Synopsis of lichomolgid copepods (Poecilostomatoida) associated with soft corals (Alcyonacea) in the tropical Indo-Pacific

A.G. Humes

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A synopsis of the 97 species of lichomolgid copepods known to be associated with tropical Indo-Pacific shallow-water alcyonaceans is given (Madagascar, New Caledonia, Moluccas, Philippines, and Enewetak Atoll). One new genus and 29 new species are included, distributed among the lichomolgid genera *Acanthomolgus* (2 new species), *Alcyonomolgus* (1), *Colobomolgus* (2), *Critomolgus* (3), *Doridicola* (5), *Paradoridicola* (7), *Paramolgus* (8), and *Telestacicola* (1). The alcyonacean hosts, numbering more than 100 species, include members of the genera *Alcyonium, Anthelia, Capnella, Cespitularia, Cladiella, Dendronephthya, Heteroxenia, Lemnalia, Litophyton, Lobophytum, Nephthea, Paralemnalia, Parerythropodium, Sarcophyton, Sinularia, Siphonogorgia, Stereonephthya, Studeriotes, Umbellulifera,* and *Xenia*. The copepods probably occur over much of the range of the widely distributed hosts. Host specificity, at least to genus, is suggested in nearly one-fourth of the copepods.

Un synopse comprenant les 97 espèces connues de copépodes lichomolgides associées aux Alcyonacea de l'eau peu profonde de l'Indo-Pacifique est présenté (Madagascar, Nouvelle Calédonie, Iles Moluques, Philippines, et l'Atoll Enewetak). Un genre nouveau et 29 espèces nouvelles sont inclues, distribueés parmi les genres lichomolgides *Acanthomolgus* (2 espèces nouvelles), *Alcyonomolgus* (1), *Colobomolgus* (2), *Critomolgus* (3), *Doridicola* (5), *Paradoridicola* (7), *Paramolgus* (8), et *Telestacicola* (1). Les hôtes de ces copépodes, comptant au nombre de plus que 100 espèces, comprennent des représentants des genres *Alcyonium, Anthelia, Capnella, Cespitularia, Cladiella, Dendronephthya, Heteroxenia, Lemnalia, Litophyton, Lobophytum, Nephthea, Paralemnalia, Parerythropodium, Sarcophyton, Sinularia, Siphonogorgia, Stereonephthya, Studeriotes, Umbellulifera,* et *Xenia*. Les copépodes en toute probabilité se trouvent dans la plupart des aires de répartition étendues des hôtes. La spécificité pour certains hôtes, au moins au niveau du genre, est suggérée dans presque un quartier des copépodes.

A. G. Humes, Boston University Marine Program, Marine Biological Laboratory, Woods Hole, Massachusetts 02543, U. S. A.

Contents

Introduction

Alcyonaceans, along with gorgonaceans and scleractinians, are conspicuous and abundant animals in shallow warm waters of the tropical Indo-Pacific (see Tixier-Durivault, 1966; Verseveldt, 1982, and earlier publications). Copepods are associated with many of these cnidarians (Humes, 1970; 1985). In early decades of exploration of the Indo-Pacific marine fauna, copepods living with alcyonaceans were unreported. During that time, however, two reports contained descriptions of lichomolgid copepods, though their authors were unaware of the hosts involved: *Lichomolgus dentipes* Thompson & A. Scott, 1903, since redescribed by Humes & Ho (1968c) and later placed in *Colobomolgus* by Humes & Stock (1973), and *Lichomolgus foxi* Gurney, 1927, since redescribed by Humes & Ho (1968c) and placed in *Critomolgus* by Humes & Stock (1973).

Discovery of a lichomolgid copepod associated with soft corals was reported by Stock & Kleeton (1963), who found *Critomolgus bulbipes* (Stock & Kleeton, 1963) (= *Doridicola bulbipes*) associated with the alcyonaceans *Alcyonium acaule* Marion and *Parerythropodium coralloides* (Pallas) in the vicinity of Banyuls, France, in the western Mediterranean. In the next year Humes & Frost (1964) described *Lichomolgus decorus* (now *Paredromolgus*), and *Lichomolgus protentus* (now *Anisomolgus*) from various alcyonaceans in the region of Nosy Bé in northwestern Madagascar.

It is the purpose of this paper to provide a synopsis of the Lichomolgidae associated with Alcyonacea in the Indo-Pacific, including the descriptions of one new genus and 29 new species.

Materials and Methods

The alcyonaceans, either whole colonies or fragments of large colonies, were isolated in sea water in plastic bags immediately after collection. Later a small amount

of 95% ethanol was added to make a concentration of approximately 5 %. After several hours the soft corals were thoroughly rinsed and the water passed through a fine net (120 holes per 2.5 cm). The copepods were then recovered from the sediment retained.

Measurements were made on specimens in lactic acid. The body length was measured from the tip of the head to the posterior end of the caudal rami. The lengths of the segments of the first antenna were measured along their posterior nonsetiferous margins. In the formula for the armature of legs 1-4 the Roman numerals indicate spines and the Arabic numerals represent setae.

Type specimens of the new species described here have been deposited in the Rijksmuseum van Natuurlijke Historie (RMNH), Leiden. Differences between the total number of type specimens collected and the number of types deposited represent those specimens dissected and retained by the author. Other specimens, not types, are in the National Museum of Natural History (USNM) or the RMNH as indicated, or, if without designation, are in the author's collection.

Systematic Part

Family **Lichomolgidae** Kossmann, 1877

Key to genera of Lichomolgidae associated with Alcyonacea in the Indo-Pacific
(based on females)

1. Leg 4 endopod 1- or 2-segmented but unarmed ..... ***Perosyna***
- Leg 4 endopod 1- or 2-segmented but armed 2
2. Leg 4 endopod 1-segmented ..... ***Telestacicola***
- Leg 4 endopod 2-segmented 3
3. Leg 4 endopod without inner element on first segment and only one element on second segment ..... ***Monomolgus***
- Leg 4 endopod with inner element on first segment and more than one element on second segment 4
4. Leg 4 endopod with 3 elements (II,1) on second segment ..... ***Notoxynus***
- Leg 4 endopod with 2 elements (1,I or II) on second segment 5
5. Leg 4 endopod with first segment having inner spine 6
- Leg 4 endopod with first segment having inner seta 7
6. Leg 4 exdopod with third segment having formula II,II,5 ..... ***Acanthomolgus***
- Leg 4 exdopod with third segment having formula III,I,5 ..... ***Meringomolgus***
7. Second maxilla with first segment having large digitiform process ..... ***Panjakus***
- Second maxilla with first segment lacking such process 8
8. Leg 4 endopod with second segment having formula 1,I 9
- Leg 4 endopod with second segment having formula II 10
9. Leg 4 exopod with third segment having formula II,I,5 ..... ***Alcyonomolgus***
- Leg 4 exopod with third segment having formula III,I,5 ..... ***Anisomolgus***
10. Leg 4 exopod with third segment having formula II,I,5 11
- Leg 4 exopod with third segment having formula III,I,5 13
11. Mandible with convex margin of base with protruding hyaline area without spinules ..... ***Ascetomolgus***

