 μm . Greatest width 308 μm . Prosome 504 μm long. Urosome (Fig. 30A) 6-segmented. Fifth pedigerous somite 117 μm wide, distinctly narrower than genital somite. Genital somite oval, 192 \times 169 μm . Four abdominal somites 27 \times 60, 29 \times 60, 23 \times 58, and 44 \times 60 μm . Caudal ramus 90 \times 29 μm , ratio 4.74 : 1.

Rostrum as in female. Antennule with 3 aesthetascs added at opposite side of locations indicated by dots in Fig. 28D, with armature formula: 4, 13+2 aesthetascs, 6, 3+1 aesthetasc, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc. Antenna (Fig. 30B) added by small scales (or suckers) along inner margin of second segment. Third segment armed with 3 setae and 1 spiniform process (distalmost seta absent, unlike that of female).

Labrum, mandible, maxillule, and maxilla as those of female. Maxilliped (Fig. 30C) 3-segmented, with terminal claw. First segment unarmed. Second segment nearly as long as first segment, with 2 rows of minute spines, 1 row of larger spinules and 2 setae. Third segment short and unarmed. Terminal claw as long as 3 segments combined, with 2 unequal setae proximally.

Endopod of leg 1 (Fig. 30D) with third segment armed with 2 spines and 4 setae (formula II,4); 2 spines on this segment subequal in length. Free segment of leg 5 (Fig. 30E) 29 \times 13 μm , ratio 2,23

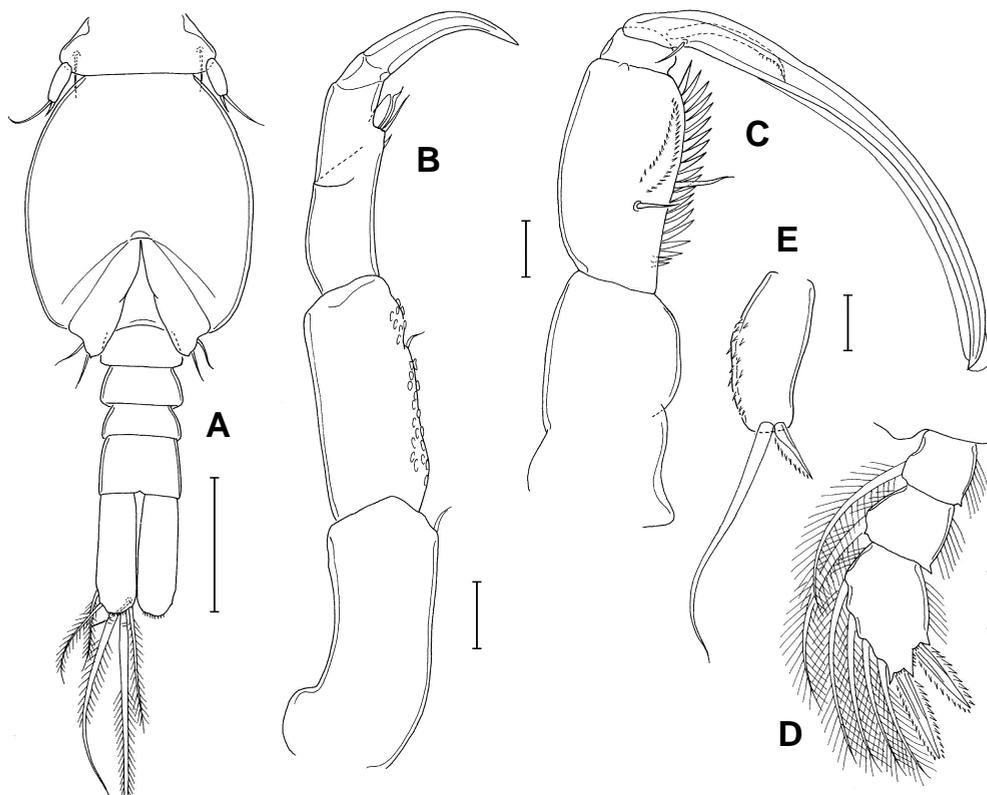


Fig. 30. *Schedomolgus walteri* n. sp., male. A, urosome, ventral; B, antenna; C, maxilliped; D, leg 1 endopod; E, free segment of leg 5. Scale bars = 0.02 mm (B-E), 0.1 mm (A).

: 1, with spinules on convex outer margin and terminally short inner spine (12 μ m) and long, naked outer seta (47 μ m). Leg 6 represented by 2 small setae on posterior tip of genital flap (Fig. 30A).

Etymology. The specific name *walteri* is taken after Mr. T. Chad Walter, a copepodologist in the National Museum of Natural History, Smithsonian Institution, who made the author possible to study the copepod specimens dealt with in this study.

Remarks. The presence of the spiniform process, in addition to setae, near the inner distal corner of the terminal segment of the antenna is a unique character of *Schedomolgus walteri* n. sp. allowing to distinguish this species from all congeners. The free segment of female leg 5 of *S. walteri* bears a distinct proximal swelling, without spinules on its outer surface. Within the genus *Schedomolgus*, only *S. tener* (Humes, 1973) has the proximal swelling of the free segment, otherwise this species is not allied with *S. walteri*.

Schedomolgus majusculus Humes, 1993 was described only with males discovered also from New Caledonia. This species has the unarmed antenna and the longer (81 μ m long, according to Humes, 1993b), and tapering free segment of male leg 5. Therefore *Schedomolgus majusculus* is hardly confused with the new species.

***Schedomolgus tenuicaudatus* n. sp. (Figs. 31-33)**

Material examined. 6 ♀♀, 5 ♂♂ from the scleractinian coral *Acropora rosaria* (Dana), in 2 m, west of Isle of Mando, New Caledonia, 1 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016285), allotype (♂; USNM 1016286), and paratypes (4 ♀♀, 3 ♂♂; USNM 1016287) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 31A) with moderately broad prosome. Length 1.03 mm. Greatest width 358 µm. Prosome 513 µm long, occupying about 50% of body length. First pedigerous somite separated from cephalosome by dorsal suture line. Urosome (Fig. 31B) tapering and 5-segmented. Fifth pedigerous somite 171 µm wide, slightly wider than genital double-somite. Genital double-somite wider than long, 133 × 163 µm, ratio 1 : 1.23, gradually narrowed posteriorly. Genital area located dorsally, at place slightly anterior to middle. Three abdominal somites becoming narrowed posteriorly, 56 × 93, 48 × 73, and 70 × 63 µm. Caudal rami isolated from each other, markedly slender and elongate, each ramus 147 × 18 µm, ratio 8.17 : 1; 6 caudal setae characteristically small, shorter than ramus, aggregated distally, and naked.

Rostrum tapering posteriorly, with obscure posterior margin (Fig. 31C). Antennule (Fig. 31D) short, 212 µm long and 7-segmented; armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; all setae naked. Antenna (Fig. 31E) stout and 3-segmented. First segment short, strongly tapering, nearly as long as wide, with small inner distal seta. Second segment 85 µm long, with 1 small seta on inner margin. Third segment 50 µm long, evenly curved and unarmed. Terminal claw strongly curved proximally, 23 µm long.

Labrum (Fig. 31F) bilobed, each lobe with slightly produced median portion of posterior margin. Mandible (Fig. 31G) with broad proximal notch; inner margin bilobed, each lobe with long spinules; convex margin protruded, with 4 foliaceous processes (or scales) and followed by delicate denticles. Terminal lash stiff, with serrate margins. Maxillule (Fig. 31H) armed terminally with 3 setae, one of them directed laterally. Maxilla (Fig. 31I) with unarmed basal segment. Distal segment with 3 setae: small outer proximal seta, naked anterior seta, and inner seta marginated with broad membrane. Lash as long as segment, with serrate convex margin. Maxilliped (Fig. 32A) 3-segmented. First segment tapering and unarmed. Second segment as long as first segment with 2 unequal inner setae. Terminal segment tapering, with 1 seta and 1 small spine, and terminated by acutely pointed process.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod in leg 4. Armature formula as follows:

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Inner side of posterior margin in legs 1-3 with setules. Second segment of leg 4 endopod 59 × 22 µm; terminal spines 31 µm (inner) and 21 µm (outer).

Free segment of leg 5 (Fig. 32F) curved inward, 128 × 21 µm, ratio 6.10 : 1, with weak inner proximal expansion, several depressions along outer margin; 2 terminal setae naked, 57 µm (inner)

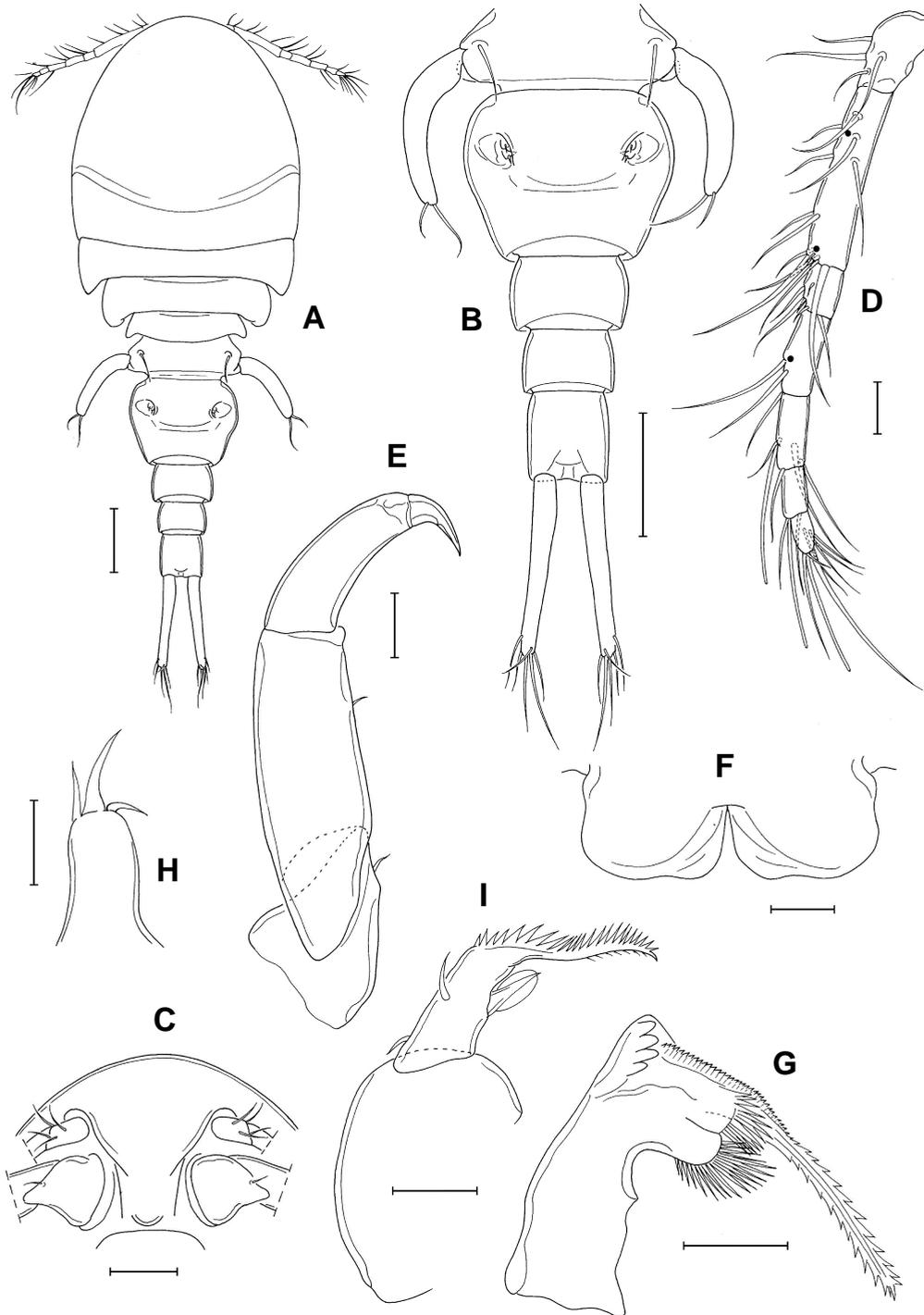


Fig. 31. *Schedomolgus tenuicaudatus* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, rostral area, ventral; D, antennule; E, antenna; F, labrum; G, mandible; H, maxillule; I, maxilla. Scale bars = 0.02 mm (D-I), 0.05 mm (C), 0.1 mm (A, B).

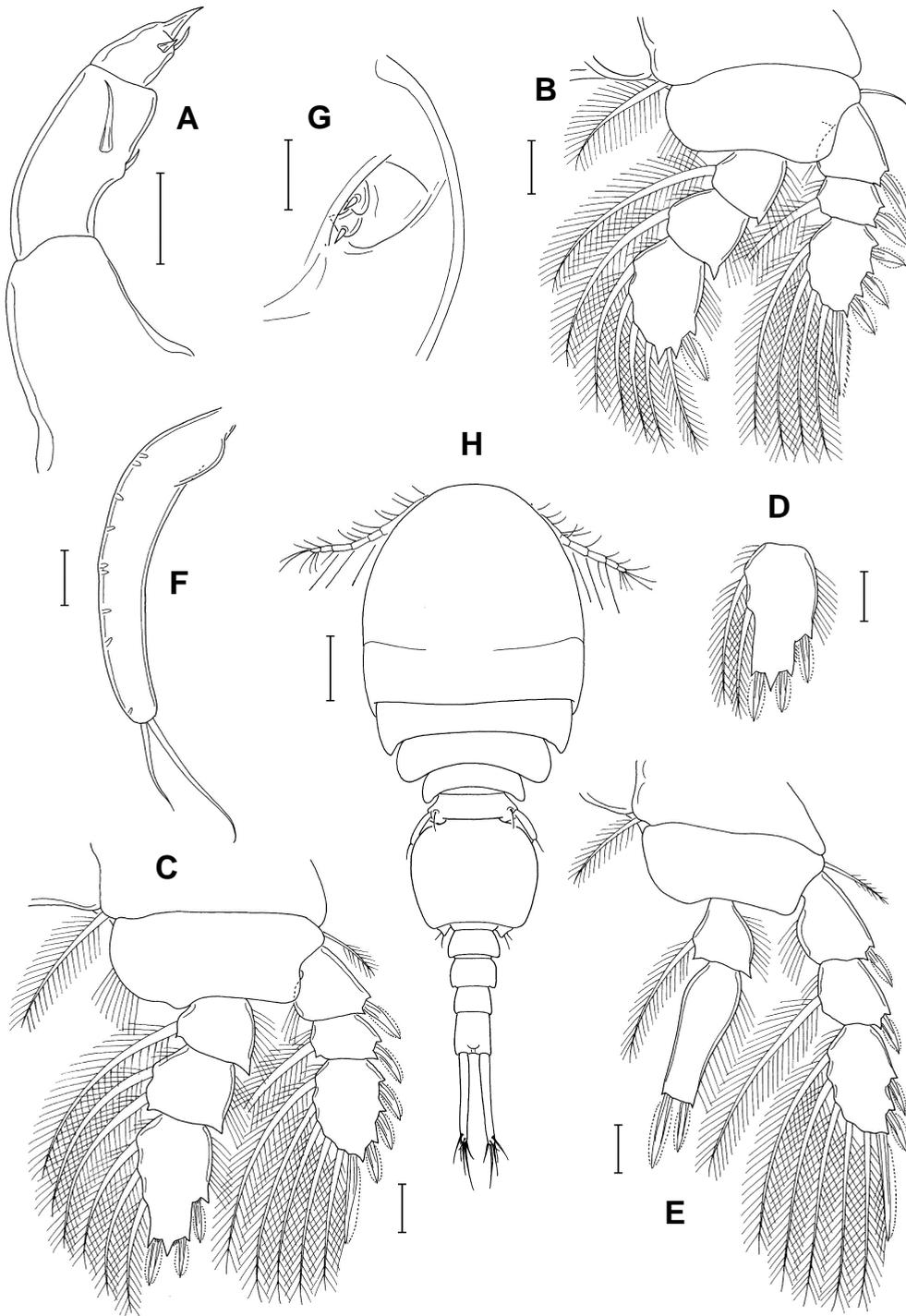


Fig. 32. *Schedomolgus tenuicaudatus* n. sp. Female: A, maxilliped; B, leg 1; C, leg 2; D, third segment of leg 3 endopod; E, leg 4; F, free segment of leg 5. Male: H, habitus, dorsal. Scale bars = 0.02 mm (A-G), 0.1 mm (H).

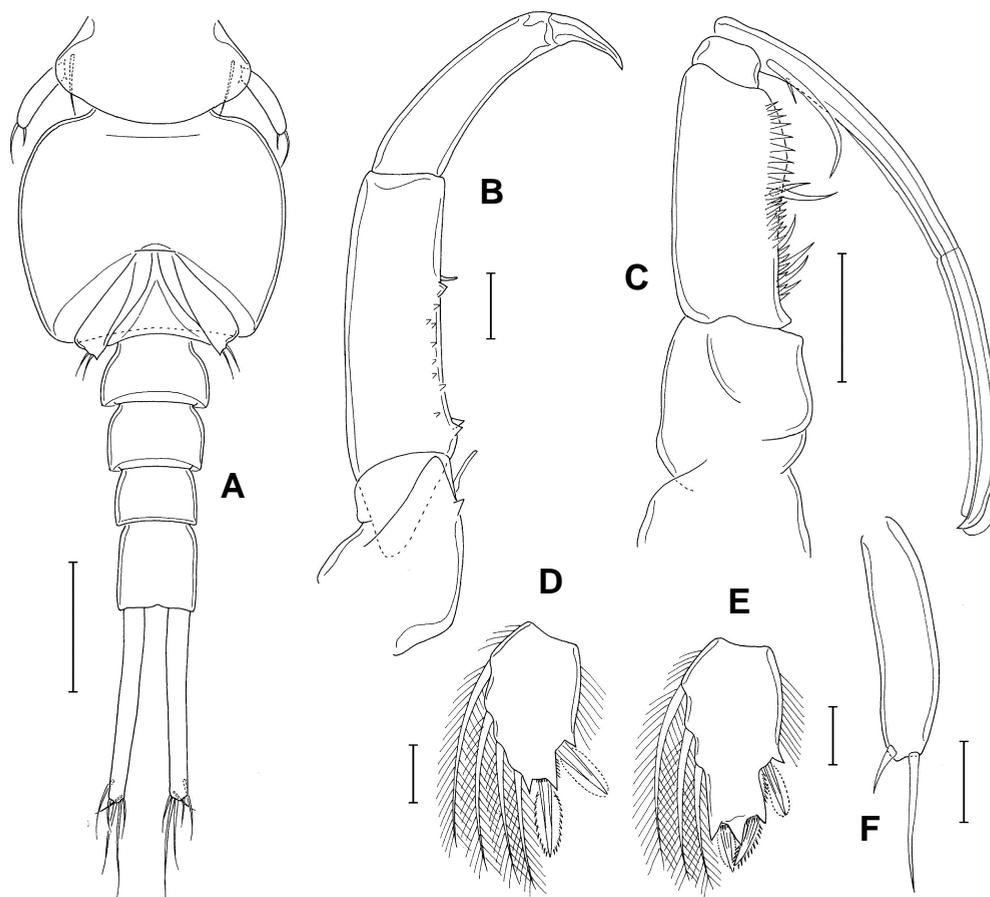


Fig. 33. *Schedomolgus tenuicaudatus* n. sp., male. A, urosome, ventral; B, antenna; C, maxilliped; D, third segment of leg 1 endopod; E, third segment of leg 2 endopod; F, free segment of leg 5. Scale bars = 0.02 mm (B-F), 0.1 mm (A).

and 36 μm (outer). Leg 6 represented by 2 small, spiniform setae in genital area (Fig. 32G).

Male. Body (Fig. 32H) similar to that of female. Length 1.08 mm. Greatest width 363 μm . Prosome 513 μm long. Urosome (Fig. 33A) 6-segmented. Fifth pedigerous somite 148 μm wide, distinctly narrower than genital somite. Genital somite 177 \times 202 μm , wider than long. Four abdominal somites 44 \times 83, 50 \times 73, 44 \times 63, and 65 \times 58 μm . Caudal ramus 148 \times 17 μm , ratio 8.71 : 1.

Rostrum as in female. Antennule with 3 aesthetascs added at opposite side of locations indicated by dots in Fig. 31D, with armature formula: 4, 13+2 aesthetascs, 6, 3+1 aesthetasc, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc. Antenna (Fig. 33B) added by 1 small pointed process at place proximal to distal seta on first segment, and on inner margin of second segment 3 pointed processes (2 proximal and 1 near base of seta) and minute spinules.

Labrum, mandible, maxillule, and maxilla as those of female. Maxilliped (Fig. 33C) 3-segmented,

with terminal claw. First segment unarmed, constricted near middle. Second segment with 2 rows of spinules proximally, 1 row of spinules distally, and near middle of inner margin 2 unequal setae. Third segment short and unarmed. Terminal claw as long as 3 segments combined, with 2 unequal proximal setae.

Endopod of leg 1 with third segment (Fig. 33D) armed with 2 spines and 4 setae (formula II, 4). Two terminal spines of third segment of leg 2 endopod distally touching, with slightly enlarged median process (Fig. 33E). Free segment of leg 5 (Fig. 33F) unornamented, nearly linear, $59 \times 15 \mu\text{m}$, ratio 3.93 : 1, and terminally with short inner seta ($12 \mu\text{m}$) and longer outer seta ($35 \mu\text{m}$). Leg 6 represented by 2 small setae on posterior tip of genital flap (Fig. 33A).

Etymology. The specific name *tenuicaudatus* is a combination of the Latin *tenuis* (slender) and *cauda* (tail), alluding to the slender caudal rami.

Remarks. *Schedomolgus tenuicaudatus* n. sp. is very similar to *S. arcuatipes* associated with the scleractinian coral *Acropora palifera* (Lamarck) from Madagascar (Humes and Ho, 1968a) in having the elongated caudal ramus which is more than seven times as long as wide and a female genital double-somite which is wider than long. The new species is separable from *S. arcuatipes* by having the stouter antenna, the shorter caudal setae with longest one of them at most half as long as the ramus, the shorter abdominal somites with all of them wider than long, and no spinules on the free segment of female leg 5.

***Schedomolgus dumbensis* n. sp. (Figs. 34 and 35)**

Material examined. 2 ♀♀ from the scleractinian coral *Fungia (Fungia) fungites* (Linnaeus), in 2 m, Baie Dumbea, New Caledonia, 6 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016288) has been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratype (1 ♀) in the collection of the author.

Female. Body (Fig. 34A) relatively large, with broad prosome and slender urosome. Length 1.94 mm. Greatest width $858 \mu\text{m}$. Prosome 1.17 mm long, occupying about 60% of body length. First pedigerous somite separated dorsally from cephalosome. Second pedigerous somite dorsally with blunt tubercle near posterior border. Urosome (Fig. 34B) 5-segmented. Fifth pedigerous somite $306 \mu\text{m}$ wide, distinctly wider than genital double-somite, with angular lateral tip bearing minute spinules. Genital double-somite gradually narrowed posteriorly, $272 \times 228 \mu\text{m}$, ratio 1.19 : 1, with lateral furrows delimiting anterior two-thirds and narrower posterior one-third. Genital area located dorsolaterally. Three abdominal somites 72×117 , 61×112 , and $125 \times 117 \mu\text{m}$. Posteroventral margin of anal somite marginated with fine spinules. Caudal ramus $194 \times 56 \mu\text{m}$, ratio 3.46 : 1, with 6 caudal seta; outer lateral seta located at distal third of outer margin; smallest dorsal seta naked, other setae plumous.

Rostrum not developed, with obscure posterior margin. Antennule (Fig. 34C) slender, $563 \mu\text{m}$ long, and 7-segmented; armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; all setae naked; one of setae on first segment enlarged, $162 \mu\text{m}$ long. Antenna (Fig. 34D) tapering and 3-segmented. First segment $125 \mu\text{m}$ long, with 1 minute distal seta. Second segment about $83 \mu\text{m}$ long with minute distal seta on inner margin. Third segment slender, elongated, $219 \mu\text{m}$ long, armed with 3 minute setules near middle of inner margin, and 1 inner distal seta. Terminal claw $63 \mu\text{m}$ long.

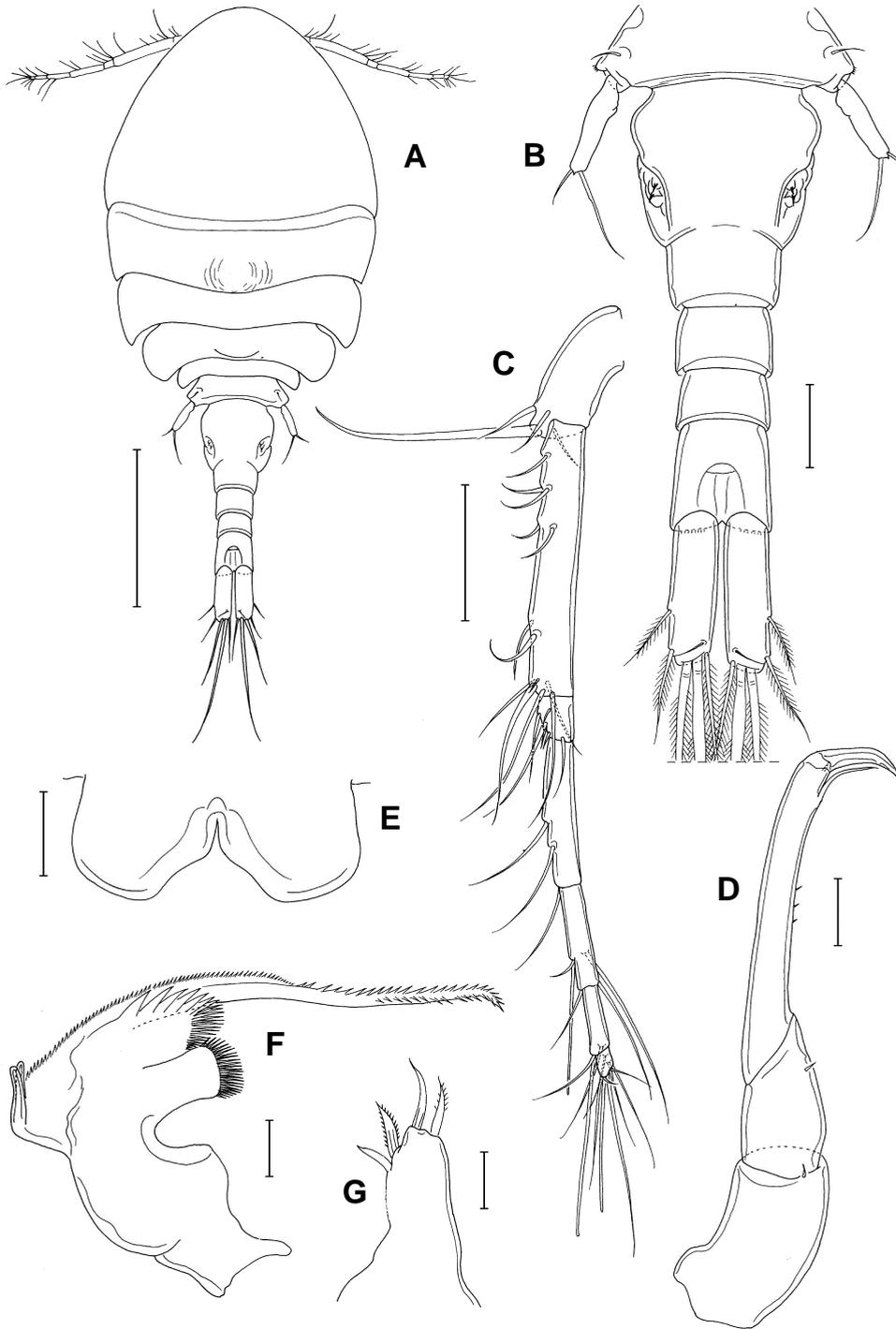


Fig. 34. *Schedomolgus dumbensis* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, antennule; D, antenna; E, labrum; F, mandible; G, maxillule. Scale bars = 0.02 mm (F, G), 0.05 mm (D, E), 0.1 mm (B, C), 0.5 mm (A).

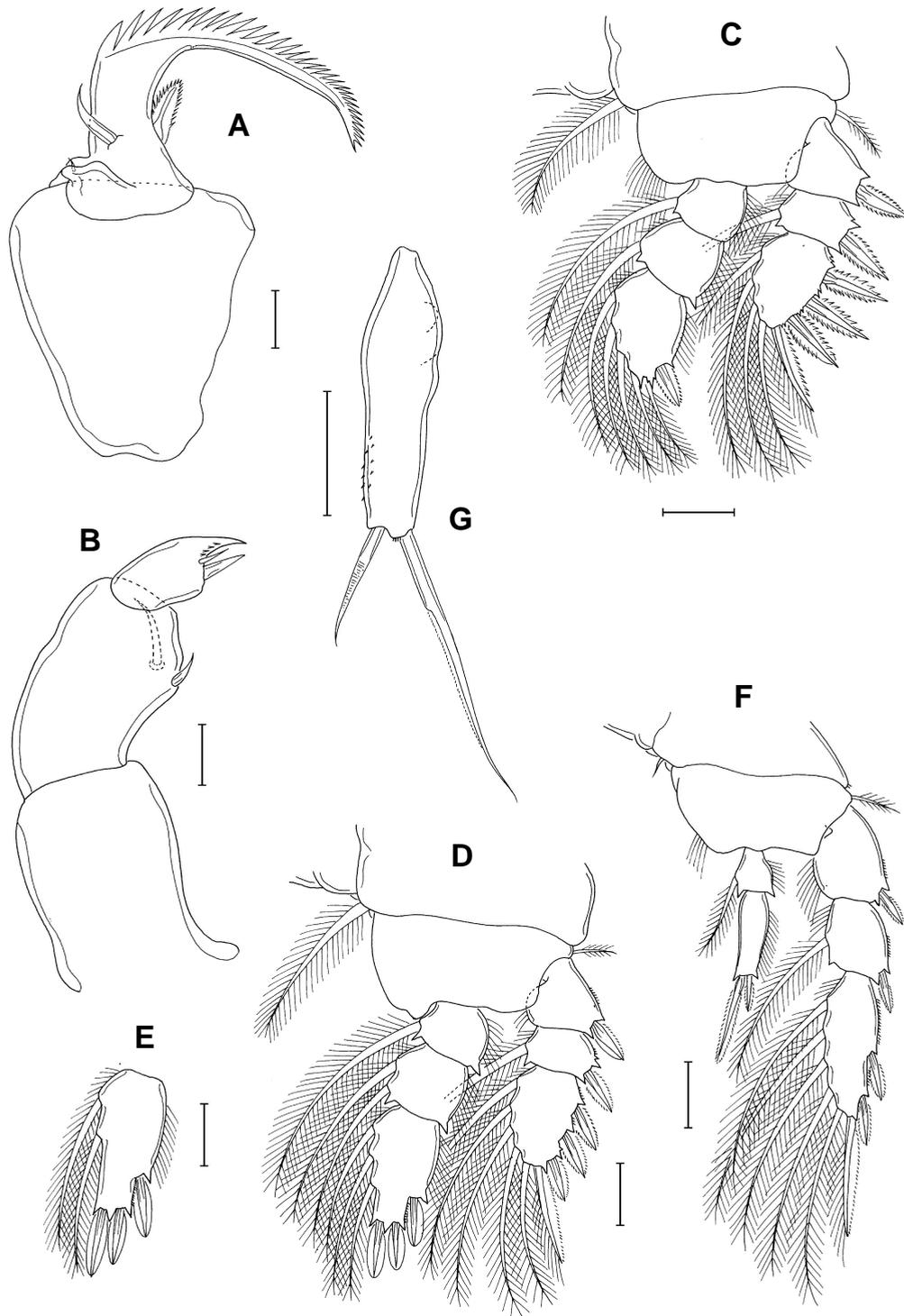


Fig. 35. *Schedomolgus dumbensis* n. sp., female. A, maxilla; B, maxilliped; C, leg 1; D, leg 2; E, third segment of leg 3 endopod; F, leg 4; G, free segment of leg 5. Scale bars = 0.02 mm (A, B), 0.05 mm (C-G).

Labrum (Fig. 34E) bilobed, each lobe with slightly concave median portion of posterior margin. Mandible (Fig. 34F) with deep proximal notch. Inner margin bilobed; distal margin of distal lobe with larger spinules. Convex margin protruded, with 1 pair of long digitiform processes and followed by delicate denticles. Terminal lash long, with spinules along margins. Maxillule (Fig. 34G) armed with 2 subterminal setae (distal one of them serrate) and 2 terminal setae. Maxilla (Fig. 35A) with unarmed basal segment. Distal segment with 3 setae: minute outer proximal seta on ridge, smooth anterior seta, and leaf-like, serrate inner seta. Lash longer than proximal part of segment, with strongly serrate convex margin. Maxilliped (Fig. 35B) 3-segmented. First segment unarmed, and slightly broadened distally. Second segment as long as first segment, with 2 unequal setae on convex inner margin. Terminal segment broadened distally, with 1 seta and 1 spine, and terminated by acutely pointed process bearing 4 minute spinules.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod in leg 4. Armature formula as follows:

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Inner seta on coxa of leg 4 minute. Second segment of leg 4 endopod $65 \times 21 \mu\text{m}$; terminal spines on this segment distinctly unequal, $67 \mu\text{m}$ (inner) and $29 \mu\text{m}$ (outer).

Free segment of leg 5 (Fig. 35G) widest at proximal third, $115 \times 30 \mu\text{m}$, ratio 3.83 : 1, with minute spinules along distal third of outer margin; 2 terminal setae spine-like, $118 \mu\text{m}$ (inner) and $51 \mu\text{m}$ (outer). Leg 6 represented by 2 small spinules in genital area (Fig. 34B).

Male. Unknown.

Etymology. The specific name *dumbensis* is derived from the type locality, Baie Dumba.

Remarks. The body size of *Schedomoligus dumbensis*, n. sp. having the body length of 1.94 mm is remarkable. The recorded next largest body is 1.59 mm long known for *S. tener* (Humes, 1973b). Similarities of these species present in the shape of genital double-somite, the mandible bearing 2 digitiform processes on the convex side, the caudal rami bearing the ratio of the length to width 3.0-3.5 : 1 in the female, and the maxillule bearing four elements.

Although the third segment of antenna is elongated in both species, the armature on this segment is different between these species. This segment in *S. tener* is armed with 2 larger and 1 smaller setae near the middle of inner margin (Humes, 1973b). In contrast, the same segment in *S. dumbensis* is armed with one longer distal seta and three minute setae in the middle of the inner margin. Moreover, *S. dumbensis* possesses the free segment of female leg 5 smaller ($115 \mu\text{m}$ long) than that of *S. tener* ($169 \mu\text{m}$ long, according to Humes, 1973b). In addition, the proximal swelling on the free segment of female leg 5, recorded in *S. tener*, is absent in *S. dumbensis*.

Genus *Scyphuliger* Humes, 1991

***Scyphuliger longicaudatus* n. sp. (Figs. 36-38)**

Material examined. 12 ♀♀, 15 ♂♂ from the scleractinian coral *Acropora convexa* (Dana), in 1 m, north of Pt. Pontillon, Noumea, New Caledonia, 28 June 1971, collected by A. G. Humes.

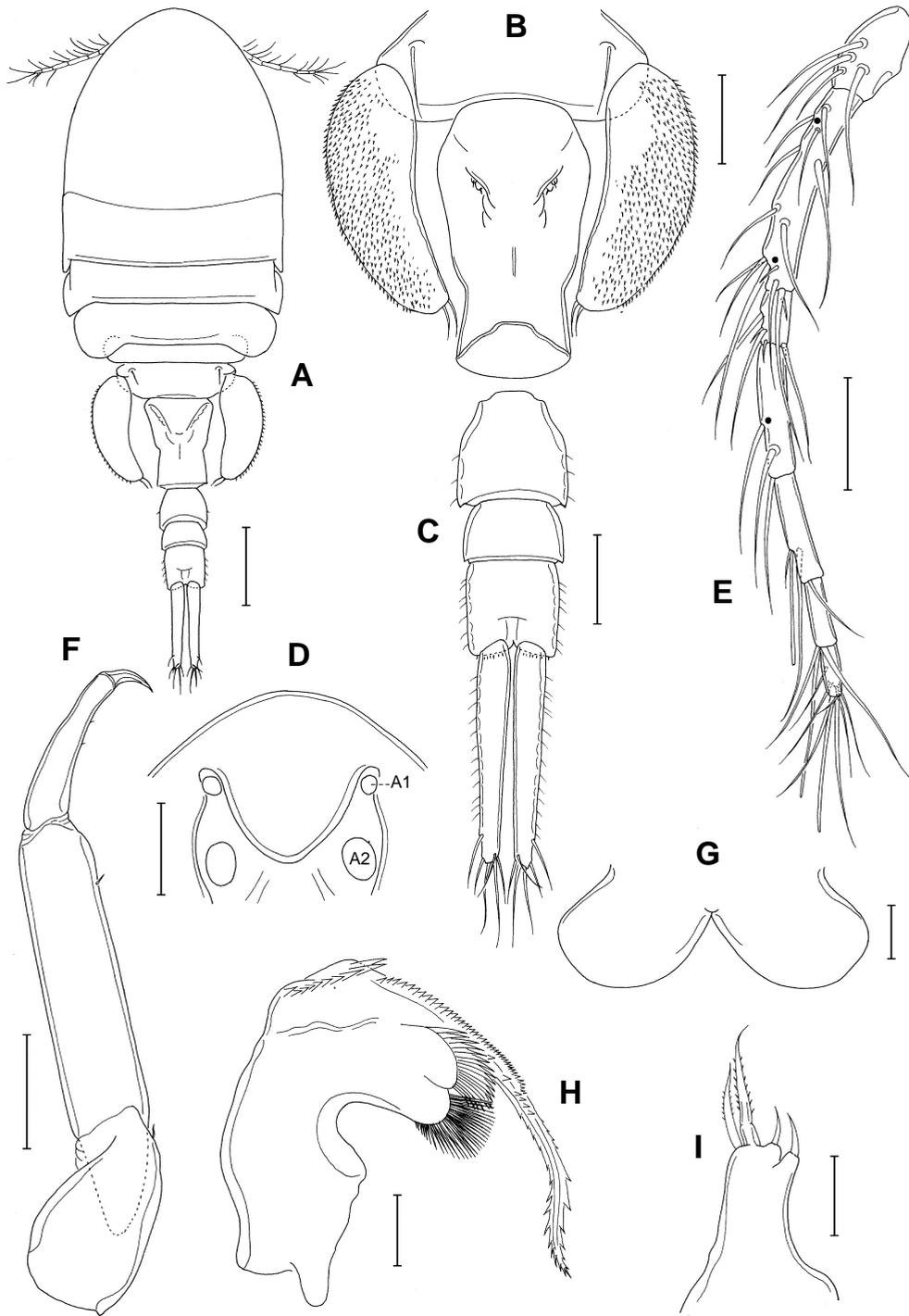


Fig. 36. *Scyphuliger longicaudatus* n. sp., female. A, habitus, dorsal; B, first two urosomal somites, dorsal; C, abdomen, dorsal; D, rostral area, ventral; E, antennule; F, antenna; G, labrum; H, mandible; I, maxillule. Scale bars = 0.02 mm (G-I), 0.05 mm (E, F), 0.1 mm (B-D), 0.2 mm (A).

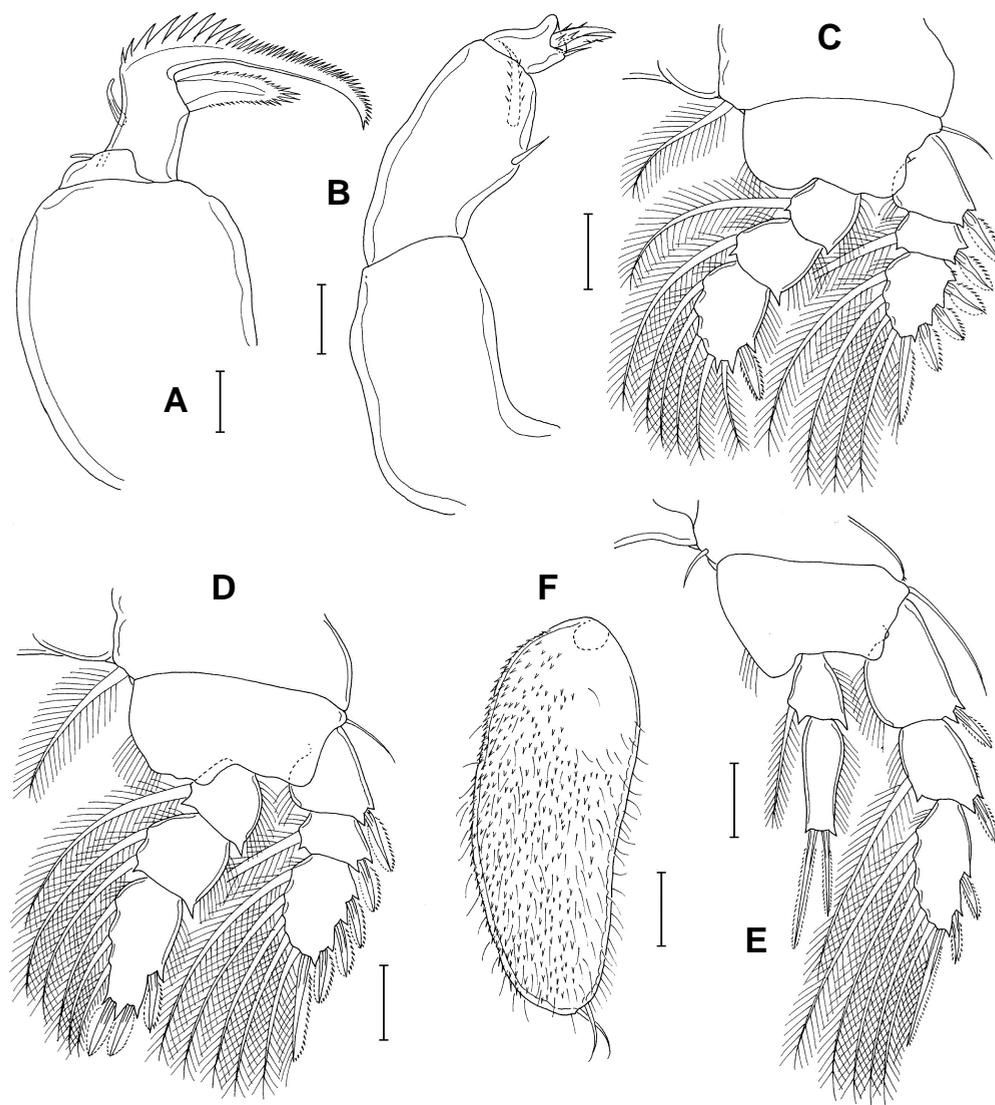


Fig. 37. *Scyphuliger longicaudatus* n. sp., female. A, maxilla; B, maxilliped; C, leg 1; D, leg 2; E, leg 4; F, free segment of leg 5. Scale bars = 0.02 mm (A, B), 0.05 mm (C-F).

Holotype (♀; USNM 1016289), allotype (♂; USNM 1016290), and paratypes (10 ♀♀, 12 ♂♂; USNM 1016291) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 36A) with moderately broad prosome and narrow urosome. Length 1.68 mm. Greatest width 553 μ m. Prosome 912 μ m long, with nearly parallel lateral margins. First pedigerous somite demarcated from cephalosome by faint dorsal suture line. Posterolateral corners of first pedigerous somite produced posteriorly. Dorsal surface of cephalosome and first pedigerous somite ornamented with numerous, minute, villiform sensillae (not illustrated in Fig. 36A). Urosome 5-

segmented (Fig. 36B, C). Fifth pedigerous somite 300 μm wide, distinctly wider than genital double-somite. Genital double-somite 288 \times 168 μm , slightly tapering posteriorly toward shallow lateral constriction. Ratio 1.42 : 1. Dorsal surface of somite showing indentation. Genital areas located dorsally. Three abdominal somites from anterior to posterior 109 \times 121, 68 \times 112, and 103 \times 101 μm . First abdominal somite distinctly narrowed proximally. First abdominal and anal somite with fine sensillae on lateral margins.

Caudal ramus elongated, 241 \times 36 μm , ratio 6.69 : 1, weakly tapering, ornamented with fine sensillae along outer lateral margin, with 6 short setae. Outer lateral seta located subterminally. Longest inner one of 2 median terminal setae 94 μm at most. Egg sac not seen.

Rostrum with distinct posterior contour as in Fig. 36D. Antennule (Fig. 36E) slender and 312 μm long. Armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc. All setae smooth. Antenna (Fig. 36F) 3-segmented and tapering, each segment 75, 150, and 68 μm from proximal to distal. First and second segments with minute setae, respectively. Third segment distinctly narrowed distally with 2 obscure setae on inner margin. Terminal claw small, 23 μm .

Labrum (Fig. 36G) with 2 divergent posteroventral lobes. Mandible (36H) with distinct proximal notch; inner margin bilobed, each lobe bearing tuft of long spinules; convex margin with about 10 spinules and followed by small denticles; terminal lash moderately long with 4-6 spinules proximally and serrate margins. Maxillule (Fig. 36I) with 1 subterminal seta mounted on papilla-like process, and 3 unequal terminal setae. Maxilla (Fig. 37A) with second segment having 3 setae : inner seta lamellate, large, as long as half length of lash. Lash with larger spines proximally and followed by minute spinules on convex margin. Maxilliped (Fig. 37B) with first segment unarmed. Second segment with 2 setae; larger distal one of them with spinules on margins; third segment truncated, armed terminally with 2 spines and 1 small seta.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod of leg 4. Armature formula as follows :

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Outer seta on basis of legs 1-4 naked. Inner seta on coxa of leg 4 small and naked. Second segment of leg 4 endopod 75 \times 28 μm , with terminal spines of 83 μm (inner) and 56 μm (outer).

Free segment of leg 5 (Fig. 37F) suboval, 281 \times 108 μm , ratio 2.60 : 1, with slightly concave inner margin and slightly convex outer margin, minute spinules and sensillae covered on all surfaces; two terminal setae small, both about 46 μm long. Leg 6 represented by 2 minute setae in genital area.

Male. Body resembling in general form that of female, but with incomplete demarcation between cephalosome and first pedigerous somite. Length 1.48 mm and greatest width 482 μm . Urosome (Fig. 38B) 6-segmented. Fifth pedigerous somite distinctly narrower than genital somite. Genital somite broader than long, 265 \times 315 μm , with round anterior and posterior corners, and many sensillae on lateral margins. Four abdominal somites 53 \times 91, 59 \times 93, 44 \times 85, and 85 \times 85 μm . Second abdominal and anal somites bearing sensillae on lateral margins.

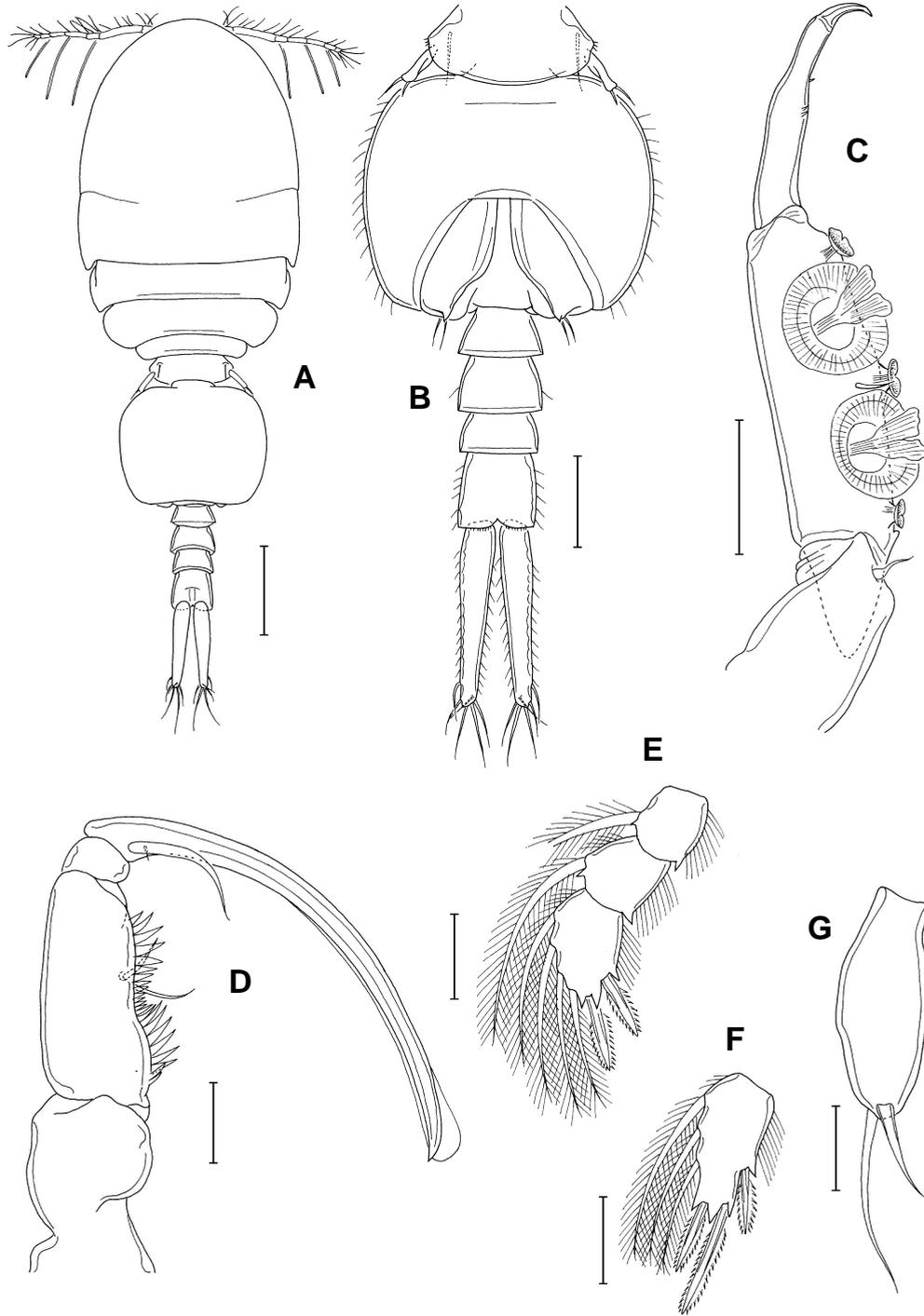


Fig. 38. *Scyphuliger longicaudatus* n. sp., male. A, habitus, dorsal; B, urosome, ventral; C, antenna; D, maxilliped; E, leg 1 endopod; F, third segment of leg 2 endopod; G, free segment of leg 5. Scale bars = 0.02 mm (G), 0.05 mm (C-F), 0.1 mm (B), 0.2 mm (A).

Caudal ramus similar to that of female, $206 \times 38 \mu\text{m}$, ratio 5.42 : 1, with many sensillae on lateral margins.

Rostrum like that of female. Antennule resembling that of female but 3 aesthetascs added, 2 on second and 1 on fourth segments, as shown by dots in Fig. 36E. Antenna (Fig. 38C) with first segment having 1 distal inner seta. Second segment with inner seta near middle, and 3 small and 2 large (each placed between small suckers alternately) suckers on inner margin. Third segment tapering, with 3 minute setae on inner margin and short terminal claw.

Labrum, mandible, maxillule, and maxilla like those of female. Maxilliped (Fig. 38D) with first segment unarmed and distally expanded. Second segment with 2 similar inner setae and row of spinules (spinules shorter in middle of row). Small third segment unarmed. Claw slightly longer than proximal segments combined, evenly curved, with 2 very unequal proximal setae.

Legs 1-4 similar to those of female, but sexual dimorphism in legs 1 and 2. Leg 1 (Fig. 38E) with endopod having armature formula 0-1; 0-1; I, I, 4. Endopod of leg 2 with same armature formula as that of female (Fig. 38F), but outer one of 2 terminal spines distinctly longer than other spines.

Leg 5 with free segment (Fig. 38G) suboval, widest in middle, $52 \times 22 \mu\text{m}$, ratio 2.36 : 1. Two terminal setae $44 \mu\text{m}$ (outer) and $25 \mu\text{m}$ (inner).

Leg 6 as posteroventral flap on genital somite bearing 2 small setae (Fig. 38B).

Etymology. The specific name *longicaudatus* is a combination of the Latin *longus* (=long) and *cauda* (=tail). It alludes to the long caudal rami of the species.

Remarks. Five species have been recorded in the genus *Scyphuliger* as associates of scleractinian corals of the genus *Acropora*. The elongated caudal rami (the ratio of the length to width being 6.69 : 1) seems to be the main diagnostic feature of *Scyphuliger longicaudatus* n. sp. Such elongated caudal rami exceeding five times as long as wide were described in *S. aristoides* Humes, 1993, *S. manifestus* Humes, 1991, and *S. tenuatus* (Humes, 1990). These three species can be separated from the *S. longicaudatus* by the following ways :

Scyphuliger aristoides, known only by females, possesses only three setae on the maxillule (four in *S. longicaudatus*), the longer free segment of female leg 5 with the ratio of the length to width 1.85 : 1 (Humes, 1993b), in contrast to the ratio 2.60 : 1 in *S. longicaudatus*, the abdominal somites each longer than wide (second abdominal somite is distinctly wider than long in *S. longicaudatus*), and no setules on lateral margins of the anal somite and caudal rami.

Scyphuliger manifestus has the genital double-somite gradually narrowed posteriorly (constricted posteriorly in *S. longicaudatus*), only three setae on the maxillule, the free segment of female leg 5 proximally narrowed, and the abdominal somites and caudal rami bearing no setules on margins.

Scyphuliger tenuatus has only three setae on the maxillule, the slender free segment of female leg 5, and the abdominal somites and caudal rami bearing no setules. Two larger suckers on the second segment of male antenna, which are balloon-like hyaline processes (Humes, 1990b), are different from those of *S. longicaudatus*, as well.