- Mandible with convex area of base having scalelike area with spinules 12
12. Second antenna with terminal segment having 1 claw ..... *Paramolgus*
- Second antenna with terminal segment having 2 claws ..... *Doridicola*
13. Second antenna with terminal segment bearing 1 claw 14
- Second antenna with terminal segment bearing 2 claws 16
14. Mandible with convex side of base having pointed toothlike process ..... *Mecra*
- Mandible with convex side of base having scalelike area with spinules 15
15. Mandible with very short terminal lash ..... *Colobomolgus*
- Mandible with long terminal lash ..... *Paradoridicola*
16. Mandible with convex side of base having distally directed tooth . *Paredromolgus*
- Mandible with convex side of base having scalelike area with spinules 17
17. Mandible with very short terminal lash ..... *Contomolgus*
- Mandible with long terminal lash ..... *Critomolgus*

Genus *Acanthomolgus* Humes & Stock, 1972: key to species (based on females)

1. Leg 1 with first segment of exopod having unusually long outer spine, more than twice length of succeeding spines ..... *A. longispinifer*
- Leg 1 with spine on first segment of exopod approximately same length as succeeding spines or shorter 2
2. Leg 5 with free segment distinctly less than 100 µm long 3
- Leg 5 with free segment distinctly more than 100 µm long 4
3. Genital segment broadest slightly anterior to middle; free segment of leg 5 stout, 79 x 37 µm ..... *A. plantei*
- Genital segment broadest slightly posterior to middle; free segment of leg 5 slender, 83 x 24 µm ..... *A. boholensis*
4. Two long median terminal setae on caudal ramus smooth 5
- Two long median terminal setae on caudal ramus with lateral setules 6
5. Prosome with ratio of length to width 1.24:1 ..... *A. varirostratus*
- Prosome with ratio of length to width 1.56:1 ..... *A. cuneipes*
6. Caudal ramus slightly longer than wide ..... *A. exilipes*
- Caudal ramus quadrate or wider than long 7
7. Length of body 0.90 mm or slightly more 8
- Length of body 0.77 (0.72-0.84 mm) ..... *A. brevifurca*
8. Second segment of endopod of leg 4 with proximal inner hairs 9
- Second segment of endopod of leg 4 with short inner spinules ..... *A. fissisetiger*
9. Free segment of leg 5 117 x 26 µm ..... *A. hians*
- Free segment of leg 5 143 x 20 µm ..... *A. gentilis*

Acanthomolgus boholensis spec. nov.
(figs.1a-i, 2a-j, 3a-i)

Type material.— 16 ♀♀, 12 ♂♂ from one colony of *Dendronephthya (Roxasia) puetteri* Kükenthal, in 40 m, Bohol Island, Philippines, 10° 17.9'N, 124° 10.9'E, 22.ix.1975. Thomas Forhan collector. Holotype ♀ (RMNH F 805), allotype ♂ (RMNH F 806), and 21 paratypes (12 ♀♀, 9 ♂♂) (RMNH F 807).

Female.— Body (fig. 1a) with broad prosome and relatively small urosome. Length 0.71 mm (0.68-0.72 mm) and greatest width 0.36 mm (0.35-0.37 mm), based on 10 specimens. Greatest dorsoventral thickness 0.24 mm. Segment bearing leg 1 separated from head by weak transverse dorsal furrow. Epimera of segments bearing legs 1-4 more or less rounded. Ratio of length to width of prosome 1.37:1. Ratio of length of prosome to that of urosome 2.4:1.

Segment bearing leg 5 (fig. 1b) 55 x 86 μm. Genital segment 88 x 85 μm, broadest in posterior half, with gently rounded lateral margins producing wineglass shape. Genital areas located dorsolaterally in broadest part of segment. Each area (fig. 1c) with 2 minute setae 5 μm and adjacent thornlike process. Three postgenital segments from anterior to posterior 19 x 55, 17 x 49, and 21 x 44 μm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 1d) quadrate, 17 x 17 μm. Outer lateral seta 33 μm, dorsal seta 23 μm, outermost terminal seta 65 μm, innermost terminal seta 133 μm, and 2 long median terminal setae 203 μm (outer) and 255 μm (inner). All setae smooth.

Dorsal surface of body without visible sensilla.

Egg sac incomplete in specimens studied. Eggs 39-47 μm.

Rostrum (fig. 1e) broadly rounded posteroventrally, raised in lateral view (fig.1f). First antenna (fig. 1g) 300 μm long. Lengths of its 7 segments: 27 (52 μm along anterior margin), 91, 21, 38, 47, 34, and 23 μm, respectively. Formula: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 1h) slender, 4-segmented, 195 μm long without claws. Formula: 1, 1, 3, and 2 claws + 4 small setae. Fourth segment 75 μm along outer side, 52 μm along inner side, and 18 μm wide. Claws unequal, slender claw 61 μm, stouter claw (fig. 1i) 49 μm.

Labrum (fig. 2a) prominent anteriorly (fig. 1f) and having 2 posteroventral lobes. Mandible (fig.2b), paragnath, first maxilla (fig. 2c), second maxilla (fig. 2d), and maxilliped (fig. 2e) resembling in major respects those of *Acanthomolgus brevifurca* described below.

Ventral area between maxillipeds and first pair of legs (fig. 2f) only slightly protuberant.

Legs 1-4 (fig. 2g-j) with spine and setal formula as follows:

P1	coxa	0-1	basis	1-0	exp	I-0;	I-1; III,I,4	enp	0-1;	0-1; I,5
P2	coxa	0-1	basis	1-0	exp	I-0;	I-1; III,I,5	enp	0-1;	0-2; I,II,3
P3	coxa	0-1	basis	1-0	exp	I-0;	I-1; III,I,5	enp	0-1;	0-2; I,II,2
P4	coxa	0-1	basis	1-0	exp	I-0;	I-l; II,I,5	enp	0-1;	II

Leg 1 with small lobe on postero-outer corner of coxa. Leg 4 (fig. 2j) with inner coxal seta very short, 4 μm. Exopod 115 μm long. Endopod with first segment 25 μm long without spiniform processes, 30 μm with these processes, 22 μm wide, its inner distal spine 28 μm. Second segment 47 μm long without processes, 52 μm with processes, and 17 μm wide, its 2 terminal spines 25 μm and 51 μm. Setules on outer margin of both segments.

Leg 5 (fig. 3a) with elongate free segment 83 μm long, 24 μm in greatest width, 13 μm wide distally; proximally with outer margin slightly indented and with inner margin showing only very slight expansion. Two terminal setae 34 μm and 50 μm. Dorsal seta 48 μm. All setae smooth. Free segment ornamented with prominent spinules along outer surface.

Leg 6 represented by 2 small setae on genital area (fig. 1c).

Colour of living specimens unknown.

Male.— Body (fig. 3b) more slender than in female. Length 0.58 mm (0.56-0.61 mm) and greatest width 0.22 mm (0.20-0.23 mm), based on 10 specimens. Greatest dorsoventral thickness 0.14 mm. Ratio of length to width of prosome 1.58:1. Ratio of length of prosome to that of urosome 1.52:1.

Segment bearing leg 1 (fig. 3c) 42 x 55 µm. Genital segment 135 x 117 µm, a little longer than wide. Four postgenital segments from anterior to posterior 21 x 39, 18 x 37, 13 x 36, and 15.5 x 36 µm.

Caudal ramus (fig. 3c) quadrate, 15.5 x 15.5 µm, armed as in female.

Body surface unornamented as in female.

Rostrum resembling that of female. First antenna similar to that of female, but 3 aesthetes added (at points indicated by dots in fig. 1g). Second antenna (fig. 3d), 172 µm long without claws, resembling that of female but showing sexual dimorphism in having small spinules on inner margin of first 3 segments. Fourth segment slightly more slender than in female, with dimensions of 78 µm along outer side, 57 µm along inner side, and 13 µm wide.

Labrum, mandible, paragnath, first maxilla, and second maxilla as in female. Maxilliped (fig. 3e) 4-segmented as in congeners (asssuming proximal part of claw to represent fourth segment). Second segment with 2 setae and 2 rows of spinules, one row twice length of other row. Claw 133 µm, with 2 extremely unequal proximal setae.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female, but endopod of leg 1 (fig. 3f) geniculate and third segment having I,I,4, outer barbed spine 29 µm, inner spine 31 µm with more prominent barbs. This segment with terminal slightly reflexed spiniform process. Leg 4 as in female.

Leg 5 (fig. 3g) with elongate slender free segment, 25 x 6 µm, its terminal setae 23 µm and 16.5 µm. Dorsal seta approximately 26 µm. Free segment ornamented with few small outer spinules.

Leg 6 (fig. 3h) with 2 very unequal smooth setae 26 µm and 5 µm.

Spermatophore (fig. 3i) elongate oval, 122 x 52 µm without neck.

Colour unknown.

Etymology.— The specific name refers to the island off whose shores the copepods were collected.

Remarks.— *Acanthomolgus boholensis* may be distinguished from its many congeners by a combination of characters: the wineglass shape of the female genital segment with the genital areas located posterior to the middle, the elongate free segment of leg 5 in the female with outer spinules and almost no inner proximal expansion, the quadrate caudal ramus, the two unequally long claws on the second antenna, and the geniculate endopod of leg 1 in the male. The small size of *A. boholensis* further differentiates it from most congeners. Only three species, *A. eminulus* Humes & Lewbel, 1977, *A. arctatipes* Humes, 1974, and *A. brevifurca* spec. nov., described below, approach the small size of the new species. In these species the free segment of leg 5 in the female has a prominent inner proximal expansion, thus readily distinguishing them from *A. boholensis*.

Acanthomolgus brevifurca spec. nov.
(figs 4a-h, 5 a-j, 6a-i)

Type material.— 17 ♀♀, 19 ♂♂ from 2 colonies of *Siphonogorgia variabilis* (Hickson), in 10 m, Poelau Gomumu, south of Obi, Moluccas, 01°50'00"S, 127°30'54"E, 30.v.1975. Holotype ♀ (RMNH F 808), allotype ♂ (RMNH F 809), and 29 paratypes (13 ♀♀, 16 ♂♂) (RMNH F 810).

Female.— Body (fig. 4a) with moderately broad prosome. Length 0.77 mm (0.72-0.84 mm) and greatest width 0.40 mm (0.37-0.43 mm), based on 4 specimens. Greatest dorsoventral thickness 0.22 mm. Segment bearing leg 1 separated from head by transverse dorsal furrow. Ratio of length to width of prosome 1.4:1. Urosome relatively short. Ratio of length of prosome to that of urosome 2.55:1.

Segment bearing leg 5 (fig. 4b) 60 x 120 µm. Genital segment 107 x 112 µm, a little wider than long, with rounded lateral margins in dorsal view. Greatest width in posterior half of segment. Genital areas situated dorsolaterally in posterior third of segment. Each area (fig. 4c) with 2 small setae 10 µm long. Three postgenital segments from anterior to posterior 18 x 73, 15.5 x 68, and 23 x 65 µm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 4d) 15 x 23 µm, much wider than long, ratio 1:1.53. Outer lateral seta 83 µm, dorsal seta 26 µm, and outermost terminal seta 122 µm, all smooth. Innermost terminal seta 220 µm with delicate lateral setules. Outer terminal seta 418 µm, inner terminal seta 500 µm, both with widely spaced strong lateral setules.

Dorsal surface of body lacking visible sensilla.

Egg sac (fig. 4e) elongate, 475 x 176 µm, containing many relatively small eggs 43-47 µm in diameter.

Rostrum (fig. 4f) rounded posteroventrally. First antenna (fig. 4g) 385 µm long. Lengths of its 7 segments: 26 (60 µm along anterior margin), 104, 23, 65, 60, 47, and 29 µm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae naked.

Second antenna (fig. 4h) 221 µm long not including claws, 4-segmented, with armature 1, 1, 3, and 2 long terminal claws + 5 small setae. One claw 83 µm and slightly stouter than other claw 88 µm. Fourth segment 90 µm along outer side, 60 µm along inner side, and 21 µm wide.

Labrum (fig. 5a) with 2 posteroventral lobes. Mandible (fig. 5b), paragnath, first maxilla (fig. 5c), second maxilla (fig. 5d), and maxilliped (fig. 5e) resembling in major respects those of *Acanthomolgus astrictus* Humes & Stock, 1973, and other congeners.

Ventral area between maxillipeds and first pair of legs not protuberant and similar to that of congeners.

Legs 1-4 (fig. 5f-i) segmented and armed as in congeners. Leg 1 with posteroouter corner of coxa having small lobe, and third segment of endopod with seta next to spine being very slightly spiniform. Leg 4 with exopod 138 µm, third segment with II,I,5. Inner seta on coxa 10 µm. Endopod with first segment 29 µm long without spiniform processes, 35 µm with these processes, 30 µm wide, its distal inner minutely barbed spine 20 µm. Second segment 73 µm without processes, 26 µm in greatest width, and 19 µm in least width. Two terminal minutely barbed spines 29 µm (outer) and 72 µm (inner).