***Scyphuliger latus* n. sp. (Figs. 39-41)**

Material examined. 3 ♀♀, 1 ♂ from the scleractinian *Acropora exilis* (Brook), in 1 m, west of Isle of Mando, New Caledonia, 15 July 1971, collected by A. G. Humes. Holotype (♀; USNM

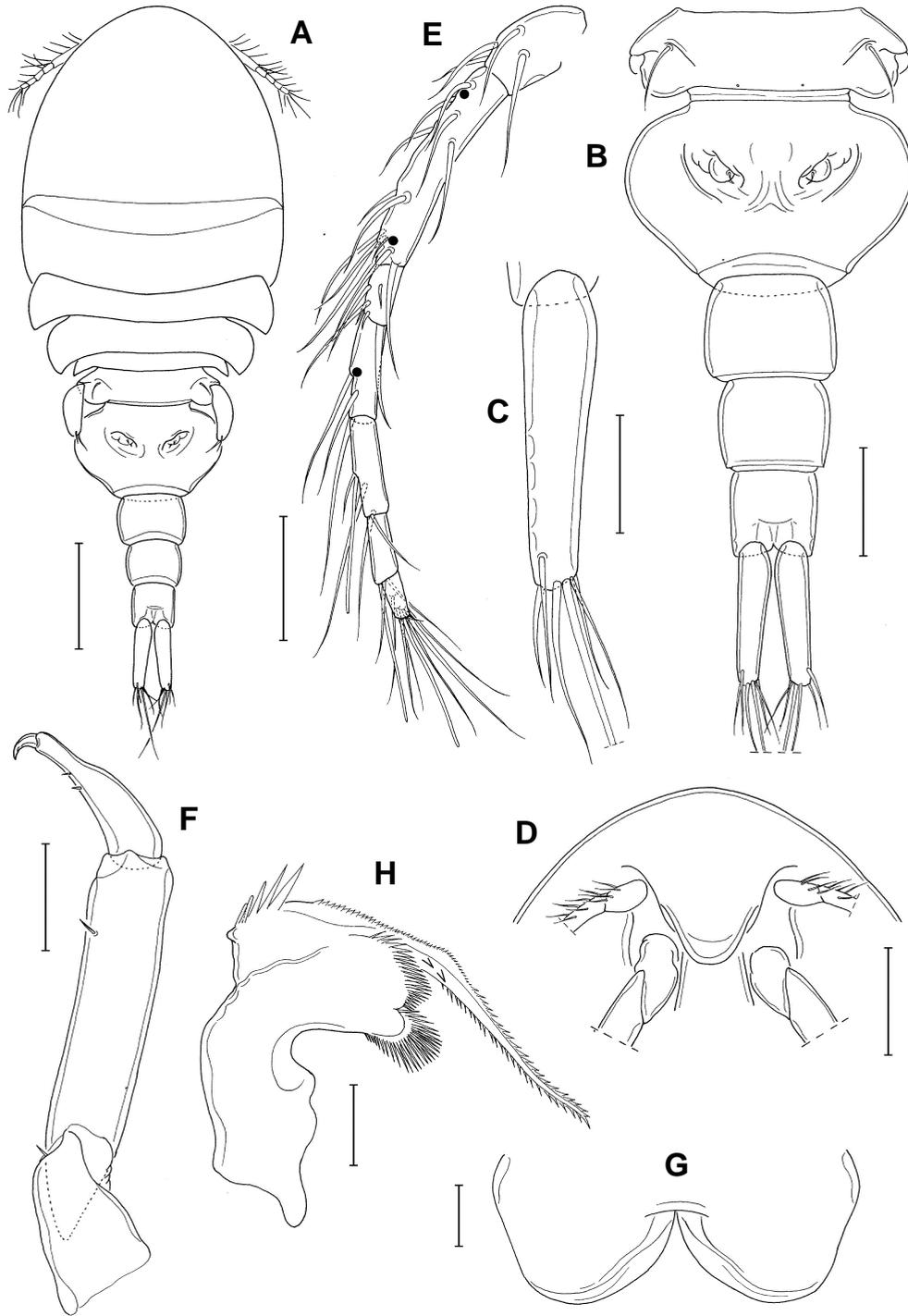


Fig. 39. *Scyphuliger latus* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, left caudal ramus, dorsal; D, rostral area, ventral; E, antennule; F, antenna; G, labrum; H, mandible. Scale bars = 0.02 mm (G, H), 0.05 mm (C, E, F), 0.1 mm (B, D), 0.2 mm (A).

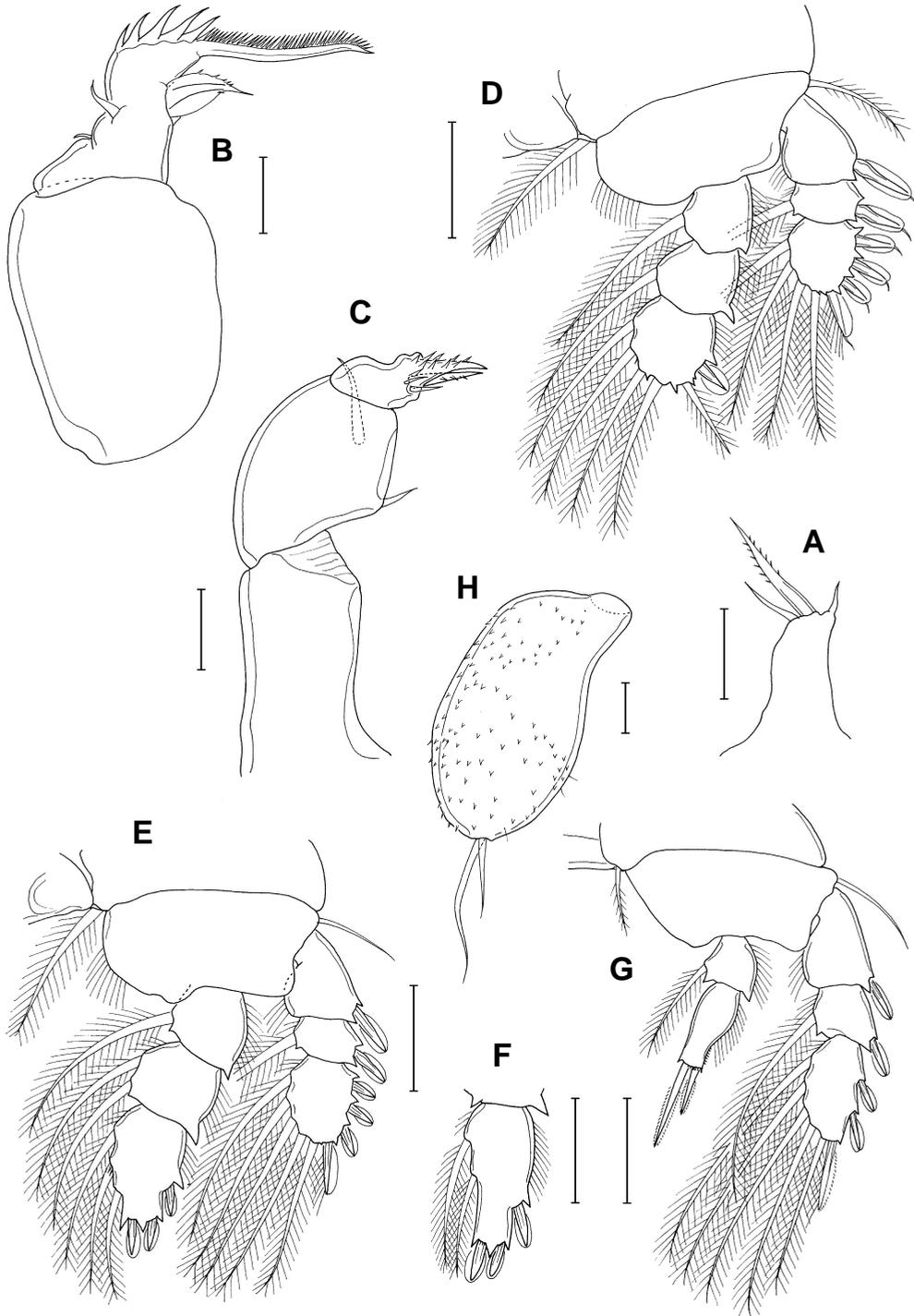


Fig. 40. *Scyphuliger latus* n. sp., female. A, maxillule; B, maxilla; C, maxilliped; D, leg 1; E, leg 2; F, third endopodal segment of leg 3; G, leg 4; H, free segment of leg 5. Scale bars = 0.02 mm (A-C, H), 0.05 mm (D-G).

1016293), allotype (♂; USNM 1016294: dissected and mounted on a slide), and paratype (1 ♀; USNM 1016295) have been deposited in the National Museum of Natural History, Smithsonian Institution. Dissected paratype (1 ♀) in the collection of the author.

Female. Body (Fig. 39A) moderately broad. Length 1.29 mm. Greatest width 485 µm. Prosome 685 µm long. First pedigerous somite demarcated from cephalosome by faint dorsal transverse furrow. Posterolateral corners of second to fourth pedigerous somite angular. Urosome (Fig. 39B) 5-segmented. Fifth pedigerous somite broad, 263 µm wide. Genital double-somite distinctly wider than long, markedly expanded laterally, 175 × 268 µm, with strongly convex lateral margins and strongly tapering posterior part. Genital areas located dorsally. Three abdominal somites gradually narrowed, 90 × 123, 85 × 103, and 80 × 75 µm from anterior to posterior.

Caudal ramus (Fig. 39C) weakly tapering, 136 × 32 µm, ratio 4.25 : 1; 6 caudal setae naked, longest inner one of 2 median terminal setae 153 µm. Egg sac not seen.

Rostrum consisting of broader proximal and narrower distal parts (Fig. 39D). Antennule (Fig. 39E) 268 µm long and 7-segmented; armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; all setae smooth. Antenna (Fig. 39F) 3-segmented. First 2 segments each armed with 1 small seta. Third segment distinctly tapering, with 2 minute setae on inner margin; terminal claw small and strongly curved.

Labrum (Fig. 39G) with 2 posteroventral lobes. Mandible (39H) with distinct proximal notch. Inner margin bilobed, each lobe bearing tuft of long spinules. Convex margin with 5 spines (2 blunt proximal spines plus 3 pointed distal spines) and followed by small denticles. Lash serrate on both margins, with 2 proximal denticles. Maxillule (Fig. 40A) with 3 terminal setae, 2 of them directed obliquely. Maxilla (Fig. 40B) with second segment having 3 setae: inner seta lamellate. Lash with 5 larger spines proximally and followed by minute spinules on convex margin. Maxilliped (Fig. 40C) with first segment unarmed. Second segment with 2 unequal setae and protruded inner margin. Third segment terminated by spine-like process bearing several spinules, with 2 small setae, 1 spine-like seta, and corrugated outer margin.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod of leg 4. Armature formula as follows:

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Outer seta on basis of leg 1 weakly plumous (Fig. 40D); those of legs 2-4 naked. Second segment of leg 4 endopod 41 × 19 µm, with terminal spines of 43 µm (inner) and 24 µm (outer) (Fig. 40G).

Free segment of leg 5 (Fig. 40H) broadened distally, 110 × 58 µm, ratio 1.90 : 1, with round terminal margin, denticles on all surfaces, and 2 terminal setae of 59 µm and 32 µm. Leg 6 represented by 2 minute setae in genital area (Fig. 39B).

Male. Body (Fig. 41A) resembling that of female, but first pedigerous somite fused with cephalosome. Length 1.10 mm and greatest width 425 µm. Urosome (Fig. 41B) 6-segmented. Fifth pedigerous somite short and distinctly narrower than genital somite, 183 µm wide. Genital

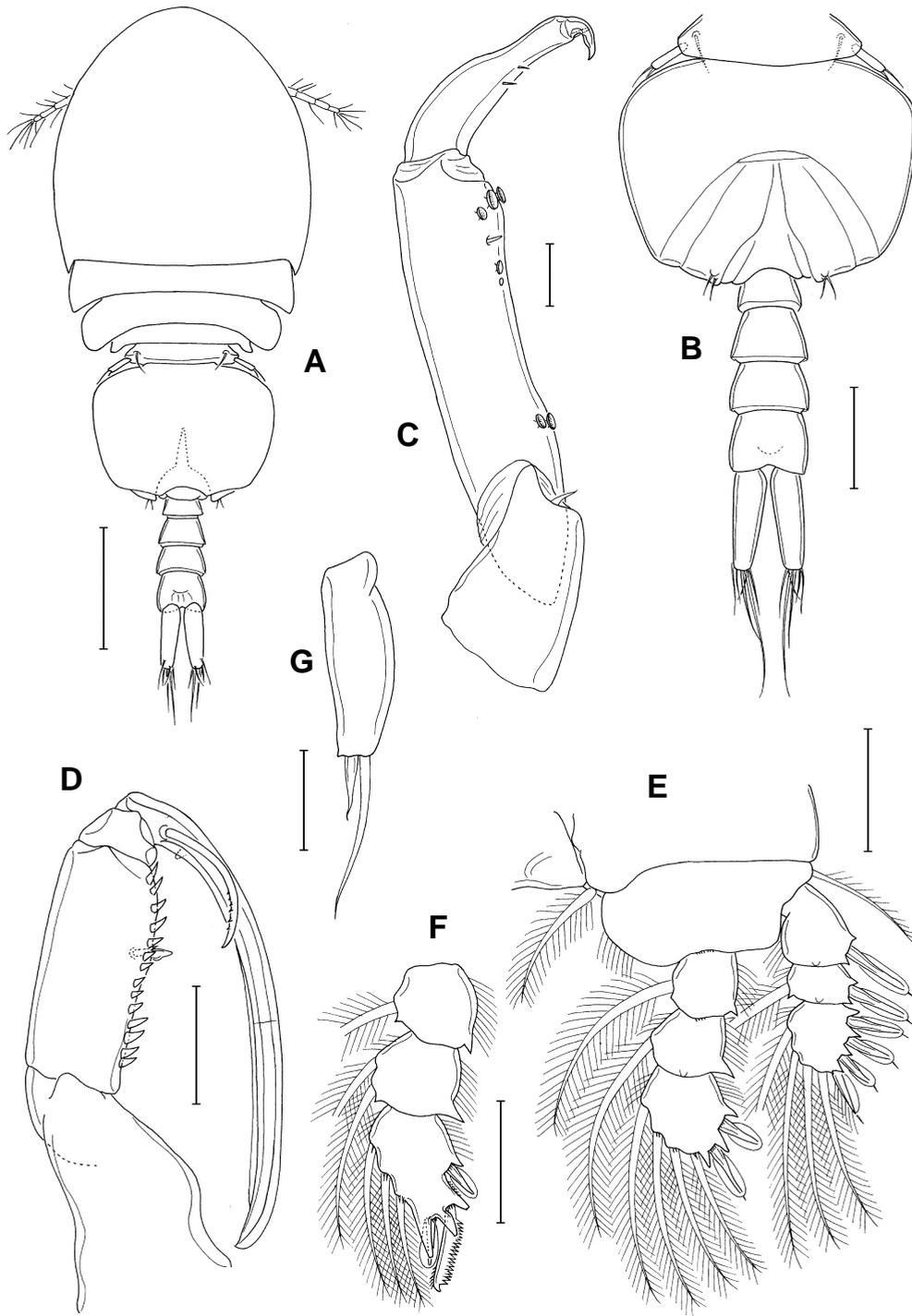


Fig. 41. *Scyphuliger latus* n. sp., male. A, habitus, dorsal; B, urosome, ventral; C, antenna; D, maxilliped; E, leg 1; F, leg 2 endopod; G, free segment of leg 5. Scale bars = 0.02 mm (C, G), 0.05 mm (D-F), 0.1 mm (B), 0.2 mm (A).

somite large, wider than long, $223 \times 292 \mu\text{m}$, slightly narrowed distally. Four abdominal somites unusually broadened distally, 30×63 , 55×75 , 50×77 , and $60 \times 77 \mu\text{m}$.

Caudal ramus similar to that of female, $100 \times 33 \mu\text{m}$, ratio 3.03 : 1.

Rostrum like that of female. Antennule resembling that of female but 3 aesthetascs added, 2 on second and 1 on fourth segments, as shown by dots in Fig. 39E. Antenna (Fig. 41C) with second segment bearing 1 subdistal seta, 7 small suckers (2 proximal, 2 subdistal, and 3 distal), one of 2 subdistal suckers obscure. Third segment tapering. Terminal claw small and strongly curved.

Labrum, mandible, maxillule, and maxilla like those of female. Maxilliped (Fig. 41D) with first segment unarmed and distally narrowed. Second segment with 2 small inner setae (one of them thick) and row of blunt spinules on inner margin. Small third segment unarmed. Claw as long as proximal segments combined, proximally with 1 long seta, 1 minute setule, and 1 papilla-like process.

Legs 1-4 similar to those of female, but with sexual dimorphism in legs 1 and 2. Leg 1 (Fig. 41E) with third endopodal segment bearing 2 spines and 4 setae (formula I, I, 4). Endopod of leg 2 (Fig. 41F) with third segment bearing enlarged distal processes and saw-like, transformed median spine.

Leg 5 with free segment (Fig. 41G) widest in middle, $40 \times 13 \mu\text{m}$, ratio 3.08 : 1. Two terminal setae very unequal, larger one exceeding twice as long as smaller one.

Leg 6 represented by posteroventral flap on genital somite bearing 2 small setae (Fig. 41B).

Etymology. The specific name *latus* (“wide” in Latin) alludes to the broad genital double-somite in the female.

Remarks. In all known species of the genus *Scyphuliger* the female genital double-somite is longer than wide. By having the somite which is distinctly wider than long, *S. latus* can be readily separated from all congeners. The presence of the extremely small suckers on the second segment of the male antenna is also a distinguishing character.

***Scyphuliger paucisurculus* n. sp. (Figs. 42–44)**

Material examined. 5 ♀♀, 5 ♂♂ from the scleractinian coral *Acropora exilis* (Brook), in 2 m, west of Isle of Mando, New Caledonia, 15 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016296), allotype (♂; USNM 1016297), and paratypes (3 ♀♀, 3 ♂♂; USNM 1016298) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 42A) relatively narrow. Length 1.22 mm. Greatest width $440 \mu\text{m}$. Prosoma $635 \mu\text{m}$ long. First pedigerous somite demarcated from cephalosome by faint dorsal transverse furrow. Urosome (Fig. 42B) 5-segmented. Fifth pedigerous somite $198 \mu\text{m}$ wide, distinctly wider than genital double-somite. Genital double-somite longer than wider, gradually narrowed distally, $180 \times 160 \mu\text{m}$. Genital areas located dorsally. Three abdominal somites 75×100 , 75×85 , and $73 \times 88 \mu\text{m}$ from anterior to posterior.

Caudal ramus (Fig. 42C) with nearly parallel lateral margins, $105 \times 36 \mu\text{m}$, ratio 2.92 : 1; 6 caudal setae naked, longest inner one of 2 median terminal setae about twice as long as ramus. Egg sac not seen.

Rostrum strongly tapering, conical (Fig. 42D). Antennule (Fig. 42E) $265 \mu\text{m}$ long and 7-segmented. Armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1

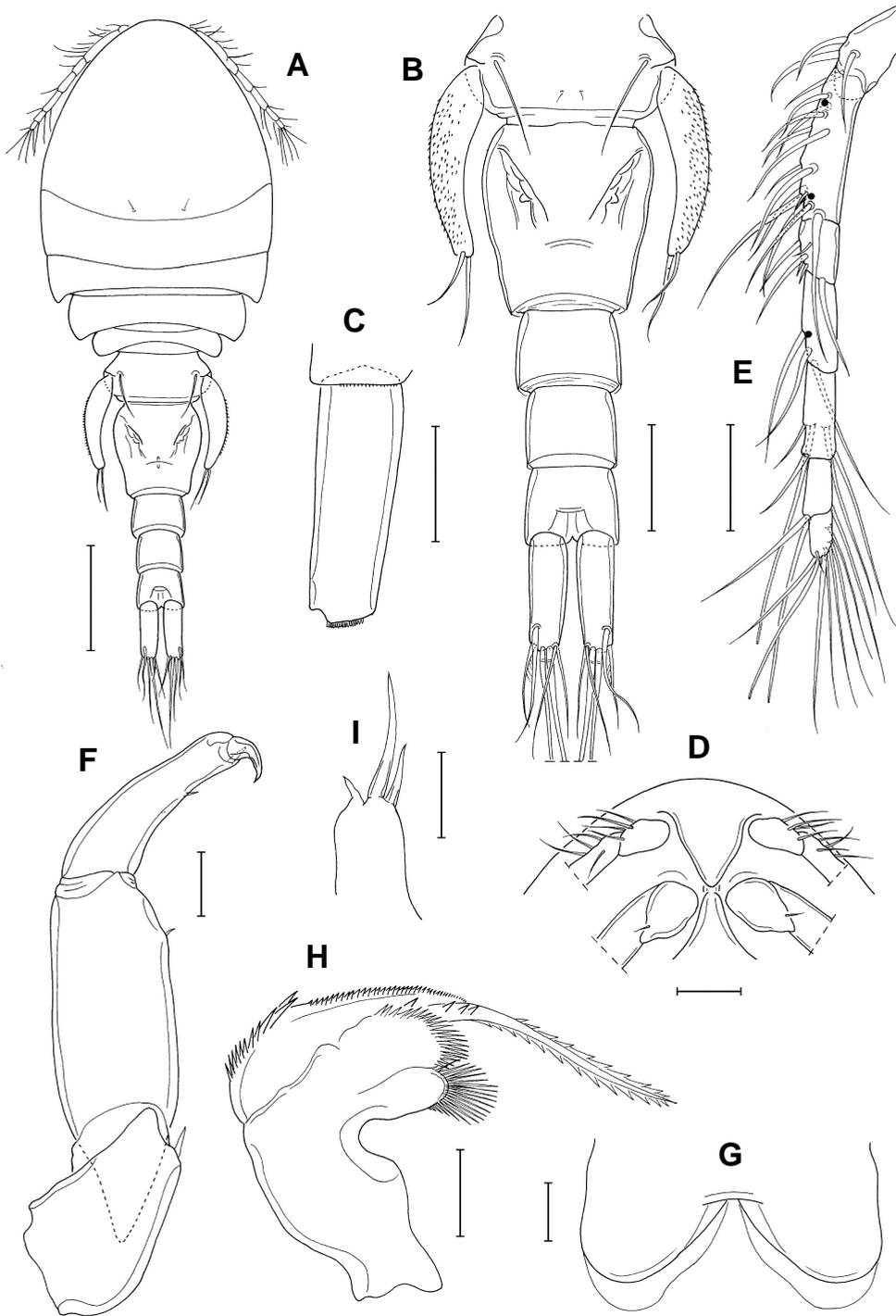


Fig. 42. *Scyphuliger paucisurculus* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus, ventral; D, rostral area, ventral; E, antennule; F, antenna; G, labrum; H, mandible; I, maxillule. Scale bars = 0.02 mm (F-I), 0.05 mm (C, E), 0.1 mm (B, D), 0.2 mm (A).

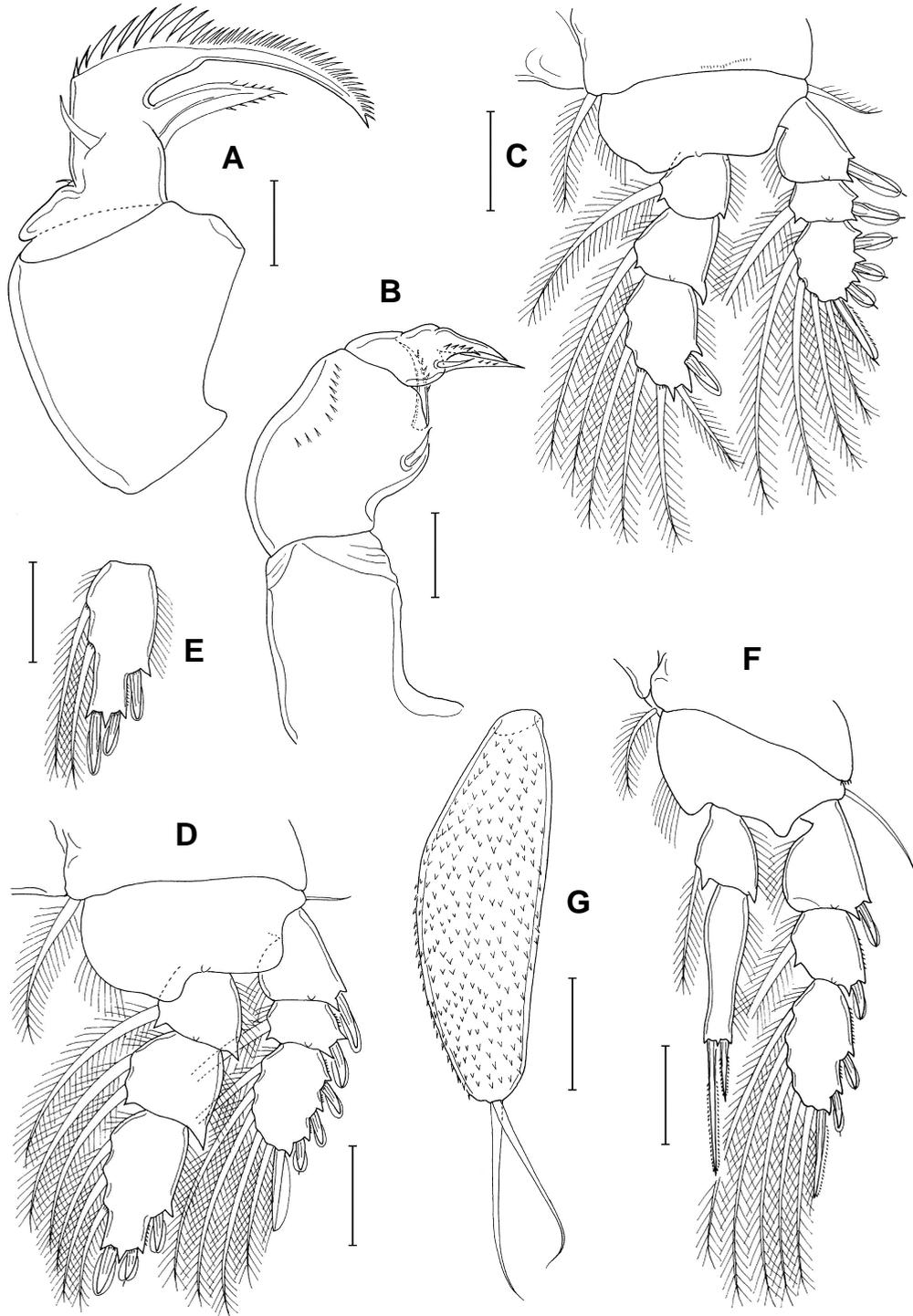


Fig. 43. *Scyphuliger paucisurculus* n. sp., female. A, maxilla; B, maxilliped; C, leg 1; D, leg 2; E, third endopodal segment of leg 3; F, leg 4; G, free segment of leg 5. Scale bars = 0.02 mm (A, B), 0.05 mm (C-G).

aesthetasc. All setae smooth. Antenna (Fig. 42F) 3-segmented and stocky. First 2 segments each armed with 1 small seta. Third segment tapering, with 1 minute setae on inner margin. Terminal claw short and strongly curved.

Labrum (Fig. 42G) with 2 posteroventral lobes, rimmed with broad hyaline membrane along posterior margin. Mandible (42H) with distinct proximal notch; inner margin bilobed, each lobe bearing tuft of long spinules; convex margin with 11 spinules and followed by small denticles. Lash serrate on both margins, with 4 proximal denticles. Maxillule (Fig. 42I) with 3 terminal setae, one of which process-like. Maxilla (Fig. 43A) with second segment having 3 setae, inner seta lamellate and enlarged. Lash with several large spines proximally and followed by small spinules on convex margin. Maxilliped (Fig. 43B) with first segment unarmed. Second segment with 2 unequal setae and protruded inner margin. Third segment terminated by spine-like process bearing several spinules, with 1 small setae and 1 spine.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod of leg 4. Armature formula as follows :

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Outer seta on basis of leg 1 weakly plumous (Fig. 44C); those of legs 2-4 naked. Second segment of leg 4 endopod elongated (Fig. 43F), $79 \times 22 \mu\text{m}$, with terminal spines of 69 (inner) and $32 \mu\text{m}$ (outer).

Free segment of leg 5 (Fig. 43G) tapering both proximally and distally, $180 \times 57 \mu\text{m}$, ratio 3.16 : 1, with numerous denticles on outer surface, and 2 naked terminal setae of $95 \mu\text{m}$ and $88 \mu\text{m}$. Leg 6 obscure (Fig. 42B).

Male. Body (Fig. 44A) resembling that of female, but first pedigerous somite fused with cephalosome. Length 1.20 mm and greatest width $400 \mu\text{m}$. Urosome (Fig. 44B) 6-segmented. Fifth pedigerous somite distinctly narrower than genital somite, $146 \mu\text{m}$ wide. Genital somite slightly wider than long, $223 \times 232 \mu\text{m}$, with rounded anterior and posterior corners. Four abdominal somites 48×81 , 65×79 , 63×75 , and $56 \times 77 \mu\text{m}$.

Caudal ramus similar to that of female, $82 \times 33 \mu\text{m}$, ratio 2.48 : 1.

Rostrum like that of female. Antennule resembling that of female but 3 aesthetascs added, 2 on second and 1 on fourth segments, as shown by dots in Fig. 42E. Antenna (Fig. 44C) stocky, with second segment bearing 1 minute inner seta in middle, 2 large proximal and 2 smaller distal suckers. Third segment with 3 inner setae, proximal two of which closed to each other. Terminal claw strongly recurved.

Labrum, mandible, maxillule, and maxilla like those of female. Maxilliped (Fig. 44D) with first segment unarmed and distally expanded. Second segment with 2 inner setae and row of spinules (those of proximal part larger than distal ones) on inner margin. Small third segment unarmed. Claw as long as proximal segments combined, proximally with 1 long and 1 small setae.

Legs 1-4 similar to those of female, but with sexual dimorphism in leg 1. Leg 1 (Fig. 44E) with third segment of endopod bearing 2 spines and 4 setae (formula I, I, 4). Endopod of leg 2 with third

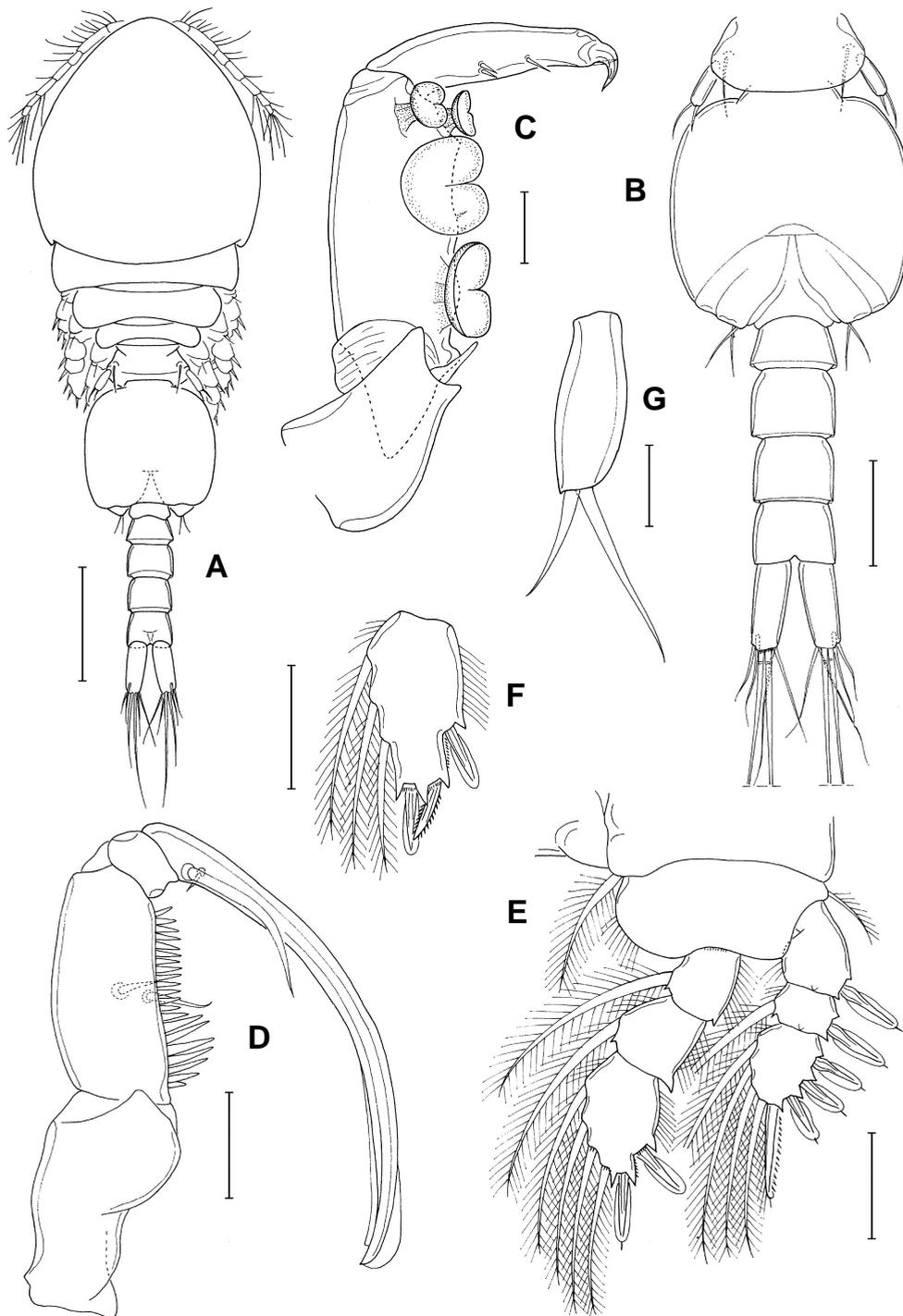


Fig. 44. *Scyphuliger paucisurculus* n. sp., male. A, habitus, dorsal; B, urosome, ventral; C, antenna; D, maxilliped; E, leg 1; F, third endopodal segment of leg 2; G, free segment of leg 5. Scale bars = 0.02 mm (C, G), 0.05 mm (D-F), 0.1 mm (B), 0.2 mm (A).

segment bearing median spine directed inward (Fig. 44F).

Leg 5 with free segment (Fig. 44G) widest in middle, $43 \times 17 \mu\text{m}$, ratio 2.53 : 1. Two terminal setae unequal, $47 \mu\text{m}$ (outer) and $29 \mu\text{m}$ (inner).

Leg 6 as posteroventral flap on genital somite bearing 2 setae (Fig. 44B).

Etymology. The specific name *paucisurculus* is a combination of the Latin *pauci* (few) and *surculus* (sucker). It alludes to the presence of only four (not five) suckers on the second segment of the male antenna.

Remarks. By the number and arrangement of the suckers on second segment of the male antenna, *Scyphuliger paucisurculus* can be distinguished from all congeners. In the previously recorded species there are usually five suckers on this segment, 2 larger and 3 smaller, with each larger sucker located between the smaller ones. But in the *S. paucisurculus* there are two proximal larger and two distal smaller suckers. *Scyphuliger aristoides* Humes, 1993, a species known only by females, is dissimilar to *S. paucisurculus*, because it has the long caudal rami with the ratio of the length to width 5.48 : 1 (Humes, 1993b)

The slender, spindle-shaped free segment of female leg 5 is also an outstanding feature of *S. paucisurculus*.

***Scyphuliger pennatus* n. sp. (Figs. 45-47)**

Material examined. 2 ♀♀, 1 ♂ from the scleractinian coral *Acropora corymbosa* (Lamarck), in 1 m, Rocher à la Voile, Noumea, New Caledonia, 15 June 1971, collected by A. G. Humes. Holotype (♀; USNM 1016299) and allotype (♂; USNM 1016300: dissected and mounted on a slide) have been deposited in the National Museum of Natural History, Smithsonian Institution. Dissected paratype (1 ♀) in the collection of the author.

Female. Body (Fig. 45A) with moderately broad prosome and narrow urosome. Length 1.14 mm. Greatest width $450 \mu\text{m}$. Prosome $620 \mu\text{m}$ long. First pedigerous somite demarcated from cephalosome by faint dorsal transverse furrow. Posterolateral corners of first and second pedigerous somite extended posteriorly as tapering process. Urosome (Fig. 45B) 5-segmented. Fifth pedigerous somite distinctly broader than genital double-somite, $198 \mu\text{m}$ wide. Genital double-somite consisting of broader, posteriorly narrowed, anterior two-thirds and narrower posterior one-third bearing parallel margins, $163 \times 138 \mu\text{m}$. Genital areas located dorsally. Three abdominal somites 65×91 , 67×81 , and $73 \times 81 \mu\text{m}$ from anterior to posterior. Proximal part of first abdominal somite distinctly narrowed. Anal somite with pair of sensillae on each lateral margin.

Caudal ramus (Fig. 45C) widest in middle, $96 \times 36 \mu\text{m}$, ratio 2.67 : 1, with 6 caudal setae. Innermost terminal seta plumous, other setae naked. Egg sac not seen.

Rostrum with distinct posterior contour (Fig. 45D). Antennule (Fig. 45E) $220 \mu\text{m}$ long and 7-segmented. Armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc. All setae smooth. Antenna (Fig. 45F) 3-segmented. First 2 segments each armed with 1 small seta. Third segment slender, slightly tapering, with 1 minute subdistal setae on inner margin. Terminal claw short and strongly curved.

Labrum (Fig. 45G) with 2 posteroventral lobes, each lobe with hyaline membrane on posterior margin. Mandible (45H) with distinct proximal notch. Inner margin bilobed, each lobe bearing tuft of long spinules. Convex margin with 9 small spines and followed by minute denticles. Lash serrate

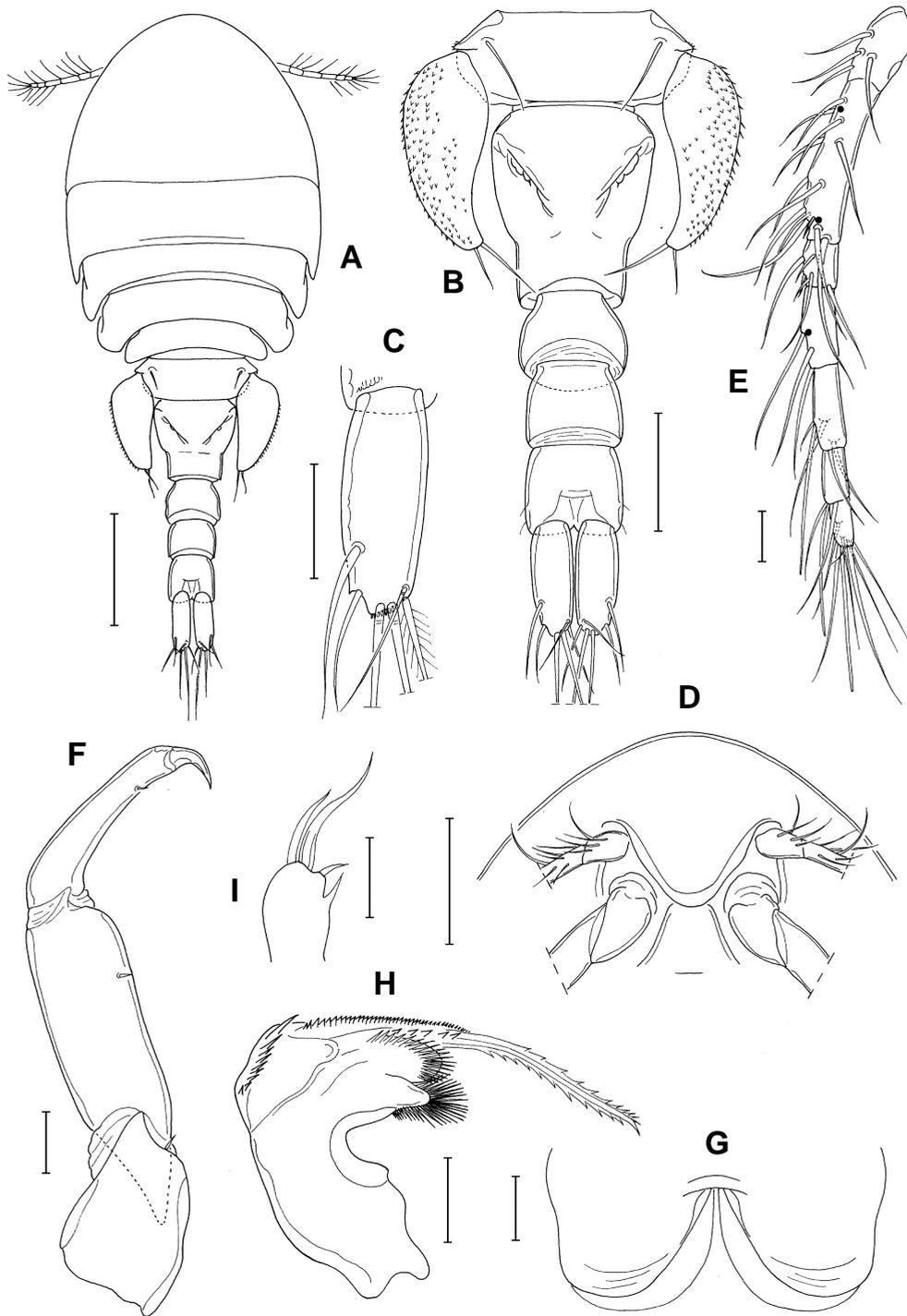


Fig. 45. *Scyphuliger pennatus* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus, dorsal; D, rostral area, ventral; E, antennule; F, antenna; G, labrum; H, mandible; I, maxillule. Scale bars = 0.02 mm (C, E-I), 0.1 mm (B, D), 0.2 mm (A).

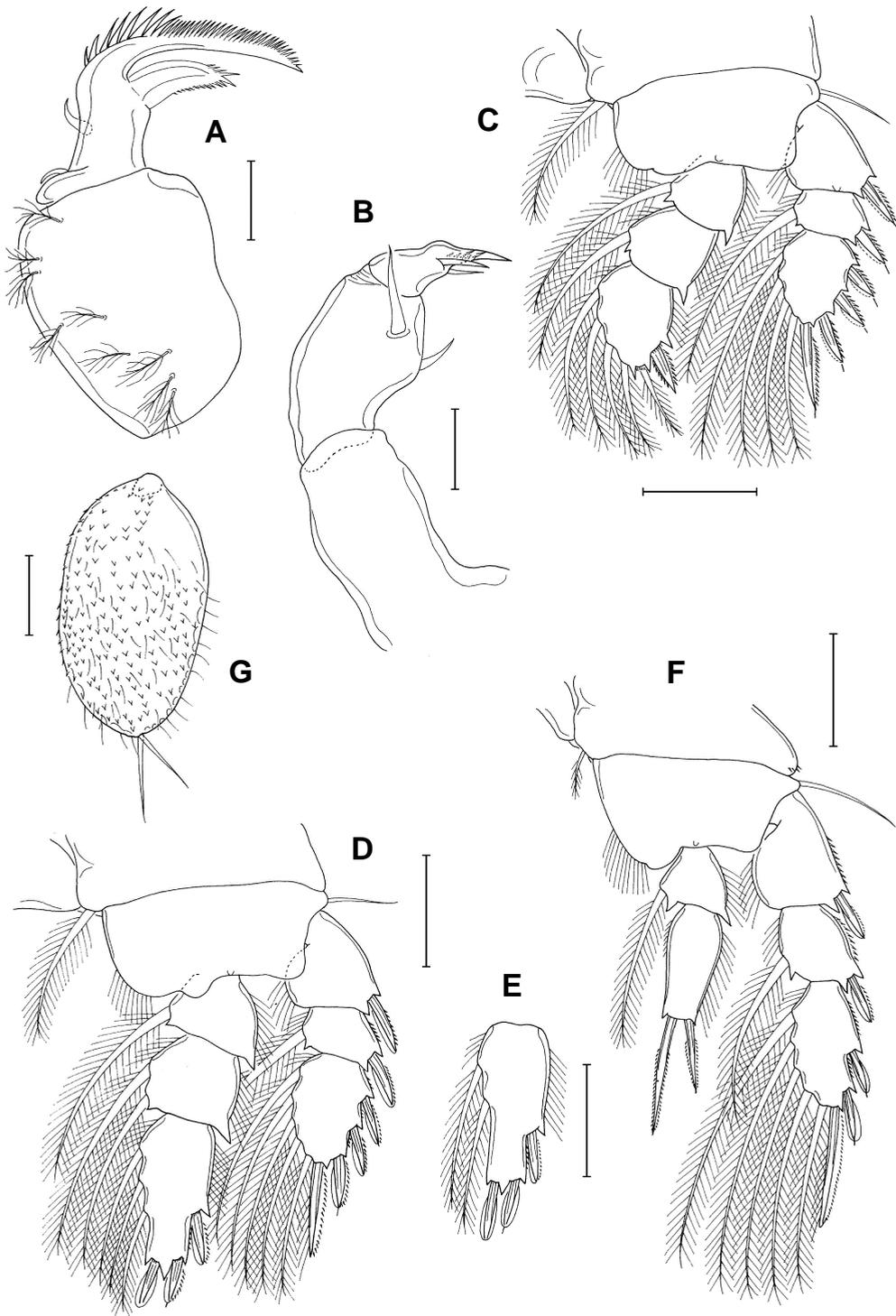


Fig. 46. *Scyphuliger pennatus* n. sp., female. A, maxilla; B, maxilliped; C, leg 1; D, leg 2; E, third endopodal segment of leg 3; F, leg 4; G, free segment of leg 5. Scale bars = 0.02 mm (A, B), 0.05 mm (C-G).

on both margins, with 5 proximal denticles. Maxillule (Fig. 45I) with 1 subterminal process and 3 smooth terminal setae. Maxilla (Fig. 46A) with first segment bearing 9 feathered setules. Second segment having 3 setae, inner seta lamellate and distally serrate. Lash with several spines proximally and followed by minute spinules on convex margin. Maxilliped (Fig. 46B) with first segment unarmed. Second segment with 2 unequal setae and protruded inner margin. Third segment terminated by spine-like process bearing several spinules, with 2 small setae.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod of leg 4. Armature formula as follows :

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Outer seta on basis of legs 1-4 naked. Second segment of leg 4 endopod $51 \times 25 \mu\text{m}$, with terminal spines of $53 \mu\text{m}$ (inner) and $33 \mu\text{m}$ (outer).

Free segment of leg 5 (Fig. 46G) oval, $165 \times 92 \mu\text{m}$, ratio 1.79 : 1, with denticles and sensillae on surfaces, and 2 terminal setae of $45 \mu\text{m}$ and $55 \mu\text{m}$. Leg 6 represented by 1 minute setule in genital area (Fig. 45B).

Male. Body (Fig. 47A) resembling that of female, but first pedigerous somite completely fused with cephalosome. Length 1.13 mm and greatest width $425 \mu\text{m}$. Urosome (Fig. 47B) 6-segmented. Fifth pedigerous somite distinctly narrower than genital somite, $162 \mu\text{m}$ wide. Genital somite wider than long, $200 \times 250 \mu\text{m}$, with rounded corners. Four abdominal somites unornamented, 50×75 , 55×80 , 53×75 , and $65 \times 78 \mu\text{m}$.

Caudal ramus $95 \times 33 \mu\text{m}$, ratio 2.88 : 1, with several sensillae on outer margin, in addition to 6 caudal setae.

Rostrum like that of female. Antennule resembling that of female but 3 aesthetascs added, 2 on second and 1 on fourth segments, as shown by dots in Fig. 45E. Antenna (Fig. 47C) with second segment bearing 1 seta in middle, 2 large and 3 small suckers arranged alternately, and on inner margin 5 feathered setules. Third segment with 3 minute setae. Terminal claw short and strongly curved.

Labrum, mandible, maxillule, and maxilla like those of female. Maxilliped (Fig. 47D) with first segment unarmed and distally expanded. Second segment with 2 inner setae (one of them curved proximally) and row of spinules on inner margin (those in middle smaller). Small third segment unarmed. Claw evenly curved, as long as proximal segments combined, proximally with 1 long and 1 small setae.

Legs 1-4 similar to those of female, but with sexual dimorphism in legs 1 and 2. Leg 1 (Fig. 47E) with third endopodal segment bearing 2 spines and 4 setae (formula I, I, 4). Third endopodal segment of leg 2 (Fig. 47F) with median spine directed inward.

Leg 5 with free segment (Fig. 47G) widest in middle, $34 \times 16 \mu\text{m}$, ratio 2.13 : 1. Two terminal setae very unequal, $53 \mu\text{m}$ (outer) and $20 \mu\text{m}$ (inner).

Leg 6 as posteroventral flap on genital somite bearing 2 small setae (Fig. 47B).

Etymology. The specific name *pennatus*, meaning “feathered” in Latin, alludes to the presence

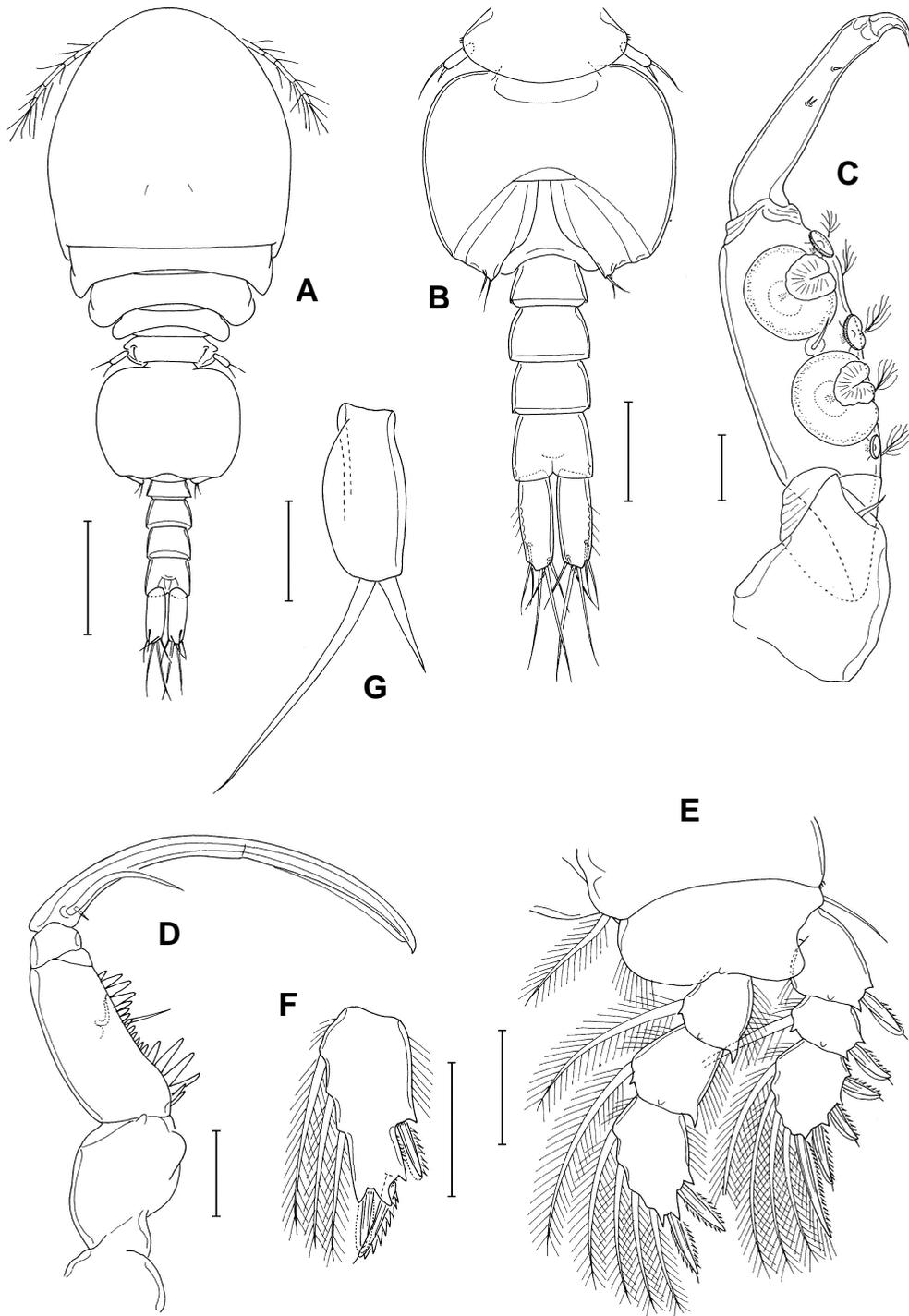


Fig. 47. *Scyphuliger pennatus* n. sp., male. A, habitus, dorsal; B, urosome, ventral; C, antenna; D, maxilliped; E, leg 1; F, third endopodal segment of leg 2; G, free segment of leg 5. Scale bars = 0.02 mm (C, G), 0.05 mm (D-F), 0.1 mm (B), 0.2 mm (A).

of feather-like setules on the first segment of the maxilla and the second segment of the male antenna.

Remarks. By having the feather-like setules on the basal segment of the maxilla and on the second segment of the antenna, *Scyphuliger pennatus* can be differentiated from all congeners.

***Scyphuliger pilosus* n. sp. (Figs. 48-50)**

Material examined. 4 ♀♀, 2 ♂♂ from the scleractinian coral *Acropora corymbosa* (Lamarck), in 1 m, Rocher à la Voile, Noumea, New Caledonia, 15 June 1971, collected by A. G. Humes. Holotype (♀; USNM 1016301), allotype (♂; USNM 1016302), and paratypes (2 ♀♀; USNM 1016303) have been deposited in the National Museum of Natural History, Smithsonian Institution. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 48A) with narrow prosome bearing nearly parallel lateral margins. Length 1.44 mm. Greatest width 505 µm. Prosome 770 µm long. First pedigerous somite demarcated from cephalosome by faint dorsal transverse furrow. Posterior half of cephalosome and first 2 pedigerous somites ornamented on dorsal surface with numerous villiform sensillae (Fig. 48D). Posterolateral corners of second pedigerous somite extending posteriorly but not pointed. Urosome (Fig. 48B) 5-segmented. Fifth pedigerous somite broad, 250 µm wide. Genital double-somite narrow, distally broadened, 208 × 144 µm, consisting of broader anterior two-thirds and narrower posterior one-third. Genital areas located dorsally. Three abdominal somites gradually narrowed, 92 × 103, 78 × 89, and 81 × 86 µm from anterior to posterior. First abdominal somite distinctly narrowed proximally. Anal somite with fine sensillae (or setules) on lateral margins.

Caudal ramus (Fig. 48C) 135 × 35 µm, ratio 3.86 : 1, with setules on outer margin and 6 caudal setae. Innermost terminal seta plumose, other 5 setae naked. Egg sac not seen.

Anterior half of cephalosome, including rostral area, densely covered with fine setules (Fig. 48E). Rostrum broad, extending to bases of antennae, with nearly rounded posterior margin (Fig. 48E). Antennule (Fig. 48F) 268 µm long, slender, and 7-segmented. Armature formula : 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc. All setae smooth. Antenna (Fig. 48G) 3-segmented and slender. First 2 segments each armed with 1 small seta. Third segment distinctly narrow, with 1 small blunt process proximally and 1 minute seta distally on inner margin. Terminal claw small.

Labrum (Fig. 48H) with 2 posteroventral lobes. Mandible (48I) with broad proximal notch. Inner margin bilobed, each lobe bearing tuft of long spinules. Convex margin with row of spinules and followed by fine denticles. Lash serrate on both margins, with 6 proximal denticles. Maxillule (Fig. 49A) with 3 terminal setae and 1 subterminal process. Maxilla (Fig. 49B) with unarmed first segment. Second segment having 3 setae and blunt process near proximal seta; inner seta enlarged and lamellate, with serrate margins. Lash with spinules on convex margin, several proximal ones of them larger. Maxilliped (Fig. 49C) with first segment unarmed. Second segment with 2 unequal setae and slightly protruded inner margin. Third segment tapering, with 2 unequal setae, and terminated by acute process bearing several spinules.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod of leg 4. Armature formula as follows :

Leg 1: coxa 0-1; basis 1-0; exp I-0; I-1; III, I, 4; enp 0-1; 0-1; I, 5

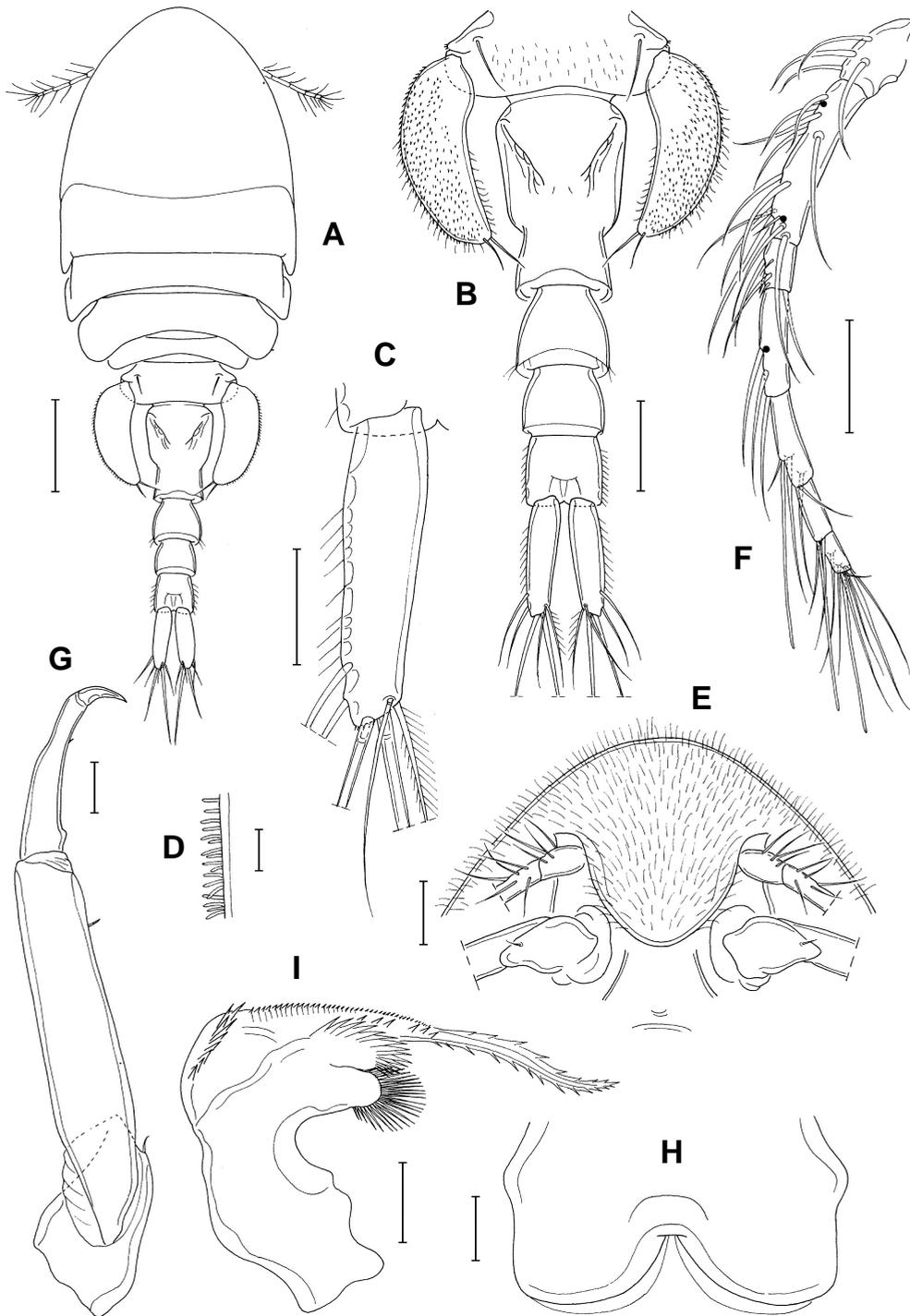


Fig. 48. *Scyphuliger pilosus* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus, dorsal; D, villiform sensillae on dorsal surface of anterior prosomal somites; E, rostral area, ventral; F, antennule; G, antenna; H, labrum; I, mandible. Scale bars = 0.02 mm (D, G-I), 0.05 mm (C, E, F), 0.1 mm (B), 0.2 mm (A).

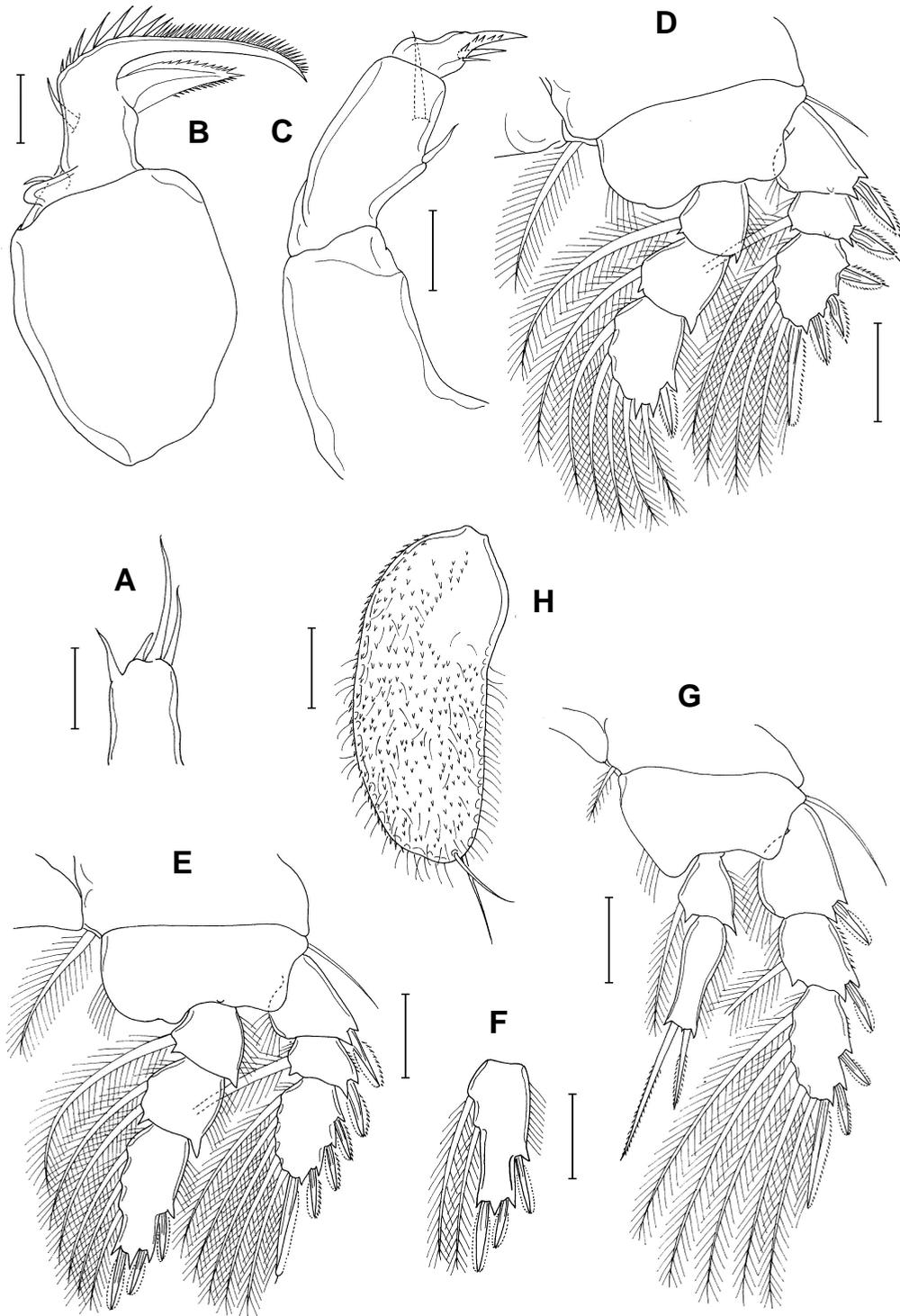


Fig. 49. *Scyphuliger pilosus* n. sp., female. A, maxillule; B, maxilla; C, maxilliped; D, leg 1; E, leg 2; F, third endopodal segment of leg 3; G, leg 4; H, free segment of leg 5. Scale bars = 0.02 mm (A-C), 0.05 mm (D-H).

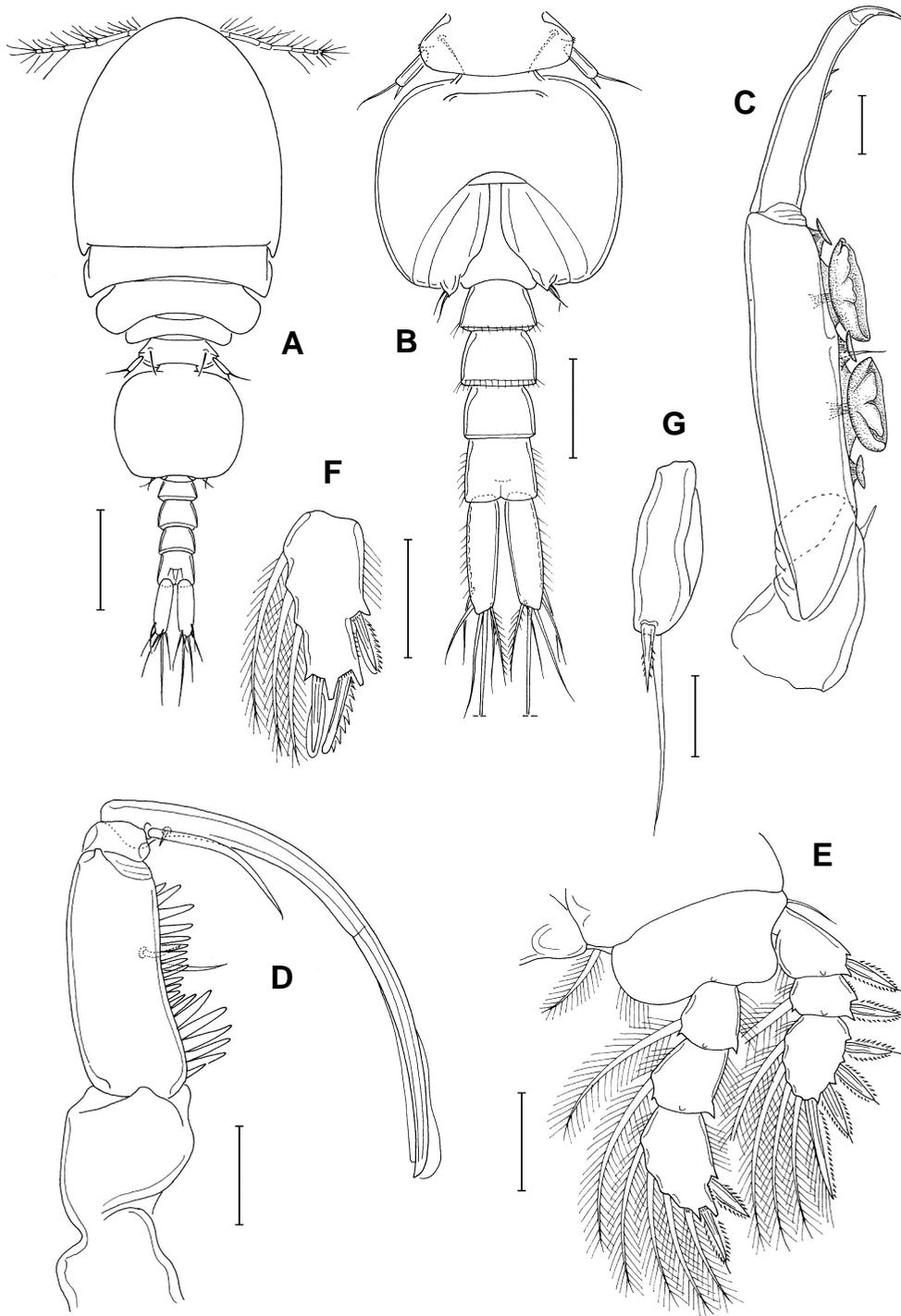


Fig. 50. *Scyphuliger pilosus* n. sp., male. A, habitus, dorsal; B, urosome, ventral; C, antenna; D, maxilliped; E, leg 2; F, third endopodal segment of leg 2; G, free segment of leg 5. Scale bars = 0.02 mm (C, G), 0.05 mm (D-F), 0.1 mm (B), 0.2 mm (A).

Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Outer seta on basis of legs 1-4 smooth. Second segment of leg 4 endopod $67 \times 23 \mu\text{m}$, with terminal spines of $88 \mu\text{m}$ (inner) and $48 \mu\text{m}$ (outer).

Free segment of leg 5 (Fig. 49H) $212 \times 83 \mu\text{m}$, ratio 2.55 : 1, with round terminal margin, spinules and setules on all surfaces, and 2 terminal setae of $58 \mu\text{m}$ and $50 \mu\text{m}$. Leg 6 not discernible.

Male. Body (Fig. 50A) resembling that of female but first pedigerous somite fused with cephalosome. Length 1.25 mm and greatest width $415 \mu\text{m}$. Urosome (Fig. 50B) 6-segmented. Fifth pedigerous somite distinctly narrower than genital somite, $155 \mu\text{m}$ wide. Genital somite nearly circular, wider than long, $212 \times 247 \mu\text{m}$, with rounded corners. Four abdominal somites 47×77 , 56×75 , 53×70 , and $63 \times 73 \mu\text{m}$ from anterior to posterior. Fine setules along posteroventral border of first 2 abdominal somites and lateral margins of anal somite. Caudal ramus $115 \times 32 \mu\text{m}$, ratio 3.59 : 1, with fine setules on outer lateral margin.

Rostrum like that of female. Antennule resembling that of female but 3 aesthetascs added, 2 on second and 1 on fourth segments, as shown by dots in Fig. 48F. Antenna (Fig. 50C) with second segment bearing 1 middle seta, 3 small suckers, and between them 2 large suckers. Third segment with 2 minute setae on inner margin.

Labrum, mandible, maxillule, and maxilla like those of female. Maxilliped (Fig. 50D) with first segment unarmed and constricted near middle. Second segment with 2 subequal inner setae and row of blunt spinules (those in middle smaller) on inner margin. Small third segment unarmed. Claw slender, longer than proximal segments combined, proximally with 1 long and 1 small setae.

Legs 1-4 similar to those of female, but with sexual dimorphism in legs 1 and 2. Leg 1 (Fig. 50E) with third endopodal segment bearing 2 spines and 4 setae (formula I, I, 4). Endopod of leg 2 (Fig. 50F) with third segment bearing saw-like inner terminal spine (Fig. 50F).

Leg 5 with free segment (Fig. 50G) slightly expanded in middle, $43 \times 17 \mu\text{m}$, ratio 2.53 : 1, terminally with 1 small barbed spine ($17 \mu\text{m}$) and 1 seta ($50 \mu\text{m}$).

Leg 6 represented by posteroventral flap on genital somite bearing 2 small setae (Fig. 50B).

Etymology. The specific name *pilosus* ("hairy" in Latin) alludes to the anterior prosomal somites covered dorsally with the numerous villiform sensillae and hair-like setules.

Remarks. Three species, *Scyphuliger concavipes* Humes, 1991, *S. eumorphus* Humes, 1993, and *S. latus* have in common the caudal ramus with a range of the ratio of the length to width 3.0-4.5 : 1, as the new species. *Scyphuliger pilosus* differs from *S. latus*, because the female genital double-somite of *S. latus* is distinctly wider than long. It differs from *S. concavipes* and *S. eumorphus*, as well, in having the moderately elongated and roughly quadrangular free segment of female leg 5 which is not oval as in the two congeners.

Probably, the easiest way to distinguish *S. pilosus* from the above three species is to examine the number of elements on the maxillule: four in *S. pilosus* and three in the three species.

Key to species of *Scyphuliger*

1. Female genital double-somite wider than long *S. latus* n. sp.
– Female genital double-somite longer than wide 2
2. Caudal ramus more than 5 times as long as wide 3
– Caudal ramus less than 5 times as long as wide 6
3. Maxillule armed with 4 setae or setiform elements; caudal ramus more than 6.5 times as long as wide *S. longicaudatus* n. sp.
– Maxillule armed with 3 setae or setiform elements; caudal ramus less than 6.5 times as long as wide 4
4. Free segment of female leg 5 more than 5 times as long as wide *S. tenuatus* (Humes)
– Free segment of female leg 5 less than 5 times as long as wide 5
5. Free segment of female leg 5 oval *S. aristoides* Humes
– Free segment of female leg 5 proximally narrowed, not oval *S. manifestus* Humes
6. Maxillule armed with 4 setae or setiform elements 7
– Maxillule armed with 3 setae or setiform elements 8
7. Pinnate setules on first segment of maxilla and second segment of male antenna; caudal ramus less than 3 times as long as wide *S. pennatus* n. sp.
– No pinnate setules on first segment of maxilla and second segment of male antenna; caudal ramus more than 3 times as long as wide *S. pilosus* n. sp.
8. Female body longer than 1.5 mm; second segment of female antenna more than twice as long as third segment *S. concavipes* Humes
– Female body shorter than 1.5 mm; second segment of female antenna less than twice as long as third segment 9
9. Free segment of female leg 5 twice as long as wide; male antenna with 2 large and 3 small suckers on second segment *S. eumorphus* Humes
– Free segment of female leg 5 more than 3 times as long as wide; male antenna with 2 large and 2 small suckers *S. paucisurculus* n. sp.

Family Kelleriidae Humes and Boxshall, 1996

Genus *Kelleria* Gurney, 1927

***Kelleria australiensis* Bayly, 1971 (Figs. 51 and 52)**

Material examined. 1 ♀ from the sea star *Pentaceraster regulus* (Müller and Troschel), intertidal, Noumea, New Caledonia, 9 June 1971, collected by A. G. Humes.

Female. Body (Fig. 51A) 1.34 mm long. Maximum width 528 µm. Urosome (Fig. 51B) slender, 5-segmented. Fifth pedigerous somite 169 µm wide. Genital double-somite 225 × 160 µm. Genital area situated dorsolaterally, slightly anterior to middle of somite. Three abdominal somites 77 × 103, 58 × 92, and 67 × 93 µm. Ventral surface of these somites unornamented. Caudal ramus 92 × 42 µm, ratio 2.19 : 1. Outer lateral and dorsal setae naked, other setae plumous. Two median terminal setae marginated with narrow hyaline membrane along distal half of inner margin.

Rostrum rounded posteriorly (Fig. 51C). Antennule (Fig. 51D) 7-segmented, tapering, with armature formula 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc. All setae smooth. Setae on fourth segment distinctly longer than others. Antenna (Fig. 51E) 4-segmented.

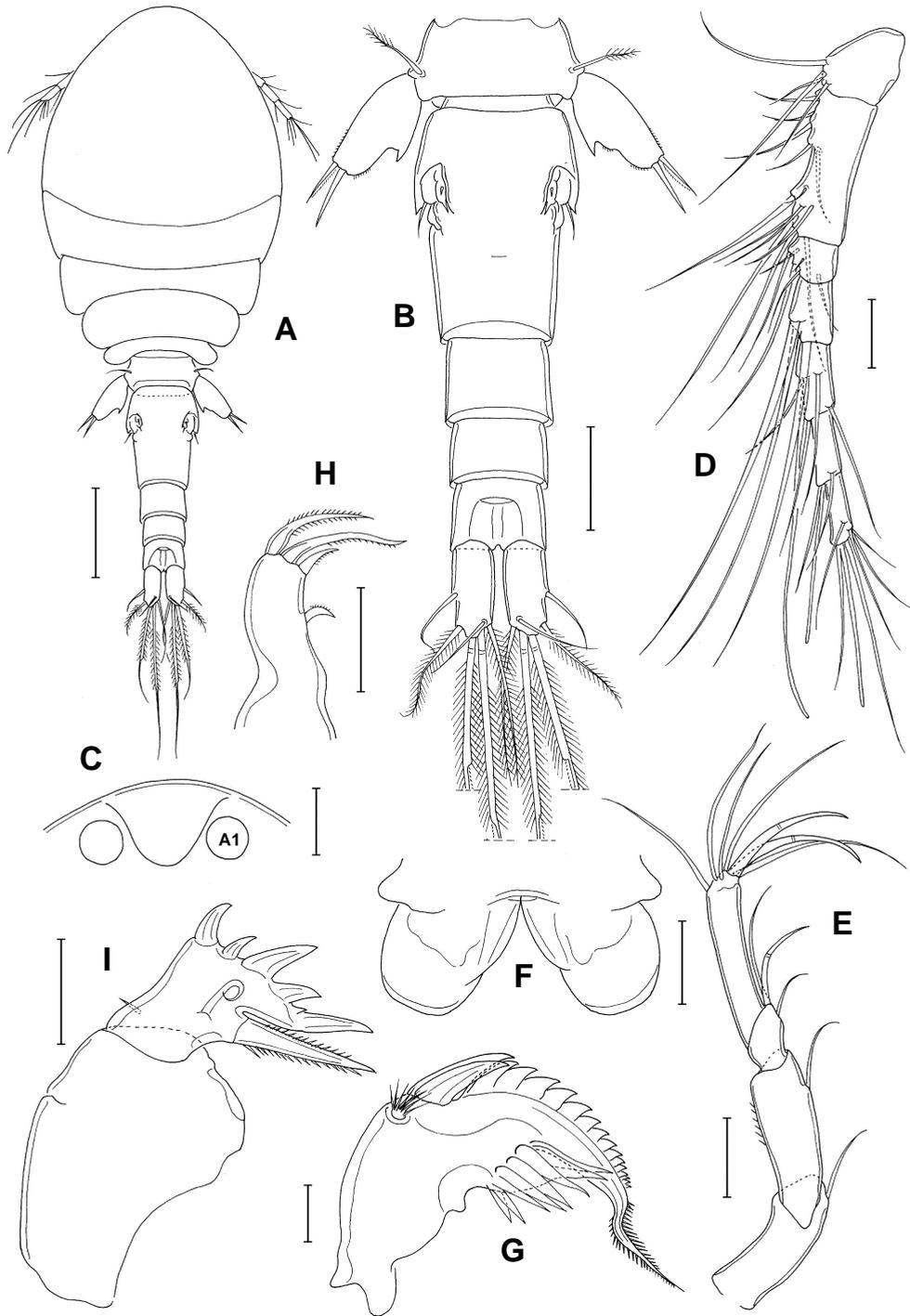


Fig. 51. *Kellera australiensis* Bayly, female. A, habitus, dorsal; B, urosome, dorsal; C, rostral area, ventral; D, antennule; E, antenna; F, labrum; G, mandible; H, maxillule; I, maxilla. Scale bars = 0.02 mm (G, H), 0.05 mm (C-F, I), 0.1 mm (B), 0.2 mm (A).

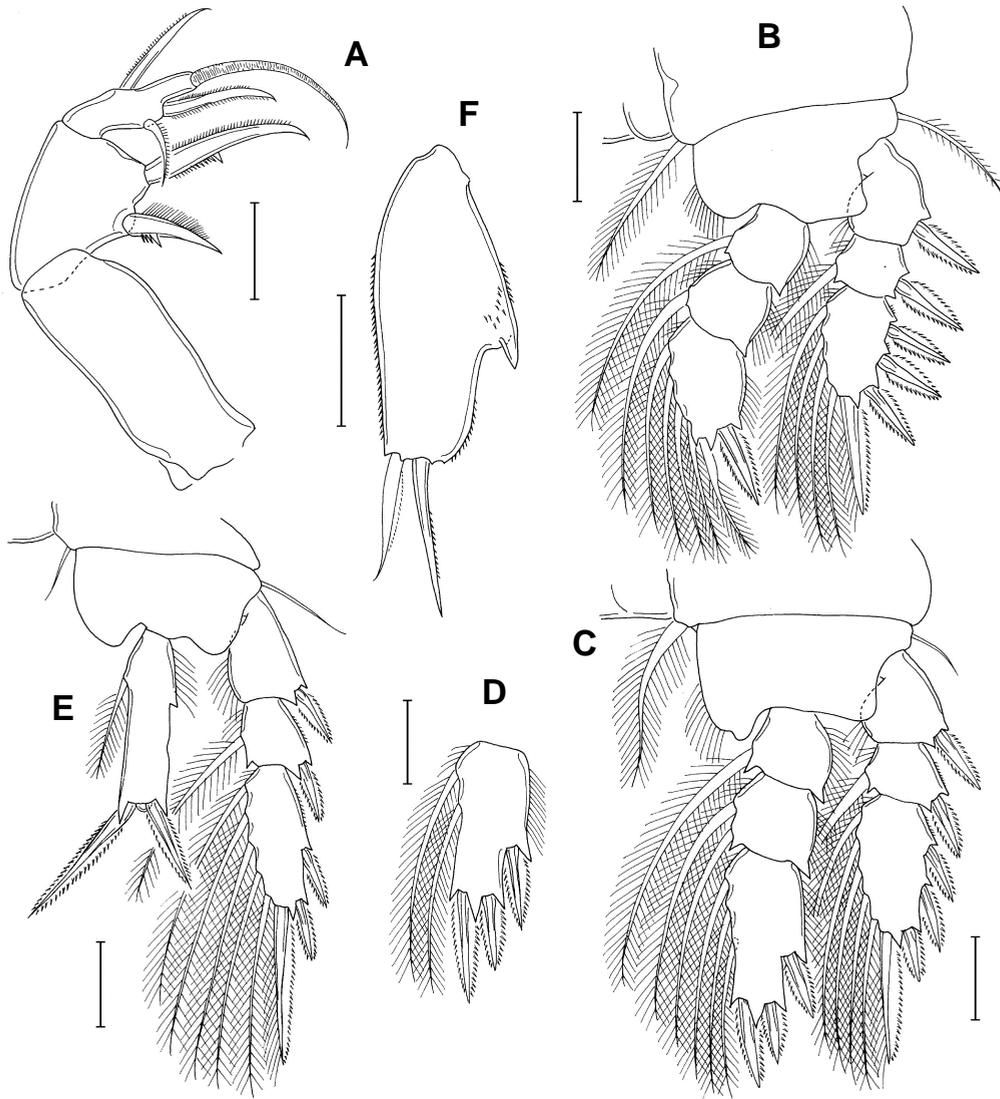


Fig. 52. *Kellera australiensis* Bayly, female. A, maxilliped; B, leg 1; C, leg 2; D, third endopodal segment of leg 3; E, leg 4; F, free segment of leg 5. Scale bars = 0.05 mm (A-F).

First segment about 92 μm long, with 1 distal seta. Second segment 100 μm , with 1 inner subdistal seta and minute spinules on outer margin. Shortest third segment 33 μm with 1 setiform spine and 2 setae. Fourth segment 100 μm , with 2 slender, setiform spines and 5 subequal setae.

Labrum (Fig. 51F) with 2 relatively narrow posterior lobes and deep median incision. Mandible (Fig. 51G) with obscure proximal notch. Inner margin with about 8 leaf-like setae. Outer margin proximally with 1 tuft of small setules and 2 large teeth, and followed by smaller teeth. Terminal lash moderately long and spinulated on both margins. Maxillule (Fig. 51H) with 1 lateral and 3 terminal setae (2 long and 1 short). Second segment of maxilla with 3 setae, inner one of which

enlarged as strong spinulate spine and armed distally on convex side with 3 large teeth, 2 smaller teeth arranged alternately between larger ones, 1 small denticle at base of larger distal tooth; no whip-like terminal lash present. Maxilliped (Fig. 52A) with second segment armed with 2 large, spiniform setae on inner margin. Third segment narrow, armed with 4 distinct setae, terminal one of which flagellum-like.

Legs 1-4 with 3-segmented rami except for 1-segmented endopod of leg 4. Armature formula of legs 1-4 as follows :

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp II, 1

Leg 4 endopod $103 \times 32 \mu\text{m}$, with 1 dentiform process on outer margin and pointed distal corners (Fig. 52E); two terminal spines $92 \mu\text{m}$ (inner) and $58 \mu\text{m}$ (outer).

Free segment of leg 5 (Fig. 52F) $122 \times 54 \mu\text{m}$, with 1 large process on inner margin and terminally 1 outer seta ($50 \mu\text{m}$) and 1 spine ($16 \mu\text{m}$). Leg 6 represented by 2 unequal setae and 1 spiniform process in genital area (Fig. 51B).

Male. Not discovered.

Remarks. Bayly (1971) discovered this copepod as plankton from brackish lakes in Australia. Since then this species has never been rediscovered. Therefore, the present paper is the first to report the host of this copepod.

The single female specimen from New Caledonia coincides well with the description of Bayly, especially in the maxilla and maxilliped. Some differences, for example, the presence of only a single process on the inner margin of the free segment of female leg 5, instead of two as in the original description, are considered to be variations or artifacts.

Family Lichomolgidae Kossman, 1877

***Pterioidicola* n. gen.**

Diagnosis. Lichomolgidae. Body not transformed. Urosome 5-segmented in female and 6-segmented in male. Rostrum narrow, with rounded posterior margin. Antennule 7-segmented, with armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc, in male added by 4 aesthetascs: 2 on both second and fourth segments. Antenna massive, 3-segmented, formed as that of *Macrochiron*, with armature formula 1, 1, III+8; one of claws on terminal segment enlarged. Labrum with 2 distinct posterior lobes. Mandible narrow, with elongated, tapering lash, without defined inner margin. Maxillule armed with 1 lateral setiform process and 3 terminal setae. Maxilla 2-segmented; first segment unarmed; second segment with 2 setae and elongate lash. Maxilliped 3-segmented; second segment with strongly expanded inner side, with 2 setae; third segment with 1 seta and terminated by tapering process. Legs 1-4 not sexually dimorphic, with 3-segmented rami. Leg 4 with third exopodal segment bearing 3 spines and 5 setae (formula II, I, 5) and endopod bearing armature formula 0-1; 0-1; II. Leg 5 with small free segment bearing 2 setae.

Etymology. The generic name *Pterioidicola* is taken after the Pterioidea, a superfamilial taxon of

bivalve host, and *-cola*, the ending of many generic names of associated copepods.

Type species. *Pterioidicola antennatus* n. sp.

Remarks. The shape of antenna of the new genus is suggestive of that of *Macrochiron* of the family Macrochironidae. The morphology of other body parts belongs, however, to the family Lichomolgidae. The combination of characters, i.e., the simple, elongate mandible, the presence of four setae on the inner margin of terminal segment (a part of original third segment of a four-segmented antenna) of the antenna, the absence of sexual dimorphism on the endopod of leg 1, and the 3-segmented endopod of leg 4 serves to place the new genus within the Lichomolgidae, according to the definition of the lichomolgoid families proposed by Humes and Boxshall (1996).

Within the Lichomolgidae, six genera are known to have a three-segmented endopod in leg 4. They are *Diogenella* Stock, 1968, *Diogenicium* Edwards, 1891, *Henicoxiphium* Illg and Humes, 1971, *Herrmannella* Canu, 1891, *Lichomolgidium* Kossmann, 1877, and *Modiolicola* Aurivillius, 1882. Of these, only *Henicoxiphium* has a three-segmented antenna, like *Pterioidicola*. However, by having the characteristic form of antenna and the presence of two terminal spines on the third endopodal segment of leg 4, *Pterioidicola* hardly can be placed near *Henicoxiphium*, the genus associated with an ascidian in the West Atlantic.

The nature of the sexual dimorphism in the antennule, i.e., the addition in the male of two aesthetascs on each of second and fourth segments, is quite unusual. Within the superfamily Lichomolgoidea, such a sexual dimorphism is observable only in two species, *Modiolicola maximus* (Thompson, 1893) (see redescription of Humes and Stock, 1973) in the Lichomolgidae and, as Humes and Boxshall (1996) mentioned, *Scambicornus finmarchicus* (Scott, 1903) in the Synapticolidae.

***Pterioidicola antennatus* n. sp. (Figs. 53-55)**

Material examined. 2 ♀♀, 4 ♂♂ from 3 pterioid pelecypods (2 *Isognomen isognomen* L. and 1 *Malleus albus* Lamarck), in 3 m, Noumea, New Caledonia, 29 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016304), allotype (♂; USNM 1016305), and paratypes (2 ♂♂; USNM 1016306) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 53A) cyclopiform, with ovoid prosome and slender urosome. Length 850 µm. Greatest width 358 µm. First pedigerous somite separated from cephalosome by weak dorsal transverse suture; its epimera tapering posteriorly but not pointed. Prosome 550 µm long, and urosome 302 µm long. Ratio of length to width of prosome 1.32 : 1. Ratio of length of prosome to that of urosome 1.82 : 1.

Urosome (Fig. 53B) 5-segmented. Fifth pedigerous somite 94 µm. Genital double-somite in dorsal view roughly rhomboidal, widest in middle, 111 × 117 µm, consisting of large anterior part and short narrower posterior part. Genital areas located laterally in posterior one-fourth of somite. Three abdominal somites from anterior to posterior 26 × 56, 20 × 53, and 40 × 56 µm.

Caudal ramus 44 × 22 µm, ratio 2.0 : 1, unornamented, slightly convergent, with 6 setae. Outer lateral and dorsal setae smooth, other 4 setae plumous. Longest inner one of 2 median terminal seta longer than urosome. Egg sac not seen.

Rostrum directed ventrally, small, shaped nearly as inverted triangle in anterior view. Antennule

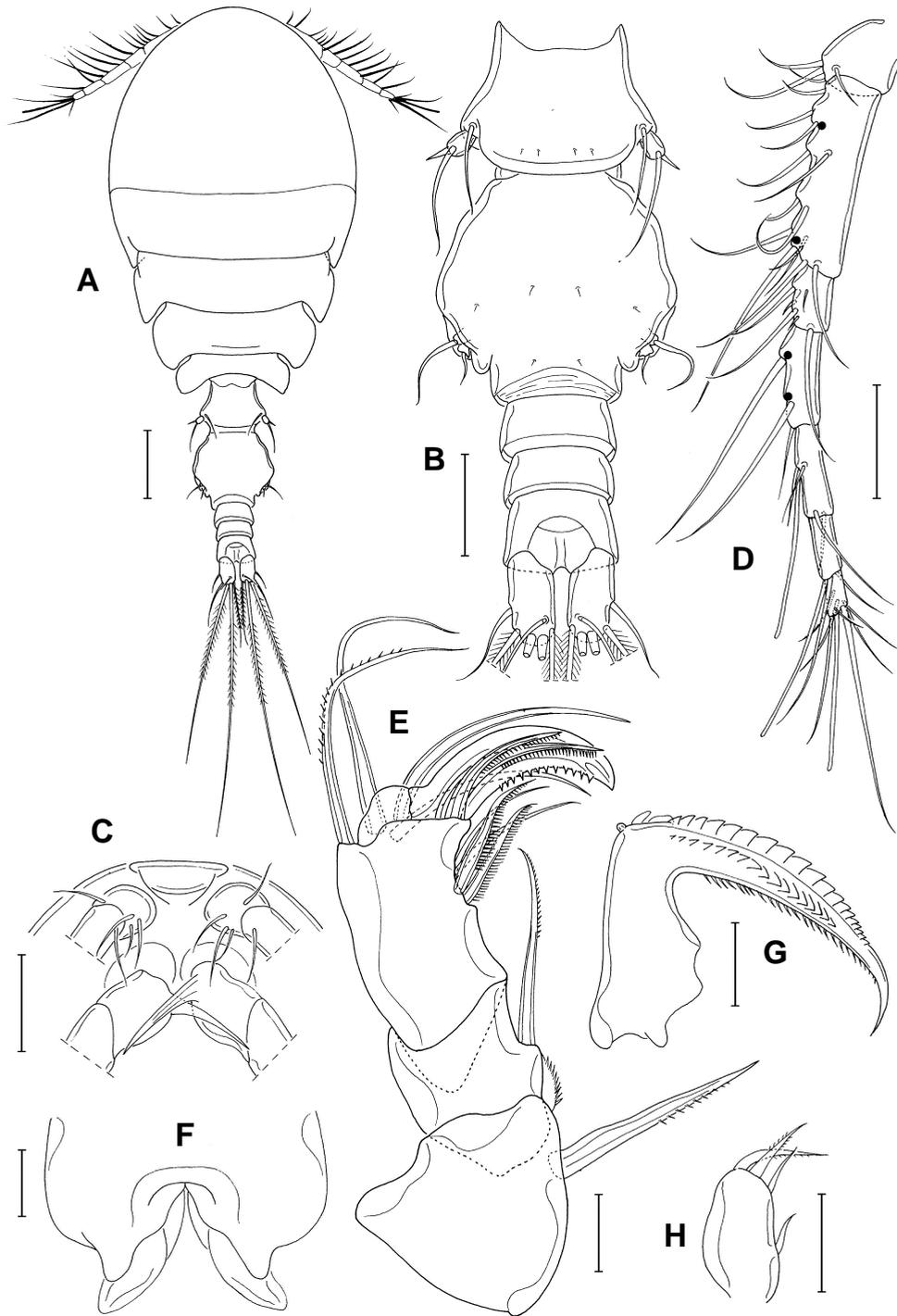


Fig. 53. *Pteriodicola antennatus* n. gen., n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, rostral area, ventral; D, antennule; E, antenna; F, labrum; G, mandible; H, maxillule. Scale bars = 0.02 mm (E-H), 0.05 mm (B-D), 0.1 mm (A).

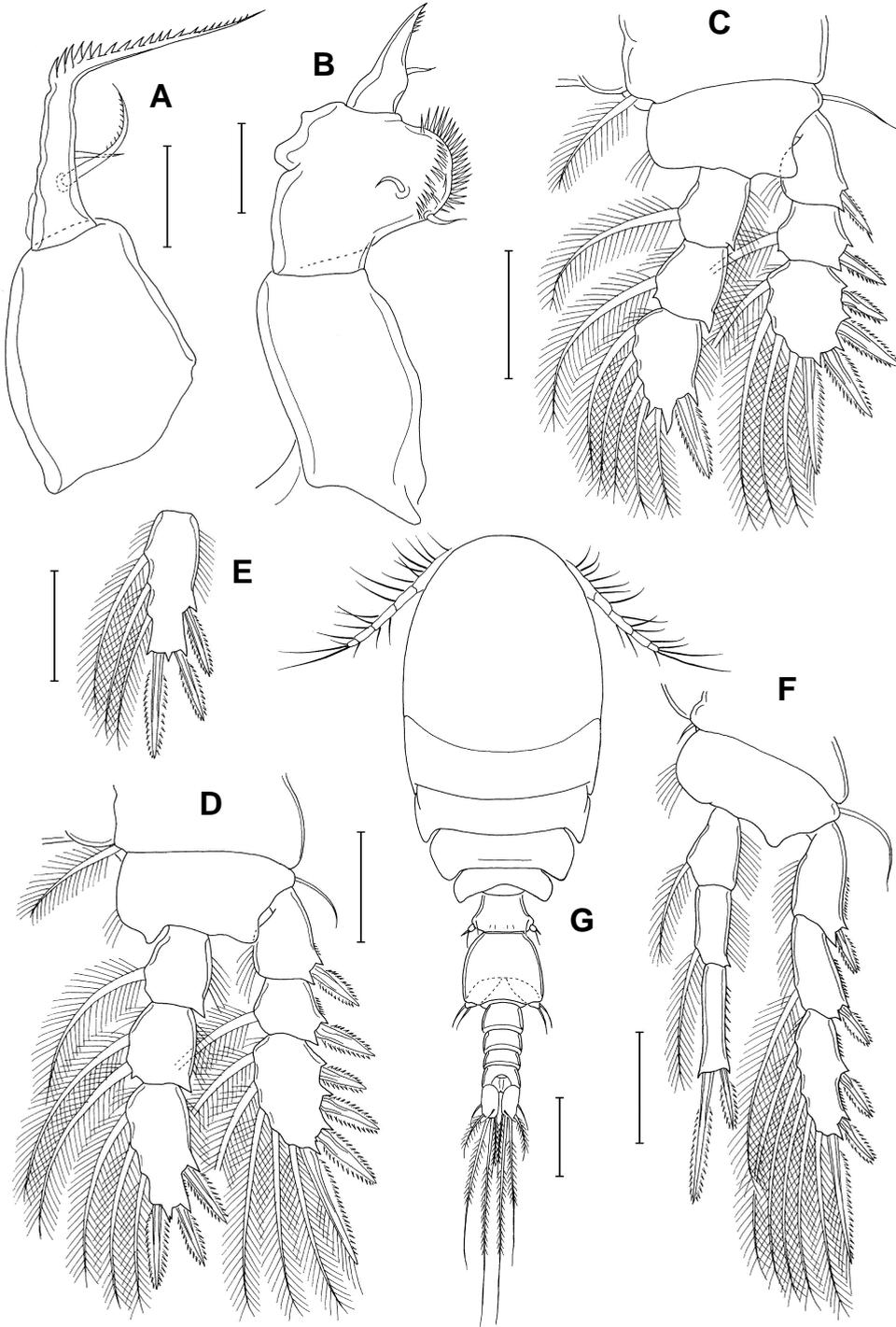


Fig. 54. *Pteriodicola antennatus* n. gen., n. sp. Female: A, maxilla; B, maxilliped; C, leg 1; D, leg 2; E, third endopodal segment of leg 3; F, leg 4. Male: G, habitus, dorsal. Scale bars = 0.02 mm (A, B), 0.05 mm (C-F), 0.1 mm (G).

(Fig. 53D) 7-segmented, with armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; all setae smooth. Antenna (Fig. 53E) massive, 3-segmented, similar to that of *Macrochiron*. First segment as long as wide, with 1 large, spiniform inner seta. Second segment shortest among segments, shorter than wide, with 1 long inner seta; proximal part of inner margin fringed with serrate membrane. Third segment about 1.6 times as long as wide, armed with 4 setae near middle of inner margin (proximal 2 of them thicker and serrate along inner margin) and terminally 6 setae + 1 saw-like strong claw (2 inner ones of 6 setae spiniform). Terminal claw with row of about 12 denticles along concave inner margin.

Labrum (Fig. 53F) with 2 posterovetral lobes; each lobe abruptly tapering posteriorly, with broad hyaline membrane on inner half. Mandible (Fig. 53G) sickle-shaped, with elongate, tapering lash, without proximal notch; convex side of lash with 1 small nipple-shaped knob at proximity and continued by 2 indistinct hyaline processes and distinct teeth; lateral side of lash armed with row of teeth on one side; concave side of lash with spinules. Maxillule (Fig. 53H) with 1 lateral setiform process and 3 distal setae. Maxilla (Fig. 54A) with unarmed first segment. Second segment slender, with 2 setae directed inwards, proximal one of them (seta II) distinctly larger than distal one (seta I); terminal lash long and slender, armed with teeth on convex side. Maxilliped (Fig. 54B) 3-segmented. First segment unarmed and longest. Second segment with 1 pair of small setae of equal size and 2 rows of spinules on greatly expanded inner side; outer margin of this segment corrugated. Terminal segment small and tapering, its apex sharply pointed, with 1 seta on inner margin and several spinules on inner margin of terminal process.

Legs 1-4 with 3-segmented rami. Armature formula of these legs:

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Legs 2 & 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; 0-1; II

Outer seta on basis of legs 1-4 smooth. Leg 4 (Fig. 54F) with smooth, small inner coxal seta. Endopod slender and slightly shorter than exopod; third segment with spinules on outer margin, 2 terminal spines 28 μm (outer) and 61 μm (inner).

Leg 5 with small free segment of 14 \times 9 μm ; two terminal setae naked, distinctly different in size (Fig. 53B). Leg 6 represented by 2 setae in genital area (Fig. 53B).

Male. Body (Fig. 54G) with slender prosome. Length 741 μm and greatest width 250 μm . Urosome (Fig. 55A) 6-segmented. Fifth pedigerous somite 76 μm wide. Genital somite 88 \times 104 μm , broadened posteriorly.

Four abdominal somites from anterior to posterior 32 \times 52, 28 \times 50, 20 \times 47, and 31 \times 50 μm . Caudal ramus 41 \times 23 μm , ratio 1.78 : 1.

Rostrum as in female. Antennule added by 4 aesthetascs, 2 on each second and fourth segments, at locations shown by dots in Fig. 53D. Antenna as in female.

Labrum, mandible, maxillule, and maxilla like those of female. Maxilliped (Fig. 55B) consisting of 3 segments and terminal claw; second segment with produced inner margin, armed with 2 setae, ornamented with 1 long and 1 short rows of spinules and 3 larger distal spinules; terminal claw strongly curved, with 2 unequal proximal setae.

Legs 1-4 segmented and armed as in female, without sexual dimorphism. Leg 5 not different

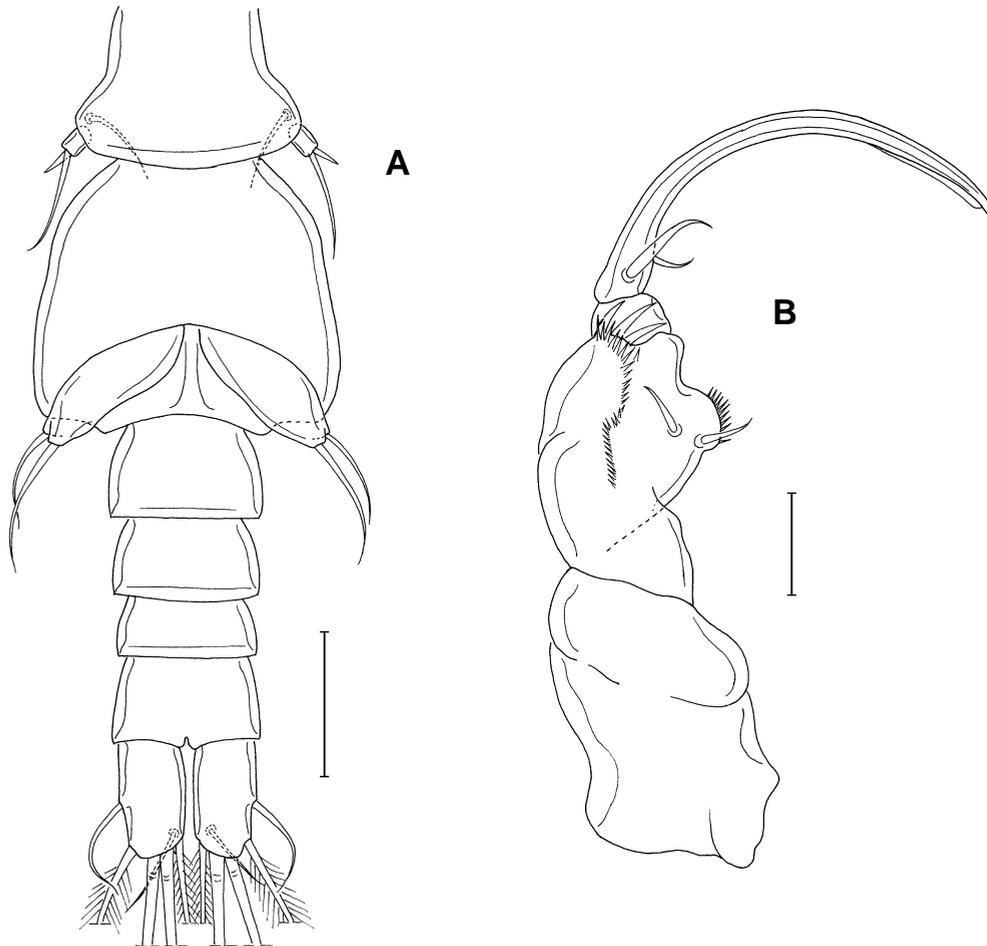


Fig. 55. *Pterioidicola antennatus* n. gen., n. sp., male. A, urosome, ventral; B, maxilliped. Scale bars = 0.02 mm (B), 0.05 mm (A).

from that of female. Leg 6 as posteroventral flap on genital somite bearing 2 long setae (Fig. 55A).

Etymology. The specific name *antennatus* alludes to the unusual form of the antenna which resembles that of the genus *Macrochiron* of the Macrochironidae, a group of copepods unrelated to the new species.

Family uncertain

***Ruhtra* n. gen.**

Diagnosis. Body vermiform and unsegmented. Female genital areas located dorsolaterally and well-defined. Antennule unsegmented, with setation reduced. Antenna 4-segmented, with armature formula 1, 1, 3, and 6+1 claw; terminal claw styliform, elongated and thin. Labrum bilobed, with deep but narrow median incision. Mandible lichomolgoid type, with shallow proximal notch, indistinctly bilobed inner margin, digitiform process on outer margin, and short distal lash.

Maxilla 2-segmented; basal segment unarmed; distal segment with 2 setae and long lash. Maxilliped 3-segmented, with armature formula 0, 1, and 3, without terminal claw. Legs 1 and 2 with 1-segmented exopod and 2-segmented endopod. Legs 3 and 4 absent. Leg 5 represented by a pair of small setae. Leg 6 represented by a pair of spiniform setae in genital area. No sexual dimorphism present in antennule, antenna, mouthparts and biramous legs.

Type species. *Ruhtra humesi* n. sp.

Etymology. The generic name is the reversed spelling of the first name of the late Dr. Arthur G. Humes. It is taken in commemoration of his great contributions to copepod systematics (Huys and Boxshall, 2001). Gender is feminine.

Remarks. Although it is known that the copepods of the order Poecilostomatoida typically have a sexually dimorphic maxilliped (Huys and Boxshall, 1991), *Ruhtra* n. gen. extraordinarily shows no sexual dimorphism in this appendage. Nevertheless, *Ruhtra* can not be placed in any copepod order other than the Poecilostomatoida. The presence of the 4-segmented antenna bearing a terminal claw, the well-defined labrum and the simple, distally tapering mandible indicate that the new genus apparently belongs to the order Poecilostomatoida, near the lichomolgoid complex.

In addition to the absence of the sexual dimorphism in the maxilliped, the structure of this appendage itself is also characteristic. The lichomolgoid maxilliped typically carries 2 setae on the second segment (basis) and four claw-like setae on the third segment (endopod) (Humes and Boxshall, 1996). A combination of characteristics, i.e., the single seta on the second segment and the three simple setae (without a claw or spiniform seta) on the terminal segment is, therefore, an outstanding feature of *Ruhtra*.

The deletion of posterior legs and the reduction of leg segments are not uncommon in the lichomolgoid copepods, especially in the endo-associates having vermiform body. However, the nature of the reduction of leg segments in *Ruhtra* is extraordinary. It is certain in the lichomolgoid copepods that whenever the reduction of leg segments occurs it is always more conspicuous in the endopod. In contrast to this generality, in *Ruhtra* the reduction of leg segments occurs first in the exopod, i.e., the two pairs of legs carry 1-segmented exopod and 2-segmented endopod.

It is interesting to note here that the two pairs of legs of *Ruhtra* are of larval forms of poecilostomatoid copepods. Several lichomolgoid copepods have been recorded for their copepodid larvae (see Kim, 2003). Some general knowledges obtained from the previous records that are worth mentioning here are: 1) in lichomolgoid copepodid I the two pairs of biramous legs (legs 1 and 2, both with 1-segmented rami) carry no inner coxal seta; 2) leg 1 bears eight elements (formula IV, I, 3) on the exopod and seven setae (formula 7) on the endopod; 3) leg 2 bears seven elements (III, I, 3) on the exopod and six elements (III, 3) on the endopod. A comparison of the legs of *Ruhtra* with those of lichomolgoid copepodids results in that the two pairs of legs of *Ruhtra* are a mixture of the leg forms of copepodids I and II of other lichomolgoid copepods. In *Ruhtra*, the two pairs of legs carry no inner coxal seta (like copepodid I of other lichomolgoids), leg 1 bears eight elements on the 1-segmented exopod (like copepodid I) and seven elements on the 2-segmented endopod (like copepodid II), and leg 2 bears seven elements on the 1-segmented exopod (like copepodid I) and 6 elements on the 2-segmented endopod (like copepodid II but without addition of 1 seta on the second segment).

Such paedomorphic features are not limited to the legs but extend to other appendages.

Although the antennule of *Ruhtra* is unsegmented, the setation on this appendage is similar to copepodid II of some lichomolgoids. The presence of one seta on the second segment and three setae on the third segment of maxilliped of *Ruhtra* reminds us of copepodid I maxilliped in which the third and fourth segments bear one and three setae, respectively. Furthermore, the absence of sexual dimorphism in the antennule, maxilliped and legs of *Ruhtra* may be attributable to the larval traits of this copepod.

In conclusion, the structures of the antenna, labrum and mandible suggest that *Ruhtra* is a member of the lichomolgoid complex. The characteristic forms of maxilliped and legs, and some paedomorphic traits may allow *Ruhtra* to be established as a new genus with uncertain familial position.

***Ruhtra humesi* n. sp. (Figs. 56, 57)**

Material examined. 8 ♀♀, 13 ♂♂ from the Alcyonacean coral *Stereonephthya inordinata* Tixier-Durivault, in 30 m, Maître Island near Noumea, New Caledonia, 23 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016307), allotypes (♂; USNM 1016308), and paratypes (5 ♀♀, 10 ♂♂; USNM 1016309) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (2 ♀♀, 2 ♂♂) in the collection of the author.

Female. Body (Fig. 56A, B) vermiform, tapering, unsegmented, dorsoventrally deeper than laterally wider, with weak lateral constrictions corresponding to original segmentations. Length 1.26 mm and greatest width 300 µm. Greatest dorsoventral thickness 315 µm. Somites indistinctly recognizable by weak lateral constrictions. Genital area well defined. Urosome defined from prosome in lateral view by distinct constriction near middle of body. Caudal ramus fused with anal somite, tapering, about 88 × 30 µm, ended roundly, with 5 indistinct, minute caudal setae (Fig. 56C). Egg sac not seen.

Rostrum digitiform (Fig. 56B). Antennule (Fig. 56D) unsegmented, 119 µm long, with proximal hump on anterior margin; setae grouped into 3, 4, 2+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc. Antenna (Fig. 56E) 4-segmented, with armature formula 1, 1, 3, and 6+1 claw. Each segment 42, 62, 23 and 27 µm long from proximal to distal. Terminal claw characteristically thin, styliform, and 88 µm long; one of distal setae originated from outer distal corner and curved inward.