Leg 5 (fig. 5j) with elongate free segment 127 µm long, 34 µm wide at rounded

proximal inner expansion, and 13 µm wide distally. Two terminal setae 91 µm, with inner fringe, and 65 µm and smooth. Dorsal adjacent seta approximately 30 µm. Free segment ornamented with slender outer spinules. Outer corner of segment bearing leg 5 having few very small spinules.

Leg 6 represented by 2 setae on genital area (fig. 4c).

Colour of living specimens in transmitted light opaque gray, eye red, egg sacs dark gray.

Male.— Body (fig. 6a) slender. Length 0.64 mm (0.61-0.67 mm) and greatest width 0.23 mm (0.22-0.24 mm), based on 6 specimens. Greatest dorsoventral thickness 0.21 mm. Ratio of length to width of prosome 1.74:1. Ratio of length of prosome to that of urosome 1.83:1.

Segment bearing leg 1 (fig. 6b) 31 x 68 µm. Genital segment 120 x 117 µm, about as long as wide, with rounded lateral margins in dorsal view. Four postgenital segments from anterior to posterior 16 x 42, 15.5 x 41, 13 x 40, and 15 x 40 µm.

Caudal ramus (fig. 6b) 10 x 18 µm, ratio 1:1.8. Setae similar to those in female.

Body surface unornamented.

Rostrum like that of female. First antenna similar to that of female, but 3 aesthetes added (at points indicated by dots in fig. 4g). Second antenna (fig. 6c) sexually dimorphic in having small spiniform process on distal inner side of first segment, and row of spinules along inner side of second segment.

Labrum, mandible, paragnath, first maxilla, and second maxilla like those of female. Maxilliped (fig. 6d) segmented as in congeners. Second segment with 2 setae and 2 rows of spinules. Claw 140 µm long, with 2 very unequal proximal setae.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female, except endopod of leg 1 (fig. 6e) with third segment having I,I,4, outer spine 23 µm, inner spine 26 µm, both straight with prominent barbs along margins. Between these 2 spines a spiniform process. Third segment of endopod of leg 2 with distal outer corner produced as long spiniform process (fig. 6f). Legs 3 and 4 entirely as in female. One male with second endopod segment of leg 4 somewhat longer than in other males, 47 µm without spiniform processes, 13 µm in greatest width (fig. 6g).

Leg 5 (fig. 6h) with subrectangular slender free segment 32 x 6.5 µm, its 2 terminal setae 20 µm and 30 µm. Adjacent dorsal seta 13 µm. Free segment with few slender spinules along outer side.

Leg 6 (fig. 6i) with 2 setae, both approximately 29 µm long.

Spermatophore not seen.

Colour as in female.

Etymology.— The specific name *brevifurca*, a combination of Latin *brevis* meaning short and *furca* meaning a fork, alludes to the unusually short caudal ramus.

Remarks.— Ten of the 31 described species of *Acanthomolgus* have the caudal ramus in the female distinctly wider than long, as in the new species. However, in none of these species is the caudal ramus as short as in *A. brevifurca*. All 10 may be distinguished from *A. brevifurca* by (1) the genital segment of the female being indented laterally (*A. astrictus* Humes & Stock, 1973, *A. bilobipes* Humes & Stock, 1973, and *A. longispinifer* (Humes & Ho, 1968)), (2) the nature of the free segment of leg 5 in the female (*A. eminulus* Humes & Lewbel, 1977, *A. verseveldti* (Humes & Ho, 1968), *A. varirostratus* (Humes & Ho, 1968), *A. cuneipes* (Humes & Ho, 1968), and *A.*

mopsellae Humes, 1974), and (3) the greater body length and the third segment of the endopod of leg 2 in the male with the outer terminal spine slightly bent (*A. fissisetiger* (Humes & Ho, 1968) and *A. gentilis* (Humes & Ho, 1968)).

Acanthomolgus cuneipes (Humes & Ho, 1968)

Lichomolgus cuneipes Humes & Ho, 1968a: 17, figs. 84-96.
Acanthomolgus cuneipes; Humes & Stock, 1973: 100.

Hosts.— *Stereonephthya acaulis* Verseveldt: Region of Nosy Bé, northwestern Madagascar (Humes & Ho, 1968a). *Dendronephthya mucronata* (Pütter): Nosy Bé, Madagascar (Humes & Stock, 1973).

Acanthomolgus exilipes (Humes & Ho, 1968)

Lichomolgus exilipes Humes & Ho, 1968a: 7, figs. 32-55.
Acanthomolgus exilipes; Humes & Stock, 1973: 89; Humes, 1975: 25.

Hosts.— *Dendronephthya mucronata* (Pütter): Region of Nosy Bé, Madagascar (Humes & Ho, 1968a); near Noumea, New Caledonia (Humes, 1975). New records: 2 ♀♀, 6 ♂♂, in 3 m, Karang Mie, eastern Halmahera, Moluccas, 00°20'07" 128°25'00"E, 1.v. 1975; 2 ♀♀, 3 ♂♂, in 10 m, Poelau Gomumu, south of Obi, Moluccas, 01°50'00"S, 127°30'45"E, 30.v.1975; 2 ♀♀, 18 ♂♂, in 25 mm, southern shore of Goenoeng Api, Banda Islands, Moluccas, 04°32'05"S, 129°52'30"E, 26.iv.1975; 1 ♂, in 25 m, same locality and date. *Dendronephthya regia* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Ho, 1968a; Humes & Stock, 1973). *Dendronephthya stocki* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Ho, 1968a; Humes & Stock, 1973). *Dendronephthya koellikeri* Kükenthal: Nosy Ovy, Iles Radama, south of Nosy Bé, Madagascar, 13°59'S, 47°46.5'E (Humes & Ho, 1968a). *Dendronephthya speciosa* Kükenthal: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Dendronephthya* spec.: Banc des Frères, Iles Mitsio, northeast of Nosy Bé, Madagascar, 12°58'S, 48°28'E (Humes & Stock, 1973). *Stereonephthya cordylophora* Verseveldt.

Acanthomolgus fissisetiger (Humes & Ho, 1968)

Lichomolgus fissisetiger Humes & Ho, 1968a: 14.
Acanthomolgus fissisetiger; Humes & Stock, 1973: 100.

Hosts.— *Stereonephthya acaulis* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Ho, 1968a; Humes & Stock, 1973). The identification of *Stereonephthya papyracea* Kükenthal, published as a host for this copepod (Humes & Ho, 1968a: 14), was changed by Dr. Verseveldt to *Stereonephthya acaulis*. *Lemnalia elegans* (May): Nosy Bé, Madagascar (Humes & Ho, 1968a). *Lemnalia humesi* Verseveldt: Nosy Be, Madagascar (Humes & Stock, 1973).