Labrum (Fig. 56F) bilobed, with deep but narrow median incision. Mandible (Fig. 56G) strongly tapering distally, terminated by pinnate distal lash and 2 hyaline obscure processes; proximal notch shallow; inner margin obscurely defined, naked and indistinctly bilobed; convex outer margin with 1 prominent digitiform process bearing setules. Paragnath and maxillule not recognized. Maxilla (Fig. 56H) 2-segmented. First segment (syncoxa) unarmed. Second segment (basis) with densely pinnate inner seta (seta I) and plumose lateral seta (seta II); terminal lash long, bearing setules and in middle 1 or 2 denticles. Maxilliped (Fig. 56I) 3-segmented. First segment unarmed but with tuft of setules on inner side and several setules on outer margin. Second segment armed with 1 seta in middle, row of enlarged setules along inner margin and laterally, row of smaller setules. Terminal segment small, about 1.5 time as long as wide, and armed with 3 distal setae, 2 of them longer and weakly plumous.

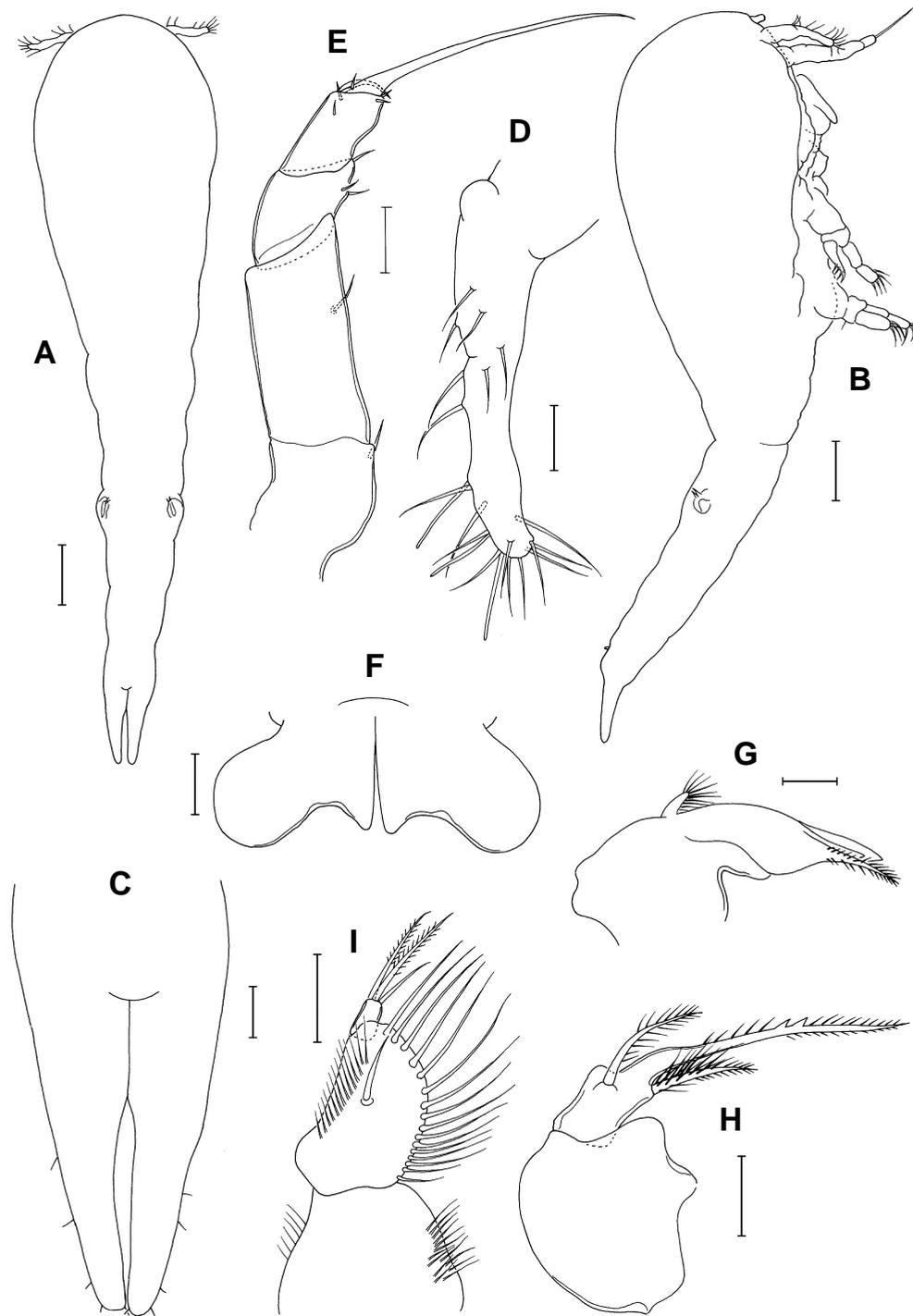


Fig. 56. *Ruhtra humesi* n. gen., n. sp., female. A, habitus, dorsal; B, same, lateral; C, caudal rami, dorsal; D, antennule; E, antenna; F, labrum; G, mandible; H, maxilla; I, maxilliped. Scale bars = 0.01 mm (G), 0.02 mm (C-F, H, I), 0.1 mm (A, B).

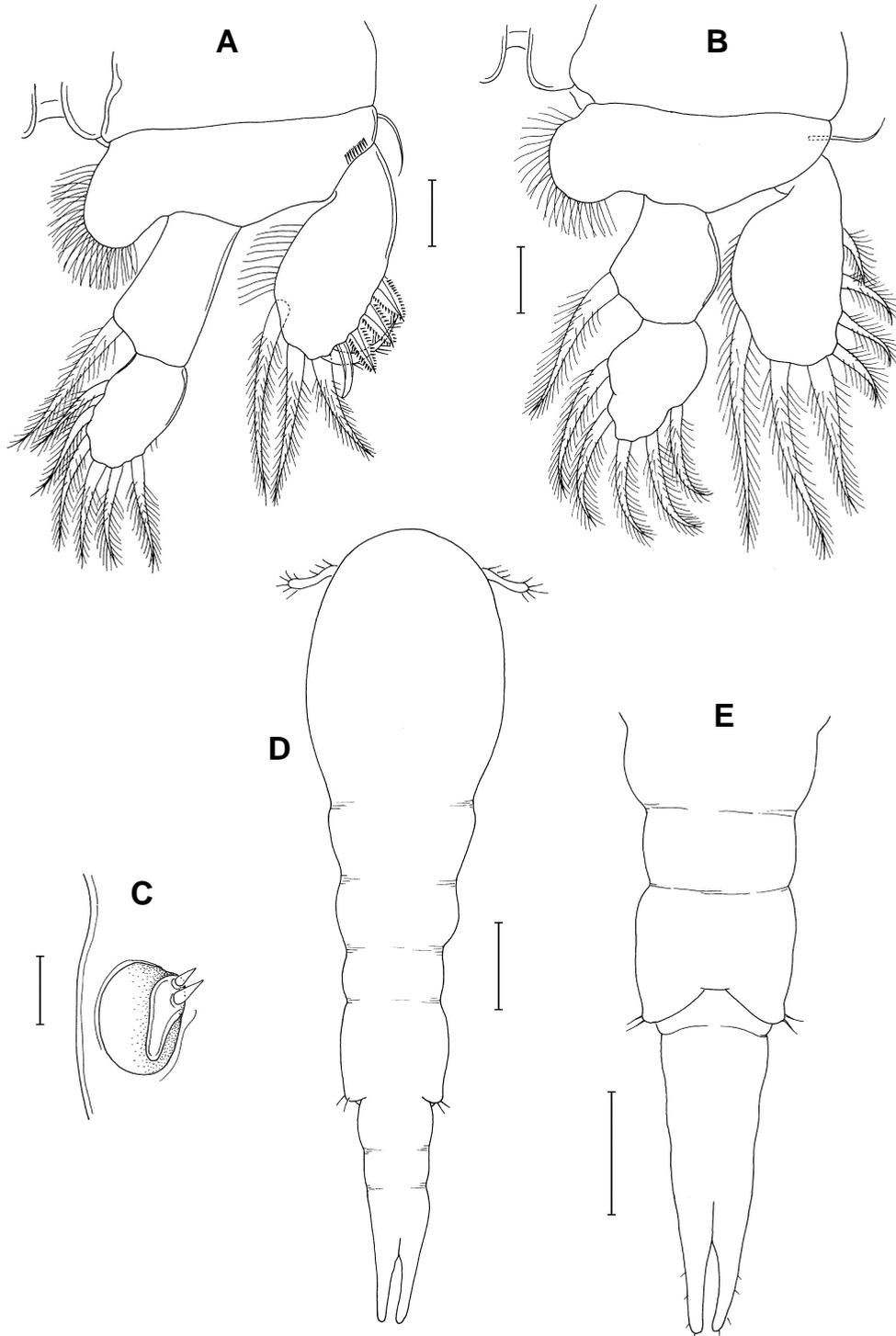


Fig. 57. *Ruhtra humesi* n. gen., n. sp. Female: A, leg 1; B, leg 2; C, genital area. Male: D, habitus, dorsal; E, posterior part of body, ventral. Scale bars = 0.02 mm (A-C), 0.1 mm (D, E).

Legs 1 (Fig. 57A) and 2 (Fig. 57B) with 1-segmented exopod and 2-segmented endopod. Both legs without inner coxal seta. Outer seta on basis of these legs small and naked. Inner side of these legs pronounced and with dense setules. Outermost seta of leg 1 exopod recurved. Three outer proximal spines of leg 1 exopod finely serrate but distal spine naked. Armature formula of legs 1 and 2 as follows :

Leg 1:	coxa 0-0;	basis 1-0;	exp IV, 4;	enp 0-1; 6
Leg 2:	coxa 0-0;	basis 1-0;	exp 4, 3;	enp 0-1; 5

Legs 3-5 absent. Leg 6 represented by 1 pair of spiniform setae in genital area (Fig. 57C).

Male. Body (Fig. 57D) resembling that of female, but with more conspicuous lateral constrictions. Body regions recognized as cephalothorax incorporating cephalosome and first 2 pedigerous somites, 3 metasomites, and 5 urosomites. Genital somite with well defined posteroventral genital flaps. Abdomen 252 μm long and similar to that of female.

Rostrum, antennule, antenna, maxilliped and other mouthparts, and legs 1 and 2 not different from those of female. Legs 3-5 absent. Leg 6 represented by genital flap bearing 2 setules on genital somite (Fig. 57E).

Etymology. The specific name *humesi* is taken after the surname of the late Dr. Arthur G. Humes who collected the new species.

Family Rhynchomolgidae Humes and Stock, 1972

Genus *Acanthomolgus* Humes and Stock, 1972

***Acanthomolgus gentilis* (Humes and Ho, 1968)**

Material examined. 30 ♀♀, 25 ♂♂ from the gorgonacean coral *Siphonogorgia variabilis* (Hickson), in 30 m, off Noumea, New Caledonia, 23 July 1971, collected by A. G. Humes.

Remarks. This is a new host record.

***Acanthomolgus variostracus* (Humes and Ho, 1968)**

Material examined. 1 ♀, 1 ♂ from the gorgonacean coral *Siphonogorgia variabilis* (Hickson), in 30 m, off Noumea, New Caledonia, 23 July 1971, collected by A. G. Humes.

Remarks. This is a new host record.

Genus *Critomolgus* Humes and Stock, 1972

***Critomolgus linguifer* n. sp. (Figs. 58-60)**

Material examined. 2 ♀♀, 5 ♂♂ from the alcyonacean coral *Cladiella humesi* Verseveldt, in 2 m, west of Isle of Mando, Noumea, New Caledonia, 26 June 1971, collected by A. G. Humes. Holotype (♀; USNM 1016310), allotype (♂; USNM 1016311), and paratypes (3 ♂♂; USNM 1016312) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 58A) with moderately broad prosome and slender urosome. Length 1.27 mm and greatest width 600 μm . Epimera of second to fourth pedigerous somites extending posterolaterally, with rounded lateral margins. First pedigerous somite separated from cephalosome by weak dorsal furrow.

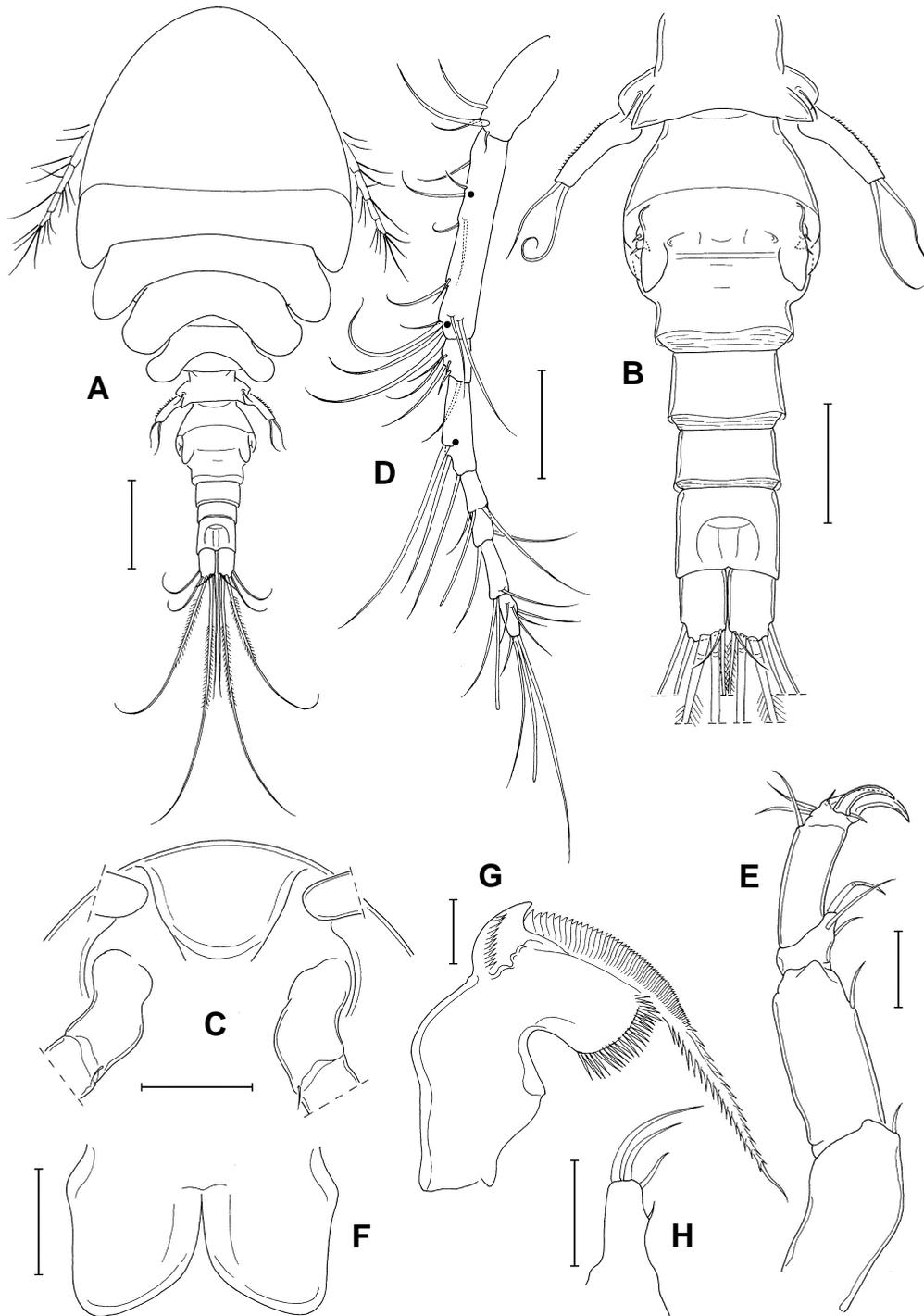


Fig. 58. *Critomolgus linguifer* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, rostral area, ventral; D, antennule; E, antenna; F, labrum; G, mandible; H, maxillule. Scale bars = 0.02 mm (G), 0.05 mm (E, F, H), 0.1 mm (B-D), 0.2 mm (A).

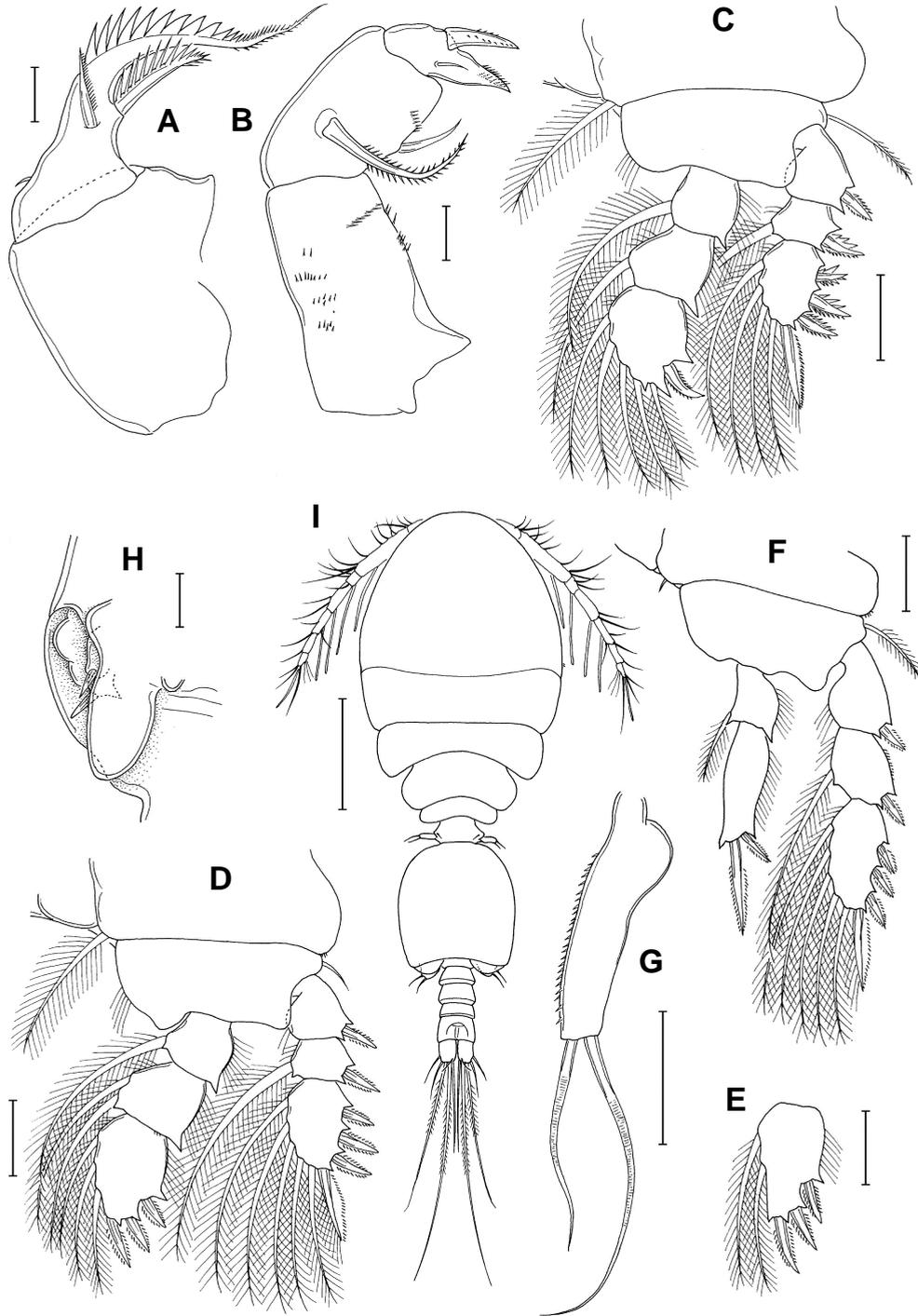


Fig. 59. *Critomolgus linguifer* n. sp. Female: A, maxilla; B, maxilliped; C, leg 1; D, leg 2; E, third endopodal segment of leg 3; F, leg 4; G, free segment of leg 5; H, genital area. Male: I, habitus, dorsal. Scale bars = 0.02 mm (A, B, H), 0.05 mm (C-G), 0.2 mm (I).

Urosome (Fig. 58B) 5-segmented. Fifth pedigerous somite 165 μm wide, with prominent conical dorsolateral process on each side. Genital double-somite in dorsal view 193 \times 163 μm , consisting of roundly expanded anterior and short narrower posterior parts, with tongue-like process dorsally near genital area (Fig. 59H). Genital area located dorsolaterally near middle of somite. Three abdominal somites from anterior to posterior 63 \times 96, 50 \times 88, and 71 \times 88 μm . Posteroventral border of anal somite smooth.

Caudal ramus 62 \times 38 μm , ratio 1.63 : 1, longer than wide, with 6 setae; two median and innermost terminal setae plumous, other setae naked. Egg sac not seen.

Rostrum broad, with roundly convex posterior margin (Fig. 58C). Antennule (Fig. 58D) 7-segmented, slender and long, with armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; all setae smooth. Antenna (Fig. 58E) 4-segmented, with armature formula: 1, 1, 2+1 claw, and 5+2 claws. Claw on third segment setiform. Two terminal claws different in length and thickness.

Labrum (Fig. 58F) deeply incised medially, with 2 posteroventral lobes having slightly divergent tips. Mandible (Fig. 58G) with deep proximal notch. Inner margin slightly convex. Convex margin with small spinules on expanded area, and followed by small denticles. Lash long and serrate on both margins. Maxillule (Fig. 58H) with 1 small subterminal and 3 terminal setae. Maxilla (Fig. 59A) with broad, unarmed first segment. Second segment with 3 setae; inner seta with large spinules along distal margin. Anterior seta with minute spinules along inner margin. Maxilliped (Fig. 59B) 3-segmented. First segment with minute spinules on surfaces. Second segment shorter than first, with extremely unequal setae 63 μm and 27 μm , larger one barbed along both margins. Third segment continued to tapering process bearing minute spinules, with 1 small seta and 1 large spine.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod of leg 4, with following armature formula.

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; II

Inner coxal seta in legs 1-3 long and plumous, but that of leg 4 minute. Second endopodal segment of leg 4 78 \times 27 μm , its 2 terminal spines very unequal, 64 μm (inner) and 26 μm (outer). Outer margin of endopod with fine setules (Fig. 59F).

Free segment of leg 5 (Fig. 59G) 94 \times 25 μm , ratio 3.76 : 1, with round proximal expansion and spinules on outer margin. Two terminal setae long and smooth, 81 μm (outer) and 120 μm (inner). Leg 6 represented by 2 spiniform elements in genital area (Fig. 59H).

Male. Body (Fig. 59I) narrower than that of female. Length 1.06 mm and greatest width 383 μm . Epimera of prosomal somites less developed. Urosome (Fig. 60A) 6-segmented. Fifth pedigerous somite small, 100 μm wide. Genital somite 223 \times 219 μm , nearly as long as wide, with rounded anterolateral corners. Four abdominal somites from anterior to posterior 46 \times 73, 35 \times 71, 27 \times 67, and 44 \times 69 μm .

Caudal ramus resembling that of female, 44 \times 32 μm , ratio 1.38 : 1.

Rostrum similar to that of female. Antennule like that of female but 3 aesthetascs added at

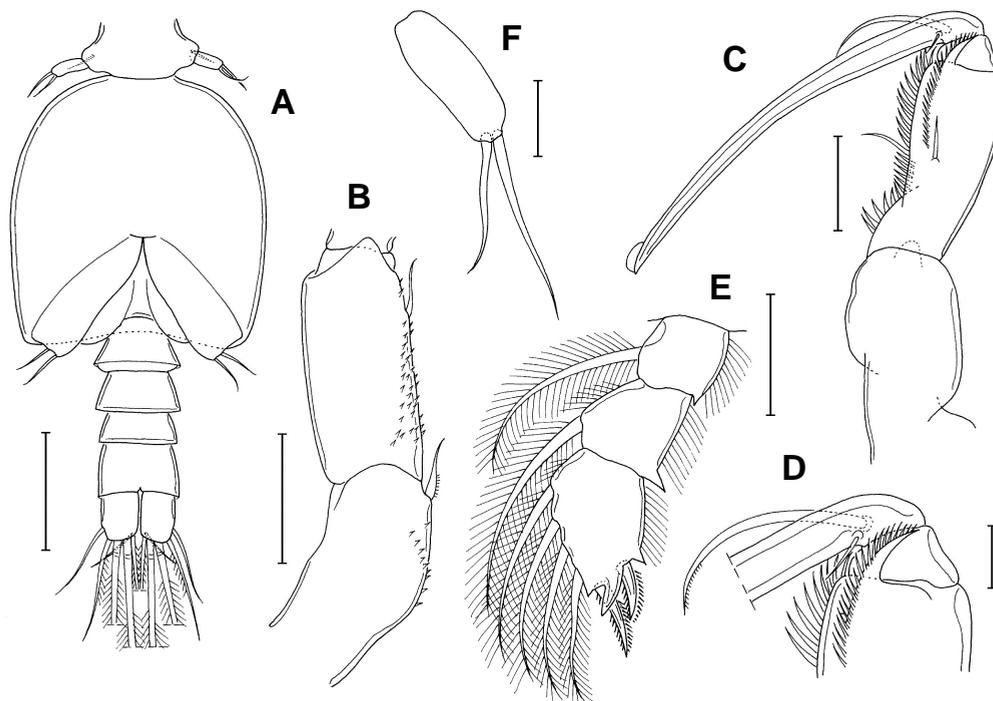


Fig. 60. *Critomolgus linguifer* n. sp., male. A, urosome, ventral; B, basal part of antenna; C, maxilliped; D, distal part of maxilliped; E, leg 1 endopod. Scale bars = 0.02 mm (D, F), 0.05 mm (B, C, E), 0.1 mm (A).

locations indicated by dots in Fig. 58D. Antenna as in female, but having small spinules on inner side of first 2 segments (Fig. 60B).

Labrum, mandible, maxillule, and maxilla resembling those of female. Maxilliped (Fig. 60C) with second segment bearing 2 inner setae, row of spinules along inner margin, another shorter row of smaller spinules, and pointed distal spiniform process bearing spinules unilaterally (Fig. 60D). Terminal claw as long as 3 segments combined, with 1 setae and 1 small setule proximally.

Legs 1-4 as in female except for sexual dimorphism in third endopodal segment of leg 1 (Fig. 60E) bearing armature formula I, I, 4 and having 1 large, slightly curved spiniform process terminally.

Leg 5 with small rectangular free segment $40 \times 15 \mu\text{m}$, ratio 2.67 : 1, its 2 terminal setae smooth, $52 \mu\text{m}$ (outer) and $38 \mu\text{m}$ (inner). Leg 6 represented by 2 setae on genital flap (Fig. 60A)

Etymology. The specific name *linguifer*, a combination of the Latin *lingua* (=tongue) and *ferre* (=to carry), alludes to the presence of the tongue-like processes on the genital double-somite in the female.

Remarks. By having one spine and two setae on the third segment of the antenna, *Critomolgus linguifer* n. sp. can be compared with *C. ptilosarci* Humes and Stock, 1973, *C. bulbipes* Stock and Kleeton, 1963, *C. audens* (Humes, 1959), and *C. nudus* Kim, 2000. Of these four congeners, only *C. ptilosarci* has the caudal ramus which is slightly longer than wide, like *C. linguiferus*. In

other three species the caudal ramus is shorter than wide.

Critomolgus linguifer may be distinguished from *C. ptilosarci* by the shorter body (1.27 mm long in the female, in contrast to 1.94 mm in *C. ptilosarci*). Moreover, in *C. ptilosarci*, one of two setae on the second segment of female maxilliped is greatly elongated, a feature not observable in *C. linguifer*.

The most characteristic feature of *C. linguifer* may be the possession of a pair of large, tongue-like dorsolateral processes on the female genital double-somite (Fig. 59H). *Critomolgus penicillatus* Humes, 1982 and *C. foxi* (Gurney, 1927) also have the similar processes, but these are slender and spiniform in *C. penicillatus* (see Humes, 1982a), and much smaller in *C. foxi* (see Humes and Ho, 1968c).

***Critomolgus mandoensis* n. sp. (Figs. 61–63)**

Material examined. 2 ♀♀, 2 ♂♂ from the sea anemone *Cryptodendrum adhaesivum* Klunsinger, in 1 m, west of Isle of Mando, Noumea, New Caledonia, 3 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016313) and allotype (♂; USNM 1016314) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 61A) relatively large. Length 1.92 mm and greatest width 815 µm. Prosome 1.19 mm long, occupying more than 60% length of body. First pedigerous somite separated from cephalosome by weak dorsal furrow.

Urosome (Fig. 61B) stocky and 5-segmented. Fifth pedigerous somite slightly wider than genital double-somite, 233 µm wide. Genital double-somite 208 × 229 µm, nearly quadrangular, slightly wider than long, with weakly convex lateral margins. Genital area located dorsally anterior to middle. Three abdominal somites from anterior to posterior 63 × 147, 44 × 139, and 88 × 133 µm. Posteroventral border of anal somite unornamented.

Caudal ramus (Fig. 61C) 100 × 56 µm, ratio 1.79 : 1. Outer lateral seta smooth, other setae plumous. Egg sac not seen.

Rostrum broad, with roundly convex posterior margin (Fig. 61D). Antennule (Fig. 61E) slender, 610 µm long, with armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; all setae smooth; two distal setae on second segment markedly long, longer than segment. Antenna (Fig. 61F) slender and 4-segmented, with armature formula: 1, 1, 3, and 5+2 claws. Approximate lengths of first to fourth segments 173, 170, 38, and 154 µm. Two terminal claws nearly equal, 65 µm and 60 µm.

Labrum (Fig. 61G) with 2 elongated posteroventral lobes having hyaline membrane on posterior margin. Mandible (Fig. 61H) slender, with broad proximal notch. Inner margin oblique, spinulated, and confluent with proximal part of lash. Convex margin with row of minute spinules and followed by delicate denticles. Lash long and serrate along both margins. Maxillule (Fig. 61I) with 1 small lateral and 3 terminal setae, smaller one of latter spinulated. Maxilla (Fig. 62A) with broad, unarmed first segment. Second segment with 3 setae; inner seta enlarged and spiniform, with spinules along distal margin. Anterior seta smooth and straight. Lash relatively short, only slightly longer than inner seta, and evenly curved. Maxilliped (Fig. 62B) 3-segmented. Second segment shorter than first, with 2 extremely unequal inner setae 38 µm and 8 µm. Third segment nearly

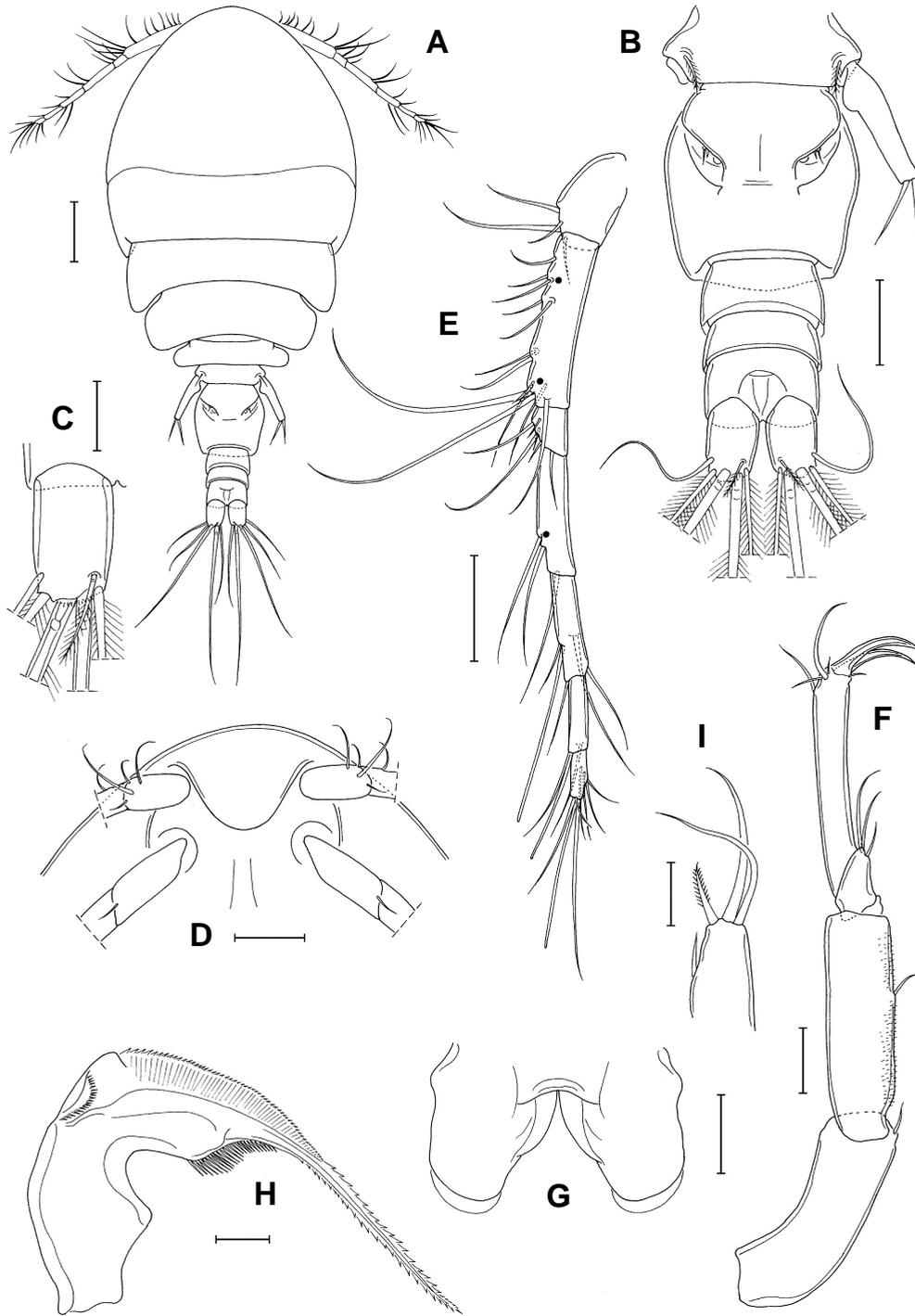


Fig. 61. *Critomolgus mandoensis* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus; D, rostral area, ventral; E, antennule; F, antenna; G, labrum; H, mandible; I, maxillule. Scale bars = 0.02 mm (H, I), 0.05 mm (C, F, G), 0.1 mm (B, D, E), 0.2 mm (A).

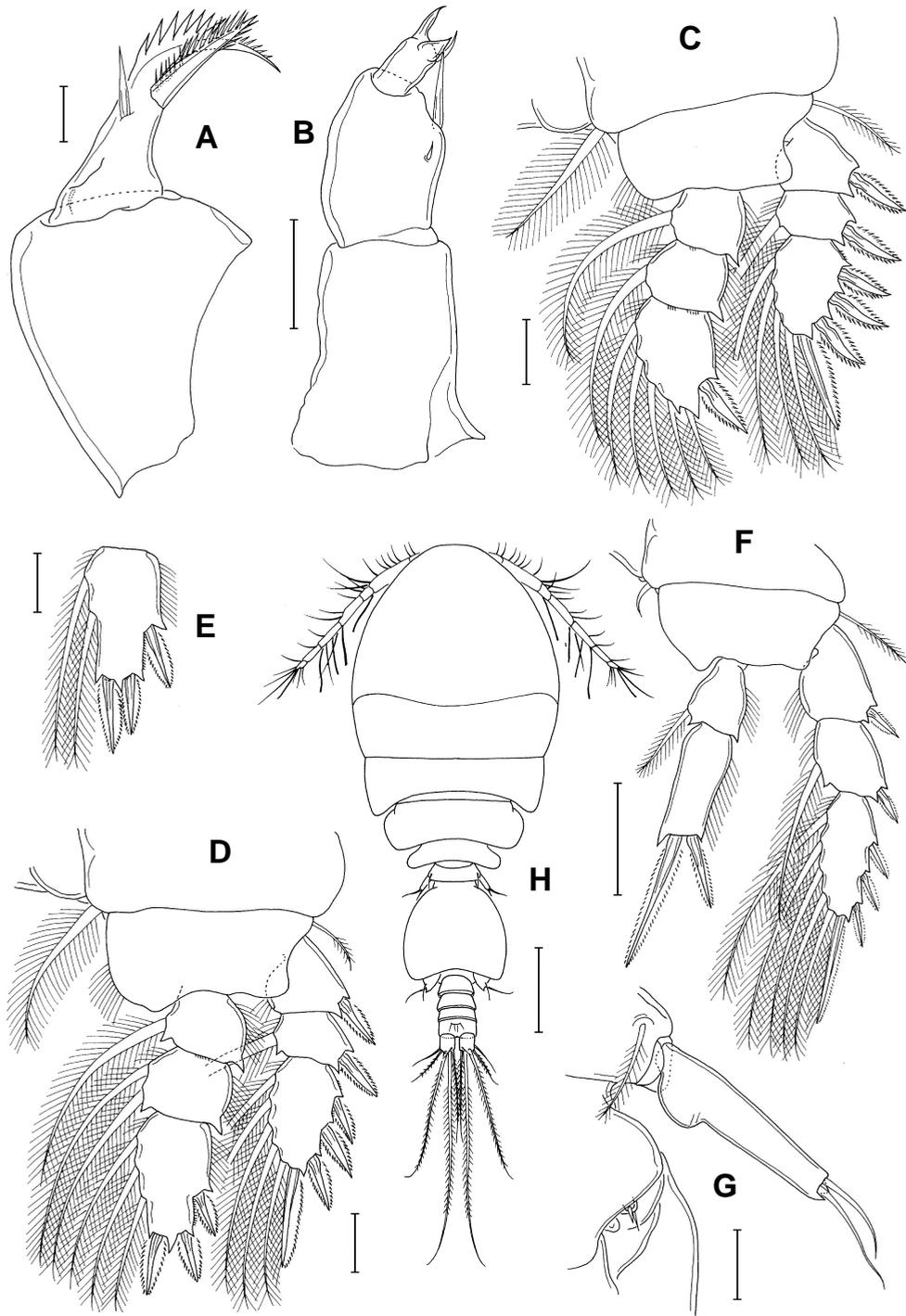


Fig. 62. *Critomolgus mandoensis* n. sp. Female: A, maxilla; B, maxilliped; C, leg 1; D, leg 2; E, third endopodal segment of leg 3; F, leg 4; G, leg 5 and genital area. Male: H, habitus, dorsal. Scale bars = 0.02 mm (A), 0.05 mm (B-E, G), 0.1 mm (F), 0.2 mm (H).

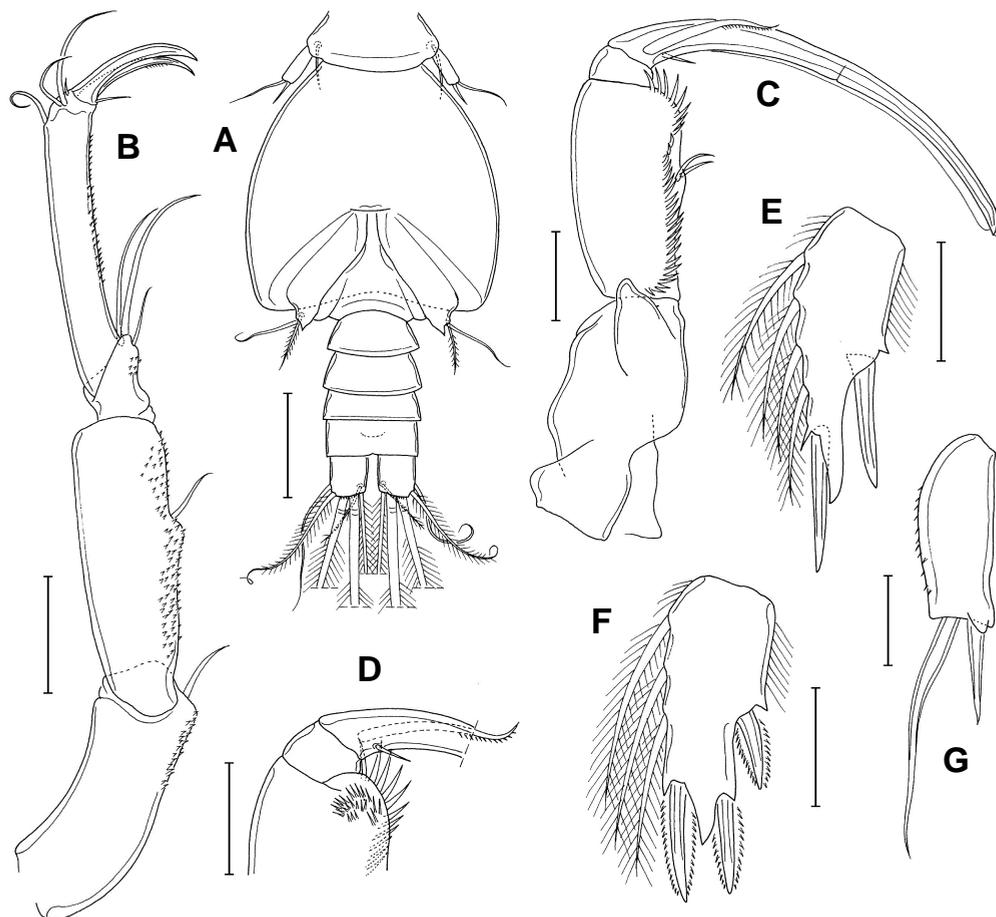


Fig. 63. *Critomolgus mandoensis* n. sp., male. A, urosome, ventral; B, antenna; C, maxilliped; D, distal part of maxilliped; E, third endopodal segment of leg 1; F, third endopodal segment of leg 2; G, free segment of leg 5. Scale bars = 0.02 mm (G), 0.05 mm (B-F), 0.1 mm (A).

rectangular, terminated by conical process and armed with 1 seta and 1 spine.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod of leg 4, with following armature formula.

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; II

Inner coxal seta in legs 1-3 large and plumous, but this seta in leg 4 small and smooth. Second endopodal segment of leg 4 (Fig. 62F) 2.27 times as long as wide, inner one of its 2 terminal spines 1.8 times as long as outer one. Outer margin of segment with fine setules.

Free segment of leg 5 (Fig. 62G) elongated, $148 \times 47 \mu\text{m}$, ratio 3.15 : 1, with round proximal

expansion. Two terminal setae smooth, 91 μm (inner) and 73 μm (outer). Leg 6 represented by 1 small spinule and 1 small seta in genital area (Fig. 62G).

Male. Body (Fig. 62H) narrower than that of female. Length 1.22 mm and greatest width 494 μm . Urosome (Fig. 63A) 6-segmented. Fifth pedigerous somite small, 125 μm wide. Genital somite distinctly broadened distally, 250 \times 243 μm , anterolateral corners not defined. Four abdominal somites from anterior to posterior 45 \times 87, 38 \times 94, 25 \times 97, and 38 \times 90 μm .

Caudal ramus 42 \times 37 μm , ratio 1.14 : 1.

Rostrum similar to that of female. Antennule like that of female but 3 aesthetascs added at opposite side of locations indicated by dots in Fig. 61E. Antenna (Fig. 63B) as in female, but having small spinules on inner side of all segments.

Labrum, mandible, maxillule, and maxilla resembling those of female. Maxilliped (Fig. 63C) with first segment bearing 1 large, tapering distal process. Second segment gradually broadened distally, bearing 2 inner setae and 1 row of spinules along inner margin. Inner distal part of second segment with 1 patch of small spinules (Fig. 63D). Terminal claw slightly shorter than proximal 3 segments combined, with 2 extremely unequal setae proximally.

Leg 1 with third endopodal segment having 2 enlarged, smooth spines, 4 setae (formula I, I, 4), and enlarged distal process (Fig. 63E). Third endopodal segment of leg 2 with larger spines and distal process (Fig. 63F).

Leg 5 with small free segment 41 \times 17 μm , ratio 2.41 : 1, its 2 terminal elements smooth : spiniform inner seta of 23 μm and longer outer seta of 57 μm . Leg 6 represented by 2 setae, one of them weakly plumous, on genital flap (Fig. 63A)

Etymology. The specific name *mandoensis* is derived from the type locality, Isle of Mando, New Caledonia.

Remarks. In the genus *Critomolgus* only two species have, as *C. mandoensis* n. sp., a combination of the features that the caudal ramus is 1.5 to 2.0 times as long as wide, and the female genital double-somite is wider than long. They are *C. hispidulus* (Humes, 1982) and *C. virgulariae* (Humes, 1978).

Critomolgus mandoensis can be distinguished from *C. hispidulus* by the absence of dorsal lobe near the insertion of the free segment of leg 5, by the different form of the third endopodal segment of male leg 1, by the nearly quadrangular (without prominent anterior expansion) female genital double-somite, and by the prominent posterior margin of rostrum.

Critomolgus mandoensis can be distinguished from *C. virgulariae* by having a larger body (1.92 mm versus 1.12 mm in the female of *C. virgulariae*), by the absence of any claw or spiniform seta on the third segment of antenna, by the unornamented first segment of maxilla, and by the prominent proximal swelling on the free segment of female leg 5.

***Critomolgus brevicaudatus* n. sp. (Figs. 64–66)**

Material examined. 3 ♀♀, 1 ♂ from 1 individual of a sea anemone of unknown species, in intertidal pool, Ricaudy Reef, New Caledonia, 25 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016315), allotype (♂; USNM 1016316 : antenna, maxilliped, and legs 1 and 2 of left side dissected out), and paratype (1 ♀; USNM 1016317) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratype (1 ♀) in

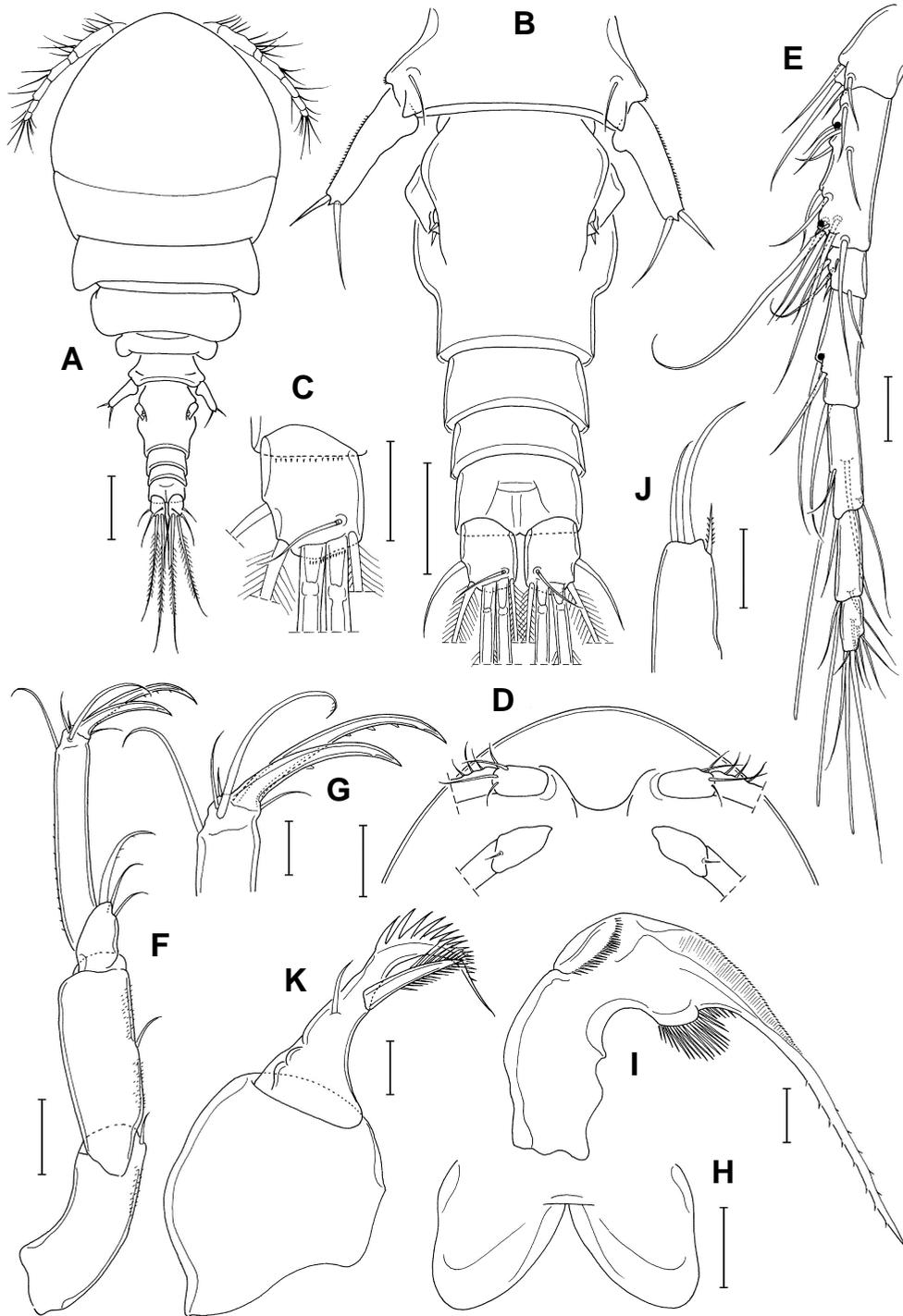


Fig. 64. *Critomolgus brevicaudatus* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus, dorsal; D, rostral area, ventral; E, antennule; F, antenna; G, terminal part of antenna; H, labrum; I, mandible; J, maxillule; K, maxilla. Scale bars = 0.02 mm (G, I-K), 0.05 mm (C, E, F, H), 0.1 mm (B, D), 0.2 mm (A).

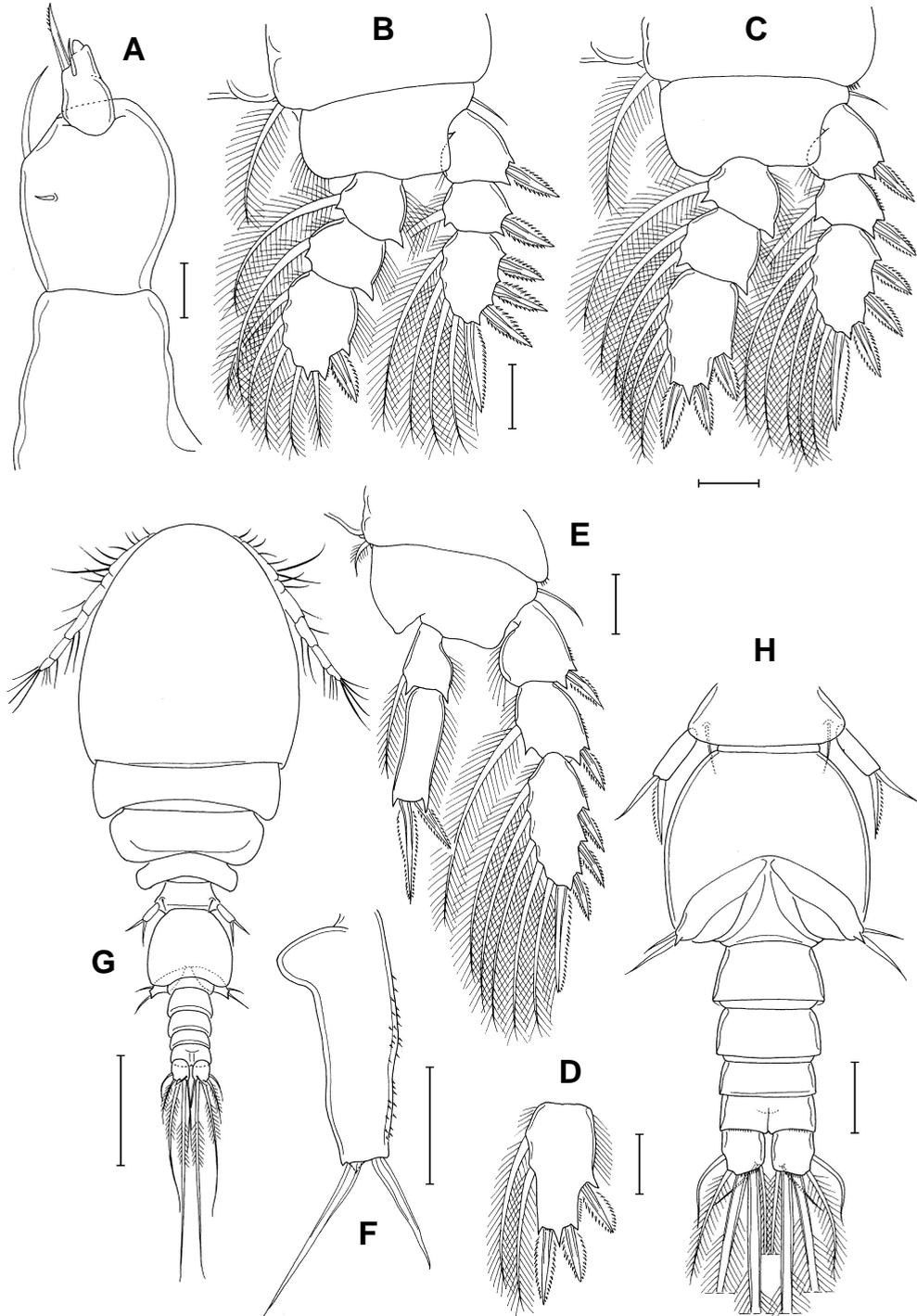


Fig. 65. *Critomolgus brevicaudatus* n. sp. Female: A, maxilliped; B, leg 1; C, leg 2; D, third endopodal segment of leg 3; E, leg 4; F, free segment of leg 5. Male: G, habitus, dorsal; H, urosome, ventral. Scale bars = 0.02 mm (A), 0.05 mm (B-F, H), 0.2 mm (G).

the collection of the author.

Female. Body as Fig. 64A. Length 1.56 mm and greatest width 704 μm . Prosome 1.06 mm long, occupying approximately 68% length of whole body. First pedigerous somite separated from cephalosome by weak dorsal furrow, narrower than cephalosome.

Urosome (Fig. 64B) 5-segmented and stocky. Fifth pedigerous somite 233 μm wide, wider than genital double-somite, with conical dorsolateral process near base of leg 5. Genital double-somite in dorsal view 215 \times 196 μm , with indented lateral margins of anterior part. Genital area located dorsolaterally anterior to middle. Three abdominal somites short and broad, 52 \times 129, 43 \times 119, and 72 \times 113 μm , from anterior to posterior. Posteroventral border of anal somite rimmed with fine spinules.

Caudal ramus stout, 66 \times 50 μm , ratio 1.32 : 1, with posteroventral border rimmed with fine spinules, and 6 caudal seta. Outer lateral and dorsal setae smooth, other setae plumous. Egg sac not seen.

Rostrum small with roundly convex posterior margin, extending to area between antennule and antenna (Fig. 64D). Antennule (Fig. 64E) 510 μm long, with armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; all setae smooth. Antenna (Fig. 64F) slender and 4-segmented, with armature formula: 1, 1, 3, and 5+2 claws. First and second segments with minute spinules on inner margin. Lengths of segments from proximal to distal 133, 130, 33, and 133 μm , measured at midline. Two terminal claws slender (Fig. 64G), 84 μm and 64 μm .

Labrum (Fig. 64H) with 2 divergent, tapering posteroventral lobes having round tip. Mandible (Fig. 64I) slender, with broad proximal notch. Inner margin slightly protruded, with long spinules. Convex margin with row of small spinules and followed by minute denticles. Lash elongate, with minute, sparse spinules on margins. Maxillule (Fig. 64J) with 1 small, weakly plumous subterminal seta and 2 naked terminal setae. Maxilla (Fig. 64K) with broad, unarmed first segment. Second segment tapering; proximal seta absent; anterior seta naked; inner seta spiniform, bipectinated. Terminal lash short, with spinules gradually diminishing in size distally. Maxilliped (Fig. 65A) with first segment unarmed. Second segment slightly expanded, with 2 isolated, extremely unequal setae (35 μm and 8 μm). Terminal segment terminated by small knob, with 1 spine and 1 seta.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod of leg 4, with following armature formula.

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; II

Outer seta on basis of legs 1-4 small and smooth. Inner coxal seta of leg 4 small, but plumous. Leg 4 (Fig. 65E) with second endopodal segment nearly rectangular, 94 \times 33 μm , its 2 terminal spines 88 μm (inner) and 50 μm (outer).

Leg 5 with free segment (Fig. 65F) 105 \times 48 μm (width measured across expanded proximal area), ratio 2.19 : 1, gradually narrowed distally, with strong proximal expansion, minute spinules on outer margin, and point on terminal margin. Two terminal setae smooth and stiff, 75 μm (inner) and 54 μm (outer). Leg 6 represented by 2 small spiniform setae in genital area (Fig. 64B).

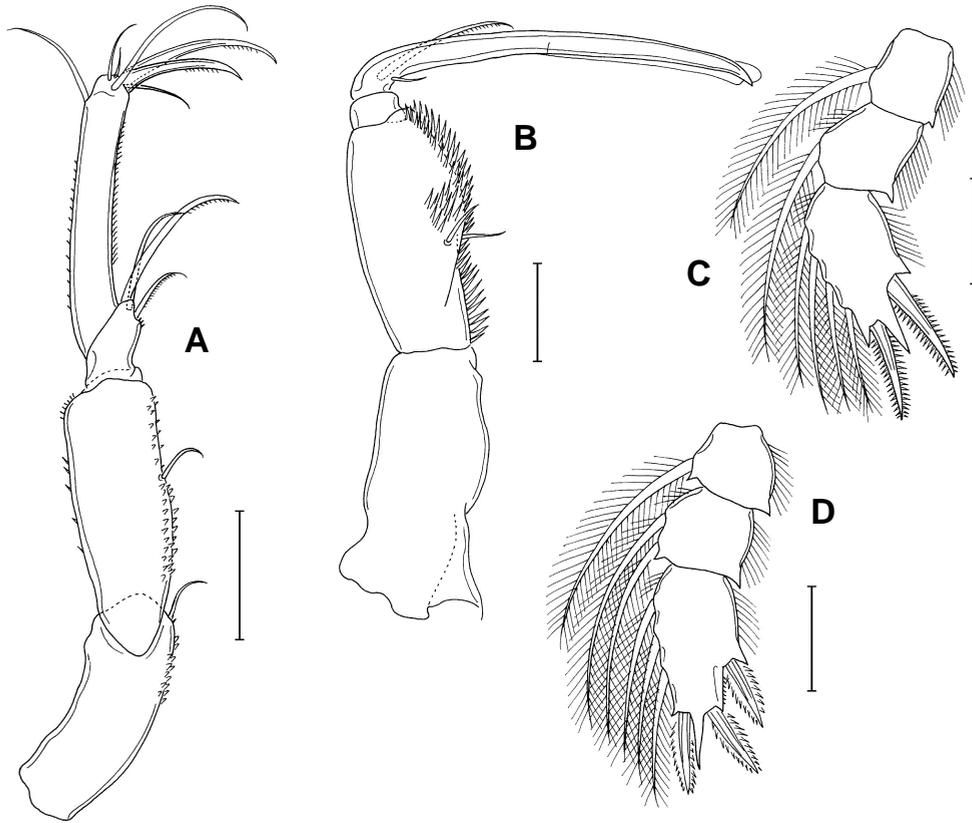


Fig. 66. *Critomolgus brevicaudatus* n. sp., male. A, antenna; B, maxilliped; C, leg 1 endopod; D, leg 2 endopod. Scale bars = 0.05 mm (A-D).

Male. Body (Fig. 65G) narrower than that of female, without demarcation between cephalosome and first pedigerous somite. Length 1.00 mm and greatest width 388 μ m. Urosome (Fig. 65H) 6-segmented. Fifth pedigerous somite triangular, 112 μ m wide. Genital somite 140 \times 145 μ m, nearly as long as wide, gradually broadened posteriorly. Four abdominal somites from anterior to posterior 45 \times 78, 38 \times 73, 25 \times 68, and 25 \times 67 μ m. Anal somite short, not longer than preceding somites.

Caudal ramus 33 \times 30 μ m, ratio 1.10 : 1.

Rostrum similar to that of female. Antennule like that of female but 3 aesthetascs added at locations indicated by dots in Fig. 64E. Antenna (Fig. 66A) as in female, but larger spinules on inner margin of first 2 segments, and added by minute spinules on outer margin of second segment and both margins of fourth segment. Larger seta on third segment elongated.

Labrum, mandible, maxillule, and maxilla resembling those of female. Maxilliped (Fig. 66B) with second segment bearing 2 equal inner setae and 2 or 3 rows of spinules along inner margin. Terminal claw shorter than proximal 3 segments combined, with 2 extremely unequal proximal setae.

Legs 1-4 as in female except for sexual dimorphism in third endopodal segment of legs 1 and 2. Third endopodal segment (Fig. 66C) of leg 1 armed with 2 spines and 4 setae (formula I,I,4); its median terminal process elongated and acute. Median terminal process of third endopodal segment of leg 2 elongated and acute, as well.

Leg 5 with rectangular free segment $42 \times 21 \mu\text{m}$, ratio 2.0 : 1 and terminally 1 spine and 1 seta (Fig. 65H). Leg 6 represented by 2 unequal setae and 1 dentiform process on genital flap.

Etymology. The specific name *brevicaudatus*, a combination of the Latin *brevis* (short) and *cauda* (tail), alludes to the short caudal rami.

Remarks. In the genus *Critomolgus*, a range of the length to width of the female caudal ramus, from 1.0 to 1.5, is shared by several species, including the new species. *Critomolgus rigidus* certainly belongs to this group of species, based on the illustrations of Ummerkutty (1962), but is excluded from the following comparison with *C. brevicadatus*, because that species from India is incompletely described. Other species having similar caudal rami can be distinguished from *C. brevicadatus* by having the following features.

In *Critomolgus brevipes* (Shen and Lee, 1966) the body is small, only 0.91 mm long in the female, and the free segment of leg 4 is about four times as long as wide (Humes, 1990a, p. 27).

In *Critomolgus isoawamochi* Ho, 1981, described only with males, two terminal claws on antenna is distinctly unequal in size, the labrum bears a pair of large, bilobate, spinulate protrusions on either side of the median incision (Ho, 1981), and the maxillule is armed with four elements.

In *Critomolgus foxi* (Gurney, 1927) the maxillule is armed with four elements (although lateral one of them is small), the convex margin of mandible bears a tapering process, the terminal process on the third segment of female maxilliped is prominent, as long as spine on the same segment, the inner seta on the first endopodal segment of leg 4 is small, much shorter than the width of the segment, and the free segment of male leg 4 bears two terminal setae (one spine and one seta in *C. brevicadatus*).

In *Critomolgus pteropadus* (Humes, 1978) the third segment of antenna is armed with one claw and one seta, and the free segment of female leg 5 bears three swellings.

In *Critomolgus buddhensis* (Thompson and Scott, 1903) the female abdomen is only two-segmented, and the female genital double-somite is globular.

In *Critomolgus trispinosus* (Stock, 1959), which was described probably on the basis of a female copepodid V, the maxillule is armed with four elements, and the antenna bears the fourth segment which is not elongated and its third segment is armed with one claw and one seta.

***Critomolgus antennulus* Humes, 1990**

Material examined. 58 ♀♀, 24 ♂♂ from the alcyonacean coral *Cladiella humesi* Verseveldt, in 2 m, west of Isle of Mando, near Noumea, New Caledonia, 26 June 1971, collected by A. G. Humes.

Remarks. This is a new host record.

***Critomolgus cladiellae* Humes, 1990**

Material examined. 2 ♀♀, 4 ♂♂ from the alcyonacean coral *Cladiella humesi* Verseveldt, in 2 m, west of Isle of Mando, near Noumea, New Caledonia, 26 June 1971, collected by A. G.

Humes.

Remarks. This is a new host record.

Genus *Doridicola* Leydig, 1853

***Doridicola parvicaudatus* n. sp. (Figs. 67-69)**

Material examined. 10 ♀♀, 5 ♂♂ from the ancyonacean coral *Stereonephthya inordinata* Tixier-Durivault, in 30 m, off Noumea, New Caledonia, 23 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016318), allotype (♂; USNM 1016319), and paratypes (8 ♀♀, 3 ♂♂; USNM 1016321) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 67A) with relatively narrow prosome and short urosome. Length 1.01 mm and greatest width 417 µm. Prosome 679 µm long, occupying about 67% length of body. First pedigerous somite separated from cephalosome by faint dorsal furrow. Epimera of second pedigerous somite projected posterolaterally with angular tip.

Urosome (Fig. 67B) 5-segmented. Fifth pedigerous somite 140 µm wide, with minute spinules at lateral tips. Genital double-somite longer than wide, 146 × 135 µm, divided by dorsal transverse furrow into longer anterior part and shorter posterior part (this part 33 × 96 µm). Genital area located dorsolaterally near middle of somite. Three abdominal somites from anterior to posterior 31 × 79, 29 × 72, and 47 × 68 µm. First 2 abdominal somite markedly short.

Caudal ramus (Fig. 67C) 87 × 85 µm, nearly as long as wide, with smooth, rounded posteroventral margin, and 7 caudal setae. Outer proximal seta small but distinct. Outermost and innermost terminal setae plumous, other 5 setae smooth. Longest inner one of 2 median terminal seta distinctly longer than urosome. Egg sac (Fig. 68K) weakly tapering distally, 542 × 200 µm, containing numerous eggs.

Rostrum with obscure posterior margin, extending over insertion of antenna by weak ridge (Fig. 67D). Antennule (Fig. 67E) slender and long, 477 µm, with armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; all setae thin and smooth. Antenna (Fig. 67F) stocky and 4-segmented, with armature formula: 1, 1, 3, and 4+2 claws. Lengths of first to fourth segments approximately 67, 67, 29, and 87 µm. First 2 segments robust. Two terminal claws elongate, 131 µm and 115 µm, longer one more slender than shorter one.

Labrum (Fig. 67G) with 2 tapering posterior lobes. Mandible (Fig. 68A) broad, with deep proximal notch. Inner margin clearly defined and slightly convex. Convex margin with row of about 10 small spinules, and followed by pointed process and minute denticles. Lash long, whip-like, and spinulated. Maxillule (Fig. 68B) with 1 small subterminal and 3 terminal smooth setae. Maxilla (Fig. 68C) with broad, unarmed first segment. Second segment with 3 setae; inner seta with long spinules on distal margin; anterior seta with minute spinules along inner margin. Lash long, with serrate outer margin. Maxilliped (Fig. 68D) with first segment bearing inner and distal rows of small spinules. Second segment with equal, spinulated setae, both 32 µm. Short third segment with 2 similar, spinulated spines and 1 seta.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod of leg 4, with following armature formula.

Leg 1: coxa 0-1; basis 1-0; exp I-0; I-1; III, I, 4; enp 0-1; 0-1; I, 5

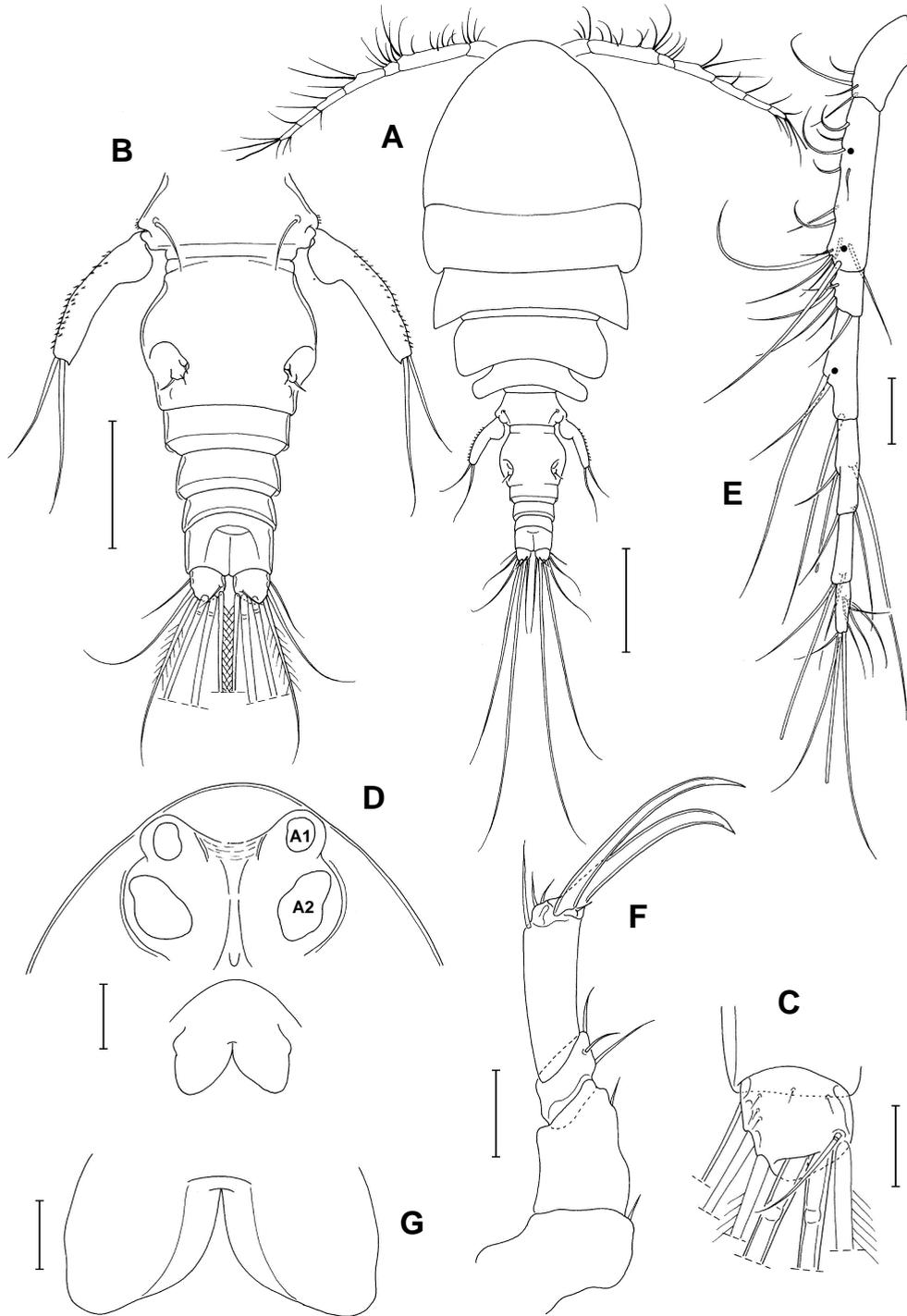


Fig. 67. *Doridicola parvicuadatus* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus, dorsal; D, rostral area, ventral; E, antennule; F, antenna; G, labrum. Scale bars = 0.02 mm (C, G), 0.05 mm (D-F), 0.1 mm (B), 0.2 mm (A).

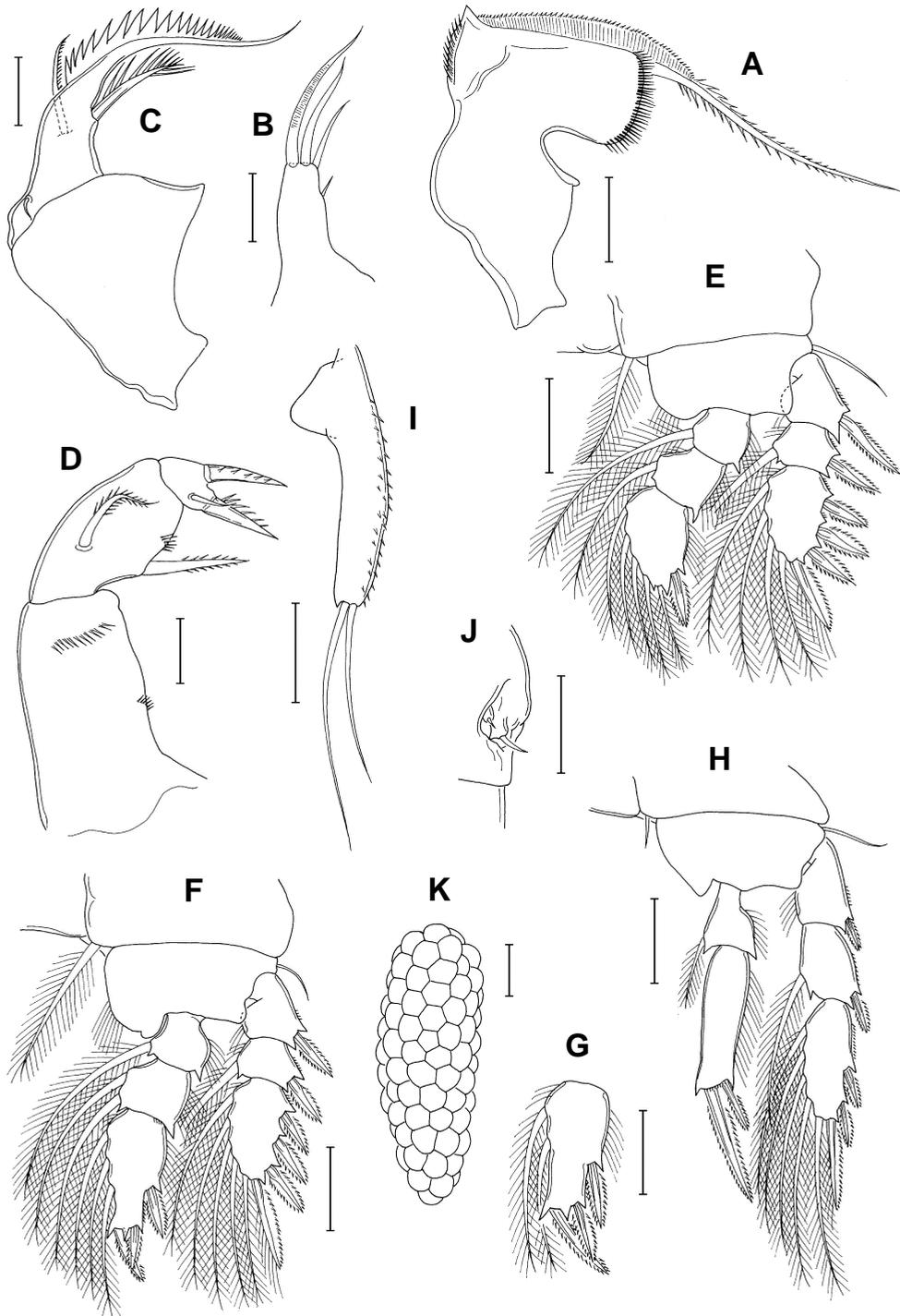


Fig. 68. *Doridicola parvicuadatus* n. sp., female. A, mandible; B, maxillule; C, maxilla; D, maxilliped; E, leg 1; F, leg 2; G, third endopodal segment of leg 3; H, leg 4; I, free segment of leg 5; J, genital area; K, egg sac. Scale bars = 0.02 mm (A-D), 0.05 mm (E-J), 0.1 mm (K).

Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Outer seta on coxa of legs 1-4 smooth (Fig. 68E, F, H). Inner coxal seta of leg 4 small and smooth; those of legs 1-3 large and plumous. Leg 4 (Fig. 68H) with second endopodal segment $85 \times 27 \mu\text{m}$, its 2 terminal spines $72 \mu\text{m}$ (inner) and $31 \mu\text{m}$ (outer). Inner seta on first segment short, reaching middle of second segment.

Leg 5 with free segment (Fig. 68I) $130 \times 41 \mu\text{m}$ (width measured across expanded proximal area), ratio 3.17 : 1, with prominent, conical proximal expansion, and spinules on outer margin; two terminal setae large, $140 \mu\text{m}$ (inner) and $91 \mu\text{m}$ (outer). Leg 6 represented by 2 small setae in genital area (Fig. 68J).

Male. Body (Fig. 69A) slender than that of female, with incomplete suture between cephalosome and first pedigerous somite. Length 0.80 mm and greatest width $279 \mu\text{m}$. Urosome (Fig. 69B) stocky and 6-segmented. Fifth pedigerous somite $87 \mu\text{m}$ wide. Genital somite $165 \times 157 \mu\text{m}$. Four abdominal somites from anterior to posterior 28×51 , 25×53 , 15×51 , and $23 \times 51 \mu\text{m}$.

Caudal ramus wider than long, $18 \times 21 \mu\text{m}$, ratio 1 : 1.17.

Rostrum similar to that of female. Antennule like that of female but 3 aesthetascs added at locations indicated by dots in Fig. 67E. Antenna as in female, but added by small spinules along inner side of first 2 segments.

Labrum, mandible, maxillule, and maxilla resembling those of female. Maxilliped (Fig. 69C) with second segment bearing 1 inner seta (another seta not recognized) and spinules along inner margin; these spinules arranged as 1 row in proximal half and 2 or more rows in distal half of segment. Terminal claw slender, shorter than proximal 3 segments combined, with 1 setae and 1 small setule proximally.

Legs 1-4 as in female except for sexual dimorphism in third endopodal segment of leg 1 (Fig. 69D) bearing armature formula I,I,4 and having enlarged, barbed median terminal process. Leg 5 with slender free segment (Fig. 69E) $47 \times 10 \mu\text{m}$, ratio 4.70 : 1, its 2 terminal setae extremely unequal, smooth, $68 \mu\text{m}$ (outer) and $21 \mu\text{m}$ (inner). Leg 6 represented by 2 smooth setae on genital flap (Fig. 69B).

Etymology. The specific name *parvicaudatus* is a combination of the Latin *parvus* meaning “small” and *cauda* meaning “tail”. It alludes to the short caudal rami of the species.

Remarks. In most species of the genus *Doridicola*, the two setae on the second segment of female maxilliped are different in size, with one distinctly shorter than the other. Only in eight species, one of the two setae exceeds half length of the other (Ho and Kim, 2001). In five of these eight species, two terminal claws on antenna are equal or subequal in length, like the new species : *D. claudus* (Humes and Stock, 1973), *D. connexus* Humes, 1986, *D. micropus* (Humes, 1973), *D. myorae* (Greenwood, 1971), and *D. sensilis* (Humes, 1964).

Doridicola connexus, *D. micropus*, and *D. myorae* differ from *D. parvicaudatus*, because these three species have no proximal swelling on the free segment of female leg 5.

Doridicola parvicaudatus can be distinguished from *D. claudus* by having the shorter caudal ramus which is as long as wide (compared to more than three times as long as wide in *D. claudus*),

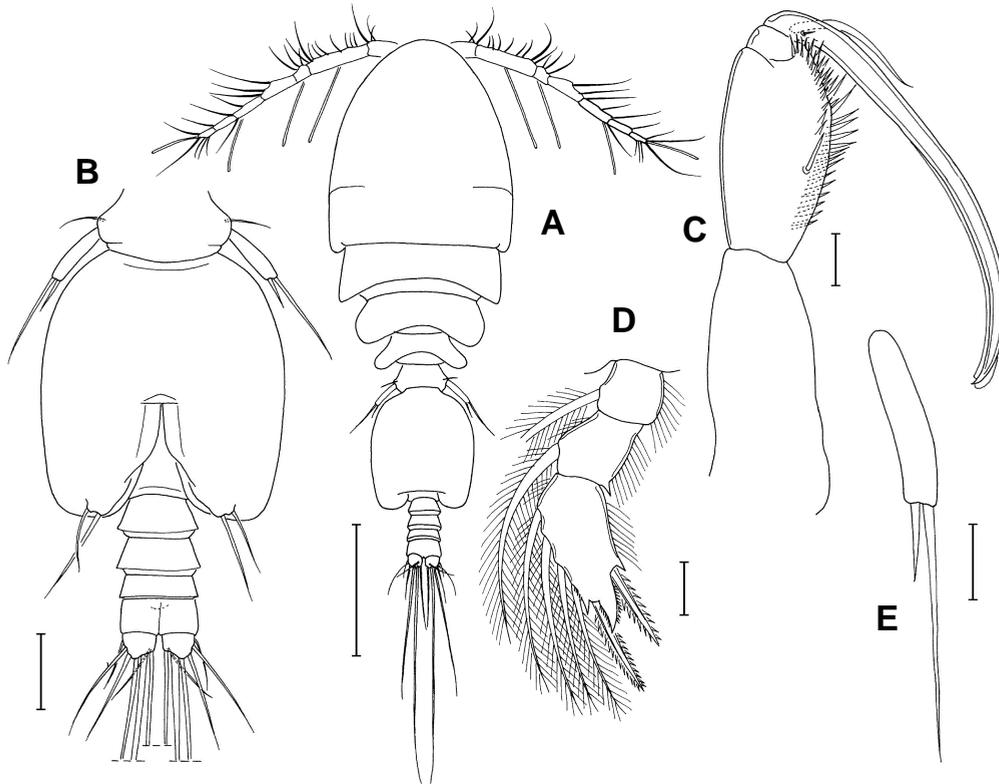


Fig. 69. *Doridicola parvicaudatus* n. sp., male. A, habitus, dorsal; B, urosome, ventral; C, maxilliped; D, leg 1 endopod; E, free segment of leg 5. Scale bars = 0.02 mm (C-E), 0.05 mm (B), 0.2 mm (A).

the broader female genital double-somite which is slightly longer than wide (about 1.9 times as long as wide in *D. claudus*), and the presence of two terminal setae on the free segment of leg 5 in both sexes (one spine and one seta in *D. claudus*).

Doridicola parvicaudatus can be distinguished as well from *D. sensilis* by having the three setae on the third segment of antenna (one spine and two setae in *D. sensilis*), the smaller body size (1.01 mm long in the female, compared to 1.52 mm in *D. sensilis*), and the elongated terminal claws of the antenna which are distinctly longer than terminal segment (shorter than segment in *D. sensilis*).

***Doridicola inaequalis* (Humes and Ho, 1966)**

Material examined. 5 ♀♀, 1 ♂ from a zoanthid of *Palythoa* sp. in 2 m, Pt. Pontillon, near Noumea, New Caledonia, 2 June 1971, collected by A. G. Humes.

Remarks. This species is new to New Caledonia.

***Doridicola mimicus* (Humes, 1975)**

Material examined. 1 ♀, 1 ♂ from the alcyonacean coral *Cladiella humesi* Verseveldt, in 2 m,

west of Isle of Mando, near Noumea, New Caledonia, 26 June 1971, collected by A. G. Humes.

Remarks. This is a new host record.

Genus *Paramolgus* Humes and Stock, 1972

***Paramolgus galeatus* n. sp. (Figs. 70 and 71)**

Material examined. 2♂♂, 1 copepodid V ♂ from the alcyonacean coral *Sarcophyton ehrenbergi* von Marenzeller, Serpents Island, New Caledonia, 19 July 1971, collected by A. G. Humes. Holotype (♂; USNM 1016322) and paratype (1 copepodid V; USNM 1016323) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratype (1♂) in the collection of the author.

Male. Body (Fig. 70A) with greatly expanded cephalothorax and narrower remaining part. Length 1.53 mm. Cephalosome and first pedigerous somite fused to form cephalothorax, leaving rudimentary suture line and lateral constriction. Greatest width of body 740 μm measured across posterolateral corners of cephalothorax (700 μm across posterior part of original cephalosome). Cephalothorax helmet-shaped, with tapering posterolateral corners. Third pedigerous somite markedly narrower than cephalothorax, with posteriorly extended, acutely pointed, posterolateral corners. Third and fourth pedigerous somites each with round tubercle in middle of posterodorsal border.

Urosome (Fig. 70B) 6-segmented. Fifth pedigerous somite short but as wide as following somite. Genital somite 140 μm measured at midline (187 μm from anterior border to level of posterolateral corners) and 210 μm wide, slightly constricted laterally, with posteriorly expanded posterolateral corners. Four abdominal somites from anterior to posterior 62 × 117, 55 × 103, 43 × 93, and 128 × 96 μm. Anal somite longer than wide, distinctly longer than preceding abdominal somites. Caudal rami divergent; each ramus tapering, 267 × 40 μm, ratio 6.68 : 1, with 6 small caudal setae. Outer lateral seta located at distal one-third of outer margin; dorsal seta located near level of outer lateral setae; longest one of 4 terminal setae 108 μm.

Rostrum broad and indented anterolaterally, its posterior border fused with ventral surface of cephalothorax (Fig. 70C). Antennule (Fig. 70D) 480 μm long, with armature formula: 4, 13+2 aesthetasc, 6, 3+1 aesthetasc, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; all setae smooth. Distal seta on fourth segment inserted on beak-like process. Antenna (Fig. 70E) 4-segmented, with armature formula: 1, 1, 2, and 3+1 claw. Lengths of segments from proximal to distal approximately 94, 112, 24, and 94 μm, measured at midline. Distal setae on fourth segment obscure. Terminal claw strong, 66 μm, distally recurved.

Labrum (Fig. 70F) with 2 posterior lobes having divergent tips. Mandible (Fig. 70G) with broad proximal notch. Inner margin straight and well defined from lash. Convex margin not produced, with spinules. Lash long and thin, with serrated margins. Maxillule (Fig. 70H) with 3 subequal, smooth setae terminally. Maxilla (Fig. 70I) with short, unarmed first segment. Second segment with 3 setae; inner seta elongate, with spinulated distal margin. Terminal lash long and slender. Maxilliped (Fig. 71A) 3-segmented. First segment unarmed and distally narrowed. Second segment distinctly narrower than first segment, with 2 small inner setae and 1 longitudinal row of minute spinules. Claw proximally with 1 spiniferous seta and 1 small setule.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod of leg 4, with following

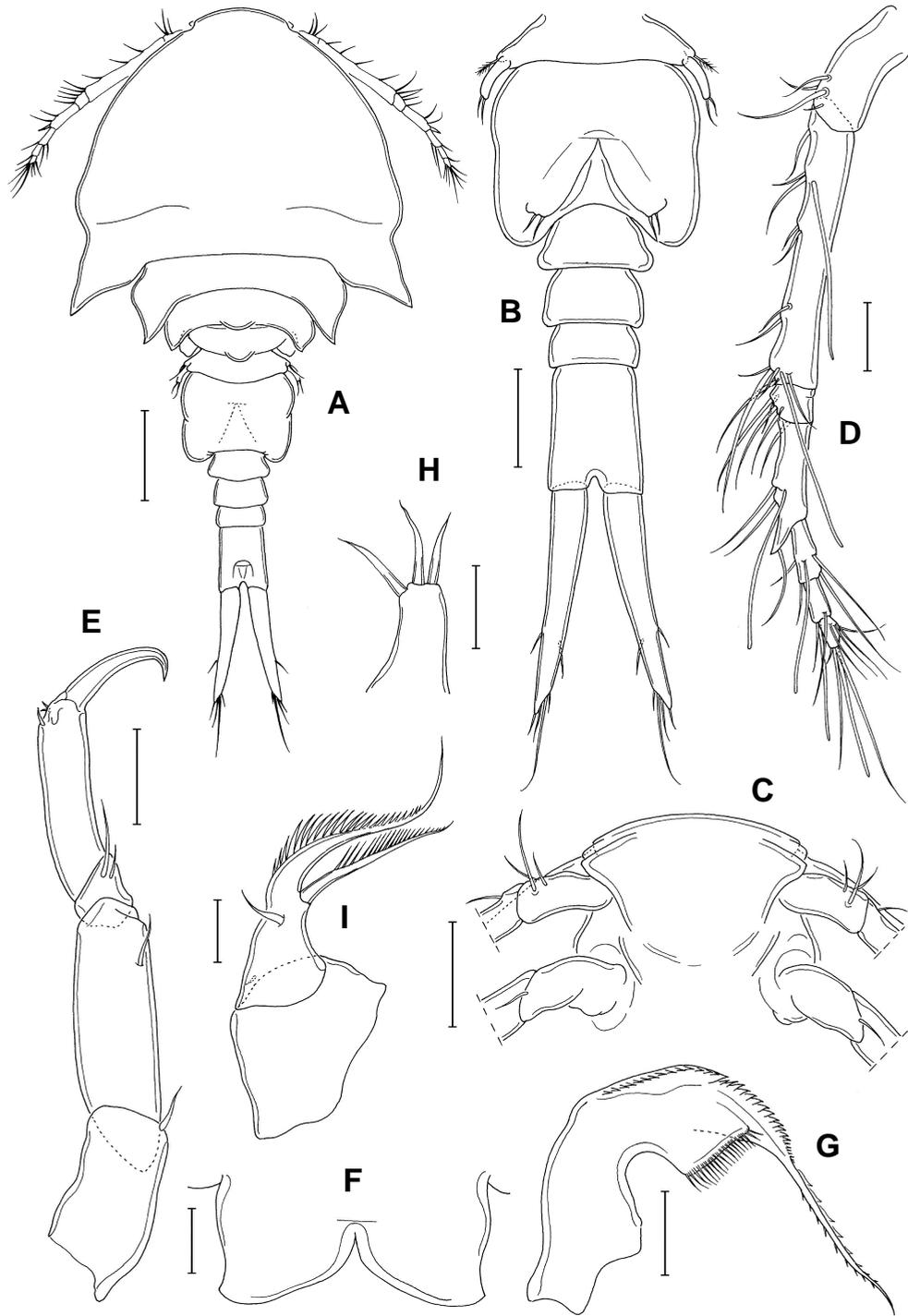


Fig. 70. *Paramolgus galeatus* n. sp., male. A, habitus, dorsal; B, urosome, ventral; C, rostral area, ventral; D, antennule; E, antenna; F, labrum; G, mandible; H, maxillule; I, maxilla. Scale bars = 0.02 mm (F-I), 0.05 mm (D, E), 0.1 mm (B, C), 0.2 mm (A).

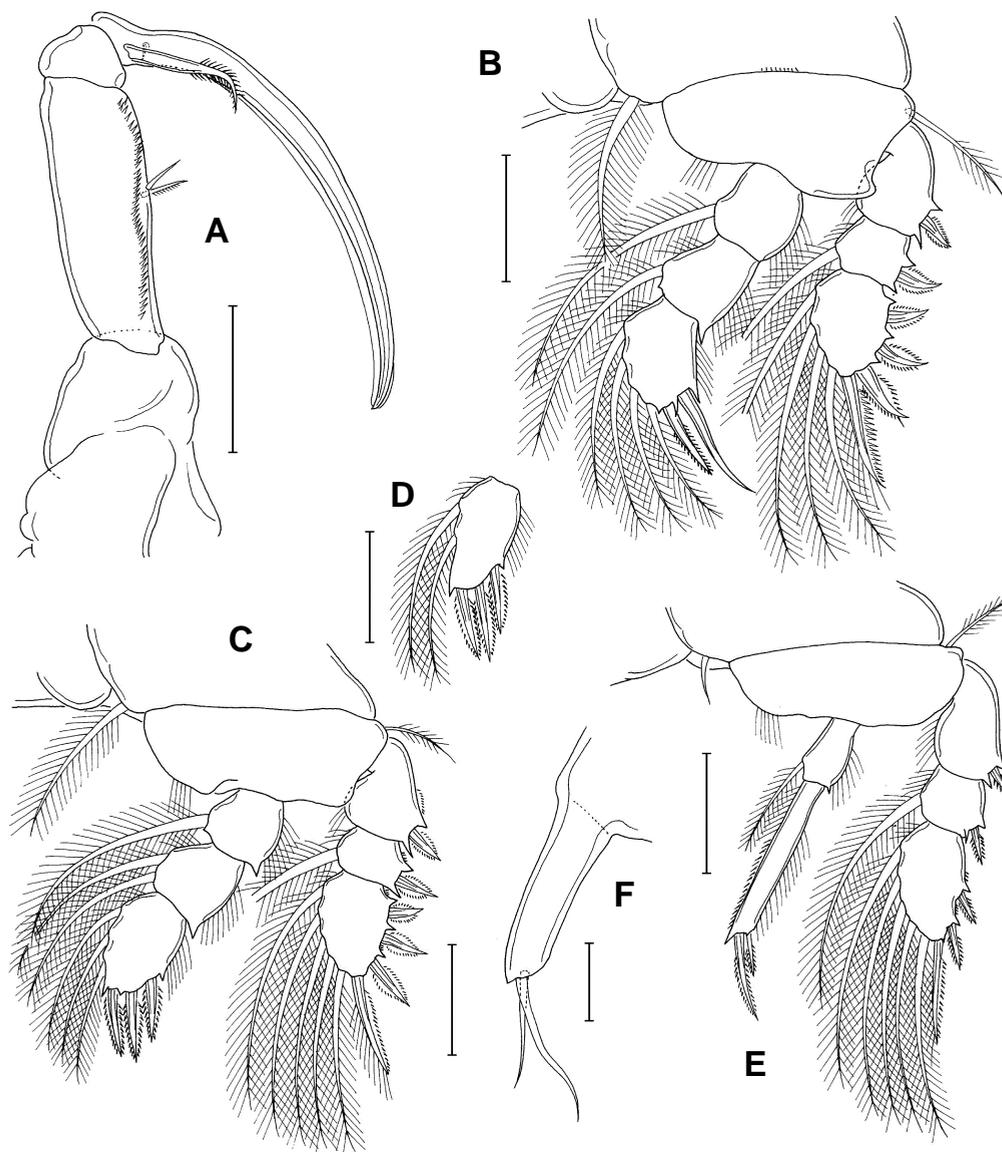


Fig. 71. *Paramolgus galeatus* n. sp., male. A, maxilliped; B, leg 1; C, leg 2; D, third endopodal segment of leg 3; E, leg 4; F, leg 5. Scale bars = 0.02 mm (F), 0.05 mm (A-E).

armature formula.

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, I, 4
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Proximal spine on third endopodal segment of leg 1 elongate and smooth. Leg 4 (Fig. 71E) with small, smooth inner coxal seta. Endopod of this leg slender and elongated; first segment with inner seta reaching middle of second segment; second segment $71 \times 11 \mu\text{m}$, ratio 6.45 : 1, with fine spinules on inner margin, setules on outer margin, and pointed inner distal corner; two terminal spines unequal, $39 \mu\text{m}$ (inner) and $18 \mu\text{m}$ (outer).

Leg 5 (Fig. 71F) immovable, without free segment, about $46 \times 15 \mu\text{m}$, ratio 3.07 : 1, with nearly parallel lateral margins; its 2 terminal setae smooth, $41 \mu\text{m}$ and $31 \mu\text{m}$. Leg 6 represented by 2 small setae on genital flap (Fig. 70B).

Female. Unknown.

Etymology. The specific name *galeatus*, a Latin meaning a helmet, is derived from the helmet-shaped cephalothorax of the species.

Remarks. Although only males have been available for this description, the peculiar body form of this species allows it to be described as new. The large, laterally expanded, and helmet-shaped cephalothorax makes this species distinctive among members of the genus.

Paramolgus galeatus can be differentiated by other way. Of known species bearing large body size exceeding 1 mm in the male, very few have elongated caudal rami, like *P. galeatus*. Only two species, both recorded from the Moluccas, *P. extendens* Humes and Dojiri, 1979 and *P. inconstans* Humes and Dojiri, 1979, in which the caudal ramus is more than four times as long as wide, agree with these conditions. However, by having the elongated second endopodal segment of leg 4 and no free segment in leg 5, *P. galeatus* is easily differentiated from the two species from the Moluccas.

***Paramolgus clavatus* (Humes and Ho, 1968)**

Material examined. 2 ♀♀ from the alcyonacean coral *Sinularia polydactyla* (Ehrenberg), in 2 m, east end of Ricaudy Reef, New Caledonia, 18 June 1971, collected by A. G. Humes.

Remarks. This is a new host record.

***Paramolgus nephthaenus* Humes, 1980**

Material examined. 5 ♀♀, 8 ♂♂ from the alcyonacean coral *Stereonephthya inordinata* Tixier-Durivault, in 30 m, 1 km northwest of Passe de Dumbea, off Noumea, New Caledonia, 23 July 1971, collected by A. G. Humes.

Remarks. This species is new to New Caledonia, and the above coral is a new host record.

***Paramolgus promiculus* Humes, 1980**

Material examined. 29 ♀♀, 54 ♂♂ from the alcyonacean coral *Stereonephthya inordinata* Tixier-Durivault, in 30 m, 1 km northwest of Passe de Dumbea, off Noumea, New Caledonia, 23 July 1971, collected by A. G. Humes.

Remarks. This is a new host record.

***Pachysericola* n. gen.**

Diagnosis. Rhynchomolgidae. Body laterally compressed, dorsoventrally deeper than laterally wider. Urosome 5-segmented in female, and 6-segmented in male. Antennule 7-segmented.

Antenna 3-segmented, with 1 terminal claw. Mandible with deep proximal notch, linear inner margin, and slender lash. Maxillule with 3 terminal setae. Maxilla with first segment unarmed, and second segment bearing 2 setae and short lash. Maxilliped 3-segmented and armed as in usual rhynchomolgid copepods. Legs 1-4 with 3-segmented rami except for 2-segmented endopod in leg 4. Third endopodal segment of leg 1 sexually dimorphic, armed with 1 spine and 5 setae in female, but in male 2 spines and 4 setae. Leg 4 with third exopodal segment armed with 3 spines and 5 setae, and endopodal segment armed with 1 seta on first segment and 2 spines on second segment. Armature in legs 1-3 as other rhynchomolgids. Free segment of leg 5 with 2 terminal setae.

Etymology. The generic name *Pachysericola* is a combination of *Pachyseris*, the generic name of the coral host and the Greek *-cola* (to love). Gender masculine.

Type species. *Pachysericola compressus* n. sp.

Remarks. Among recorded genera of the Rhynchomolgidae, only two, *Spaniomolgus* Humes and Stock, 1972 and *Lambanestes* Humes, 1982, show, like the new genus, a combination of characters, i.e., the second endopodal segment of leg 4 is armed with a pair of spines, and the antenna is 3-segmented. These two genera differ from *Pachysericola* as follows:

Spaniomolgus has a broad prosome, only a single seta on the first segment of antennule, and short setae on caudal ramus.

Lambanestes bears, like *Pachysericola*, the strongly flexed female urosome (the female is known only in *L. gemmulatus* Humes, 1982). However, this genus has two terminal claws on antenna, a large spine or process on the convex margin of mandible, and reduced setation on legs 1-4.

***Pachysericola compressus* n. sp. (Figs. 72-74)**

Material examined. More than 100 specimens from the scleractinian coral *Pachyseris rugosa* (Lamarck), in 2 m, Maitre Island near Noumea, New Caledonia, 21 June 1971, collected by A. G. Humes. Holotypes (♀; USNM 1016324), allotype (♂; USNM 1016325), and paratypes (50 ♀ ♀, 30 ♂ ♂; USNM 1016326) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Remaining specimens, including dissected paratypes (3 ♀ ♀, 3 ♂ ♂) in the collection of the author.

Female. Body (Fig. 72A) laterally compressed, dorsolaterally deeper than laterally wider, hardly stand in natural posture. Length 0.86 mm, greatest width 174 µm, and greatest depth 200 µm. Prosome 409 µm long. First pedigerous somite fused with cephalosome to form cephalothorax. Cephalothorax distinctly longer than wide, with parallel lateral margins (Fig. 72B).

Urosome 5-segmented and recurved dorsally, with its end facing anterior direction. Fifth pedigerous somite 83 µm wide. Genital double-somite 114 × 77 µm, tapering posteriorly. Genital area located dorsally in anterior one third of somite (Fig. 72C). Three abdominal somites cylindrical, unornamented, and 66 × 45, 70 × 43, and 43 × 41 µm from anterior to posterior.

Caudal ramus 68 × 16 µm, ratio 4.25 : 1, slightly curved outward and slightly broadened distally, with 6 caudal setae (Fig. 72D). Proximalmost (dorsal) seta expanded, 50 µm, located in distal one-third of ramus. Two median terminal setae with minute spinules on margins; inner one longest, 99 µm long. Other 4 setae smooth. Egg sac (Fig. 72E) containing only 1 or 2 eggs, each egg large, about 140 µm in diameter.

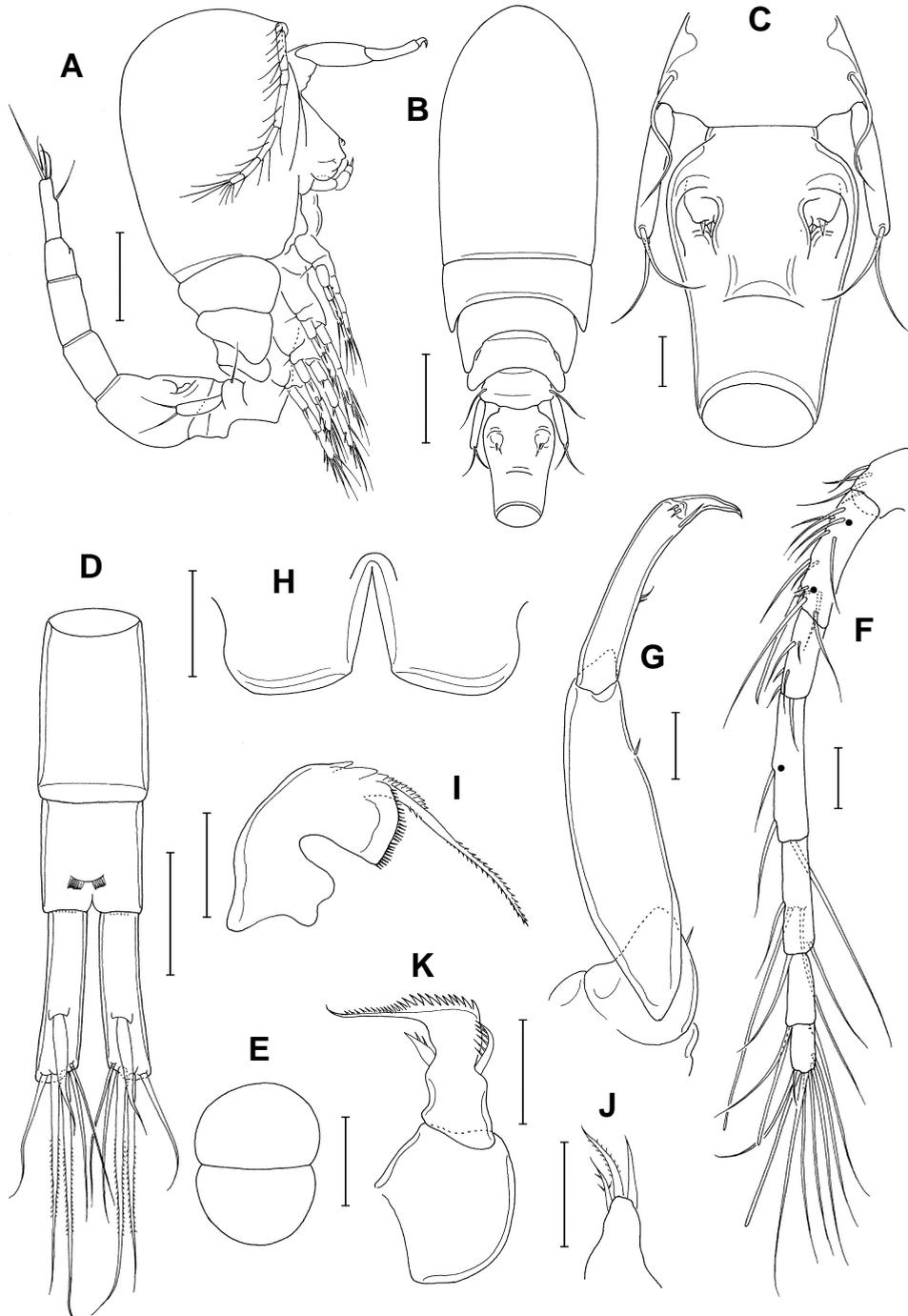


Fig. 72. *Pachysericola compressus* n. gen., n. sp., female. A, habitus, lateral; B, prosome and anterior part of urosome, dorsal; C, first two urosomal somites, dorsal; D, posterior part of urosome, dorsal; E, egg sac; F, antennule; G, antenna; H, labrum; I, mandible; J, maxillule; K, maxilla. Scale bars = 0.02 mm (C-K), 0.1 mm (A, B).

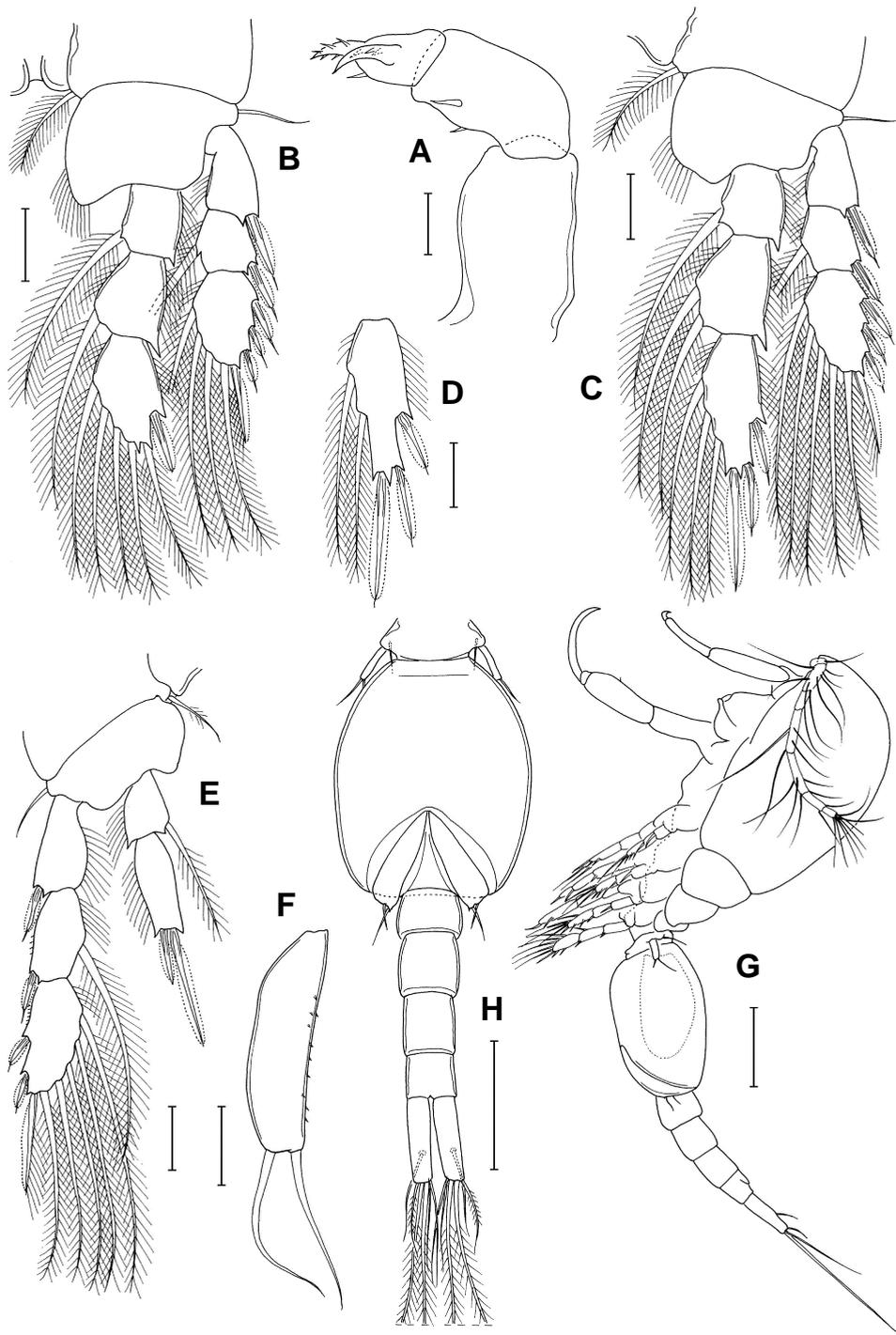


Fig. 73. *Pachysericola compressus* n. gen., n. sp. Female: A, maxilliped; B, leg 1; C, leg 2; D, third endopodal segment of leg 3; E, leg 4; F, free segment of leg 5. Male: G, habitus, lateral; H, urosome, ventral. Scale bars = 0.01 mm (A), 0.02 mm (B-F), 0.1 mm (G, H).

Rostrum as weak, blunt lobe (Fig. 72A). Antennule (Fig. 72F) slender, 260 μm long, 7-segmented, with armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; fourth segment longest among segments; all setae smooth; distal one of setae on second segment with blunt tip. Antenna (Fig. 72G) 3-segmented. First segment very short, wider than long, with small inner distal seta. Second segment longest among segments, about 90 μm long, widest in middle, with small inner distal seta. Third segment 60 μm long, slender, armed with 2 minute setae in middle of inner margin, 3 terminal obscure setae (2 of them directed backward), and 1 short claw of 20 μm long.

Labrum (Fig. 72H) deeply incised medially, with 2 posterior lobes having nearly horizontal posterior margin. Mandible (Fig. 72I) with deep proximal notch. Slightly convex inner margin broad, rimmed with fine spinules and demarcated by steep angle from lash. Convex margin with 2 obscure hyaline processes and followed by several denticles. Lash thin and long, with fine spinule on distal part. Maxillule (Fig. 72J) armed terminally with 3 setae. Maxilla (Fig. 72K) with unarmed first segment. Second segment with 2 setae: inner seta broad and short, with few spinules on distal margin; outer seta with spinules along distal margin. Terminal lash strongly tapering, forming right angle with segment, with serrate convex margin. Maxilliped (Fig. 73A) 3-segmented. First segment unarmed. Second segment slightly shorter than first, with 2 small inner seta. Third segment tapering, terminated with spiniform process bearing 2 or 3 barbs on margins, with 1 small seta and 1 spiniform, barbed seta.

Legs 1-4 with 3-segmented rami except for 2-segmented endopod of leg 4, with following armature formula.