Acanthomolgus gentilis (Humes & Ho, 1968)

Lichomolgus gentilis Humes & Ho, 1968a: 11, figs. 56-69.
Acanthomolgus gentilis; Humes & Stock, 1973: 100.

Hosts.— *Dendronephthya mucronata* (Pütter): Region of Nosy Bé, Madagascar (Humes & Ho, 1968a; Humes & Stock, 1973). Near Noumea, New Caledonia (Humes, 1975). *Dendronephthya koellikeri* Kükenthal: Nosy Ovy, Iles Radama, south of Nosy Bé, Madagascar, 13°59'S, 47°46.5'E (Humes & Ho, 1968a). *Dendronephthya stocki* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Ho, 1968a). *Dendronephthya lokobeensis* Verseveldt: Nosy Bé, Madagascar (Humes & Stock, 1973). *Dendronephthya speciosa* Kükenthal: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Dendronephthya* spec.: Banc des Frères, Iles Mitsio, northeast of Nosy Bé, Madagascar, 12°58'S, 48°28'E (Humes & Stock, 1973). *Umbellulifera striata* (Thompson & Henderson): Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Stereonephthya cordylophora* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Stereonephthya acaulis* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Ho, 1968a); Humes & Stock, 1973). The identification of *Stereonephthya papyracea* Kükenthal, published as a host for this species (Humes & Ho, 1968a: 11), was changed by Dr. Verseveldt to *Stereonephthya acaulis* .

Acanthomolgus hians (Humes & Ho, 1968)

Lichomolgus hians Humes & Ho, 1968b: 719, figs. 90-108.
Acanthomolgus hians; Humes & Stock, 1973: 105.

Host.— *Siphonogorgia pichoni* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Ho, 1968b; Humes & Stock, 1973). The identification *Siphonogorgia pendula* Studer, published as a host for this copepod (Humes & Ho, 1968b: 719), was changed by Dr. Verseveldt to *Siphonogorgia pichoni* .

Acanthomolgus longispinifer (Humes & Ho, 1968)

Lichomolgus longispinifer Humes & Ho, 1968b: 713, figs. 69-89.
Acanthomolgus longispinifer; Humes & Stock, 1973: 106.

Host.— *Siphonogorgia pichoni* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Ho, 1968b; Humes & Stock, 1973). The name of the host alcyonacean was changed by Dr. Verseveldt from *Siphonogorgia pendula* Studer, as reported in Humes & Ho (1968b: 713), to *Siphonogorgia pichoni* .

Acanthomolgus plantei Humes & Stock, 1973

Acanthomolgus plantei Humes & Stock, 1973: 106, figs. 59-61.

Host.— *Umbellulifera striata* (Thompson & Henderson): Region of Nosy Bé, Madagascar (Humes & Stock, 1973).

Acanthomolgus varirostratus (Humes & Ho, 1968)

Lichomolgus varirostratus Humes & Ho, 1968a: 2, figs. 1-31.
Acanthomolgus varirostratus; Humes & Stock, 1973: 110.

Hosts.— *Dendronephthya mucronata* (Pütter): Nosy Ovy, Iles Radama, south of Nosy Bé, Madagascar, 13°59'S, 47°46.5'E (Humes & Ho, 1968a); region of Nosy Bé, Madagascar (Humes & Ho, 1968a; Humes & Stock, 1973); near Noumea, New Caledonia (Humes, 1975). New records: 35 ♀ ♀, 50 ♂ ♂, in 3 m, Karang Mie, eastern Halmahera, Moluccas, 00°20'07"N, 128°25'00"E, 19.v.1975 (USNM 2391772); 68 ♀ ♀, 46 ♂ ♂, in 10 m, Poelau Gomumu, south of Obi, Moluccas, 01°50'00"S, 127°30'54"E, 30.v.1975 (RMNH F 811); 25 ♀ ♀, 24 ♂ ♂, in 25 m, southern shore of Goenoeng Api, Banda Islands, Moluccas, 04°32'05"S, 129°52'30"E, 26.iv.1975; 2 ♀ ♀, in 4-25 m, same locality and date. *Dendronephthya regia* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Ho, 1968a; Humes & Stock, 1973). *Dendronephthya stocki* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Ho, 1968a; Humes & Stock, 1973). *Dendronephthya koellikeri* Kükenthal: Nosy Ovy, Iles Radama, south of Nosy Bé, Madagascar, 13°59'S, 47°46.5'E (Humes and Ho, 1968a). *Dendronephthya cirsium* Kükenthal: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Dendronephthya lokobeensis* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Dendronephthya speciosa* Kükenthal: Nosy Bé, Madagascar (Humes & Stock, 1973). *Dendronephthya* spec.: Iles Mitsio, near Nosy Bé, 12°58'S, 48°28'E (Humes & Stock, 1973). *Stereonephthya cordylophora* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973).

Acanthomolgus verseveldti (Humes & Ho, 1968)

Lichomolgus verseveldti Humes & Ho, 1968b: 694, figs. 1-26.
Acanthomolgus verseveldti; Humes & Stock, 1973: 110.

Hosts.— *Heteroxenia elisabethae* Kölliker: Region of Nosy Bé, Madagascar (Humes & Ho, 1968b). *Heteroxenia fuscescens* (Ehrenberg): Banc de Cinq Mètres, near Nosy Bé, Madagascar (Humes & Stock, 1973). *Xenia lepida* Verseveldt: Nosy Bé, Madagascar (Humes & Stock, 1973).

Genus ***Alcyonomolgus*** nov.

Diagnosis.— Lichomolgidae close to *Anisomolgus*, but with third segment of exopod of leg 4 bearing II,I,5.

Type species.— *Alcyonomolgus insolens* (Humes & Ho, 1968).

Remarks.— The two genera *Anisomolgus* and *Alcyonomolgus* are distinguished by

the armature of the third segment of the exopod of leg 4 (III,I,5 in *Anisomolgus* and II,I,5 in *Alcyonomolgus*). The armature of legs 1-4 in lichomolgid copepods is in general fixed within genera, and thus may be considered important in the recognition of generic groups. Two closely related genera, *Doridicola* Leydig, 1853, defined by having II,I,5, and *Critomolgus* Humes & Stock, 1983, by having III,I,5, are now recognized by virtue of this difference in armature. Similarly, *Paramolgus* Humes & Stock, 1972, and *Paradoridicola* Humes & Stock, 1972, are distinguished by II,I,5 in the former and III,I,5 in the latter.

Genus Alcyonomolgus nov.: key to species (based on females)

1. Prosome with ratio of length to width at least 1.70:1 2
- Prosome narrower, less than 1.50:1 4
2. Free segment of leg 5 notched on inner margin; fourth segment of second antenna elongate, longer than second segment ..... ***A. sarcophyticus***
- Free segment of leg 5 without notch; fourth segment of second antenna shorter than second segment 3
3. Caudal ramus short, 36 x 28 µm, ratio 1.31:1; free segment of leg 5 43 x 14 µm ..... ***A. dissimilis***
- Caudal ramus longer, 78 x 28 µm, ratio 3:1; free segment of leg 5 83 x 35 µm ..... ***A. bicrenatus***
4. Free segment of leg 5 unornamented 5
- Free segment of leg 5 with outer spinules 7
5. Free segment of leg 5 subtriangular, ratio 1.44:1 ..... ***A. relativus***
- Free segment of leg 5 elongate, not subtriangular, ratio 3.0-3.6:1 6
6. Caudal ramus 77 x 24 µm, ratio 3.2:1; endopod of leg 4 shorter than exopod, inner margin of second segment smooth ..... ***A. incisus***
- Caudal ramus 42 x 23 µm, ratio 1.87:1; endopod a little longer than exopod, inner margin of second segment with setules ..... ***A. insolens***
7. Free segment of leg 5 with irregular inner margin; length of body 1.18 mm (1.03-1.29 mm) ..... ***A. lumellifer***
- Free segment of leg 5 with regular inner margin; length of body 1.41 mm (1.34-1.46 mm) ..... ***A. petalophorus***

Alcyonomolgus bicrenatus (Humes, 1982)

Anisomolgus bicrenatus Humes, 1982: 67, figs. 24, 25.

Host.— *Sarcophyton ehrenbergi* von Marenzeller: Near Noumea, New Caledonia (Humes, 1982).

Alcyonomolgus dissimilis (Humes, 1982)

Anisomolgus dissimilis Humes, 1982: 50, figs 14, 15.

Hosts.— *Sarcophyton acutangulum* von Marenzeller: Region of Nosy Bé, Madagascar (Humes, 1982).

Lobophytum depressum Tixier-Durivault (new host): 11 ♀♀, 13 11, in 25 m, Banc de Cinc Metres, near Nosy Bé, Madagascar (RMNH F 812).

Alcyonomolgus incisus (Humes & Ho, 1968)

Lichomolgus incisus Humes & Ho, 1968c: 680, figs. 148-167.
Anisomolgus incisus; Humes & Stock, 1973: 127; Humes, 1982: 72-73.

Host.— *Sarcophyton ehrenbergi* von Marenzeller: Region of Nosy Bé, Madagascar (Humes & Ho, 1968c; Humes & Stock, 1973); Poelau Gomumu, south of Obi, Moluccas (Humes, 1982).

Alcyonomolgus insolens (Humes & Ho, 1968)

Lichomolgus insolens Humes & Ho, 1968c: 668, figs. 107-127.
Anisomolgus insolens; Humes & Stock, 1973: 127; Humes, 1975: 26, 27.

Hosts.— *Lobophytum crassum* von Marenzeller: Region of Nosy Bé, Madagascar (Humes & Ho, 1968c); near Yate, southeastern New Caledonia (Humes, 1975). *Lobophytum pauciflorum* (Ehrenberg): Enewetak Atoll, Marshall Islands (Humes, 1973). New records: 29 ♀♀, 32 ♂♂, in 1 m, west of Ile Mando, near Noumea, New Caledonia, 22°18'59"S, 166°09'30"E, 5.vii.1971 (RMNH F 813); 7 ♀♀, 3 ♂♂, same locality and date; 15 22, 3 ♂♂, in 2 m, Pte. Pontillion, Noumea, 22°18'24"S, 166°25'50"E, 9.v.1971 (USNM 239173); 1 ♀, 1 ♂, in 0.5 m, Ile To N'du, near Noumea, 22°10'42"S, 166°16'30"E, 29.vi.1971; 4 ♀♀, in 4 m, western side of Ricaudy Reef, near Noumea, 22°19'04"S, 166°26'28"E, 28.vii.1971; 6 ♀♀, 4 ♂♂, in 1 m, Ile aux Serpents, near Noumea, 22°16'52"S, 166°25'12"E, 19.vii.1971; 2 ♂♂, in 1 m, east of Ile To N'du, near Noumea, 22°10'49"S, 166°17'12"E, 12.vii.1971. *Lobophytum crebriplicatum* von Marenzeller: Near Noumea, New Caledonia (Humes, 1975). *Lobophytum caledonense* Tixier-Durivault (new host): 8 ♀♀, 4 ♂♂, in 2 m, western side of Ile Maître, near Noumea, New Caledonia, 22°20'05"S, 166°24'05"E, 11.vi.1971.

Alcyonomolgus lumellifer spec. nov.
(figs. 7a-h, 8a-i, 9a-j)

Type material.— 16 ♀♀, 10 ♂♂, from *Lobophytum pauciflorum* (Ehrenberg), in 17 m, in pass between Nosy Bé and Nosy Komba, northwestern Madagascar, 10.viii.1967. Holotype ♀ (RMNH 814), allotype ♂ (RMNH 815), and 19 paratypes (12 ♀♀, 7 ♂♂) (RMNH 816).
Other specimens.— 4 ♀♀, 8 ♂♂, from *Lobophytum pauciflorum*, in 0.5 m, western side of Ile To N'du, near Noumea, New Caledonia, 22°10'42"S, 166°16'30"E, 29.vi. 1971 (USNM 239174).

Female.— Body (fig. 7a) with moderately broad prosome, tapering slightly anteriorly. Length 1.18 mm (1.03-1.29 mm) and greatest width 0.57 mm (0.51-0.64 mm),

based on 10 specimens. Greatest dorsoventral thickness 0.30 mm. Epimera of segments bearing legs 1-4 rounded. Segment bearing leg 1 set off from head by weak dorsal transverse furrow. Ratio of length to width of prosome 1.46:1. Ratio of length of prosome to that of urosome 1.89:1.

Segment bearing leg 5 (fig. 7b) 83 x 156 µm. Genital segment 159 x 161 µm, about as long as wide, in dorsal view with lateral margins slightly angularly expanded at midregion. Dorsal surface showing several sclerotized markings. Genital areas located anterior to middle of segment. Each area (fig. 7c) bearing 2 very small setae 7 µm. Three postgenital segments from anterior to posterior 68 x 71, 46 x 62, and 73 x 64 µm.

Caudal ramus (fig. 7d) 44 x 29 µm, ratio 1.52:1. Outer lateral seta 57 µm, dorsal seta 40 µm, outermost terminal seta 96 µm, and innermost terminal seta 170 µm. Two long median terminal setae 450 µm (outer) and 640 µm (inner). All setae smooth.