Leg 1:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 4;	enp 0-1; 0-1; I, 5
Leg 2:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp I-0; I-1; III, I, 5;	enp 0-1; 0-2; I, II, 2
Leg 4:	coxa 0-1;	basis 1-0;	exp I-0; I-1; II, I, 5;	enp 0-1; II

Outer seta on basis of legs 1-4 smooth and relatively small. Leg 4 (Fig. 73E) with second endopodal segment $29 \times 12 \mu\text{m}$, its 2 terminal spines unequal in size, 38 μm (inner) and 17 μm (outer); inner seta on first segment extending over terminal margin of second segment.

Leg 5 with free segment (Fig. 73F) $55 \times 15 \mu\text{m}$, ratio 3.67 : 1, with narrow proximal part and sparse, minute spinules on outer margin; two terminal setae smooth, 45 μm and 42 μm . Leg 6 represented by 2 spiniform elements in genital area (Fig. 72C).

Male. Body (Fig. 73G) shaped as that of female, but urosome not recurved dorsally. Length 0.83 mm. Prosoma 415 μm long. Urosome (Fig. 73H) 6-segmented. Fifth pedigerous somite small, 79 μm wide. Genital somite oval, $183 \times 150 \mu\text{m}$, longer than wide. Abdomen slender. Four abdominal somites from anterior to posterior 31×50 , 46×46 , 46×40 , and $34 \times 38 \mu\text{m}$.

Caudal ramus rectangular, $65 \times 17 \mu\text{m}$, ratio 3.82 : 1. Proximal seta not swollen and weakly plumous. Two median terminal setae plumous.

Rostrum similar to that of female. Antennule like that of female but 3 aesthetascs added on opposite side of locations indicated by dots in Fig. 72F. Setae much longer than those of female. Three added aesthetascs longer than 3 terminal segments combined. Antenna (Fig. 74A) as in female, but having small scales along inner margin of second segment.

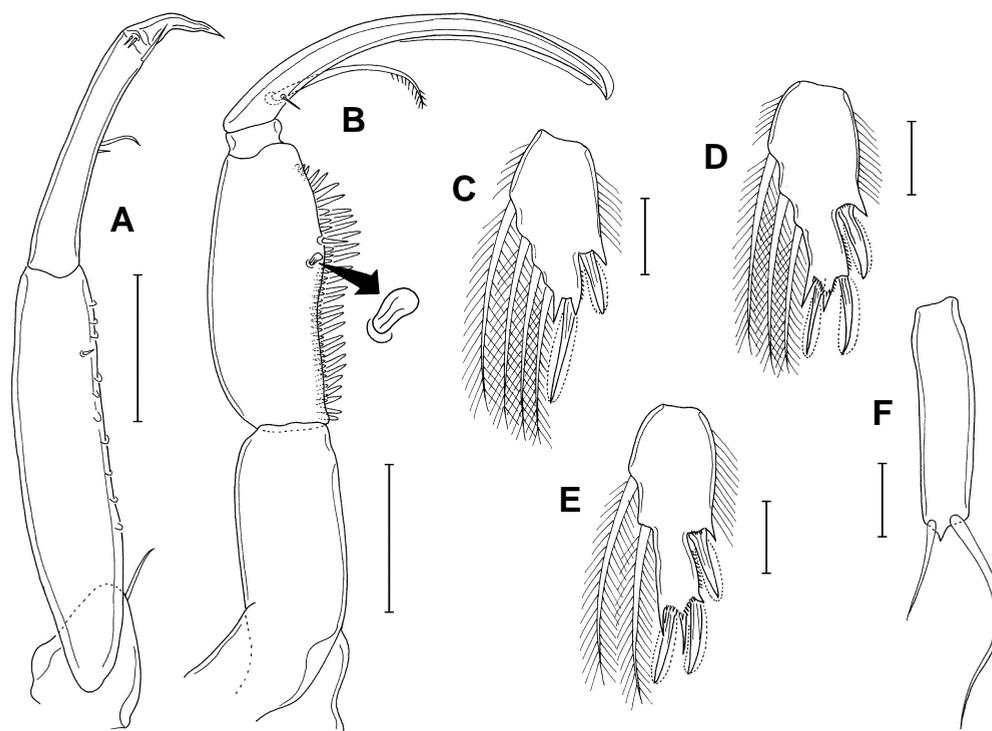


Fig. 74. *Pachysericola compressus* n. gen., n. sp., male. A, antenna; B, maxilliped; C, third endopodal segment of leg 1; D, third endopodal segment of leg 2; E, third endopodal segment of leg 3; F, free segment of leg 5. Scale bars = 0.02 mm (C-F), 0.05 mm (B), 0.1 mm (A).

Labrum, mandible, maxillule, and maxilla resembling those of female. Maxilliped (Fig. 74B) slender, with unarmed first segment. Second segment slightly shorter than first, with 2 rows of spinules (including 1 row of small spinules) along inner margin, and 2 small inner setae, one of latter modified to chisel-shaped element. Terminal claw evenly curved, distinctly shorter than proximal 3 segments combined, with 2 extremely unequal setae proximally.

Legs 1-4 as in female except for sexual dimorphism in third endopodal segment of legs 1-3 (Figs. 74C-E). Third endopodal segment of leg 1 with 2 spines and 4 setae (formula I, I, 4). Those of legs 2-3 with more developed terminal processes and shortened terminal spines. Leg 5 with free segment $30 \times 7 \mu\text{m}$, ratio 4.29 : 1, having pointed process terminally and smooth, nearly parallel, lateral margins; two terminal setae unequal, $31 \mu\text{m}$ and $14 \mu\text{m}$. Leg 6 represented by 2 small setae on genital flap (Fig. 73H)

Etymology. The specific name *compressus* refers to the laterally compressed body of the new species.

Order Siphonostomatoida Thorell, 1859

Family Asterocheridae Giesbrecht, 1899

Genus *Asteropontius* Thompson and A. Scott, 1903

***Asteropontius brevioris* n. sp. (Figs. 75-77)**

Material examined. 43 ♀♀, 15 ♂♂ from the scleractinian coral *Acropora hyacinthus* (Dana) in 1.5-2 m, Rocher à la Voile, Noumea, New Caledonia, 19 June 1971, collected by A. G. Humes. Holotype (♀; USNM 1016327), allotype (♂; USNM 1016328), and paratypes (40 ♀♀, 12 ♂♂; USNM 1016329) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (2 ♀♀, 2 ♂♂) in the collection of the author.

Female. Body (Fig. 75A) with prosome nearly circular, dorsoventrally flat, and broad. Length 985 µm and greatest width 563 µm. First pedigerous somite fused with cephalosome to form cephalothorax. Length of prosome 696 µm. Length of cephalothorax 467 µm. Fourth pedigerous somite distinctly narrower than preceding somites.

Urosome (Fig. 75B) 4-segmented. Fifth pedigerous somite 173 µm wide, tapering laterally, with posteroventral flap on both sides (Fig. 75C). Genital double-somite 146 × 135 µm, ratio 1.19 : 1, gradually narrowed posteriorly, with setules on lateral margins. Genital areas located dorsolaterally in anterior one-third of somite. First abdominal somite 71 × 85 µm, gradually broadened posteriorly. Second abdominal somite 56 × 83 µm. Genital double- and abdominal somites with transparent scales on surface. Caudal ramus (Fig. 75D) 34 × 38 µm, ratio 1 : 1.12, based on greatest dimensions; 6 caudal setae plumous. Egg sac not seen.

Rostrum as conical process (Fig. 75E). Antennule (Fig. 75F) 304 µm long, 20-segmented, with armature formula: 1, 2, 2, 2, 2 (5th segment), 2, 2, 2, 8, 2 (10th), 2, 2, 2, 2, 2 (15th), 2, 2, 2 + 1 aesthetasc, 2, and 9. All setae smooth. several setae on proximal segments enlarged, as long as one-third length of antennule. Aesthetasc on eighteenth segment slightly longer than terminal 4 segments combined. Antenna (Fig. 75G) with short first segment (coxa) of about 39 µm long. Second segment 70 µm long. Exopod small, 6 µm long, with 3 small setae. First endopodal segment 65 µm long, with longitudinal row of minute spinules. Second endopodal segment short, with 1 small inner seta and fine setules on outer and distal margins. Terminal claw slender, 105 µm long, weakly curved, with 1 small proximal seta.

Oral cone short, 146 µm long, strongly tapering (Fig. 75E), reaching insertions of maxillipeds. Mandible (Fig. 76A) with distally broadened gnathobase, 133 µm long. Palp unsegmented, fused with enlarged plumous one of 2 setae, 135 µm long; other seta minute. Maxillule (Fig. 76B) with 4 smooth setae (one of them minute) on smaller outer lobe of 26 µm long and 5 setae (one of them minute) on larger spinulated inner lobe of 58 µm long. Maxilla (Fig. 76C) with unarmed proximal segment of 133 µm long. Distal claw 172 µm long, slender, with minute spinules on proximal half of convex margin. Maxilliped (Fig. 76D) 5-segmented. First segment with 1 minute, papilliform inner distal seta. Largest second segment slightly expanded, with several minute spinules on outer margin. Third segment with 2 distal setae. Fourth segment divided by transverse line into proximal and distal parts each bearing 1 seta. Fifth segment with 1 terminal seta. Claw smooth.

Legs 1-4 (Figs. 76E-H) with 3-segmented rami. Armature formula as follows :

Leg 1:	coxa 0-1;	basis 1-1;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 2, 3
Leg 2:	coxa 0-1;	basis 1-0;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 2, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 1, I, 3
Leg 4:	coxa 0-1;	basis 1-0;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 1, I, 2

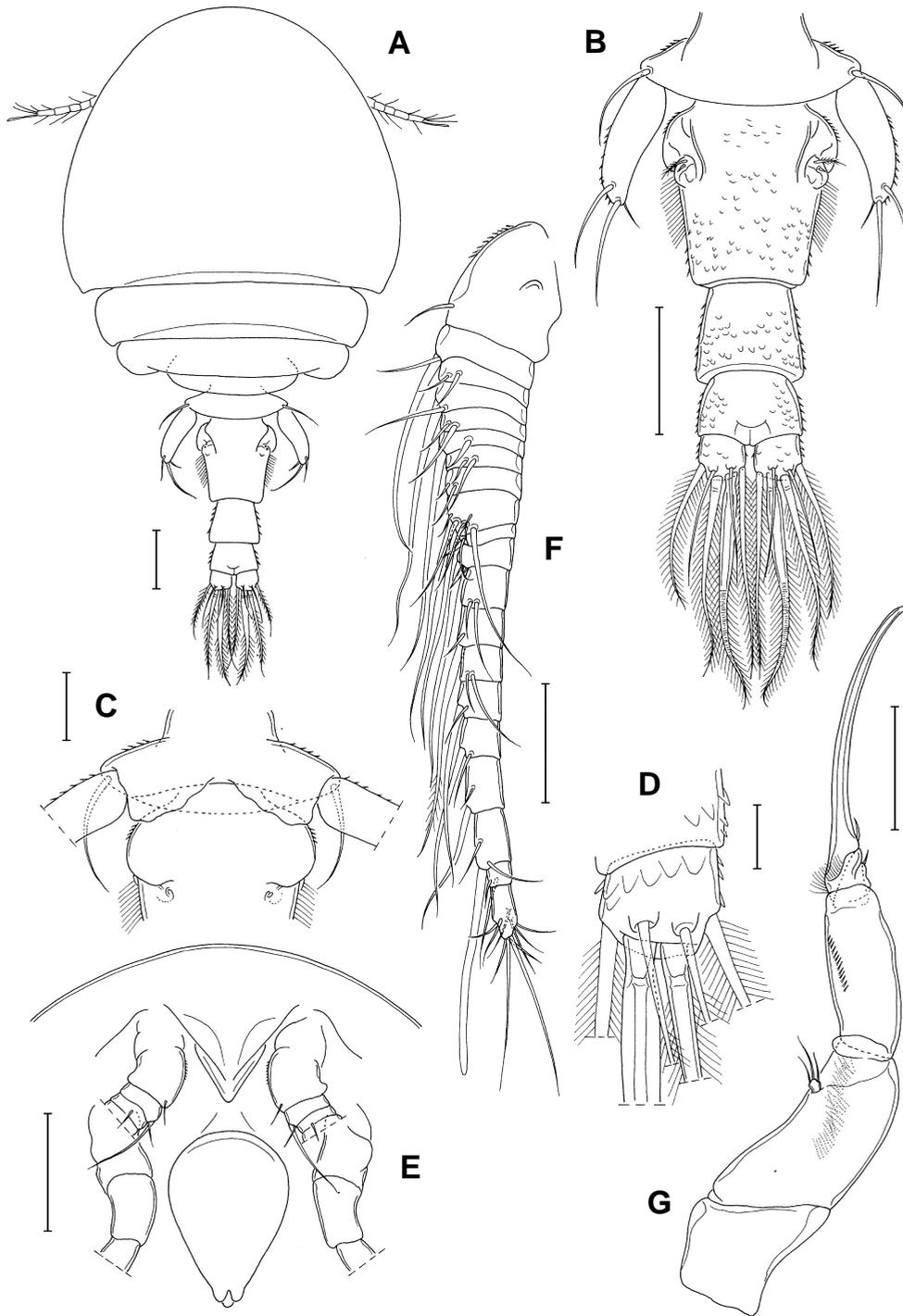


Fig. 75. *Asteropontius brevioris* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, fifth pedigerous somite, ventral; D, caudal ramus, dorsal; E, rostral area, ventral; F, antennule; G, antenna. Scale bars = 0.02 mm (D), 0.05 mm (C, F, G), 0.1 mm (A, B, E).

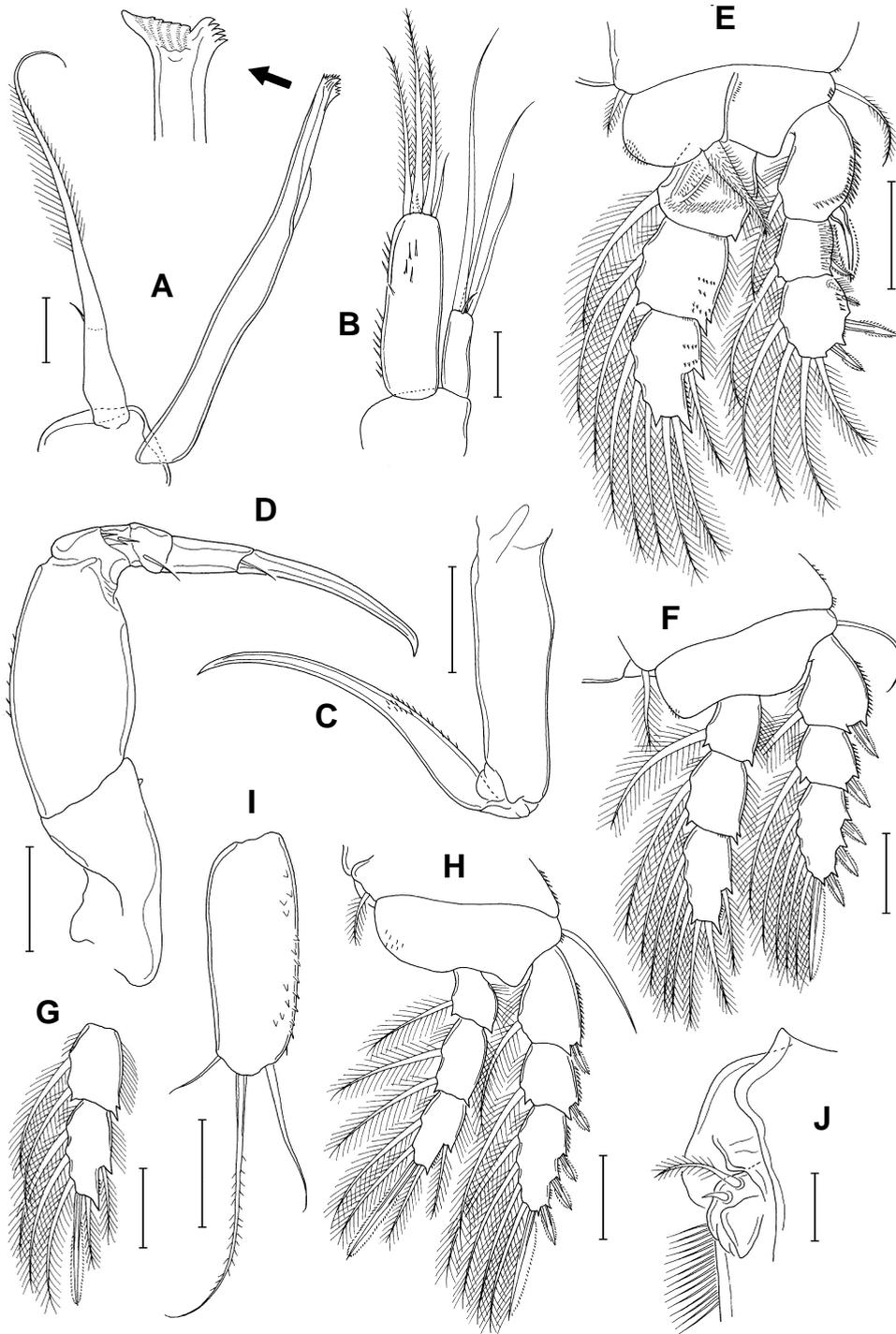


Fig. 76. *Asteropontius brevioris* n. sp., female. A, mandible; B, maxillule; C, maxilla; D, maxilliped; E, leg 1; F, leg 2; G, distal segments of leg 3 endopod; H, leg 4; I, free segment of leg 5; J, genital area. Scale bars = 0.02 mm (A, B, J), 0.05 mm (C-I).

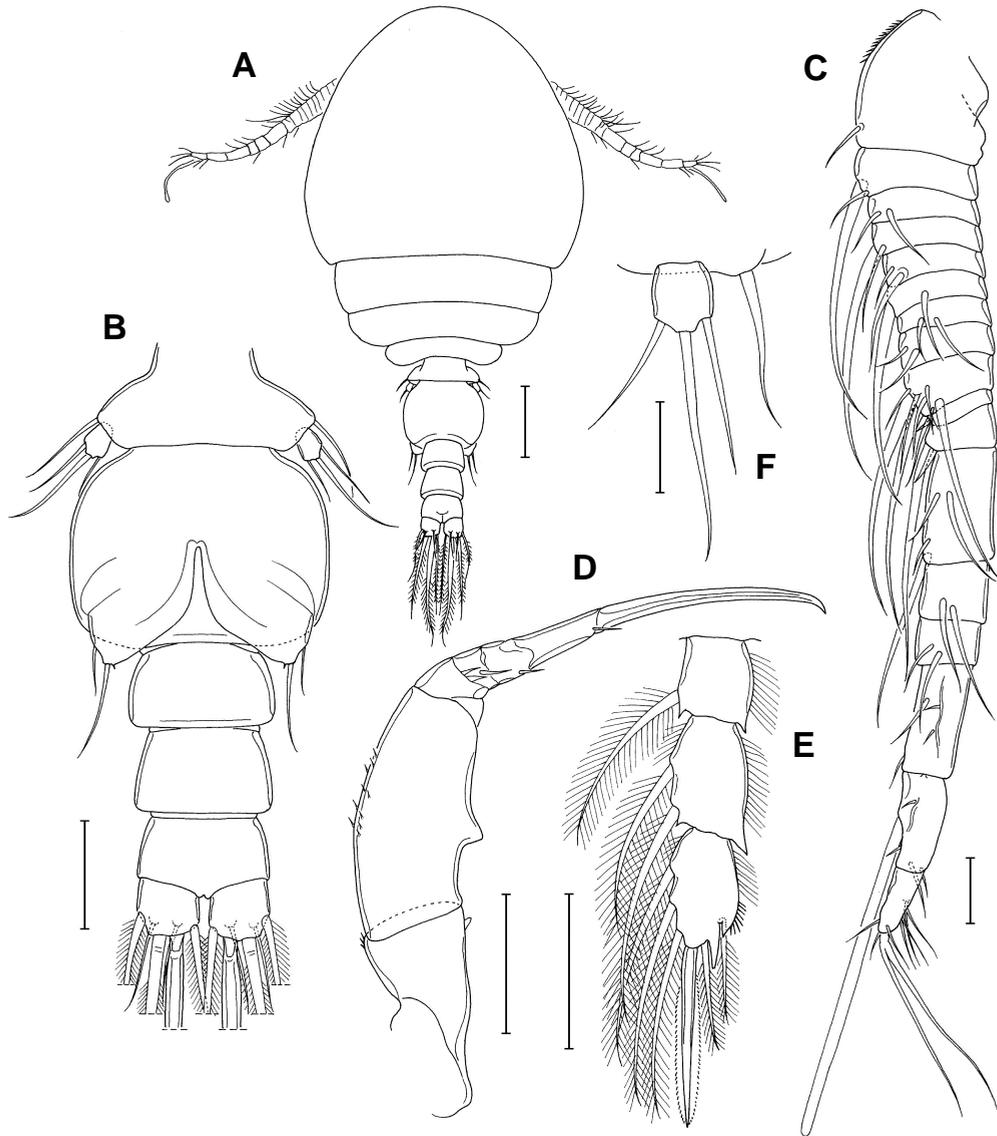


Fig. 77. *Asteropontius brevioris* n. sp., male. A, habitus, dorsal; B, urosome, ventral; C, antennule; D, maxilliped; E, leg 3 endopod; F, leg 5. Scale bars = 0.02 mm (C, F), 0.05 mm (B, D, E), 0.1 mm (A).

Leg 1 with inner seta on basis longer than first endopodal segment; first endopodal segment ornamented with minute setules and spinules on ventral surface; outer spine of first exopodal segment extending slightly over distal margin of second segment; proximalmost spine of third exopodal segment small, located on posterior surface. Second endopodal segment of legs 1-4 with bifid outer distal corner.

Leg 5 with nearly quadrangular free segment (Fig. 76l) $113 \times 42 \mu\text{m}$, ratio 2.69 : 1, with small scales on outer surface; three terminal setae from outer to inner 71, 129, and $26 \mu\text{m}$.

Leg 6 represented by 1 plumous and 1 small setae in genital area (Fig. 76J).

Male. Body (Fig. 77A) with less broadened prosome. Length 750 μm and greatest width 388 μm . Urosome (Fig. 77B) 5-segmented. Fifth pedigerous somite 99 μm wide. Genital somite 91 μm long at midline and 118 μm wide. Three abdominal somites from anterior to posterior 39×66 , 41×62 , and 35×60 μm .

Caudal ramus smaller than in female, 25×28 μm , ratio 1 : 1.12.

Rostrum like that of female. Antennule (Fig. 77C) 17-segmented, 285 μm long. Armature formula: 1, 2, 2, 2, 2 (5th), 2, 2, 2, 8, 2 (10th), 2, 4, 2, 2, 4 (15th), 4+1 aesthetasc, and 9. Fifteenth and sixteenth segments with longitudinal curvature. All setae smooth.

Antenna, oral cone, mandible, maxillule like those of female. Maxilliped (Fig. 77D) resembling that of female but sexually dimorphic in having conical process on inner margin of second segment.

Legs 1, 2, and 4 as in female. Leg 3 with third endopodal segment bearing slightly transformed outer distal portion as in Fig. 77E.

Leg 5 (Fig. 77F) with smaller free segment 15×13 μm ; its 3 setae naked, 33, 50, and 28 μm from outer to inner. Leg 6 represented by posteroventral flap on genital somite bearing 2 unequal setae and 1 minute spinule (Fig. 77B).

Etymology. The specific name *brevioris*, a combination of Latin *brevis* (short) and *oris* (mouth), alludes to the short oral cone of the species.

Remarks. The genus *Asteropontius* consists of 11 known species, excluding three species reported from India, *A. littoralis* Ummerkutty, 1961, *A. mycalei* Krishnaswamy, 1954, and *A. sewelli* Ummerkutty, 1961 which were treated as uncertain species by Stock (1975). In only three of these 11 species the outer distal corner of second endopodal segment of biramous legs is bifid as in *A. brevioris*: *A. latus* Humes, 1992, *A. bandicola* Humes, 1992, and *A. bifurcatus* Kim, 2000.

Asteropontius brevioris is differentiated from *A. latus* by having the armature formula on the third endopodal segment of leg 3 being 1, 1, I, 3 (not 1, 2, 3), and from both *A. bandicola* and *A. bifurcatus* by having the armature formula on the third endopodal segment of leg 2 being 1, 2, 3 (not 1, 1, I, 3).

Other characteristic features of *A. brevioris* may be the possession of the several enlarged setae on the proximal segments of the antennule and the proximally narrowed first abdominal somite in the female.

***Asteropontius acroporus* n. sp. (Figs. 78–80)**

Material examined. 43 ♀♀, 13 ♂♂ from the scleractinian coral *Acropora rosaria* (Dana), in 2 m, west of Isle of Mando, New Caledonia, 1 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016330), allotype (♂; USNM 1016331), and paratypes (40 ♀♀, 10 ♂♂; USNM 1016332) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dessected paratypes (2 ♀♀, 2 ♂♂) in the collection of the author.

Female. Body (Fig. 78A) with broad, flattened prosome. Length 1.17 mm and greatest width 630 μm . First pedigerous somite fused with cephalosome to form cephalothorax. Length of prosome 795 μm . Length of cephalothorax 530 μm . Second pedigerous somite distinctly narrower than

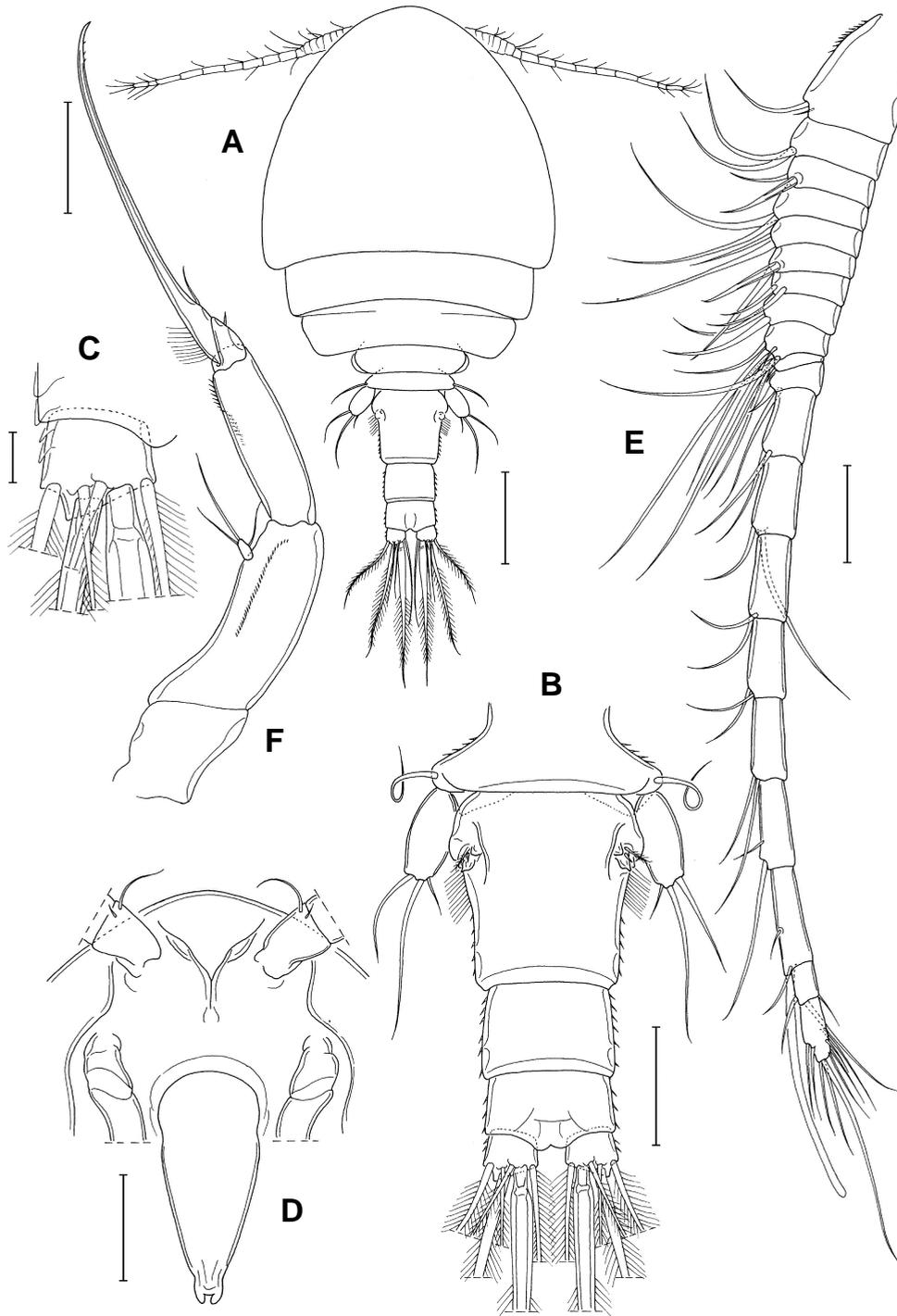


Fig. 78. *Asteropontius acroporus* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus, dorsal; D, rostral area, ventral; E, antennule; F, antenna. Scale bars = 0.02 mm (C), 0.05 mm (E, F), 0.1 mm (B, D), 0.2 mm (A).

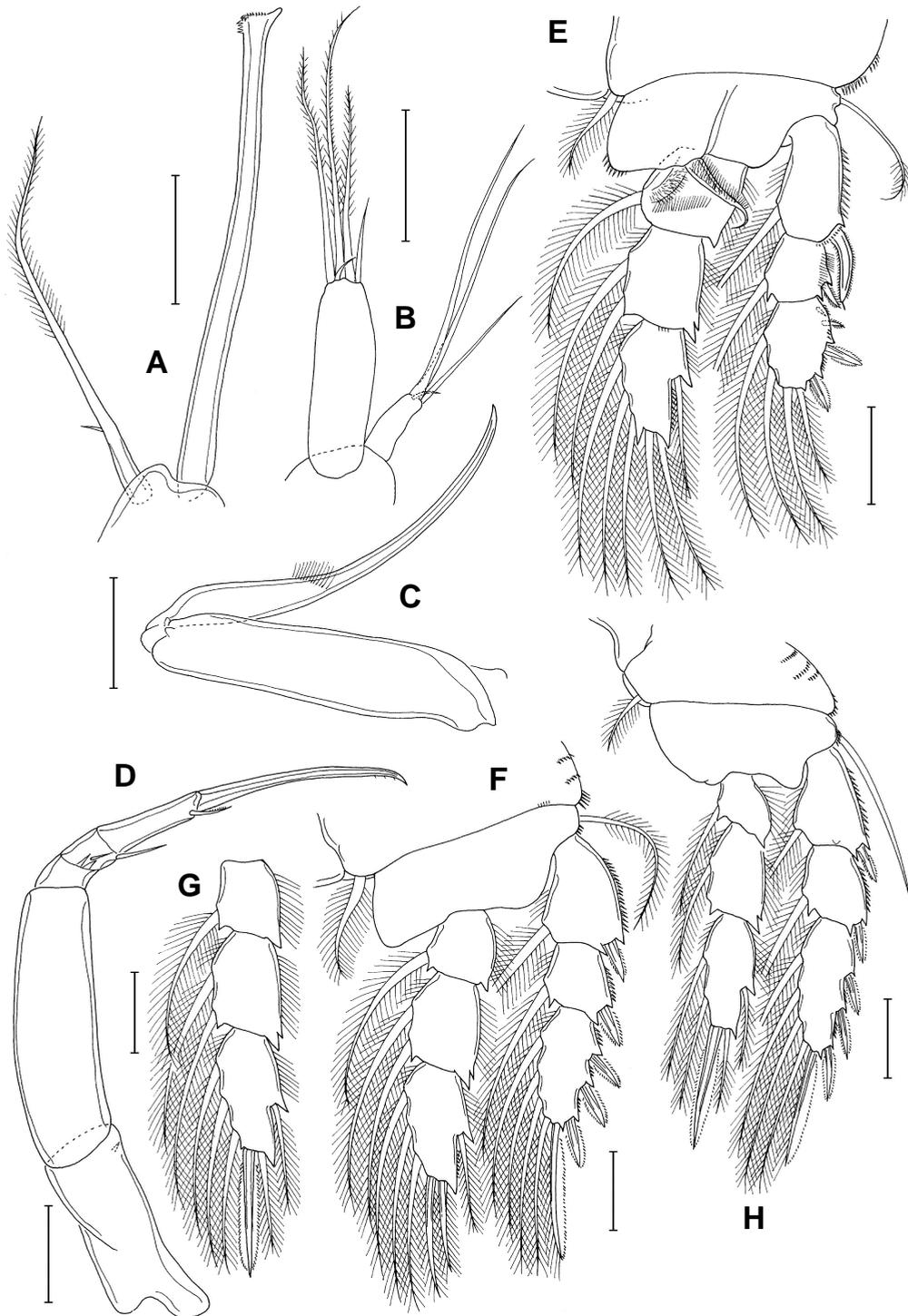


Fig. 79. *Asteropontius acroporus* n. sp., female. A, mandible; B, maxillule; C, maxilla; D, maxilliped; E, leg 1; F, leg 2; G, leg 3 endopod; H, leg 4. Scale bars = 0.05 mm (A-H).

cephalothorax. Fourth pedigerous somite distinctly narrower than preceding somites, with hyaline membrane on lateral margins.

Urosome (Fig. 78B) 4-segmented. Fifth pedigerous somite 194 μm wide, tapering laterally, with posteroventral flap on both sides. Genital double-somite 169 \times 165 μm , ratio 1.02 : 1, with slightly expanded anterior part and setules on middle of lateral margins. Genital areas located dorsolaterally in anterior one-third of somite. Two abdominal somites 75 \times 110, and 62 \times 108 μm , both with parallel lateral margins. Genital double- and abdominal somites with transparent scales on surface. Caudal ramus (Fig. 78C) 44 \times 44 μm , as long as wide, based on greatest dimensions; 6 caudal setae plumous. Egg sac not seen.

Rostrum weakly developed, formed as posteriorly tapering process (Fig. 78D). Antennule (Fig. 78E) 548 μm long, 20-segmented, with armature formula: 2, 2, 2, 2, 2 (5th segment), 2, 2, 2, 7, 2 (10th), 2, 2, 2, 2, 2 (15th), 2, 2, 2+1 aesthetasc, 2, and 9. All setae smooth. Aesthetasc on eighteenth segment slightly longer than terminal 4 segments combined. Antenna (Fig. 78F) with short first segment (coxa) of about 44 μm long. Second segment 89 μm long. Exopod small, 10 μm long, with 3 setae. First endopodal segment 78 μm long, with longitudinal row of minute spinules. Second endopodal segment short, with 1 small inner seta. Terminal claw slender, 156 μm long, weakly curved, with 1 small seta and setules proximally.

Oral cone short (Fig. 78D), 218 μm long, hardly reaching insertions of maxillipeds. Mandible (Fig. 79A) with distally broadened gnathobase, 191 μm long. Palp unsegmented, fused with enlarged, plumous one of 2 setae, 163 μm long; other seta minute. Maxillule (Fig. 79B) with 4 smooth setae (one of them minute) on smaller outer lobe of 30 μm long, and 5 setae (one of them minute) on larger inner lobe of 77 μm long. Maxilla (Fig. 79C) with unarmed proximal segment of 161 μm long. Distal claw 194 μm long, slender, with tuft of setules at proximal one-third. Maxilliped (Fig. 79D) slender and 5-segmented. First segment with 1 minute inner distal seta. Longest second segment unarmed. Third and fourth segments each with 2 setae. Fifth segment with 1 terminal seta. Claw 109 μm long.

Legs 1-4 (Figs. 79E-H) with 3-segmented rami. Armature formula as follows :

Leg 1:	coxa 0-1;	basis 1-1;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 2, 3
Leg 2:	coxa 0-1;	basis 1-0;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 2, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 1, I, 3
Leg 4:	coxa 0-1;	basis 1-0;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 1, I, 2

Leg 1 with inner seta on basis longer than first endopodal segment and spinules on inner distal corner of basis; first endopodal segment ornamented with minute setules and spinules on anterior surface; outer spine of first exopodal segment enlarged, slightly extending over distal margin of second segment, with small flagellum apically; proximalmost spine of third exopodal segment small, located on posterior surface. Second endopodal segment of legs 1-4 with bifid outer distal corner. Outer seta on basis of leg 4 smooth; those in legs 1-3 plumous.

Leg 5 with free segment (Fig. 80A) 80 \times 43 μm , ratio 1.86 : 1, slightly tapering distally; three terminal setae smooth, outer 2 of them much longer than segment.

Leg 6 represented by 1 plumous and 1 small setae in genital area (Fig. 78B).

Male. Body (Fig. 80B) with prosome narrower than in female. Length 788 μm and greatest width

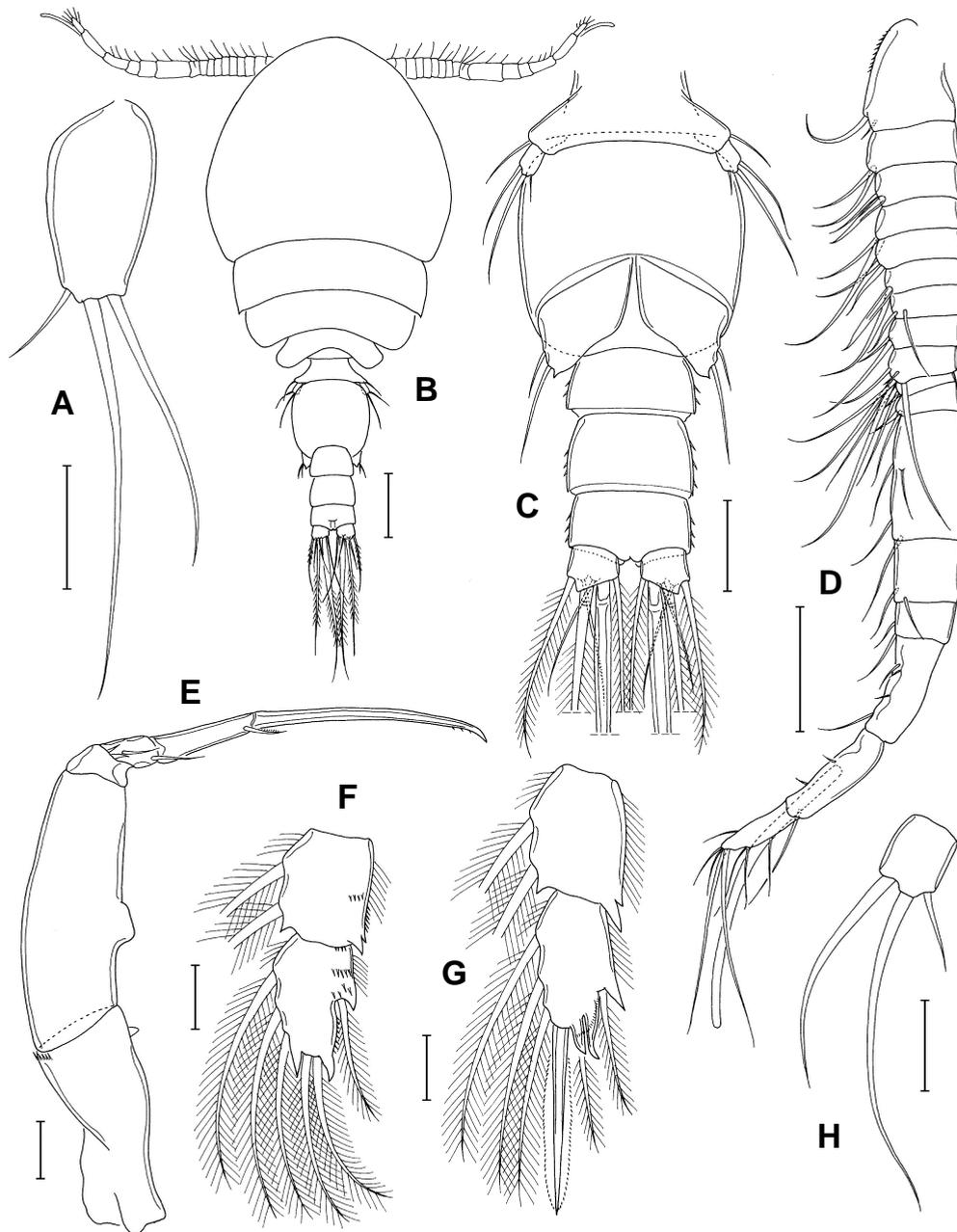


Fig. 80. *Asteropontius acroporus* n. sp. Female: A, free segment of leg 5. Male: B, habitus, dorsal; C, urosome, ventral; D, antennule; E, maxilliped; F, distal segments of leg 1 endopod; G, distal segments of leg 3 endopod; H, free segment of leg 5. Scale bars = 0.02 mm (E-H), 0.05 mm (A, C, D), 0.1 mm (B).

379 μ m. Posterolateral corners of second pedigerous somite pointed.

Urosome (Fig. 80C) 5-segmented. Fifth pedigerous somite 110 μ m wide. Genital somite 118 μ m

long at midline and 123 μm wide, slightly narrowed posteriorly. Three abdominal somites from anterior to posterior 33 \times 70, 43 \times 69, and 38 \times 67 μm . Caudal ramus 25 \times 27 μm , ratio 1 : 1.08.

Rostrum like that of female. Antennule (Fig. 80D) 17-segmented, 365 μm long. Armature formula : 2, 2, 2, 2, 2 (5th), 2, 2, 2, 7, 2 (10th), 2, 4, 2, 2, 4 (15th), 3+1 aesthetasc, and 8. All setae smooth.

Antenna, oral cone, mandible, maxillule like those of female. Maxilliped (Fig. 80E) resembling that of female but sexually dimorphic in having blunt process on inner margin of second segment.

Leg 1 with inner terminal process more prominent than in female (Fig. 80F). Leg 3 with third endopodal segment bearing additional process between outer and terminal processes (Fig. 80G). Legs 2 and 4 as in female.

Leg 5 (Fig. 80F) with small free segment, 17 \times 14 μm ; its 3 terminal setae naked and longer than segment. Leg 6 represented by posteroventral flap on genital somite bearing 2 unequal setae and 1 small pointed process (Fig. 80C).

Etymology. The specific name *acroporus* is derived from the generic name of the host, *Acropora rosaria*.

Remarks. *Asteropontius acroporus* n. sp. has the bifid outer distal corner of second endopodal segment of legs 1-4, as in preceding and other three previously known species. These four species can be distinguished from *A. acroporus* by the following their characters.

In *A. latus* the armature formula on third endopodal segment of leg 3 is 1, 5 (I, 1, I, 3 in *A. acroporus*), and that on the third endopodal segment of leg 1 is III, I, 3 (III, I, 4 in *A. acroporus*)

In *A. bandicola* and *A. bifurcatus* the armature formula on the third endopodal segment of leg 2 is 1, 1, I, 3, and the palp is longer than the mandible (shorter in *A. acroporus*).

In *A. brevioris* the first abdominal somite is proximally narrowed, the free segment of leg 5 is 2.69 times as long as wide (1.86 times as long as wide in *A. acroporus*), and the second segment of female maxilliped is stout (slender in *A. acroporus*).

The nature of the sexual dimorphism in the third endopodal segment of leg 3 and bearing a pair of long processes on the outer distal corner in the male may be a distinctive trait of *A. acroporus*.

***Asteropontius caledoniensis* n. sp. (Figs. 81-83)**

Material examined. 18 ♀♀, 4 ♂♂ from the scleractinian coral *Echinopora lamellosa* (Esper), in 1 m, Baie Dumbea, Noumea, New Caledonia, 6 July 1971, collected by A. G. Humes. Holotype (♀; USNM 1016333), allotype (♂; USNM 1016334), and paratypes (15 ♀♀, 2 ♂♂; USNM 1016335) will be deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Dissected paratypes (2 ♀♀, 1 ♂) in the collection of the author.

Other material examined. 4 ♀♀ from the scleractinian coral *Fungia concinna* (Verrill), Maitre Island near Noumea, New Caledonia, 20 June 1971, collected by A. G. Humes.

Female. Body (Fig. 81A) with relatively narrow prosome. Length 1.15 mm and greatest width 520 μm . First pedigerous somite fused with cephalosome. Length of prosome 740 μm . Length of cephalothorax 475 μm . Second pedigerous somite distinctly narrower than cephalothorax.

Urosome (Fig. 81B) 4-segmented. Fifth pedigerous somite 181 μm wide, without posteroventral flaps. Genital double-somite 160 \times 142 μm , ratio 1.13 : 1, with expanded anterior part and narrower posterior part bearing parallel margins. Genital areas located dorsolaterally in anterior

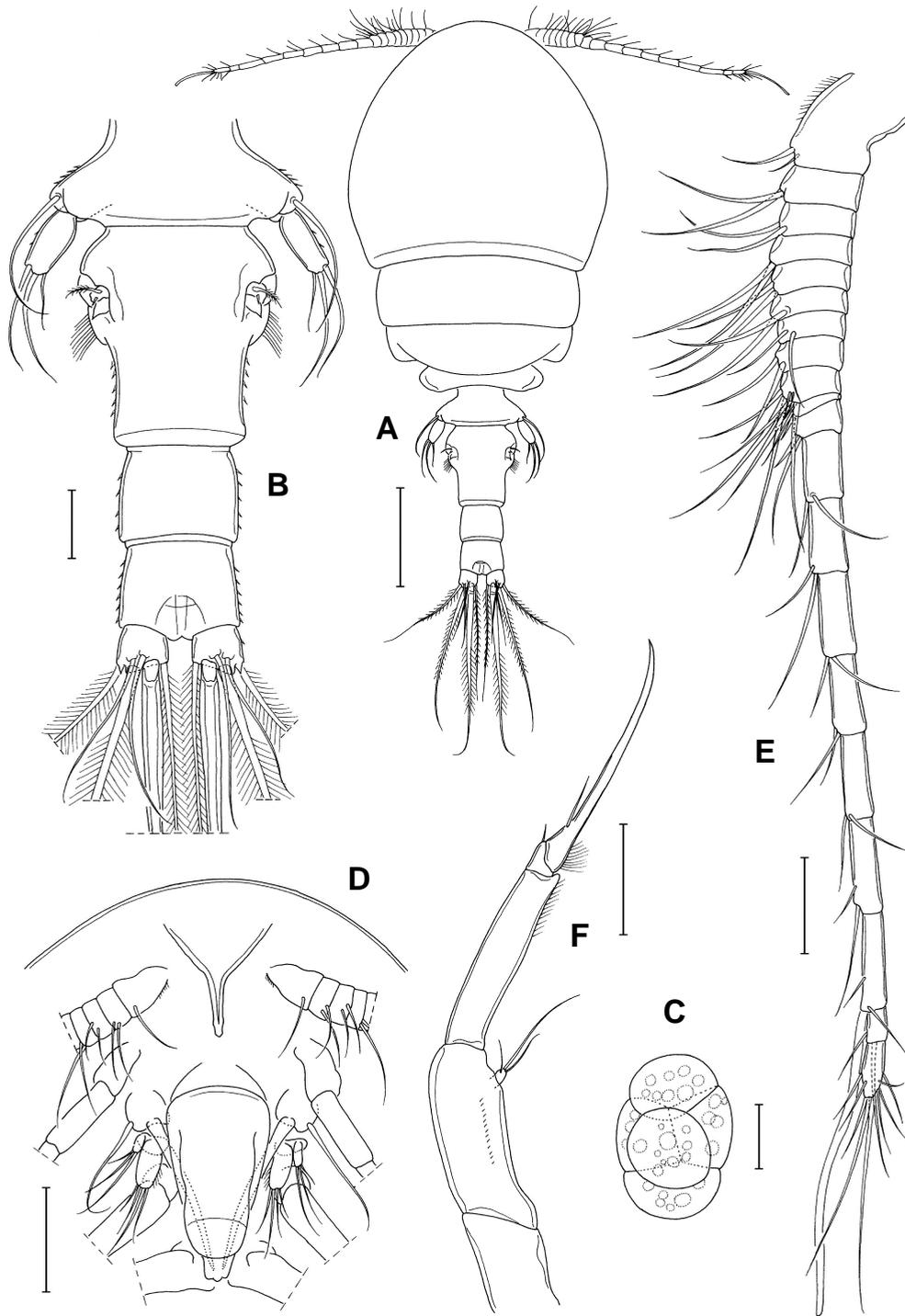


Fig. 81. *Asteropontius caledoniensis* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, egg sac; D, anterior part of cephalothorax, ventral; E, antennule; F, antenna. Scale bars = 0.05 mm (B, E, F), 0.1 mm (A, C, D).

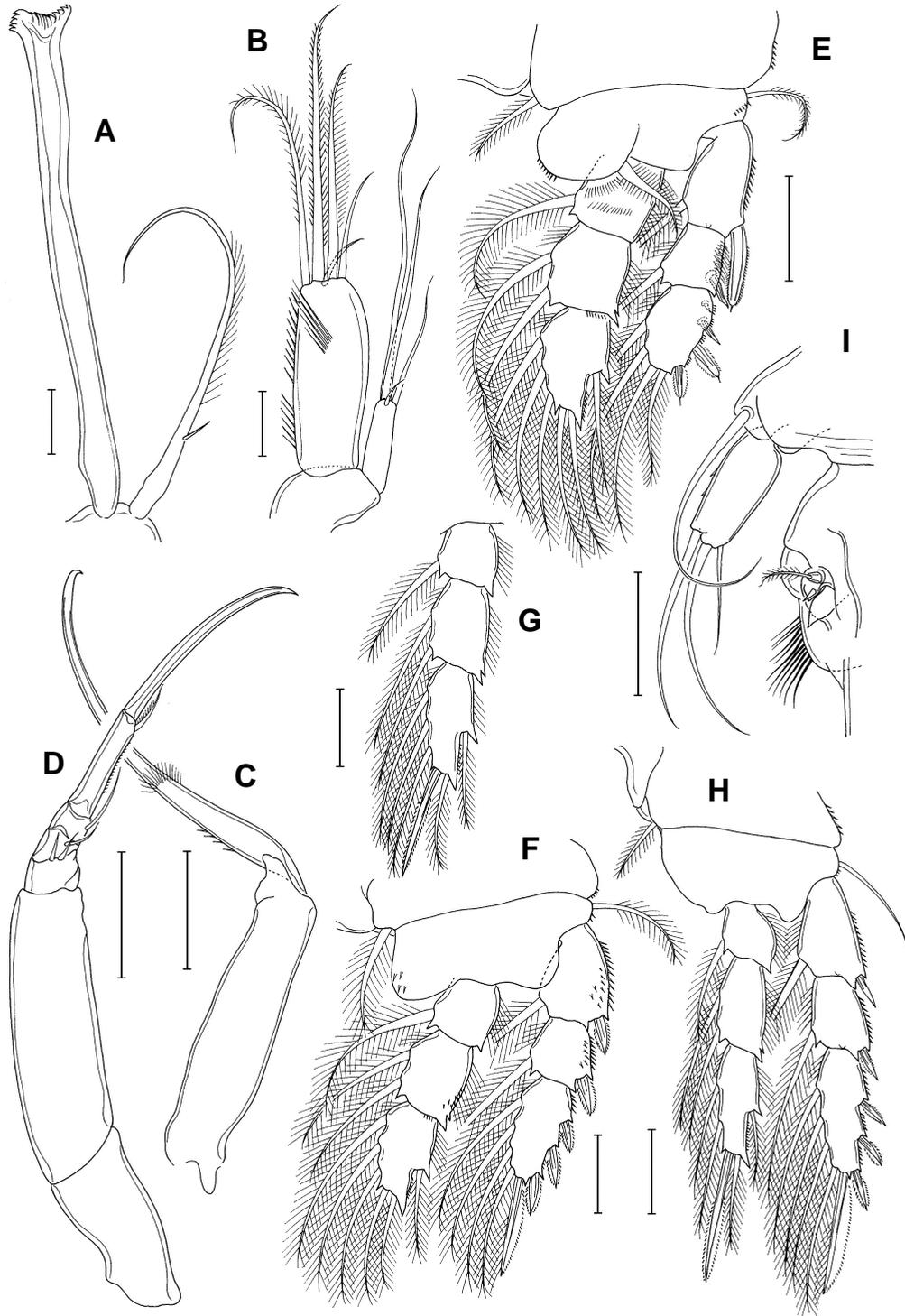


Fig. 82. *Asteropontius caledoniensis* n. sp., female. A, mandible; B, maxillule; C, maxilla; D, maxilliped; E, leg 1; F, leg 2; G, leg 3 endopod; H, leg 4; I, leg 5 and genital area. Scale bars = 0.02 mm (A, B), 0.05 mm (C-I).

one-third of somite. Two abdominal somites 71×86 and 69×87 μm . Genital double- and abdominal somites with transparent scales on surface. Caudal ramus 38×38 μm , as long as wide, based on greatest dimensions; 2 dorsal setae smooth, other 4 setae plumous. Egg sac (Fig. 81C) 250×175 μm , containing usually 5 eggs.

Rostrum strongly tapering proximally and ended as elongated posterior process (Fig. 81D). Antennule (Fig. 81E) 527 μm long and 20-segmented, with armature formula: 2, 2, 2, 2, 2 (5th segment), 2, 2, 2, 9, 2 (10th), 2, 2, 2, 2, 2 (15th), 2, 2, 2+1 aesthetasc, 2, and 9. All setae smooth. Aesthetasc on eighteenth segment slightly longer than terminal 4 segments combined. Antenna (Fig. 81F) with short first segment (coxa) of about 44 μm long. Second segment 78 μm long. Exopod small, 7 μm long, with 3 setae. First endopodal segment 83 μm long, with fine setules on distal part of outer margin. Second endopodal segment short, with 1 small inner distal seta. Terminal claw slender, 108 μm long, with 1 small seta and setules proximally.

Oral cone short (Fig. 81D), 183 μm long, reaching insertions of maxillipeds. Mandible (Fig. 82A) with distally broadened gnathobase, 157 μm long. Palp unsegmented, fused with enlarged, plumous one of 2 setae, 140 μm long; other seta minute. Maxillule (Fig. 82B) with 4 smooth setae (one of them minute) on smaller outer lobe of 27 μm long and 5 setae on larger inner lobe of 60 μm long. Maxilla (Fig. 82C) with unarmed proximal segment of 128 μm long. Distal claw 178 μm long, slender, with several spinules on proximal part of outer margin and tuft of setules at proximal two-fifths. Maxilliped (Fig. 82D) slender and 5-segmented. First and second segments unarmed. Third segment with 2 setae. Fourth segment divided into two parts each bearing 1 seta. Fifth segment with 1 terminal seta and minute spinules on inner margin. Claw 94 μm long and weakly curved.