Dorsal surface of body without sensilla or fine ornamentation.

Egg sac unknown.

Rostrum (fig. 7e) broadly rounded posteroventrally. First antenna (fig. 7f) 418 µm long, lengths of its 7 segments: 47 (78 µm along anterior margin), 169, 26, 57, 26, 31, and 21 µm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 7g) 4-segmented, 245 µm long including claw. Formula for armature: 1, 1, 3, and 1 claw + few small setae. Fourth segment slender, 94 µm along outer side, 65 µm along inner side, and 16 µm wide. Claw 29 µm.

Labrum (fig. 7h) with 2 subtruncate posteroventral lobes. Postoral region with pair of small lobes bearing fringe of petallike setae. Mandible (fig. 8a), paragnath (fig. 7h), and first maxilla (fig. 8b) resembling those of *Alcyonomolgus petalophorus* (Humes, 1982). Second maxilla (fig. 8c) with first toothlike spine on lash distinctly stouter and larger than succeeding spines. Maxilliped (fig. 8d) similar to that of *A. petalophorus*.

Ventral region between maxillipeds and first pair of legs (fig. 8e) with very weakly defined median sclerite in front of intercoxal plate of leg 1.

Legs 1-4 (fig. 8f-i) segmented and armed as in congeners. Leg 1 with coxa having pronounced outer posterior lobe. Legs 1-3 with inner coxal seta long and plumose, but in leg 4 this seta much reduced, 11 µm, and smooth. Basis of leg 1 with long plumose outer seta, but this seta in legs 2-4 less prominent. Leg 4 with exopod 117 µm long. Endopod with first segment 39 x 15.5 µm, its distal inner plumose seta 60 µm. Second segment elongate, 86 x 13 µm (length including terminal spiniform processes), bearing terminally barbed spine 40 µm and subterminally small slender smooth seta 18 µm. Both segments with hairs along outer margin.

Leg 5 (fig. 9a) with irregular free segment 65 x 39 µm, its 2 terminal setae 70 µm and 57 µm. Dorsal seta 60 µm. All setae smooth. Small spinules on outer surface of free segment.

Leg 6 represented by 2 small setae on genital area (fig. 7c).

Colour of living specimens in transmitted light opaque gray, eye red.

Male.— Body (fig. 9b) resembling that of female in general form of prosome. Length 1.01 mm (0.94-1.08 mm) and greatest width 0.40 mm (0.35-0.45 mm), based on 10 specimens. Ratio of length to width of prosome 1.28:1. Ratio of length of prosome to that of urosome 1.26:1.

Segment of leg 5 (fig. 9c) 47 x 107 μm. Genital segment 242 x 218 μm, slightly longer than wide. Four postgenital segments from anterior to posterior 52 x 60, 52 x 54, 34 x 52, and 55 x 60 μm.

Body surface unornamented as in female.

Rostrum as in female. First antenna like that of female, but 3 aesthetes added (at points indicated by dots in fig. 7f). Second antenna resembling that of female but second segment with inner row of minute spinules (fig. 9d).

Labrum, pair of postoral lobes, mandible, paragnath, first maxilla, and second maxilla like those of female. Maxilliped (fig. 9e) with second segment having 2 setae (1 distally plumed), 2 rows of spinules, and thorn-shaped inner process (with naked seta arising from it). Claw 126 μm.

Legs 1-4 resembling those of female but third segment of endopod of leg 1 with formula I,I,4 (fig. 9f), and having 2 terminal spiniform processes. Leg 2 (fig. 9g) and leg 3 (fig. 9e) showing sexual dimorphism in having shorter and stouter spines than in female. Leg 4 as in female.

Leg 5 (fig. 9i) with free segment 32 x 13.5 μm, its inner margin not irregular as in female, its 2 terminal setae 39 μm and 47 μm. Dorsal seta 52 μm. All setae smooth. Few minute spinules on outer surface of segment.

Leg 6 (fig. 9j) with 2 setae approximately 23 μm.

Colour as in female.

Etymology.— The name *lumellifer*, from Latin *luma*, a kind of thorn, the diminutive suffix *-ella*, and *fero*, to bear, refers to the thornlike process on the second segment of the maxilliped of the male.

Remarks.— Females of the new species may be distinguished by the expanded irregular inner border of the free segment of leg 5, a feature seen in only one congener, *Alcyonomolgus sarcophyticus* (Humes, 1982). The latter species differs from *A. lumellifer*, however, in having a longer caudal ramus (ratio 2.01:1), and in the shape of the genital segment.

Males of *Alcyonomolgus lumellifer* may be recognized by the thornlike process on the second segment of the maxilliped. Only one congener, *Alcyonomolgus petalophorus* (Humes, 1982), has a process here, but in that species the process is anvil-shaped.

Alcyonomolgus petalophorus (Humes, 1982)

Anisomolgus petalophorus Humes, 1982: 58, figs. 19-21.

Host.— *Sarcophyton acutangulum* (von Marenzeller): near Noumea, New Caledonia (Humes, 1982).

Alcyonomolgus relativus (Humes, 1982)

Anisomolgus relativus Humes, 1982: 47, fig. 13.

Host.— *Sarcophyton ehrenbergi* von Marenzeller: Poelau Gomumu, south of Obi, Moluccas, and near Noumea, New Caledonia (Humes, 1982).

Alcyonomolgus sarcophyticus (Humes, 1982)

Anisomolgus sarcophyticus Humes, 1982: 37, figs. 7-9.

Hosts.— *Sarcophyton glaucum* (Quoy & Gaimard): Goenoeng Api, Banda Islands, Moluccas, and region of Nosy Bé, Madagascar (Humes, 1982). *Sarcophyton elegans* Moser: Near Noumea, New Caledonia (Humes, 1982).*Sarcophyton manifestum* Tixier-Durivault: Near Noumea, New Caledonia (Humes, 1982). *Sarcophyton cornispiculatum* Verseveldt: Region of Nosy Bé, Madagascar (Humes, 1982).

Genus *Anisomolgus* Humes & Stock, 1972: key to species (based on females)

1. Caudal ramus elongate, 174 x 35 µm, ratio 5:1 ..... ***A. ensifer***
- Caudal ramus shorter, less than 100 µm; ratio 3.1 or less 2
2. Free segment of leg 5 with spinules on both outer and inner margins ..... ***A. pterolobatus***
- Free segment of leg 5 with spinules on outer side only 3
3. Genital segment with lateral margins angular ..... ***A. goniodes***
- Genital segment with lateral margins rounded, not angular 4
4. Body length 1.08 mm (0.99-1.16 mm); setae on first antenna smooth; genital segment not greatly expanded at middle ..... ***A. limbatus***
- Body length 1.67 mm (1.61-1.73 mm); some setae on second segment of first antenna plumose; genital segment expanded at middle ..... ***A. protentus***

Anisomolgus ensifer Humes, 1982

Anisomolgus ensiferus Humes, 1982: 63, figs. 22 , 23.