Legs 1-4 (Figs. 82E-H) with 3-segmented rami. Armature formula as follows:

Leg 1:	coxa 0-1;	basis 1-1;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 2, 3
Leg 2:	coxa 0-1;	basis 1-0;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 2, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 1, I, 3
Leg 4:	coxa 0-1;	basis 1-0;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 1, I, 2

Leg 1 with inner seta on basis longer than first endopodal segment and spinules on inner distal corner of basis; first endopodal segment ornamented with minute setules on anterior surface; outer spine of first exopodal segment enlarged, extending over distal margin of second segment; proximalmost spine of third exopodal segment small, located on posterior surface. Second endopodal segment of legs 1-4 with bifid outer distal corner. Outer seta on basis of leg 4 smooth; those in legs 1-3 plumous.

Leg 5 with slightly tapering free segment (Fig. 82I), 50×22 μm . ratio 2.27 : 1. Three terminal setae smooth, from outer to inner 85, 90, and 45 μm . Seta near base of free segment long, nearly twice as long as free segment.

Leg 6 represented by 1 plumous and 1 small setae in genital area (Fig. 81B).

Male. Body (Fig. 83A) much narrower than that of female. Length 676 μm and greatest width 279 μm . Prosome 441 μm long. Cephalothorax longer than wide, 294 μm long. Urosome (Fig. 83B) 5-segmented. Fifth pedigerous somite 99 μm wide. Genital somite 123 μm long at midline and 119 μm wide. Three abdominal somites from anterior to posterior 24×53 , 28×53 , and 31×56 μm .

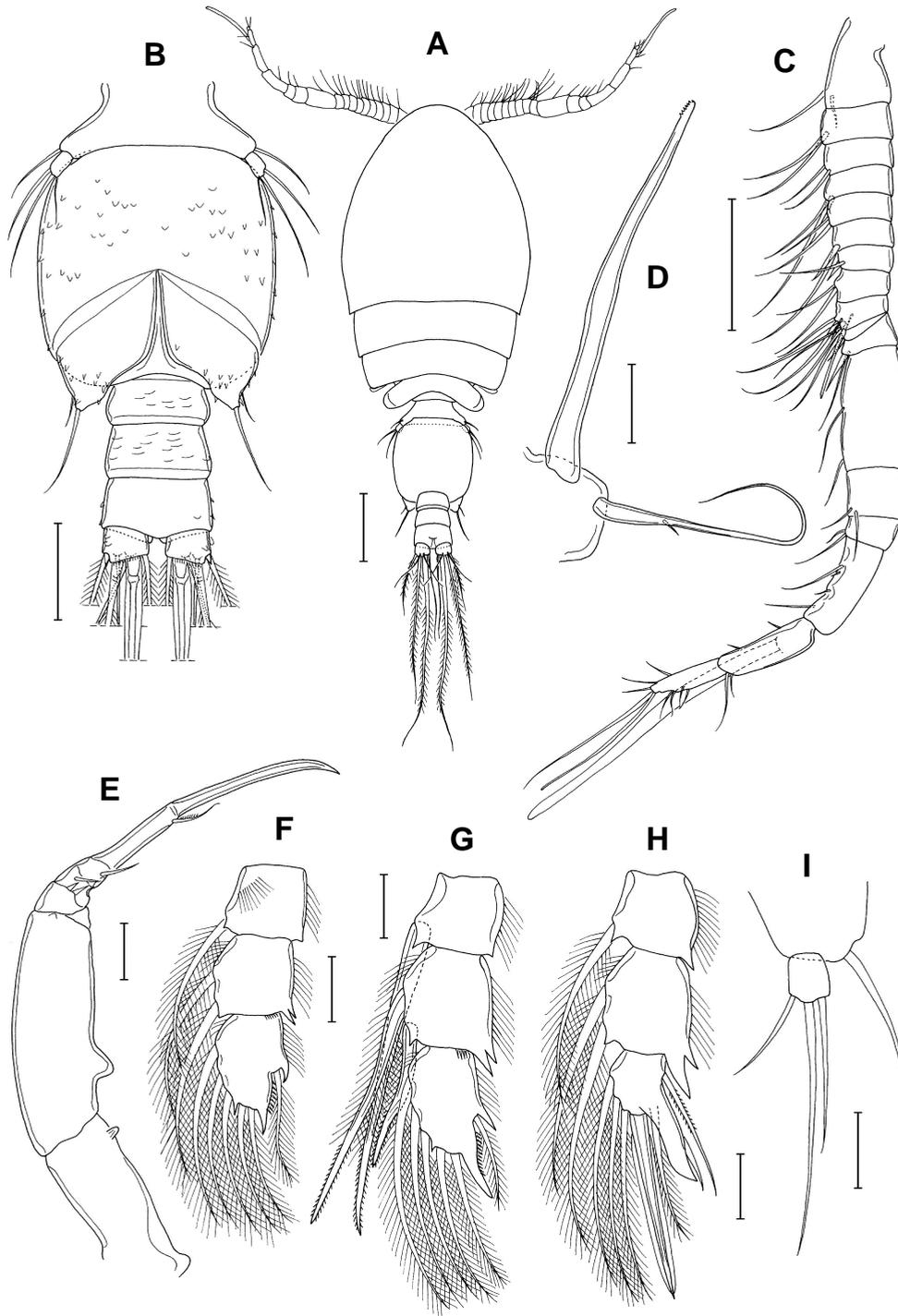


Fig. 83. *Asteropontius caledoniensis* n. sp., male. A, habitus, dorsal; B, urosome, ventral; C, antennule; D, mandible; E, maxilliped; F, leg 1 endopod; G, leg 2 endopod; H, leg 3 endopod; I, leg 5. Scale bars = 0.02 mm (D-I), 0.05 mm (B, C), 0.1 mm (A).

Caudal ramus $18 \times 24 \mu\text{m}$, wider than long, ratio 1 : 1.33.

Rostrum as in female. Antennule (Fig. 83C) 17-segmented. Armature formula : 2, 2, 2, 2, 2 (5th), 2, 2, 2, 8, 2 (10th), 2, 2, 2, 2, 4 (15th), 4+1 aesthetasc, and 9. All setae smooth.

Antenna, oral cone, and maxillule as those of female. Mandible (Fig. 83D) with gnathobase not expanded. Maxilliped (Fig. 83E) resembling that of female but sexually dimorphic in having small, knob-like process on first segment and blunt process on inner margin of second segment.

Leg 1 with inner terminal process on third endopodal segment more prominent than in female (Fig. 83F). Leg 2 with enlarged inner setae on first and second endopodal segments; distal process on third segment elongated (Fig. 83G). Third endopodal segment of leg 3 with greatly enlarged terminal process tipped subterminally with setiform flagellum (Fig. 83H).

Leg 5 (Fig. 83I) with small free segment, $13 \times 11 \mu\text{m}$; its 3 terminal setae 41, 67, 27 μm from outer to inner. Leg 6 represented by posteroventral flap on genital somite bearing 2 unequal setae (Fig. 83B).

Etymology. The specific name *caledoniensis* is derived from New Caledonia where the type locality is located in.

Remarks. *Asteropontius caledoniensis* n. sp. is very similar to *A. acroporus* in several respects. They have similar body sizes, identical structures of legs 1-4, including the possession of the bifid outer distal corner of second endopodal segment in these legs, identical segmentation of antennule in both sexes, and the identical size of caudal rami. These two species can be differentiated from each other by the following ways.

The prosome of *A. caledoniensis* is narrower than that of *A. acroporus*. The rostrum is tapering in *A. acroporus* (see Fig. 78D), but is continued to an elongated process in *A. caledoniensis* (see Fig. 81D). Leg 2 of *A. caledoniensis* is sexually dimorphic but that of *A. acroporus* is not. The third endopodal segment of leg 3 bears a pair of processes in *A. acroporus* but that of *A. caledoniensis* bears a large process accompanied with subterminal, setiform flagellum.

***Asteropontius minutus* n. sp. (Figs. 84-86)**

Material examined. 48 ♀♀, 6 ♂♂ from the scleractinian coral *Pocillopora damicornis caespitosa* Dana, in 1.5 m, Rocher à la Voile, Noumea, New Caledonia, 19 June 1971, collected by A. G. Humes. Holotype (♀; USNM 1016336), allotype (♂; USNM 1016337), and paratypes (30 ♀♀, 4 ♂♂; USNM 1016338) have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D. C. Other specimens, including dissected paratypes (2 ♀♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 84A) small, with broad prosome. Length 770 μm and greatest width 387 μm . First pedigerous somite fused with cephalosome. Length of prosome 537 μm . Fourth pedigerous somite distinctly narrower than preceding somites.

Urosome (Fig. 84B) 4-segmented. Fifth pedigerous somite 123 μm wide, without posteroventral flaps. Genital double-somite $100 \times 102 \mu\text{m}$, approximately as long as wide, with expanded anterior part and tapering posterior part. Genital areas located dorsolaterally in anterior one-third of somite. Two abdominal somites 51×60 , and $38 \times 47 \mu\text{m}$. Genital double- and abdominal somites unornamented. Caudal ramus (Fig. 84C) $22 \times 17 \mu\text{m}$, ratio 1.29 : 1, with 2 smooth dorsal setae and 4 plumous terminal setae. Egg sac not seen.

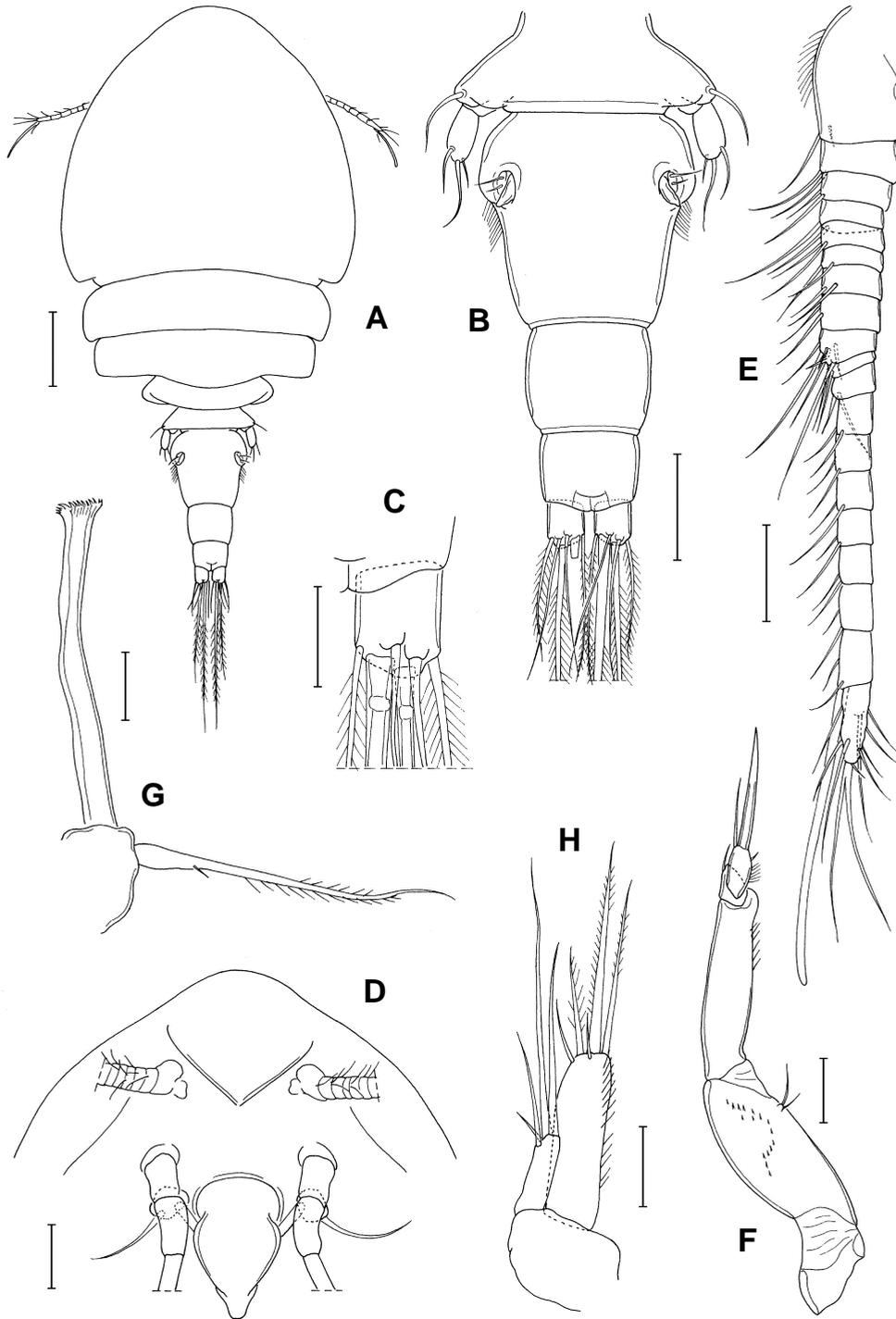


Fig. 84. *Asteropontius minutus* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus, dorsal; D, anterior part of cephalothorax, ventral; E, antennule; F, antenna; G, mandible; H, maxillule. Scale bars = 0.02 mm (C, E-H), 0.05 mm (B, D), 0.1 mm (A).

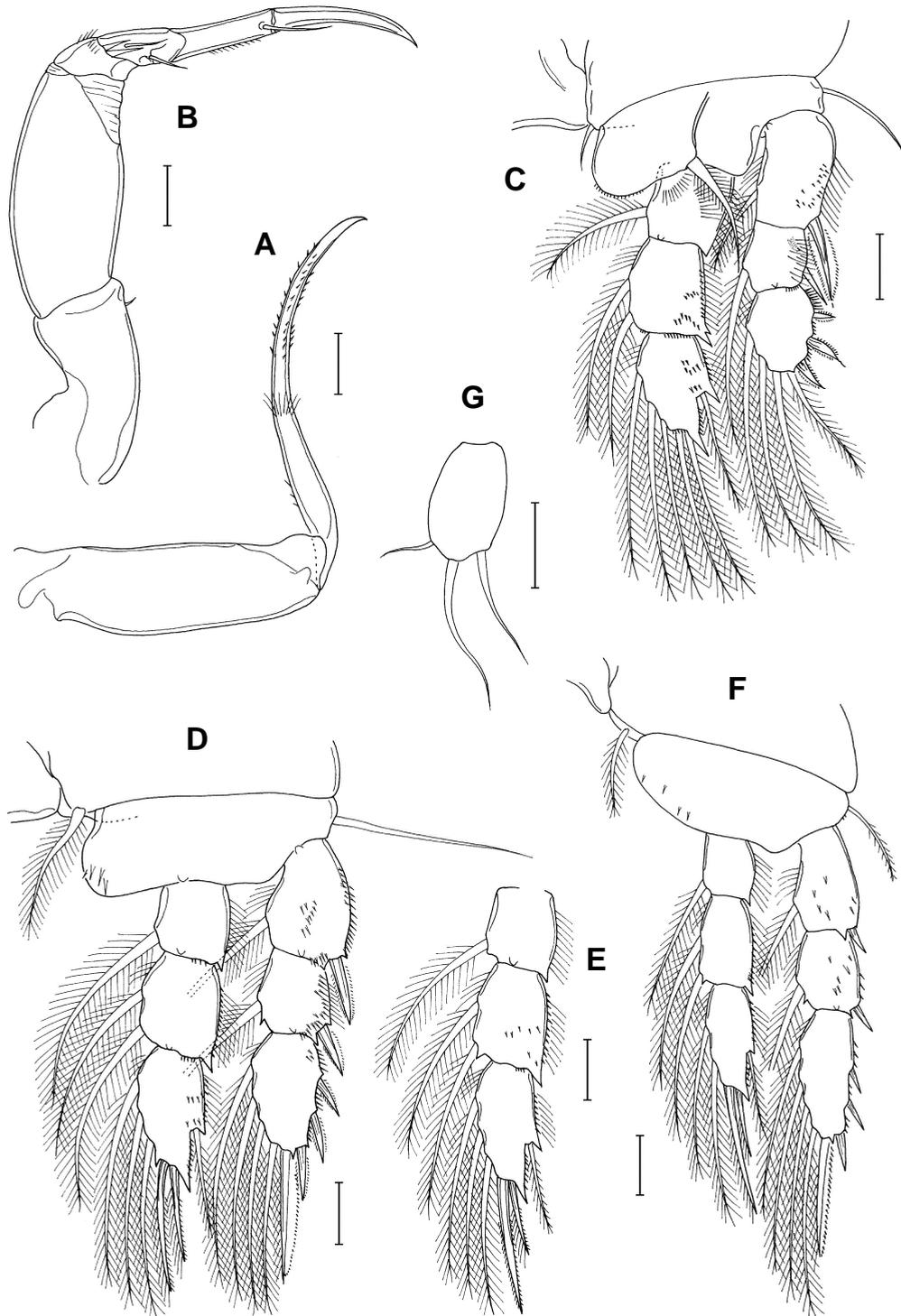


Fig. 85. *Asteropontius minutus* n. sp., female. A, maxilla; B, maxilliped; C, leg 1; D, leg 2; E, leg 3 endopod; F, leg 4; G, free segment of leg 5. Scale bars = 0.02 mm (A-G).

Rostrum strongly tapering posteriorly (Fig. 84D), with angular posterior apex. Antennule (Fig. 84E) 282 μm long, 19-segmented, with armature formula : 2, 2, 2, 2, 2 (5th segment), 2, 2, 2, 7, 2 (10th), 2, 2, 2, 2, 2 (15th), 2, 2, 2+1 aesthetasc, and 11. Setae smooth and usually small. Aesthetasc on eighteenth segment as long as terminal 6 segments combined. Antenna (Fig. 84F) with short first segment. Second segment with minute spinules. Exopod obscure, knob-like, with 2 setae. Endopod 3-segmented (terminal claw not fused with third segment). First segment 58 μm long, with fine setules distally. Second segment short, with 1 small inner seta. Third segment with 1 longer and 1 minute setae, and setules. Terminal claw straight, spine-like, 39 μm long.

Oral cone short (Fig. 84D), 110 μm long, not reaching insertions of maxillipeds. Mandible (Fig. 84G) with distally broadened gnathobase, 157 μm long. Palp unsegmented, fused with enlarged, plumous one of 2 setae, 95 μm long; other seta minute. Maxillule (Fig. 84H) with 4 smooth setae on smaller outer lobe of 20 μm long and 5 setae on larger inner lobe of 43 μm long. Maxilla (Fig. 85A) with unarmed proximal segment. Distal claw slender, with spinules on distal half and tuft of setules at proximal two-fifths. Maxilliped (Fig. 85B) slender and 5-segmented. First segment with minute inner distal seta. Second segment unarmed. Third and fourth segments each with 2 setae. Fifth segment with 1 terminal seta and minute spinules on inner margin. Claw relatively short, shorter than terminal 2 segments combined.

Legs 1-4 (Fig. 85C-F) with 3-segmented rami. Armature formula as follows :

Leg 1:	coxa 0-1;	basis 1-1;	exp. I-1; I-1; II, I, 4;	enp. 0-1; 0-2; 1, 2, 3
Leg 2:	coxa 0-1;	basis 1-0;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 2, 3
Leg 3:	coxa 0-1;	basis 1-0;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 1, 1, 3
Leg 4:	coxa 0-1;	basis 1-0;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 2, 2

Leg 1 with inner seta on basis longer than first endopodal segment and minute barbs on inner distal corner of basis; first endopodal segment ornamented with setules on anterior surface; outer spine of first exopodal segment enlarged, extending over distal margin of second segment. Second endopodal segment of legs 1 with bifid outer distal corner. Those of legs 2-4 simple. Two terminal setae on third endopodal segment of legs 2 and 4 spiniform. Outer seta on basis of legs 1-3 smooth; that of leg 4 weakly plumous.

Leg 5 with nearly ovoid free segment (Fig. 85G), $28 \times 17 \mu\text{m}$. ratio 1.65 : 1. Three terminal setae smooth. Leg 6 represented by 2 small setae in genital area (Fig. 84B).

Male. Body (Fig. 86A) with prosome narrower than in female. Length 545 μm and greatest width 253 μm . Prosome 353 μm long. Cephalothorax 250 μm long. Urosome (Fig. 86B) 5-segmented. Fifth pedigerous somite 99 μm wide. Genital somite 66 μm long at midline and 85 μm wide. Three abdominal somites from anterior to posterior 38×49 , 35×44 , and $26 \times 38 \mu\text{m}$. Caudal ramus $18 \times 14 \mu\text{m}$, ratio 1.29 : 1.

Rostrum as in female. Antennule (Fig. 86C) 18-segmented. Armature formula: 2, 2, 2, 2, 2 (5th), 2, 2, 2, 7, 2 (10th), 2, 2, 2, 2, 2 (15th), 4, 2+1 aesthetasc, and 9. All setae smooth.

Antenna, oral cone, mandible, and maxillule like those of female. Maxilliped resembling that of female but sexually dimorphic in having blunt process on inner margin of second segment (Fig. 86D).

Legs 1 and 2 as in female. Third endopodal segment of leg 3 with more acutely pointed terminal

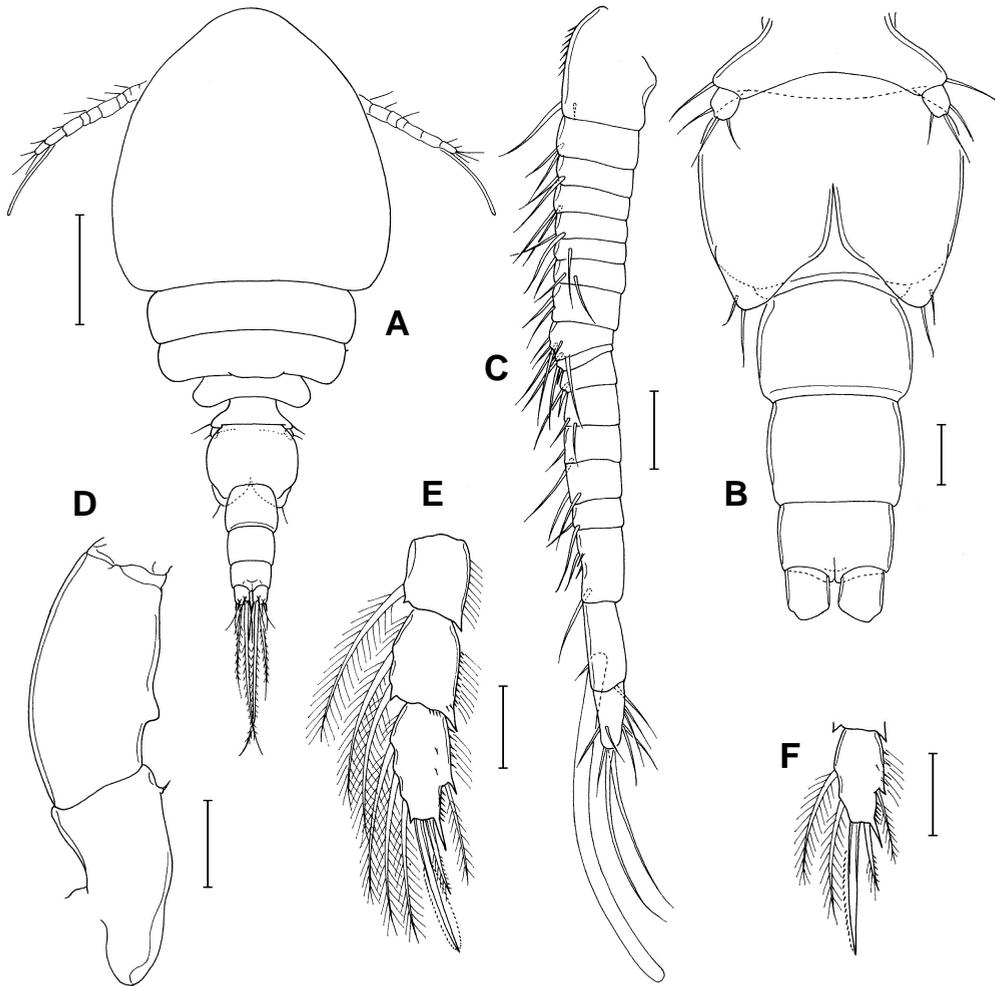


Fig. 86. *Asteropontius minutus* n. sp., male. A, habitus, dorsal; B, urosome, ventral; C, antennule; D, proximal part of antenna; E, leg 3 endopod 3; F, third endopodal segment of leg 4. Scale bars = 0.02 mm (B-F), 0.1 mm (A).

process (Fig. 86E). That of leg 4 with more acutely pointed terminal process as well, and armature formula 1, 1, I, 2.

Leg 5 with small free segment. Leg 6 represented by posteroventral flap on genital somite bearing 2 unequal setae (Fig. 86B).

Etymology. The specific name *minutus* is a Latin meaning “small”. It alludes to the small size of the new species.

Remarks. *Asteropontius minutus* n. sp. is comparable to *A. latus* Humes, 1992 and *A. proximus* Stock, 1987. In these three species the body is shorter than 1 mm and the caudal rami is distinctly longer than wide.

In having the armature formula, 1,5, on the third endopodal segment of leg 3, *A. latus* differs

from the other two species. In *Asteropontius minutus* the palp is as long as the mandible, but in *A. proximus* it is shorter than mandible. The ratio of the length to width of the free segment of male leg 4 is 1.65 : 1 in *A. minutus*, but it is 2.16 : 1 in *A. proximus*.

***Asteropontius dissimilis* n. sp. (Figs. 87–89)**

Material examined. 5 ♀♀, 4 ♂♂ from the scleractinian coral *Pocillopora damicornis caespitosa* Dana, in 1.5 m, Rocher à la Voile, Noumea, New Caledonia, 19 June 1971, collected by A. G. Humes. Holotype (♀; USNM 1016339), allotype (♂; USNM 1016340), and paratypes (3 ♀♀, 2 ♂♂; USNM 1016341) are deposited in the National Museum of Natural History, Smithsonian Institution. Dissected paratypes (1 ♀, 1 ♂) in the collection of the author.

Female. Body (Fig. 87A) with moderately broad, ovoid prosome. Length 995 µm and greatest width 517 µm. Length of prosome 721 µm. First pedigerous somite fused with cephalosome. Third pedigerous somite marginated by hyaline membrane along all margins.

Urosome (Fig. 87B) 4-segmented. Fifth pedigerous somite 171 µm wide. Genital double-somite 145 × 148 µm, with setules near middle of lateral margins and gradually narrowed posterior part. Genital areas located dorsolaterally at anterior one-third of somite. Two abdominal somites 58 × 92 and 56 × 90 µm. Sides of abdominal somites and posterior part of genital double-somite with small transparent scales. Anal somite with spinules (or scales) along posteroventral border.

Caudal ramus (Fig. 87C) subquadrate, 30 × 38 µm, ratio 1 : 1.27, with spinules on posterior margin and 6 plumous setae. Egg sac not seen.

Rostrum tapering with truncated tip (Fig. 87D). Antennule (Fig. 87E) 438 µm long, 20-segmented, with armature formula : 2, 2, 2, 2, 2 (5th segment), 2, 2, 2, 7, 2 (10th), 2, 2, 2, 2, 2, (15th), 2, 2, 2+1 aesthetasc, 2, and 11. All setae smooth. Aesthetasc on eighteenth segment as long as combined 5 terminal segments. Antenna (Fig. 88A) with short coxa. Basis with spinules. Exopod small, 7 × 6 µm, with 3 setae. Endopod 3-segmented. First segment 80 µm long, with spinules on margins. Second segment with 1 small inner distal seta. Third segment with 2 setae, one of them minute. Claw spiniform, weakly curved, 80 µm long, with minute spinules along inner margin.

Oral cone 250 µm long, extending slightly over insertions of maxillipeds (Fig. 87D). Mandible (Fig. 87F) with slightly expanded gnathobase, 225 µm long. Palp 1-segmented, with 1 long weakly plumous and 1 minute setae; combined palp and terminal longer setae 142 µm long, distinctly shorter than mandible. Maxillule (Fig. 87G) with 4 setae on smaller outer lobe (40 µm) and 5 setae on larger inner lobe (80 µm long). Maxilla (Fig. 88B) with unarmed proximal segment, and distal claw with tuft of setules near middle, minute spinules along distal half of inner margin and several spinules along proximal part of outer margin. Maxilliped (Fig. 88C) 5-segmented. First segment with 1 small inner distal seta. Second segment unarmed but with small spinules on distal part of both margins. Third and fourth segments each with 2 seta. Fifth segment with 1 distal setae bearing minute barbs. Claw as long as combined 3 terminal segments, with fine spinules along inner margin.

Legs 1–4 (Fig. 88D–G) with 3-segmented rami. Armature formula as follows :

Leg 1:	coxa 0-1;	basis 1-1;	exp. I-1; I-1; II, I, 4;	enp. 0-1; 0-2; 1, 2, 3
Leg 2:	coxa 0-1;	basis 1-0;	exp. I-1; I-1; III, I, 4;	enp. 0-1; 0-2; 1, 1, I, 3

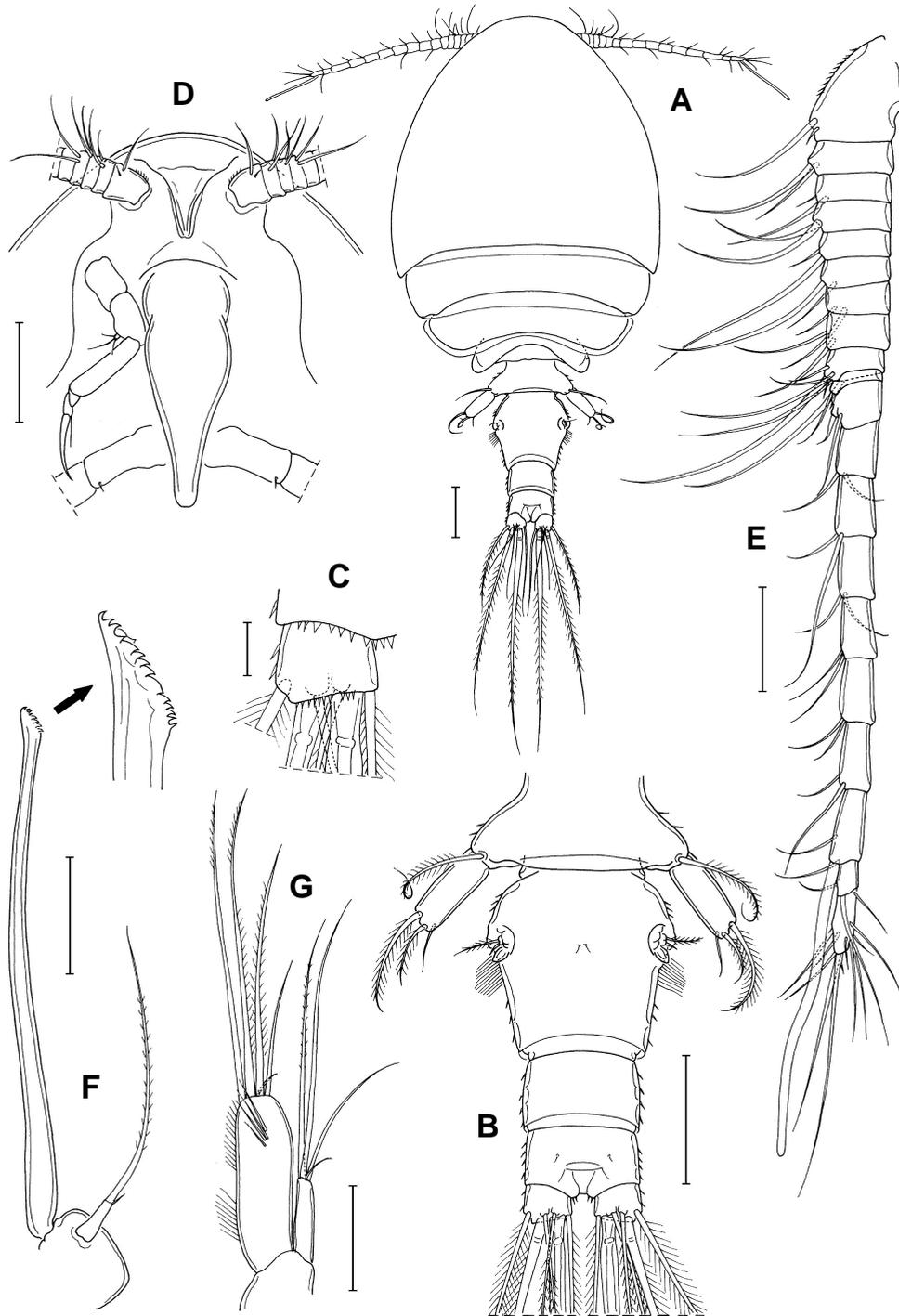


Fig. 87. *Asteropontius dissimilis* n. sp., female. A, habitus, dorsal; B, urosome, dorsal; C, caudal ramus, ventral; D, anterior part of cephalothorax, ventral; E, antennule; F, mandible; G, maxillule. Scale bars = 0.02 mm (C), 0.05 mm (E-G), 0.1 mm (A, B, D).

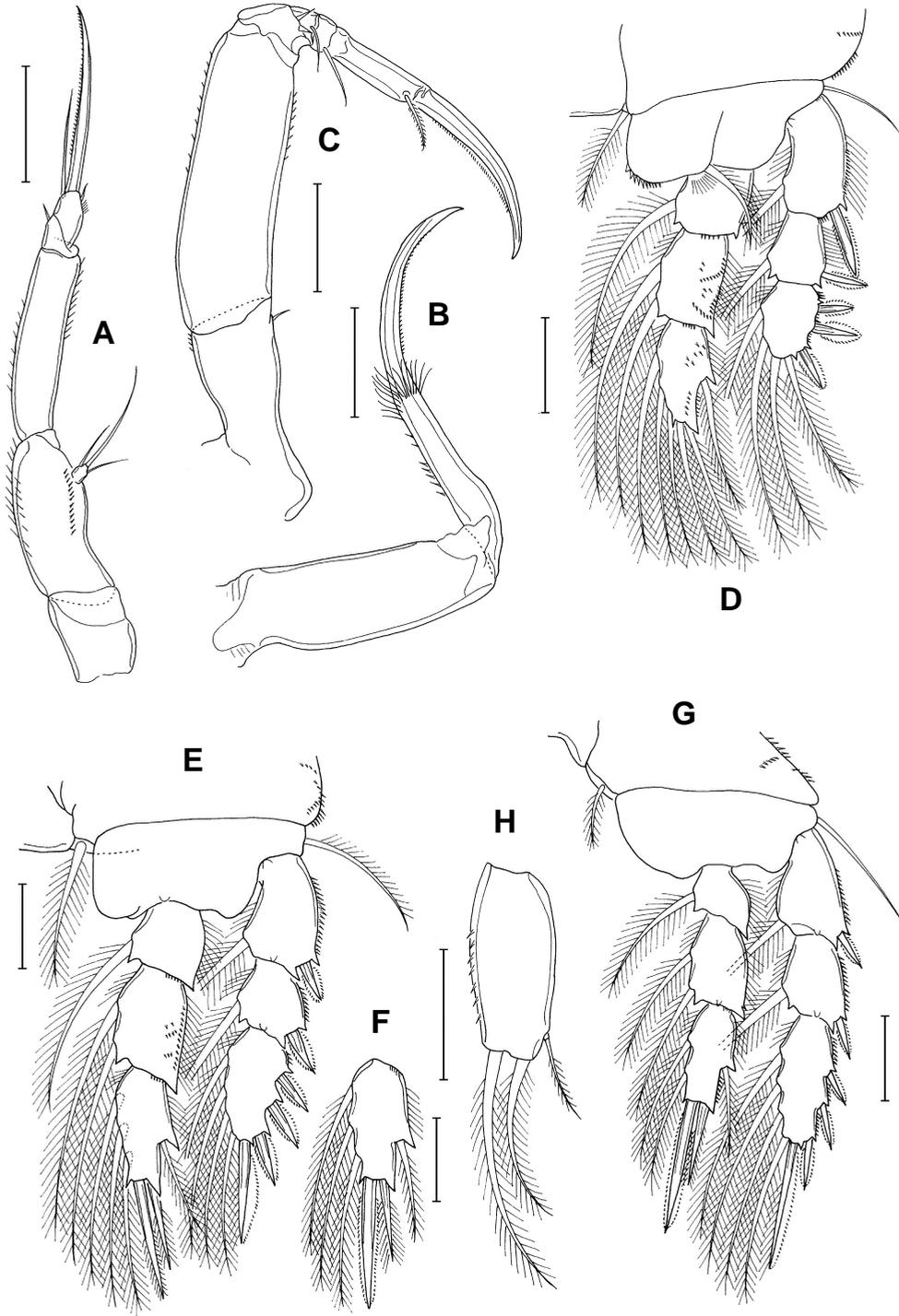


Fig. 88. *Asteropontius dissimilis* n. sp., female. A, antenna; B, maxilla; C, maxilliped; D, leg 1; E, leg 2; F, third endopodal segment of leg 3; G, leg 4; H, free segment of leg 5. Scale bars = 0.05 mm (A-H).

Leg 3: coxa 0-1; basis 1-0; exp. I-1; I-1; III, I, 4; enp. 0-1; 0-2; 1, 1, I, 3
 Leg 4: coxa 0-1; basis 1-0; exp. I-1; I-1; III, I, 4; enp. 0-1; 0-2; 1, 1, I, 2

Leg 1 with barbs on inner distal corner of basis; outer spine of first exopodal segment as long as second segment. Terminal seta on third endopodal segment of leg 2-4 spiniform. Inner distal corner of endopod of legs 1-3 simple, not bifid. That of leg 4 weakly bifid. Outer seta on basis of legs 1-4 smooth. Those of legs 2 and 3 plumous.

Leg 5 with nearly quadrangular free segment (Fig. 88H) $73 \times 33 \mu\text{m}$, ratio 2.21 : 1; 2 terminal and 1 subterminal setae plumous, longest one $100 \mu\text{m}$ long. Leg 6 represented by 1 plumous and 1 minute setae in genital area (Fig. 87B).

Male. Body (Fig. 89A) with prosome more slender than that of female. Length $777 \mu\text{m}$ and greatest width $354 \mu\text{m}$. Length of prosome $527 \mu\text{m}$. Lateral margins of third and fourth pedigerous

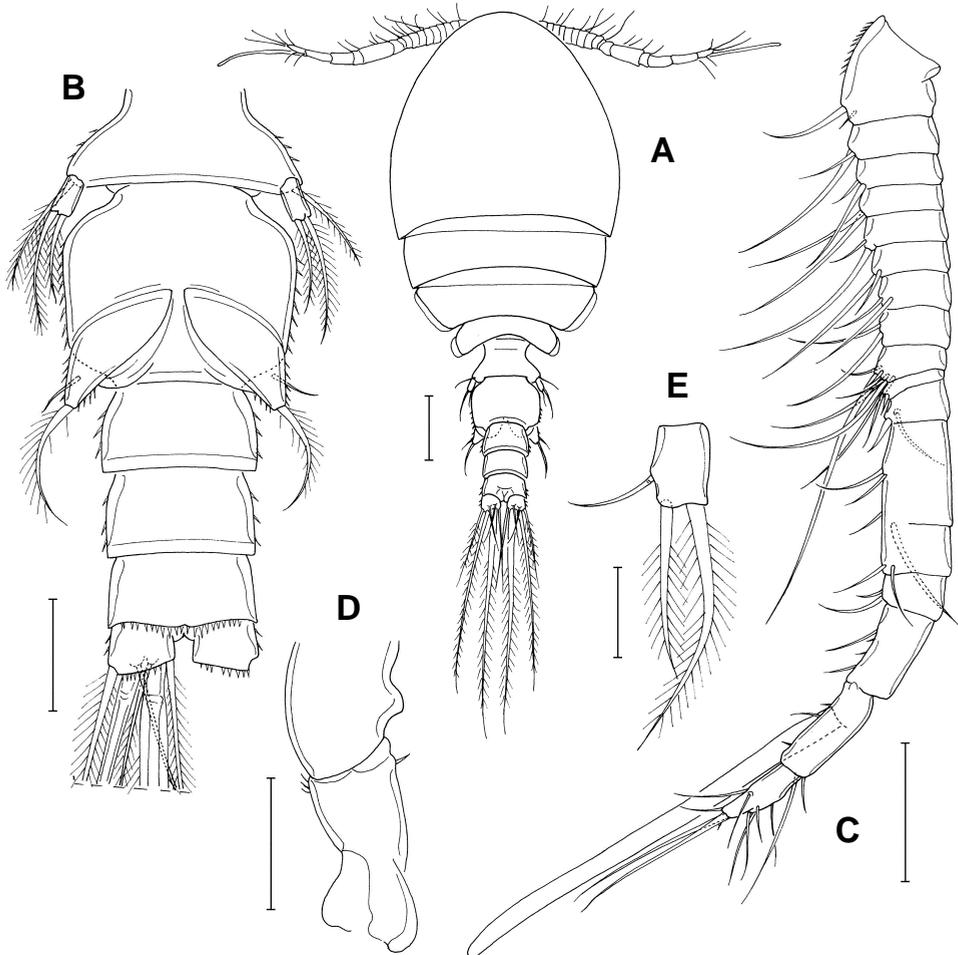


Fig. 89. *Asteropontius dissimilis* n. sp., male. A, habitus, dorsal; B, urosome, ventral; C, antennule; D, proximal part of antenna; E, free segment of leg 5. Scale bars = 0.02 mm (E), 0.05 mm (B-D), 0.1 mm (A).

somites marginated with hyaline membrane.

Urosome (Fig. 89B) 5-segmented. Fifth pedigerous somite 106 μm wide. Genital somite 89 (at midline) \times 106 μm , nearly quadrangular, with spinule-like scales on sides and genital flaps. Three abdominal somites from anterior to posterior 39 \times 70, 39 \times 67, and 39 \times 67 μm . First and second abdominal somites with transparent scales on sides.

Caudal ramus 23 \times 30 μm , ratio 1 : 1.30.

Rostrum like that of female. Antennule (Fig. 89C) 16-segmented, 317 μm long. Armature formula: 2, 2, 2, 2, 2 (5th), 2, 2, 2, 7, 2 (10th), 2, 6, 2, 4, 5+1 aesthetasc, and 9. Antenna, oral cone, mandible, maxillule like those of female. Maxilliped resembling that of female but sexually dimorphic in having blunt process on inner side of second segment (Fig. 89D).

Legs 1-4 as in female.

Leg 5 with free segment quadrangular, 18 \times 13 μm , bearing 2 terminal plumous setae (larger outer one 59 μm long) and smooth inner seta (Fig. 89E). Leg 6 represented by posteroventral flap on genital somite bearing 1 long plumous and 1 minute subdistal setae.

Etymology. The specific name *dissimilis* is a Latin meaning “dissimilar”. It alludes to the dissimilarity of the new species to *Asteropontius corallophilus* Stock, 1966 in spite that they share the same kind of coral host, *Pocillopora damicornis caespitosa*.

Remarks. *Asteropontius dissimilis* n. sp. is closely related to *A. corallophilus* Stock, 1966 in many respects, including the fact that both species are the associates of the same species of coral host. Only two points prevent them from identifying as the same species: the third endopodal segment of leg 2 bears an armature formula 1, 2, 3 in *A. dissimilis*, unlike 1, 1, I, 3 in *A. corallophilus*; the free segment of female leg 5 is rectangular in *A. dissimilis* but it is tapering in *A. corallophilus*.

Catalog of copepods associated with marine invertebrates from New Caledonia

Order Poecilostomatoida Thorell, 1859

Family Anchimolgidae Humes and Boxshall, 1996

- Amarodopsis merulinae* Humes, 1974: *Merulina ampliata* (see Humes, 1974b).
- Anchimoligus abbreviatus* Humes, 1991: *Galaxea fascicularis* (see Humes, 1996b).
- Anchimoligus compressus* Humes, 1996: *Galaxea fascicularis* (see Humes, 1996b).
- Anchimoligus contractus* Humes, 1979: *Galaxea fascicularis* (see Humes, 1996b).
- Anchimoligus convexus* Humes, 1978: *Parahalomitra irregularis* (the present paper).
- Anchimoligus gratus* Humes, 1996: *Lithactinia novaehiberniae* (see Humes, 1996d); *Parahalomitra irregularis*, *Fungia actiniformis*, and *Fungia echinata* (the present paper).
- Anchimoligus latens* Humes, 1978: *Fungia fungites* (the present paper).
- Anchimoligus maximus* n. sp.: *Fungia concinna* (the present paper).
- Anchimoligus multidentatus* n. sp.: *Alveopora catalai* (the present paper).
- Anchimoligus nasutus* Humes, 1996: *Galaxea fascicularis* (see Humes, 1996b).
- Anchimoligus noumensis* n. sp.: *Seriatopora hystrix* (the present paper).
- Anchimoligus punctilis* Humes, 1978: *Fungia fungites* (the present paper).
- Anchimoligus tanaus* Humes, 1991: *Galaxea fascicularis* var. *minima* (see Humes, 1996b).
- Anchimoligus tener* Humes, 1973: *Fungia echinata* (see Humes, 1973b); *Parahalomitra irregularis* (the present paper).
- Anchimoligus tenuipes* n. sp.: *Seriatopora hystrix* (the present paper).
- Anchimoligus tridentatus* n. sp.: *Echinopora lamellosa* (the present paper).
- Cerioxynus alatus* Humes, 1974: *Favia favius* (see Humes, 1974b).
- Cerioxynus faviticolus* Humes, 1974: *Favites halicora* (see Humes, 1974b).
- Clamocus spinifer* Humes, 1979: *Galaxea fascicularis* (see Humes, 1996b).
- Dumbeana undulatipes* Humes, 1996: *Psammocora togianensis* (see Humes, 1996a).
- Ephysarion ampullulum* Humes, 1993: *Acropora rosaria*, *A. exigua*, and *A. syringodes* (see Humes, 1993b).
- Ephysarion lobophorum* (Humes and Ho, 1968): *Acropora exigua*, *A. hyacinthus*, *A. humilis*, *A. formosa*, *A. squamosa*, and *A. gravida* (see Humes, 1993b); *Acropora convexa* (the present paper).
- Haplomoligus incolumis* Humes, 1991: *Montipora caliculata* (see Humes, 1991a); *Cladiella humesi* (the present paper).
- Haplomoligus montiporae* Humes and Ho, 1968: *Montipora lobulata*, *M. ramosa*, and *M. composita* (see Humes, 1991a).
- Jamescookina exigua* n. sp.: *Echinopora lamellosa* (the present paper).
- Jamescookina palmata* n. sp.: *Echinopora lamellosa* (the present paper).
- Juxtandrianellus probus* Humes, 1995: *Leptoria tenuis* (see Humes, 1995b).
- Karanges galaxeanus* Humes, 1979: *Galaxea fascicularis* (see Humes, 1996b).
- Lipochaetes extrusus* Humes, 1996: *Psammocora togianensis* (see Humes, 1996a).
- Mycoxynus longicauda* Humes, 1973: *Parahalomitra irregularis* (see Humes, 1973b).
- Odontomoligus bulvalis* Humes, 1991: *Lobophyllia corymbosa* (the present paper).
- Odontomoligus exilipes* n. sp.: *Psammocora samoensis* (the present paper).
- Odontomoligus forhani* Humes, 1978: *Montipora composita*, *M. lobulata*, and *M. ramosa* (see Humes, 1991a).

- Odontomolgus geminus* n. sp.: *Psammocora samoensis* (the present paper).
Odontomolgus mundulus Humes, 1974: *Alveopora mortenseni* (see Humes, 1974c).
Odontomolgus scitulus Humes, 1973: *Fungia fungites* (see Humes, 1973b).
Panjakus directus Humes, 1995: *Leptoria tenuis* (see Humes, 1995b).
Panjakus necopinus Humes, 1995: *Leptoria tenuis* (see Humes, 1995b).
Panjakus platygyrae Humes and Stock, 1973: *Platygyra astreiformis* (see Humes, 1974b).
Paraclamocus hiulcus Humes, 1997: *Psammocora togianensis* (see Humes, 1997b).
Schedomolgus dumbensis n. sp.: *Fungia fungites* (the present paper).
Schedomolgus exilliculus Humes, 1993: *Acropora palifera* (see Humes, 1993b).
Schedomolgus idanus Humes, 1993: *Acropora patula*; *A. valida* (see Humes, 1993b).
Schedomolgus insignellus Humes, 1993: *Acropora valida* and *A. danai* (see Humes, 1993b).
Schedomolgus majusculus Humes, 1993: *Acropora rosaria* (see Humes, 1993b).
Schedomolgus tenuicaudatus n. sp.: *Acropora rosaria* (the present paper).
Schedomolgus walteri n. sp.: *Lobophyllia corymbosa* (the present paper).
Scyphuliger aristoides Humes, 1993: *Acropora exilis* (see Humes, 1993b).
Scyphuliger concavipes Humes, 1991: *Acropora exigua* and *A. hyacinthus* (see Humes, 1993b).
Scyphuliger eumorphus Humes, 1993: *Acropora hyacinthus* and *A. gravida* (see Humes, 1993b).
Scyphuliger latus n. sp.: *Acropora exilis* (the present paper).
Scyphuliger longicaudatus n. sp.: *Acropora convexa* (the present paper).
Scyphuliger manifestus Humes, 1991: *Acropora valida* (see Humes, 1993b).
Scyphuliger pennatus n. sp.: *Acropora corymbosa* (the present paper).
Scyphuliger pilosus n. sp.: *Acropora corymbosa* (the present paper).
Schyphuliger paucisurculus n. sp.: *Acropora exilis* (the present paper).
Scyphuliger tenuatus (Humes, 1990): *Acropora cymbicyathus* (see Humes, 1990b); *A. danai*, *A. hyacinthus*, *A. formosa*, *A. squamosa*, and *A. affinis* (see Humes, 1993b).
Uncispina latigenitalis Humes, 1993: *Acropora palifera* (see Humes, 1993b).

Family Anthessiidae Humes, 1986

- Anthessius alatus* Humes and Stock, 1965: *Tridacna maxima* and *T. squamosa* (see Humes, 1973a).
Anthessius amicalis Humes and Stock, 1965: *Tridacna maxima* and *T. squamosa* (see Humes, 1973a).
Anthessius brevicauda (Leigh–Sharpe, 1934): *Atrina vexillum* (see Humes, 1973a).
Anthessius dolabellae Humes and Ho, 1965: *Dolabella auricularia* (see Humes, 1974a).
Anthessius pinctadae Humes, 1973: *Pinctada margaritifera* (see Humes, 1973a).

Family Kelleridae Humes and Boxshall, 1996

- Kelleria australiensis* Bayly, 1971: *Pentaceraster regulus* (the present paper).

Family Lichomolgidae Kossmann, 1877

- Lichomolgus chamarum* Humes, 1968: *Chama iostoma* (see Humes, 1973a).
Lichomolgus ieversi Thompson and A. Scott, 1903: *Pecten distans* (see Humes, 1973a).
Paclabius lumidus Kossmann, 1877: *Tridacna squamosa* (see Humes, 1973a).
Pterioidicola antennatus n. gen., n. sp.: *pteroid clams* (the present paper).
Stellicola novaecaledoniae Humes, 1976: *Linckia laevigata* and *L. guildingi* (see Humes, 1976).
Stellicola orestriphilus Kossmann, 1877: *Culcita novaeguineae* (see Humes, 1976).
Stellicola parvulipes Humes, 1976: *Culcita novaeguineae* (see Humes, 1976).

Synstellicola acanthasteris (Humes, 1970): *Acanthaster planci* (see Humes, 1976).
Synstellicola pichoni (Humes and Ho, 1967): *Choriaster granulatus* (see Humes, 1976).

Family Macrochironidae Humes and Boxshall, 1996

Macrochiron lytocarpi Humes, 1966: *Lytocarpus philippinus* (see Humes, 1977b).
Macrochiron rostratum Humes, 1966: *Lytocarpus philippinus* (see Humes, 1977b).

Family Octopicolidae Humes and Boxshall, 1996

Octopicola regalis Humes, 1974: *Octopus cyanus* (see Humes, 1974d).

Family Pseudanthessiidae Humes and Stock, 1972

Mecomerinx heterocentroti Humes, 1977: *Heterocentrotus mammillatus* (see Humes, 1977a).
Mecomerinx notabilis (Humes and Cressey, 1961): *Echinometra mathaei* (see Humes, 1977a).
Pseudanthessius implanus Humes, 1979: *Phyllacanthus imperialis* (see Humes, 1977a).
Pseudanthessius madresensis Reddiah, 1968: *Tropiometra afra* (see Humes, 1977a).
Pseudanthessius major Stock, 1967: *Himerometra magnipinna* and *Stephanometra spicata* (see Humes, 1977a).
Pseudanthessius pictus Humes, 1977: *Parasalenia gratiosa* (see Humes, 1977a).
Pseudanthessius vinnulus Humes, 1977: *Echinothrix diadema* (see Humes, 1977a).
Senariellus diadematis Humes, 1977: *Diadema setosum* (see Humes, 1977a).
Senariellus latiseta Humes, 1977: *Heterocentrotus mammillatus* and *Tripneustes gratilla* (see Humes, 1977a).

Family Rhynchomolgidae Humes and Stock, 1972

Acanthomolgus astrictus Humes and Stock, 1973: *Rumphella antipathes* (see Humes, 1993a).
Acanthomolgus exilipes (Humes and Ho, 1968): *Dendronephthya mucronata* (see Humes, 1975a).
Acanthomolgus gentilis (Humes and Ho, 1968): *Dendronephthya mucronata* (see Humes, 1975a);
Siphonogorgia variabilis (the present paper).
Acanthomolgus variostratus (Humes and Ho, 1968): *Dendronephthya mucronata* (see Humes, 1975a);
Siphonogorgia variabilis (the present paper).
Alcyonomolgus bicrenatus (Humes, 1982): *Sarcophyton ehrenbergi* (see Humes, 1982b).
Alcyonomolgus insolens (Humes and Ho, 1968): *Lobophytum crassum* and *L. crebriplacatum* (see Humes, 1975a); *L. caledonense* (see Humes, 1990a).
Alcyonomolgus lumellifer Humes, 1990: *Lobophytum pauciflorum* (see Humes, 1990a).
Alcyonomolgus petalophorus (Humes, 1982): *Sarcophyton acutangulum* (see Humes, 1982b).
Alcyonomolgus relativus (Humes, 1982): *Sarcophyton ehrenbergi* (see Humes, 1982b).
Alcyonomolgus sarcophyticus (Humes, 1982): *Sarcophyton elegans* and *S. manifestum* (see Humes, 1982b).
Anisomolgus dissimilis Humes, 1982: *Sarcophyton acutangulum* and *S. ehrenbergi* (see Humes, 1982b).
Anisomolgus ensifer Humes, 1982 (as *A. ensiferus*): *Sarcophyton glaucum* (see Humes, 1982b).
Anisomolgus goniodes Humes, 1982: *Sarcophyton trocheliophorum* and *S. manifestum* (see Humes, 1982b).
Anisomolgus insolens (Humes and Ho, 1968): *Lobophytum crassum* and *L. crebriplacatum* (see Humes, 1975a).
Anisomolgus petalophorus Humes, 1982: *Sarcophyton acutangulum* (see Humes, 1982b).

Anisomolgus protentus (Humes and Frost, 1964): *Sarcophyton elegans* (see Humes, 1975a); *S. trocheliophorum* (see Humes, 1982b).

Anisomolgus pterolobatus Humes, 1982: *Sarcophyton elegans* and *S. crassum* (= *S. implanum*) (see Humes, 1982b).

Anisomolgus relativus Humes, 1982: *Sarcophyton ehrenbergi* (see Humes, 1982b).

Anisomolgus sarcophyticus Humes, 1982: *Sarcophyton elegans* and *S. manifestum* (see Humes, 1982b).

Colobomolgus cristatus (Humes and Ho, 1968): *Sinularia leptoclados* and *S. firma* (see Humes, 1990a).

Colobomolgus dentipes (Thompson and A. Scott, 1903): *Sinularia polydactyla* (see Humes, 1975a); *S. firma* (see Humes, 1990a).

Colobomolgus epaxius Humes, 1990: *Sinularia firma* (see Humes, 1990a).

Critomolgus antennulus Humes, 1991: *Cladiella pachyclados* (see Humes, 1991b); *Cladiella humesi* (the present paper).

Critomolgus audens (Humes, 1959): *Platydoris scabra* (see Humes, 1974a).

Critomolgus brevicaudatus n. sp.: a sea anemone (the present paper).

Critomolgus caelatus Humes, 1985: *Entacmaea quadricolor* (see Humes, 1982a).

Critomolgus cladiellae Humes, 1990: *Cladiella pachyclados* (see Humes, 1990a); *Cladiella humesi* (the present paper).

Critomolgus cyllichnophorus (Humes, 1982): *Heteractis crispa* (see Humes, 1982a).

Critomolgus dunnae (Humes, 1982): *Heteractis crispa* (see Humes, 1982a).

Critomolgus foxi (Gurney, 1927): *Cladiella pachyclados* (see Humes, 1990a) and *C. humesi*; (see Humes, 1990a and the present paper).

Critomolgus hispidulus (Humes, 1982): *Entacmaea quadricolor* (see Humes, 1982a).

Critomolgus linguifer n. sp.: *Cladiella humesi* (the present paper).

Critomolgus magnificus (Humes, 1964): *Stichodactyla gigantea* (see Humes, 1982a).

Critomolgus mandoensis n. sp.: *Cryptodendrum adhaesivum* (the present paper).

Critomolgus orectopus Humes, 1990: *Cladiella pachyclados* and *Lobophytum pauciflorum* (see Humes, 1990a).

Critomolgus paterellis (Humes, 1982): *Heteractis crispa* (see Humes, 1982a).

Critomolgus penicillatus (Humes, 1982): *Entacmaea quadricolor* (see Humes, 1982a).

Critomolgus scyphulanus (Humes, 1982): *Heteractis crispa* (see Humes, 1982a).

Diallagomolgus productus Humes, 1979: *Cyphastrea chalcidicum* and *C. gardineri* (see Humes, 1979b).

Diallagomolgus vicinus Humes, 1979: *Cyphastrea chalcidicum* (see Humes, 1979b).

Doridicola aculeatus (Humes and Ho, 1968): *Stereonephthya inordinata* (see Humes, 1975a).

Doridicola cincinnatus (Humes, 1975): *Cladiella pachyclados* (see Humes, 1975a); *C. humesi*, *C. rotundata*, *C. similis*, and *C. sphaerophora* (see Humes, 1990a).

Doridicola cinctus (Humes and Stock, 1973): *Rumphella antipathes* (see Humes, 1993a).

Doridicola commodus (Humes, 1964): *Hexabranthus flammulatus* (see Humes, 1974a).

Doridicola comparatus (Humes, 1975): *Xenia membranacea* (see Humes, 1975a).

Doridicola cuspis (Humes, 1964): *Stichodactyla gigantea* (see Humes, 1982a).

Doridicola ehinasteris (Humes, 1976): *Echinaster luzonicus* (see Humes, 1976).

Doridicola inaequalis (Humes and Ho, 1966): *Palythoa* sp. (the present paper).

Doridicola mimicus (Humes, 1975): *Cladiella pachyclados* (see Humes, 1975a); *C. humesi* (the present paper).

Doridicola parvicaudatus n. sp.: *Stereonephthya inordinata* (the present paper).

Doridicola petalopus Humes, 1990: *Heteroxenia* sp. (see Humes, 1990a).

Doridicola praelongipes (Humes, 1975): *Xenia membranacea* (see Humes, 1975a); *Xenia viridis* (see Humes, 1990a).

Doridicola rostripes Humes, 1990: *Heteroxenia* sp. (see Humes, 1990a).

Doridicola rumphellae Humes, 1993: *Rumphella antipathes* (see Humes, 1993a).

Doridicola senticauda Humes, 1990: *Paralemnalia thysoides* (see Humes, 1990a).

Doridicola spinulifer (Humes and Frost, 1964): *Paralemnalia thysoides* and *Lemnalia elegans* (see Humes, 1975a).

Emunoa protenta Humes, 1996: *Psammocora togianensis* (see Humes, 1996a).

Lambanetes gemmulatus Humes, 1982: *Cryptodendron adhaesivum* (see Humes, 1982a).

Lambanetes stichodactylae Humes, 1982: *Stichodactyla haddoni* and *S. gigantea* (see Humes, 1982a).

Mandobius regalis Humes, 1991: *Pectinia lactuca* (see Humes, 1991b).

Meringomolgus hamatus Humes and Stock, 1973: *Sinularia leptoclados* (see Humes, 1990a).

Notoxynus crinitus Humes, 1982: *Heteractis crispa* (see Humes, 1982a).

Notoxynus mundus Humes, 1975: *Xenia membranacea* (see Humes, 1975a).

Numboa porosa Humes, 1997: *Psammocora contigua* (see Humes, 1997b).

Pachysericola compressus n. gen., n. sp.: *Pachyseris rugosa* (the present paper).

Paradoridicola adelphus (Humes and Ho, 1968): *Sinularia polydactyla* (see Humes, 1975a).

Paradoridicola angularis Humes, 1990: *Alcyonium simplex* (see Humes, 1990a).

Paradoridicola drepanophorus Humes, 1990: *Alcyonium simplex* (see Humes, 1990a).

Paradoridicola hystricosus Humes, 1990: *Sinularia gravis* (see Humes, 1990a).

Paradoridicola simulator Humes, 1990: *Alcyonium simplex* (see Humes, 1990a).

Paradoridicola sinulariae Humes and Stock, 1973: *Sinularia flexibilis* (see Humes, 1975a).

Paradoridicola sinularianus Humes, 1990: *Sinularia gravis* (see Humes, 1990a).

Paradoridicola squamiger (Humes and Frost, 1964): *Sinularia polydactyla* (see Humes, 1975a).

Paramoligus alcyoniicus Humes, 1990: *Alcyonium simplex* and *A. legitimum* (see Humes, 1990a).

Paramoligus centor Humes, 1990: *Paralemnalia thysoides* (see Humes, 1990a).

Paramoligus clavatus (Humes and Ho, 1968): *Stereonephthya inordinata* (see Humes, 1975a); *Sinularia polydactyla* (the present paper).

Paramoligus eniwetokensis Humes, 1973: *Lobophytum pauciflorum* (see Humes, 1990a); *L. crassum*, and *L. crebriplacatum* (see Humes, 1975a).

Paramoligus galeatus n. sp.: *Sarcophyton ehrenbergi* (the present paper).

Paramoligus incostans Humes and Dojiri, 1979: *Lobophytum pauciflorum* (see Humes, 1990a).

Paramoligus nephtzhaenus Humes, 1980: *Stereonephthya inordinata* (the present paper).

Paramoligus pavonae Humes, 1994: *Pavona praetorta* (see Humes, 1994a).

Paramoligus promiculus Humes, 1980: *Nephthya albida* (see Humes, 1990a); *Stereonephthya inordinata* (the present paper).

Paramoligus quadrangularis Humes, 1990: *Sinularia dura* (see Humes, 1990a).

Paramoligus setellus Humes, 1992: *Pavona praetorta* (see Humes, 1994a).

Paramoligus spathophorus (Humes and Ho, 1968): *Sarcophyton acutangulum*, *S. elegans*, and *S. glaucum* (see Humes, 1982b); *Lobophytum crebriplacatum* (see Humes, 1975a); *L. pauciflorum* (see Humes, 1990a).

Paramoligus subincisus Humes, 1990: *Heteroxenia* sp. (see Humes, 1990a).

Paramoligus timendus Humes, 1990: *Alcyonium simplex* (see Humes, 1990a).

Paredromoligus decorus (Humes and Frost, 1964): *Cladiella polydactyla* (see Humes, 1975a); *Cladiella humesi*, *C. pachyclados*, and *C. rotundata* (see Humes, 1990a).

Verutipes laticeps Humes, 1982: *Entacmaea quadricolor* (see Humes, 1982a).

Family Synapticolidae Humes and Boxshall, 1996

Chauliolobion bulbosum Humes, 1975: *Actinopyga echinites* and *A. obesa palauensis* (see Humes, 1975b).

Chauliolobion halodeimatis Humes, 1975: *Holothuria atra* (see Humes, 1975b).

Chauliolobion tylotus Humes, 1975: *Bohadschia argus* (see Humes, 1975b).

Lecanurius planifrontalis Humes, 1980: *Actinopyga echinites* (see Humes, 1980).

Scambicornus calcaratus Humes, 1975: *Actinopyga miliaris*, *A. palauensis*, *A. plebeja*, *A. serratidens*, *A. echinites*, and *A. lecanora* (see Humes, 1975b).

Scambicornus campanulipes (Humes and Cressey, 1961): *Actinopyga plebeja* (see Humes, 1975b).

Scambicornus idoneus (Humes and Cressey, 1961): *Holothuria atra* (see Humes, 1975b).

Scambicornus modestus (Humes and Cressey, 1961): *Stichopus variegatus* and *S. horrens* (see Humes, 1975b).

Scambicornus poculiferus (Humes and Cressey, 1961): *Synapta maculata* (see Humes, 1975b).

Scambicornus sewelli Humes, 1975: *Holothuria edulis*, *H. coluber*, *H. atra*, *H. fuscocinerea*, *H. nobilis*, and *Actinopyga echinites* (see Humes, 1975b).

Scambicornus subtilis (Humes and Cressey, 1961): *Holothuria edulis*, *H. coluber*, *H. atra*, *H. echinites*, and *H. nobilis* (see Humes, 1975b).

Scambicornus tuberatus (Humes and Cressey, 1961): *Bohadschia argus* and *B. vitiensis* (see Humes, 1975b).

Scambicornus tylotus Humes, 1975: *Bohadschia argus* (see Humes, 1975b).

Family Taeniacanthidae Wilson, 1911

Clavisodalis abbreviatus Dojiri and Humes, 1982: *Heterocentrotus mammillatus* (see Dojiri and Humes, 1982).

Clavisodalis dilatatus Dojiri and Humes, 1982: *Diadema setosum* (see Dojiri and Humes, 1982).

Clavisodalis parvibullatus Dojiri and Humes, 1982: *Echinometra mathaei* (see Dojiri and Humes, 1982).

Clavisodalis tenuis Dojiri and Humes, 1982: *Heterocentrotus mammillatus* (see Dojiri and Humes, 1982).

Echinosocius finitimus Dojiri and Humes, 1982: *Diadema setosum* (see Dojiri and Humes, 1982).

Echinosocius gulicolus Dojiri and Humes, 1982: *Diadema setosum* (see Dojiri and Humes, 1982).

Family Xarifiidae Humes, 1960

Lipochrus acroporinus Humes and Dojiri, 1982: *Acropora rosaria* and *A. patula* (see Humes and Dojiri, 1982).

Xarifia albusa Humes and Dojiri, 1982: *Acropora corymbosa*, *A. rosaria*, and *A. exilis* (= *A. elseyi*) (see Humes and Dojiri, 1982).

Xarifia acicularis Humes, 1985: *Pachyseris rugosa* (see Humes, 1985).

Xarifia anomala Humes and Ho, 1968: *Acropora palifera*, *A. corymbosa*, *A. danai*, *A. humilis*, *A. hyacinthus*, *A. gravida*, and *A. affinis* (see Humes and Dojiri, 1982).

Xarifia breviramea Humes and Dojiri, 1982: *Acropora hyacinthus*, *A. corymbosa*, *A. danai*, *A. valida*, *A. gravida*, *A. affinis*, *A. exigua*, and *A. squamosa* (see Humes and Dojiri, 1982).

Xarifia diminuta Humes and Ho, 1967: *Psammocora* cf. *contigua* (see Humes, 1985).

Xarifia echinopora Humes and Dojiri, 1982: *Echinopora horrida* (see Humes and Dojiri, 1982).

Xarifia eminula Humes, 1985: *Seriatopora hystrix* (see Humes, 1985).

- Xarifia fastigiata* Humes and Dojiri, 1982: *Acropora rosaria* and *A. exilis* (see Humes and Dojiri, 1982).
Xarifia fimbriata Humes, 1960: *Pavona cactus* (see Humes, 1985).
Xarifia finitima Humes, 1985: *Pavona cactus* (see Humes, 1985).
Xarifia formosa Humes, 1985: *Psammocora digitata* (see Humes, 1985).
Xarifia gerlachi Humes, 1962: *Acropora hyacinthus*, *A. gravida*, and *A. affinis* (see Humes and Dojiri, 1982).
Xarifia guttulifera Humes and Dojiri, 1982: *Acropora palifera* f. *alpha* (see Humes and Dojiri, 1982).
Xarifia imitans Humes, 1985: *Psammocora digitata* (see Humes, 1985).
Xarifia imparilis Humes, 1985: *Pocillopora damicornis* and *P. damicornis* var. *caespitosa* (see Humes, 1985).
Xarifia jugalis Humes, 1985: *Pocillopora damicornis* var. *caespitosa* (see Humes, 1985).
Xarifia levis Humes, 1985: *Seriatopora hystrix* (see Humes, 1985).
Xarifia mucronata Humes and Dojiri, 1982: *Acropora palifera* f. *alpha* (see Humes and Dojiri, 1982).
Xarifia obesa Humes and Ho, 1968: *Stylophora pistillata* var. *palmata* (see Humes, 1985).
Xarifia pectinea Humes and Dojiri, 1982: *Acropora hyacinthus*, *A. humilis*, *A. patula*, *A. gravida*, *A. affinis*, and *Montipora ramosa* (see Humes and Dojiri, 1982).
Xarifia quinaris Humes, 1985: *Pocillopora damicornis* var. *caespitosa* (see Humes, 1985).
Xarifia rosariae Humes and Dojiri, 1982: *Acropora rosaria* (see Humes and Dojiri, 1982).
Xarifia sabiuraensis Misaki, 1978: *Acropora gravida*, *A. convexa*, *A. hyacinthus*, *A. patula*, *A. affinis*, and *A. danai* (see Humes and Dojiri, 1982).
Xarifia sectilis Humes, 1985: *Pocillopora damicornis* (see Humes, 1985).
Xarifia simplex Humes, 1985: *Scapophyllia cylindrica* (see Humes, 1985).
Xarifia temnura Humes and Ho, 1968: *Montipora ramosa* (see Humes and Dojiri, 1982).
Xarifia trituberata Humes and Dojiri, 1982: *Acropora hyacinthus*, *A. corymbosa*, *A. danai*, *A. humilis*, *A. patula*, *A. gravida*, and *A. affinis* (see Humes and Dojiri, 1982).
Xarifia tumoris Misaki, 1978: *Acropora hyacinthus*, *A. gravida*, *A. corymbosa*, *A. affinis*, and *A. exilis* (see Humes and Dojiri, 1982).
Xarifia umbonata Humes, 1985: *Seriatopora hystrix* (see Humes, 1985).
Xarifia varilabrata Humes, 1985: *Seriatopora hystrix* (see Humes, 1985).
Xarifia villosa Humes and Dojiri, 1982: *Cyphastrea chalcidicum* (see Humes and Dojiri, 1982).

Family uncertain

Ruhtra humesi n. gen., n. sp.: *Steronephthya inordinata* (the present paper).

Order Siphonostomatoida Thorell, 1859

Family Asterocheridae Giesbrecht, 1899

- Asteropontius acroporus* n. sp.: *Acropora rosaria* (the present paper).
Asteropontius brevioris n. sp.: *Acropora hyacinthus* (the present paper).
Asteropontius caledoniensis n. sp.: *Echonopora lamellosa* and *Fungia concinna* (the present paper).
Asteropontius dissimilis n. sp.: *Pocillopora damicornis caespitosa* (the present paper).
Asteropontius minutus n. sp.: *Pocillopora damicornis caespitosa* (the present paper).
Collocheres comanthiphilus Humes, 1987: *Comanthus samoanus*, *Comanthus* sp., and *C. parvicirrus* (see Humes, 1987).
Glyptocheres extrusus Humes, 1987: ?*Comanthus parvicirrus* (see Humes, 1987).
Hetairosyna laciniata Humes, 1991: *Montipora caliculata*, *M. composita*, *M. ramosa*, and *M. lobulata*

(see Humes, 1991a).

Hetairosyna sororia Humes, 1991: *Montipora rosaria* (see Humes, 1991a).

Hetairosyna terpena Humes, 1991: *Montipora caliculata*, *M. composita*, *M. ramosa*, *M. lobulata*, *Montipora* sp. cf. *M. efflorescens* (see Humes, 1991a).

Orecturus amplus Humes, 1996: *Siphonogorgia variabilis* (see Humes, 1996c).

Family Coralliomyzontidae Humes and Stock, 1991

Tondua tholincola Humes, 1997: *Parahalomitra irregularis* (see Humes, 1997a).

Family Herpyllobiidae Hansen, 1892

Eurysilenium intermedium Stock, 1986: *Harmothoe corralophila* (see Stock, 1986).

Family Nanaspididae Humes and Cressey, 1959

Nanaspis mixta Humes, 1975: *Microthele nobilis* (see Humes, 1975b).

Family Stellicomitidae Humes and Cressey, 1958

Astroxynus culcitae Humes, 1971: *Culcita novaeguineae* (see Humes, 1976).

Order Cyclopoida Burmeister, 1834

Family Ascidicolidae Thorell, 1859

Adenaplostoma monniotorum Stock, 1993: *Didemnum hiopaa* (see Stock, 1993).

Family Cyclopidae Dana, 1853

Euryte bellatula Humes, 1991: *Montipora lobulata* Bernard, *M. caliculata*, and *M. ramosa* (see Humes, 1991a).

Family Notodelphyidae Illg, 1958

Apodelphys lamellipes Illg, 1970: *Ascidia sydneyensis samea* (see Illg, 1970).

Doropygus catalai Illg, 1970: *Ascidia sydneyensis samea* (see Illg, 1970).

Paranotodelphys constricta Illg, 1970: host unknown (see Illg, 1970).

Order Harpacticoida G. O. Sars, 1903

Family Canuellidae Lang, 1944

Sunaristes dardani Humes and Ho, 1969: *Clibanarius virescens*, *Dardanus lagopodes*, and *D. megistos* (see Humes, 1972).

Sunaristes inaequalis Humes and Ho, 1969: *Calcinus latens*, *Clibanarius virescens*, *Dardanus megistos*, and *D. scutellatus* (see Humes, 1972).

Family Diosaccidae Sars, 1906

Paramphiascella pacifica Vervoort, 1962: *Ascidia sydneyensis samea* (see Illg, 1970).

Family Peltidiidae G. O. Sars, 1904

Alteuthellopsis corallina Humes, 1981: *Pocillopora damicornis* var. *caespitosa* (see Humes, 1981).

Family Porcellidiidae Brady, 1880

Porcellidium brevicaudatum Thompson and A. Scott, 1903: *Clibanarius virescens*, *Calcinus latens*, *Dardanus lagopodes*, *D. gullatus*, *D. megistos*, *D. deformis*, and *D. scutellatus* (see Humes, 1972).

Copepods insufficiently described or of uncertain position

(species preceded by an asterisk are treated as such by Humes and Stock, 1973)

Briarella disphaerocephala Monod and Dollfus, 1932: *Centrodoridius inframaculata* (see Monod and Dollfus, 1932)

Briarella risbeci Monod, 1928: *Platydoridius cruenta* (see Monod, 1928)

Ceratocheres trochicola Monod and Dollfus, 1932: *Trochus (Tectus) obeliscus* (see Monod and Dollfus, 1932)

Chondracanthidae: *Elysia ornata* (see Risbec, 1930)

**Strongylopleura pruvoti* (Monod and Dollfus, 1932): *Aplysia* sp. (see Monod and Dollfus, 1932)

Harpacticidae?: *Platydoridius cruenta* (see Monod, 1928)

**Lichomolgus (Lichomolgus)* sp. Monod and Dollfus, 1932: *Aeolidia nebae* (see Monod and Dollfus, 1932)

**Lichomolgus (Macrochiron)* sp. Monod and Dollfus, 1932: *Chromodoridius mouaci* (see Monod and Dollfus, 1932)

**Lichomolgus (Macrochiron) alabatensis* (Kossmann, 1877): *Gymnodoridius kouaouae* (see Monod and Dollfus, 1932)

**Paralichomolgus orbicularis* Monod, 1928: *Platydoridius cruenta* (see Monod, 1928)

Catalog of Invertebrate hosts and their copepod associates from New Caledonia

Hydrozoa

Lytocarpus philippinus (Kirchenpauer): *Macrochiron lytocarpi* and *M. rostratum*.

Alcyonacea

Alcyonium legitimum Tixier-Durivault: *Paramolgus alcyoniicus*.

Alcyonium simplex Thomson and Dean: *Paradoridicola angularis*, *P. drepanophorus*, *P. simulator*, *Paramolgus alcyoniicus*, and *P. timendus*.

Cladiella humesi Verseveldt: *Critomolgus antennulus*, *C. cladiellae*, *C. foxi*, *C. linguifer*, *Doridicola cincinnatus*, *D. mimicus*, *Haplomolgus incolunaris*, and *Paredromolgus decorus*.

Cladiella pachyclados (Klunzinger): *Critomolgus antennulus*, *C. cladiellae*, *C. foxi*, *C. orectopus*, *Doridicola cincinnatus*, *D. mimicus*, and *Paredromolgus decorus*.

Cladiella polydactyla (Klunzinger): *Paredromolgus decorus*.

Cladiella rotundata Tixier-Durivault: *Doridicola cincinnatus* and *Paredromolgus decorus*.

Cladiella similis Tixier-Durivault: *Doridicola cincinnatus*.

Cladiella sphaerophora (Ehrenberg): *Doridicola cincinnatus*.

Dendronephthya mucronata (Pütter): *Acanthomolgus exilipes*, *A. gentilis*, and *A. variostratus*.

Heteroxenia sp.: *Doridicola petalopus*, *D. rostripes*, and *Paramolgus subincisus*.

Lemnalina elegans (May): *Doridicola spinulifer*.

Lobophytum caledonense Tixier-Durivault: *Alcyonomolgus insolens*.

Lobophytum crassum von Marenzeller: *Alcyonomolgus insolens*, *Anisomolgus insolens*, and *Paramolgus eniwetokensis*.

Lobophytum crebriplacatum von Marenzeller: *Alcyonomolgus insolens*, *Anisomolgus insolens*, *Paramolgus eniwetokensis*, and *P. spathophorus*.

Lobophytum pauciflorum (Ehrenberg): *Alcyonomolgus lumellifer*, *Critomolgus orectopus*, *Paramolgus eniwetokensis*, *Paramolgus incostans*, and *P. spathophorus*.

Nephtya albida (Holm): *Paramolgus promiculus*.

Paralemnalia thysoides (Ehrenberg): *Paramolgus centor*, *Doridicola senticauda*, and *D. spinulifer*.

Rumphella antipathes (L.): *Acanthomolgus astrictus*, *Alcyonomolgus petalophorus*, *Anisomolgus dissimilis*, *A. petalophorus*, *Doridicola cinctus*, and *D. rumphellae*.

Sarcophyton acutangulum (von Marenzeller): *Paramolgus spathophorus*.

Sarcophyton crassum Tixier-Durivault (= *S. implanum*): *Anisomolgus pterolobatus*.

Sarcophyton ehrenbergi von Marenzeller: *Alcyonomolgus bicrenatus*, *A. relativus*, *Anisomolgus dissimilis*, *A. relativus*, *Paramolgus galeatus*.

Sarcophyton elegans Moser: *Alcyonomolgus sarcophyticus*, *Anisomolgus protentus*, *A. pterolobatus*, *A. sarcophyticus*, and *Paramolgus spathophorus*.

Sarcophyton glaucum (Quoy and Gaimard): *Paramolgus spathophorus*, *Anisomolgus ensifer* (as *A. ensiferus*).

Sarcophyton manifestum Tixier-Durivault: *Alcyonomolgus sarcophyticus*, *Anisomolgus goniodes*, and *A. sarcophyticus*.

Sarcophyton trocheliophorum von Marenzeller: *Anisomolgus goniodes*, and *A. protentus*.

Sinularia dura (Pratt): *Paramolgus quadrangularis*.

Sinularia firma Tixier-Durivault: *Colobomolgus cristatus*, *Colobomolgus dentipes*, and *C. epaxius*.

Sinularia flexibilis (Quoy and Gaimard): *Paradoridicola sinulariae*.

Sinularia gravis Tixier-Durivault: *Paradoridicola hystricosus* and *P. sinularianus*.

Sinularia leptoclados (Ehrenberg): *Colobomolgus cristatus* and *Meringomolgus hamatus*.

Sinularia polydactyla (Ehrenberg): *Colobomolgus dentipes*, *Paradoridicola adelphus*, *P. squamiger*, and *Paramolgus clavatus*.

Siphonogorgia variabilis (Hickson): *Acanthomolgus gentilis*, *A. variostracus*, and *Orecturus amplus*.

Stichodactyla haddonii (Saville-Kent): *Lambanetes stichodactylae*.

Stichodactyla gigantea (Forskål): *Lambanetes stichodactylae*, *Critomolgus magnificus*, and *Doridicola cuspis*.

Stereonephthya inordinata (Tixier-Durivault): *Doridicola aculeatus*, *D. parvicaudatus*, and *Ruhtra humesi*, *Paramolgus clavatus*, *P. nephthaenus*, and *P. promiculus*.

Xenia membranacea Schenk: *Doridicola praelongipes*, *D. comparatus*, and *Notoxynus mundus*.

Xenia viridis Schenk: *Doridicola praelongipes*.

Scleractinia

Acropora affinis (Brook): *Scyphuliger tenuatus*, *Xarifia anomala*, *X. breviramea*, *X. gerlachi*, *X. trituberata*, *X. tumorisa*, *X. pectinea*, and *X. sabiuraensis*.

Acropora convexa (Dana): *Ecphysarion lobophorum*, *Scyphuliger longicaudatus*, and *Xarifia sabiuraensis*.

Acropora corymbosa (Lamarck): *Scyphuliger pennatus*, *S. pilosus*, *Xarifia albusa*, *X. breviramea*, *X. anomala*, *X. tumorisa*, and *X. trituberata*.

Acropora cymbicyathus (Brook): *Scyphuliger tenuatus*.

Acropora danai (Milne Edwards and Haime): *Scyphuliger tenuatus*, *Schedomolgus insignellus*, *Xarifia anomala*, *X. breviramea*, *X. trituberata*, and *X. sabiuraensis*.

Acropora exigua (Dana): *Ecphysarion ampullulum*, *E. lobophorum*, *Scyphuliger concavipes*, *Xarifia breviramea*.

Acropora exilis (Brook): *Scyphuliger aristoides*, *S. latus*, *S. paucisurculus*, *Xarifia albusa*, *X. fastigiata*, and *X. tumorisa*.

Acropora florida (Dana) (as *A. gravida* (Dana)): *Xarifia gerlachi*.

Acropora formosa (Dana): *Ecphysarion lobophorum* and *Scyphuliger tenuatus*.

Acropora gravida (Dana): *Ecphysarion lobophorum*, *Scyphuliger eumorphus*, *Xarifia anomala*, *X. breviramea*, *X. pectinea*, *X. sabiuraensis*, *X. trituberata*, and *X. tumorisa*.

Acropora humilis (Dana): *Ecphysarion lobophorum*, *Xarifia anomala*, *X. pectinea*, and *X. trituberata*.

Acropora hyacinthus (Dana): *Ecphysarion lobophorum*, *Scyphuliger concavipes*, *S. eumorphus*, and *S. tenuatus*.

Acropora hyacinthus (Dana): *Xarifia pectinea*, *X. trituberata*, *X. sabiuraensis*, *X. tumorisa*, *X. anomala*, *X. breviramea*, *X. gerlachi*, and *Asteropontius brevioris*.

Acropora palifera (Lamarck): *Schedomolgus exilliculus*, *Uncispina latigenitalis*, and *Xarifia anomala*.

Acropora palifera forma alpha (Brook): *Xarifia guttulifera* and *X. mucronata*.

Acropora patula (Brook): *Schedomolgus idanus*, *S. majusculus*, *Ecphysarion ampullulum*, *Lipochrus acroporinus*, *Xarifia pectinea*, and *X. trituberata*.

Acropora rosaria (Dana): *Lipochrus acroporinus*, *Schedomolgus tenuicaudatus*, *Xarifia albusa*, *X. fastigiata*, and *X. rosariae*.

Acropora squamosa (Brook): *Ecphysarion lobophorum*, *Scyphuliger tenuatus*, and *Xarifia breviramea*, and *Asteropontius acroporus*.

Acropora syringodes (Brook): *Ecphysarion ampullulum*.

Acropora valida (Dana): *Schedomolgus idanus*, *S. insignellus*, *Scyphuliger manifestus*, *Xarifia breviramea*.

Alveopora catalai Wells: *Anchimgolus multidentatus*.

Alveopora mortenseni Crossland: *Odontomolgus mundulus*.

Cyphastrea chalcidicum (Forskål): *Diallagomolgus productus*, *D. vicinus*, and *Xarifia villosa*.

Cyphastrea gardineri Matthai: *Diallagomolgus productus*.

Echinopora horrida Dana: *Xarifia echinopora*.

Echinopora lamellosa (Esper): *Anchimgolus tridentatus*, *Jamescookina exigua*, *J. palmata*, and *Asteropontius caledoniensis*.

Entacmaea quadricolor (Rueppell and Leuckart): *Verutipes laticeps*, *Critomolgus hispidulus*, *C. penicillatus*, and *C. caelatus*.

Favia fava (Forskål): *Cerioxynus alatus*.

Favites halicora (Ehrenberg): *Cerioxynus faviticulus*.

Fungia actiniformis (Quoy and Gaimard): *Anchimgolus gratus*.

Fungia cocinna (Verrill): *Anchimgolus maximus* and *Asteropontius caledoniensis*.

Fungia echinata (Pallas): *Anchimgolus tener*.

Fungia fungites (L.): *Anchimgolus latens*, *A. punctilis*, *Odontomolgus scitulus*, and *Schedomolgus dumbensis*.

Galaxea fascicularis (L.): *Anchimgolus abbreviatus*, *A. compressus*, *A. contractus*, *A. nasutus*, *Clamocus spinifer*, and *Karanges galaxeanus*.

Galaxea fascicularis var. *minima* Chevalier: *Anchimgolus tanaus*.

- Leptoria tenuis* (Dana): *Juxtandrianellus probus*, *Panjakus directus*, and *P. necopinus*.
Lithactinia novaehiberniae Lesson: *Anchimolgus gratus*.
Lobophyllia corymbosa (Forskål): *Schedomolgus walteri*.
Merulina ampliata (Ellis and Solander): *Amarlopsis merulinae* and *Odontomolgus bulvalis*.
Montipora caliculata (Dana): *Haplomolgus incolumis*, *Hetairosyna laciniata*, *H. terpena*, *Euryte bellatula*.
Montipora composita Crossland: *Haplomolgus montiporae*, *Odontomolgus forhani*, *Hetairosyna laciniata*, and *H. terpena*.
Montipora lobulata Bernard: *Haplomolgus montiporae*, *Odontomolgus forhani*, *Hetairosyna laciniata*, *H. terpena*, and *Euryte bellatula*.
Montipora ramosa Bernard: *Haplomolgus montiporae*, *Odontomolgus forhani*, *Xarifia pectinea*, *Xarifia temnura*, *Hetairosyna laciniata*, *H. terpena*, and *Euryte bellatula*.
Montipora rosaria Bernard: *Hetairosyna sororia*.
Montipora sp. cf. *M. efflorescens* Bernard: *Hetairosyna terpena*.
Pachyseris rugosa (Lamarck): *Pachysericola compressus* and *Xarifia acicularis*.
Parahalomitra irregularis (Gardiner): *Anchimolgus convexus*, *A. gratus*, *A. tener*, *Mycoxynus longicauda*, and *Tondua tholincola*.
Pavona cactus (Forskål): *Xarifia fimbriata* and *X. finitima*.
Pavona praetorta Dana: *Paramolgus pavonae* and *P. setellus*.
Pectinia lactuca (Pallas): *Mandobius regalis*.
Platygyra astreiformis (Milne Edwards and Haime): *Panjakus platygyrae*.
Pocillopora damicornis caespitosa Dana: *Asteropontius dissimilis* and *A. minutus*.
Psammocora contigua (Esper): *Numboa porosa*.
Psammocora cf. *contigua*: *Xarifia diminuta*.
Psammocora digitata Milne Edwards and Haime: *Xarifia formosa* and *X. imitans*.
Psammocora samoensis Hoffmeister: *Odontomolgus exilipes* and *O. geminus*.
Psammocora togianensis Umbgrove: *Emunoa protenta*, *Dumbeana undulatipes*, *Lipochaetes extrusus*, and *Paraclamocus hiulcus*.
Pocillopora damicornis (L.): *Xarifia imparilis* and *X. sectilis*.
Pocillopora damicornis var. *caespitosa* Dana: *Alteuthellopsis corallina*, *Xarifia imparilis*, *X. jugalis*, and *X. uinaria*.
Scapophyllia cylindrica Milne Edwards and Haime: *Xarifia simplex*.
Seriatopora hystrix Dana: *Anchimolgus noumensis*, *A. tenuipes*, *Xarifia eminula*, *X. umbonata*, *X. varilabrata*, and *X. levis*.
Stylophora pistillata var. *palmata* de Blainville: *Xarifia obesa*.

Actiniaria

- Cryptodendron adhaesivum* Klunzinger: *Critomolgus mandoensis* and *Lambanetes gemmulatus*.
Heteractis crispa (Ehrenberg): *Critomolgus cylichnophorus*, *C. dunnae*, *C. paterellis*, *C. scyphulanus*, and *Notoxynus crinitus*.
Unknown species: *Critomolgus brevicaudatus*.

Zoanthida

- Palythoa* sp.: *Doridicola inaequalis*.

Polychaeta

Harmothoe corralophila Day: *Eurysilenium intermedium*.

Gastropoda

Dolabella auricularia (Lightfoot): *Anthessius dolabellae*.

Hexabranhus flammulatus (Quoy and Gaimard): *Doridicola commodus*.

Platydorid scabra (Cuvier): *Critomolgus audens*.

Pelecypoda

Atrina vexillum Born: *Anthessius brevicauda*.

Chama iostoma Conrad: *Lichomolgus chamarum*.

Pecten distans (Lamarck): *Lichomolgus ieveri*.

Pinctada margaritifera L.: *Anthessius pinctadae*.

Tridacna maxima (Roding): *Anthessius alatus* and *A. amicalis*.

Tridacna squamosa Lamarck: *Anthessius alatus*, *A. amicalis*, and *Paclabius lumidus*.

Pteroid clams: *Pteroidicola antennatus*.

Cephalopoda

Octopus cyanus Gray: *Octopicola regalis*.

Crustacea

Calcinus latens Randall: *Sunaristes inaequalis* and *Porcellidium brevicaudatum*.

Clibanarius virescens Krauss: *Sunaristes dardani*, *S. inaequalis* and *Porcellidium brevicaudatum*.

Dardanus deformis (H. Milne Edwards): *Porcellidium brevicaudatum*.

Dardanus gullatus (Olivier): *Porcellidium brevicaudatum*.

Dardanus lagopodes (Forskål): *Sunaristes dardani* and *Porcellidium brevicaudatum*.

Dardanus megistos (Herbst): *Sunaristes dardani*, *S. inaequalis*, and *Porcellidium brevicaudatum*.

Dardanus scutellatus H. Milne Edwards: *Sunaristes inaequalis*, and *Porcellidium brevicaudatum*.

Crinoidea

Comanthus samoanus A. H. Clark: *Collocheres comanthiphilus*.

Comanthus sp.: *Collocheres comanthiphilus*.

?*Comanthus parvicirrus* (J. Müller): *Collocheres comanthiphilus* and *Glyptocheres extrusus*.

Asteroidea

Acanthaster planci (L.): *Synstrellicola acanthasteris*.

Choriaster granulatus Lütken: *Synstrellicola pichoni*.

Culcita novaeguineae Müller and Troschel: *Stellicola oreastriphilus*, *Stellicola parvulipes*, and *Astroxygnus culcitae*.

Echinaster luzonicus (Gray): *Doridicola ehinasteris*.

Linckia guildingi Gray: *Stellicola novaecaledoniae*.

Linckia laevigata (L.): *Stellicola novaecaledoniae*.

Holothuroidea

Actinopyga echinites (Jaeger): *Chauliolobion bulbosum*, *Lecanurius planifrontalis*, *Scambicornus*

sewelli, and *S. calcaratus*.

Actinopyga lecanora (Jaeger): *Scambicornus calcaratus*.

Actinopyga miliaris (Quoy and Gaimard): *Scambicornus calcaratus*.

Actinopyga obesa palauensis Panning: *Chauliobion bulbosum*.

Actinopyga palauensis Panning: *Scambicornus calcaratus*.

Actinopyga plebeja (Selenka): *Scambicornus campanulipes* and *S. calcaratus*.

Actinopyga serratidens Pearson: *Scambicornus calcaratus*.

Bohadschia argus (Jaeger): *Chauliobion tylotus*, *Scambicornus tuberatus*, and *S. tylotus*.

Bohadschia vitiensis (Semper): *Scambicornus tuberatus*.

Holothuria atra (Jaeger): *Chauliobion halodeimatis*, *Scambicornus idoneus*, *S. subtilis*, *S. sewelli*.

Holothuria coluber (Semper): *Scambicornus sewelli* and *S. subtilis*.

Holothuria echinites (Jaeger): *Scambicornus subtilis*.

Holothuria edulis (Lesson): *Scambicornus sewelli* and *S. subtilis*.

Holothuria fuscocinerea (Jaeger): *Scambicornus sewelli*.

Holothuria nobilis (Selenka): *Scambicornus sewelli*, *S. subtilis*, and *Nanaspis mixta*.

Microthele nobilis (Selenka): *Nanaspis mixta*.

Stichopus horrens Selenka: *Scambicornus modestus*.

Stichopus variegatus Semper: *Scambicornus modestus*.

Synapta maculata (Chamisso and Eysenhardt): *Scambicornus poculiferus*.

Echinoidea

Diadema setosum (Leske): *Clavisodalis dilatatus*, *Echinocius finitimus*, *E. gulicolus*, and *Senariellus diadematis*.

Echinothrix diadema (L.): *Pseudanthessius vinnulus*.

Echinometra mathaei (Blainville): *Mecomerinx notabilis* and *Clavisodalis parvibullatus*.

Heterocentrotus mammillatus (L.): *Clavisodalis abbreviatus*, *C. tenuis*, *Mecomerinx heterocentroti*, and *Senariellus latiseta*.

Himerometra magnipinna A. H. Clark: *Pseudanthessius major*.

Parasalenia gratiosa A. Agassiz: *Pseudanthessius pictus*.

Pentacaster regulus (Müller and Troschel): *Kelleria australiensis*.

Phyllacanthus imperialis (Lamarck): *Pseudanthessius implanus*.

Stephanometra spicata (P. H. Carpenter): *Pseudanthessius major*.

Tripneustes gratilla (L.): *Senariellus latiseta*.

Tropiometra afra (Hartlaub): *Pseudanthessius madresensis*.

Ascidacea

Ascidia sydneyensis samea (Oka): *Apodelphys lamellipes*, *Doropygus catalai*, and *Paramphiascella pacifica*.

Didemnum hiopaa Monniot and Monniot, 1987: *Adenaplostoma monniotorum*.

Unknown host

Paranotodelphys constricta.

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REFERENCES

- Bayly, I. A. E., 1971. A new species of *Kelleria* (Copepoda: Cyclopoida) from brackish water in Victoria. Rec. Aust. Mus., **28**: 111-116.
- Dojiri, M. and A. G. Humes, 1982. Copepods (Poecilostomatoida: Taeniacanthidae) from sea urchins (Echinoidea) in the southwest Pacific. Zool. J. Linn. Soc., **74**: 381-436.
- Ho, J.-S., 1981. Parasitic Copepoda of Gastropoda from the Sea of Japan. Ann. Rep. Sado Mar. Biol. Sta., Niigata Univ., **11**: 23-41.
- Ho, J.-S. and I.-H. Kim, 1997. A new family of poecilostomatoid copepods (Polyankyliidae) from a tide pool on mud flat in Korea. Korean J. Biol. Sci., **1**: 429-434.
- Ho, J.-S. and I.-H. Kim, 2001. New species of *Doridicola* (Copepoda: Rhynchomolgidae) from Thailand, with a cladistic analysis of the genus. J. Crustacean Biol., **21**(1): 78-89.
- Humes, A. G., 1972. *Sunaristes* and *Porcellidium* (Copepoda: Harpacticoida) associated with hermit crabs in New Caledonia. Cah. ORSTOM, Sér. Océanogr., **10**(3): 263-266.
- Humes, A. G., 1973a. Cyclopoid copepods associated with marine bivalve mollusks in New Caledonia. Cah. ORSTOM, Sér. Océanogr., **11**(1): 3-25.
- Humes, A. G., 1973b. Cyclopoid copepods (Lichomolgidae) from fungiid corals in New Caledonia. Zool. Anz., **190**(5/6): 312-333.
- Humes, A. G., 1974a. Cyclopoid copepods associated with opisthobranch mollusks in New Caledonia. Crustaceana, **26**(3): 233-238.
- Humes, A. G., 1974b. Cyclopoid copepods associated with the coral genera *Favia*, *Favites*, *Platygyra*, and *Merulina* in New Caledonia. Pac. Sci., **28**(4): 383-399.
- Humes, A. G., 1974c. *Odontomolgus mundulus* n. sp. (Copepoda: Cyclopoida) associated with the scleractinian coral genus *Alveopora* in New Caledonia. Trans. Am. Microsc. Soc., **93**(2): 153-162.
- Humes, A. G., 1974d. *Octopicola regalis* n. sp. (Copepoda: Cyclopoida: Lichomolgidae) associated with *Octopus cyaneus* from New Caledonia and Eniwetok Atoll. Bull. Mar. Sci., **24**(1): 76-85.
- Humes, A. G., 1975a. Cyclopoid copepods (Lichomolgidae) associated with alcyonaceans in New Caledonia. Smithon. Contrib. Zool., **191**: 1-27.
- Humes, A. G., 1975b. Cyclopoid copepods (Nanaspididae and Sabelliphilidae) associated with holothurians in New Caledonia. Smithon. Contrib. Zool., **202**: 1-41.
- Humes, A. G., 1976. Cyclopoid copepods associated with asteroid echinoderms in New Caledonia. Smithon. Contrib. Zool., **217**: 1-19.
- Humes, A. G., 1977a. Pseudanthessiid copepods (Cyclopoida) associated with crinoids and echinoids

- (Echinodermata) in the tropical western Pacific Ocean. *Smithon. Contrib. Zool.*, **243**: 1-43.
- Humes, A. G., 1977b. Cyclopoid copepods (Lichomolgidae) associated with hydroids in the tropical western Pacific Ocean. *Pac. Sci.*, **31**(4): 335-352.
- Humes, A. G., 1978. Lichomolgid copepods (Cyclopoida) associated with fungiid corals (Scleractinia) in the Moluccas. *Smithon. Contrib. Zool.*, **253**: 1-48.
- Humes, A. G., 1979a. Poecilostome copepods (Lichomolgidae) associated with the scleractinian coral *Galaxea* in the moluccas. *J. Nat. Hist.*, **13**: 507-528.
- Humes, A. G., 1979b. Cyclopoid copepods (Lichomolgidae) associated with the scleractinian *Cyphastrea* in New Caledonia. *Pac. Sci.*, **33**(2): 195-206.
- Humes, A. G., 1980. A review of the copepods associated with holothurians, including new species from the Indo-Pacific. *Beaufortia*, **30**(4): 31-123.
- Humes, A. G., 1981. Harpacticoid copepods associated with Cnidaria in the Indo-west pacific. *J. Crustacean Biol.*, **1**(2): 227-240.
- Humes, A. G., 1982a. A review of Copepoda associated with sea anemones and anemone-like forms (Cnidaria: Anthozoa). *Trans. Am. Philos. Soc.*, **72**(2): 1-120.
- Humes, A. G., 1982b. Copepoda (Poecilostomatoida: Lichomolgidae) associated with alcyonacean genus *Sarcophyton* in the Indo-Pacific. *Publ. Seto Mar. Biol. Lab.*, **17**(1/3): 25-76.
- Humes, A. G., 1985. A review of the Xarifiidae (Copepoda: Poecilostomatoida), parasites of scleractinian corals in the Indo-Pacific. *Bull. Mar. Sci.*, **36**(3): 467-632.
- Humes, A. G., 1986. Synopsis of copepods associated with asteroid echinoderms, including new species from the Moluccas. *J. Nat. Hist.*, **20**: 981-1020.
- Humes, A. G., 1987. Copepoda associated with crinoid echinoderms in the western Pacific. *Publ. Seto Mar. Biol. Lab.*, **32**(1/3): 63-108.
- Humes, A. G., 1990a. Synopsis of lichomolgid copepods (Poecilostomatoida) associated with soft corals (Alcyonacea) in the tropical Indo-Pacific. *Zool. Verh.* **266**: 1-201.
- Humes, A. G., 1990b. Lichomolgid copepods of the genus *Schedomolgus* (Poecilostomatoida) associated with the scleractinian coral *Acropora cymbicyathus* (Brook) in New Caledonia. *Beaufortia*, **41**(17): 121-127.
- Humes, A. G., 1991a. Copepoda associated with the scleractinian coral genus *Montipora* in the Indo-Pacific. *Proc. Biol. Soc. Wash.*, **104**(1): 101-137.
- Humes, A. G., 1991b. *Mandobius regalis* gen. et sp. n. (Copepoda: Poecilostomatoida: Lichomolgidae) associated with the coral *Pectinia lactuca* in New Caledonia. *Zool. Scr.*, **20**(3): 277-282.
- Humes, A. G., 1991c. Copepoda associated with scleractinian corals on the Great Barrier Reef, northeastern Australia, with a key to the genera of the Lichomolgidae. *J. Nat. Hist.*, **25**: 1171-1231.
- Humes, A. G., 1992. Copepoda associated with the coral *Gardineroseris planulata* (Dana) on the Great Barrier Reef, northeastern Australia. *Hydrobiologia*, **234**: 41-57.
- Humes, A. G., 1993a. Copepoda associated with gorgonaceans (Cnidaria) in the Indo-Pacific. *Bull. Mar. Sci.*, **53**(3): 1078-1098.
- Humes, A. G., 1993b. Poecilostomatoid copepods associated with the scleractinian coral *Acropora* in the tropical western Pacific Ocean. *Invertebr. Taxon.*, **7**: 805-857.
- Humes, A. G., 1994a. Two species of *Paramolgus* (Copepoda: Poecilostomatoida: Lichomolgidae) associated with the scleractinian *Pavona* in New Caledonia with a key to females of *Paramolgus*. *Beaufortia*, **44**(1): 1-9.

- Humes, A. G., 1994b. How many copepods? *Hydrobiologia* **292/293**: 1-7.
- Humes, A. G., 1995a. New species of *Anchimolgus* (Copepoda: Poecilostomatoida: Lichomolgidae) associated with the scleractinian coral *Goniopora* in the southwest Pacific. *J. Nat. Hist.*, **29**: 65-84.
- Humes, A. G., 1995b. Poecilostomatoid copepods from the coral *Leptoria tenuis* in New Caledonia. *Cah. Biol. Mar.*, **36**: 69-80.
- Humes, A. G., 1996a. New genera of Copepoda (Poecilostomatoida) from the scleractinian coral *Psammocora* in New Caledonia. *Zool. J. Linn. Soc.*, **118**: 59-82.
- Humes, A. G., 1996b. Copepoda associated with the scleractinian coral *Galaxea* in the Indo-Pacific. *Publ. Seto Mar. Biol. Lab.*, **37**(1/2): 1-49.
- Humes, A. G., 1996c. *Orecturus amplus*, a new species (Copepoda: Siphonostomatoida: Asterocheridae) from an alcyonacean in New Caledonia. *Proc. Biol. Soc. Wash.*, **109**(1): 112-117.
- Humes, A. G., 1996d. *Anchimolgus gratus* n. sp. (Copepoda: Poecilostomatoida: Anchimolgidae), associated with the scleractinian coral *Lithactinia novaehiberniae* in New Caledonia. *Smithon. Contrib. Zool.*, **66**(3): 193-200.
- Humes, A. G., 1997a. Copepoda (Siphonostomatoida) associated with the fungiid coral *Parahalomitra* in the southwestern Pacific. *J. Nat. Hist.*, **31**: 57-68.
- Humes, A. G., 1997b. Two new copepod genera (Poecilostomatoida) associated with the scleractinian coral *Psammocora* in New Caledonia. *Zool. Scr.*, **26**(1): 51-60.
- Humes, A. G. and G. A. Boxshall, 1996. A revision of the lichomolgoid complex (Copepoda: Poecilostomatoida), with the recognition of six new families. *J. Nat. Hist.*, **30**: 175-227.
- Humes, A. G. and M. Dojiri, 1982. Xarifiidae (Copepoda) parasitic in Indo-Pacific scleractinian corals. *Beaufortia*, **32**(9): 139-228.
- Humes, A. G. and R. U. Gooding, 1964. A method for studying the external anatomy of copepods. *Crustaceana*, **6**: 238-240.
- Humes, A. G. and J. S. Ho, 1967. New cyclopoid copepods associated with the coral *Psammocora contigua* (Esper) in Madagascar. *Proc. U. S. Nat. Mus.*, **122**(3586): 1-32.
- Humes, A. G. and J. S. Ho, 1968a. Lichomolgoid copepods (Cyclopoida) associated with corals in Madagascar. *Bull. Mus. Comp. Zool., Harvard Univ.*, **136**(10): 353-414.
- Humes, A. G. and J. S. Ho, 1968b. Lichomolgoid copepods (Cyclopoida) associated with corals in Madagascar. *Bull. Mus. Comp. Zool., Harvard Univ.*, **136**: 415-460.
- Humes, A. G. and J. S. Ho, 1968c. Cyclopoid copepods of the genus *Lichomolgus* associated with octocorals of the family Alcyoniidae in Madagascar. *Proc. Biol. Soc. Wash.*, **81**: 635-692.
- Humes, A. G. and J. H. Stock, 1973. A revision of the family Lichomolgidae Kossman, 1877, cyclopoid copepods mainly associated with marine invertebrates. *Smithon. Contrib. Zool.*, **127**: 1-368.
- Huys, R. and G. A. Boxshall, 1991. *Copepod Evolution*. The Ray Society, London, 468 pp.
- Huys, R. and G. A. Boxshall, 2001. An appreciation of the contribution of Arthur Humes to copepod systematics. *J. Crustacean Biol.*, **21**(1): 12-27.
- Illg, P. L., 1970. Report on ascidicole Copepoda collected during the Melanesia Expedition of the Osaka Museum of Natural History, Osaka, Japan. *Publ. Seto Mar. Biol. Lab.*, **18**(3): 169-188.
- Kim, I.-H. 2003. Copepodid stages of *Critomolgus anthopleurus* (Copepoda: Poecilostomatoid: Rhynchomolgidae). *J. Crustacean Biol.*, **23**(3): 558-567.
- Monod, T., 1928. Sur quelques copépodes parasites de nudibranches. *Bull. Inst. Océanogr., Monaco*, **509**: 1-

- 18.
- Monod, T. and R.-Ph. Dollfus, 1932. Le copépodes parasites de mollusques. *Annal. Parasitol. Hum. Comp.*, **10**: 129-204.
- Risbec, J., 1930. Nouvelle contribution à l'étude des Nudibranches néo-calédoniens. *Ann. Inst. Océanogr.*, Monaco, N. S., **7**: 263-298.
- Stock, J. H., 1975. Copepoda associated with West Indian Actiniaria and Corallimorpharia. *Stud. Fauna Curacao Carib. Is.*, **48**: 88-118.
- Stock, J. H., 1986. Cases of hyperassociation in the Copepoda (Herpyllobiidae and Nereicolidae). *Syst. Parasitol.*, **8**: 71-81.
- Stock, J. H., 1993. *Adenaplostoma monniotorum* n. gen., n. sp., a strange copepod parasite of a compound ascidian from New Caledonia (Crustacea: Copepoda: Cyclopoida: Ascidicolidae). *Bull. Mus. Nat. Hist. Nat. Paris*, 4^e Série, **15A**(1-4): 117-123.
- Ummerkutty, A. N. P., 1962. Studies on Indian copepods 5. On eleven new specie of marine cyclopoid copepods from the south-east coast of Indian. *J. Mar. Biol. Assoc. India*, **3**(1 & 2): 19-69.

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뉴칼레도니아의 해산 무척추동물에 공생하는 요각류(갑각강)

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요 약

남태평양에 있는 뉴칼레도니아의 무척추동물에 공생하는 요각류를 기록하였다. 3신속(*Ruhtra*, *Pterioidicola*, *Pachysericola*), 30신종이 포함되어 있으며, 이들은 천장입요각목 및 대롱입요각목 내의 다음과 같은 속에 해당된다: *Anchimolgus*속 (5신종), *Jamescookina*속 (2신종), *Odontomolgus*속 (2신종), *Schedomolgus*속 (3신종), *Scyphuliger*속 (5신종), *Critomolgus*속 (3신종), *Doridicola*속 (1신종), *Paramolgus*속 (2신종), 신속 *Pterioidicola* (1신종), 과의 위치가 불분명한 신속 *Ruhtra* (1신종), *Asteropontius*속 (5신종). 뉴칼레도니아의 미기록종과 새로운 속주에 대해서도 기록하였다. 지금까지 기록된 뉴칼레도니아산 공생성 요각류 251종과 이들의 무척추동물 숙주 163종의 목록도 제시하였다.