Host.— *Sarcophyton glaucum* (Quoy & Gaimard): Near Noumea, New Caledonia (Humes, 1982). The spelling of the specific name is corrected to *ensifer*, following the International Code of Zoological Nomenclature, 32d, ii, p.71.

Anisomolgus goniodes Humes, 1982

Anisomolgus goniodes Humes, 1982: 54, figs.16-18.

Hosts.— *Sarcophyton manifestum* Tixier-Durivault: Near Noumea, New Caledonia (Humes, 1982). *Sarcophyton trocheliophorum* von Marenzeller: Near Noumea, New Caledonia (Humes, 1975). New record: 5 ♀ ♀, 3 ♂ ♂, in 10 m, on pinnacle in lagoon 5 km west of Enewetak Island, Enewetak Atoll, Marshall Islands, 24.vi. 1969.

Anisomolgus limbatus Humes & Dojiri, 1979

Anisomolgus limbatus Humes & Dojiri, 1979a: 554, figs. 1-27.

Host.— *Lobophytum crassum* von Marenzeller: Poelau Marsegoe, western Ceram, Moluccas (Humes & Dojiri, 1979a).

Anisomolgus protentus (Humes & Frost, 1964)

Lichomolgus protentus Humes & Frost, 1964: 148, figs. .203-236.
Lichomolgus protentus; Bouligand, 1966: 269.
Anisomolgus protentus; Humes & Stock, 1973: 126; Humes, 1975: 25; 1982: 71-72.

Hosts.— *Sarcophyton globosum* Tixier-Durivault: Region of Nosy Bé, Madagascar (Humes & Frost, 1964). The name of the host was originally noted in Humes & Frost (1964) as *Sarcophyton* spec., but the soft coral was later identified as a new species, *Sarcophyton globosum,* by Tixier-Durivault (1966). *Sarcophyton trocheliophorum* von Marenzeller: Near Noumea, New Caledonia (Humes, 1982). *Sarcophyton elegans* Moser: Near Noumea, New Caledonia (Humes, 1975). *Sarcophyton glaucum* (Quoy & Gaimard): Region of Nosy Bé, Madagascar (Humes & Stock, 1973; Humes, 1982); Banda and Ceram, Moluccas (Humes, 1982).

Anisomolgus pterolobatus Humes, 1982

Anisomolgus pterolobatus Humes, 1982: 42, figs. 10-12.

Hosts.— *Sarcophyton elegans* Moser: Near Noumea, New Caledonia (Humes, 1982). *Sarcophyton crassum* Tixier-Durivault: Near Noumea, New Caledonia (Humes, 1982). The host was originally named as a new species, *Sarcophyton implanum,* by Verseveldt (1974), but was later determined by Dr. Verseveldt to be a synonym of *Sarcophyton crassum* Tixier-Durivault (1946). *Sarcophyton glaucum* (Quoy & Gaimard): Goenoeng Api, Banda Islands, and Poelau Parang, Ceram, Moluccas (Humes, 1982).

Genus *Ascetomolgus* Humes & Stock, 1972

Ascetomolgus plicatus Humes & Stock, 1973

Ascetomolgus plicatus Humes & Stock, 1973: 128, figs. 72-74.

Host.— *Studeriotes semperi* (Studer): Region of Nosy Bé, Madagascar (Humes & Stock, 1973).

Genus *Colobomolgus* Humes & Stock, 1972: key to species (based on females)

1. Free segment of leg 5 with very large dentiform proximal inner expansion .....
.....*C. dentipes*
- Free segment of leg 5 with at most only small rounded proximal inner expansion

.....2
2. Caudal ramus 89 x 20 µm, ratio 4.45:1 ..... *C. cristatus*
- Caudal ramus shorter, ratio at most 1.70:1 3
3. Free segment of leg 5 with spinules along outer side ..... *C. laboutei*
- Free segment of leg 5 smooth, without spinules 4
4. Genital segment subglobose, broadest near middle; claw on second antenna 75 µm; free segment of leg 5 82 x 18 µm, ratio 4.56:1, without proximal inner expansion ..... *C. epaxius*
- Genital segment with anterior "shoulders"; claw on second antenna 52 µm; free segment of leg 5 55 x 15 µm, ratio 3.7:1, with slight proximal inner expansion .... *C. bandensis*

Colobomolgus bandensis spec. nov.
(figs. 10a-h, 11a-i, 12a-j)

Type material.— 615 ♀♀, 215 ♂♂, from *Sinularia polydactyla* (Ehrenberg), in 3 m, southwestern shore of Goenoeng Api, Banda Islands, Moluccas, 04°31'45"S, 129°51'55"E, 25.v.1975. Holotype ♀ (RMNH F 817), allotype ♂ (RMNH F 818), and 822 paratypes (610 ♀♀, 212 ♂♂) (RMNH F 819).
Other specimens.— 20 ♀♀, 4 ♂♂, from *Sinularia polydactyla*, in 2 m, Poelau Marsegoe, Moluccas, 02°59'30"S, 128°03'30"E, 15.v.1975 (USNM 239175).

Female.— Body (fig. 10a) with broad prosome. Length 0.87 mm (0.79-0.94 mm) and greatest width 0.41 mm (0.37-0.44 mm), based on 10 specimens. Greatest dorsoventral thickness 0.30 mm. Segment bearing leg 1 separated from head by transverse dorsal furrow. Epimera of prosomal pedigerous segments rounded. Ratio of length to width of prosome 1.25:1. Ratio of length of prosome to that of urosome 1.53:1.

Segment bearing leg 5 (fig. 10b) 91 x 146 µm. Genital segment 117 µm long (127 µm in midline), 125 µm wide at laterally rounded anterior two-thirds, approximately 61 µm in posterior third. These 2 regions demarcated by small lateral notch. Genital areas situated dorsolaterally near middle of segment. Each area (fig. 10c) with 2 minute setae 4 µm long. Three postgenital segments from anterior to posterior 52 x 60, 39 x 55, and 49 x 52 µm. Posteroventral margin of anal segment smooth.

Caudal ramus (fig. 10d) 30 x 25 µm, slightly longer than wide, ratio 1.2:1. Outer lateral seta 78 µm, dorsal seta 21 µm, both smooth. Outermost terminal seta 91 µm, innermost terminal seta 187 µm, and 2 long median terminal setae 286 µm (outer) and 462 µm (inner), all 4 setae with lateral setules. Small ventral terminal flange smooth.

Body surface with very few sensilla, pair on rostrum.

Egg sac (fig. 10e) 308 x 99 µm, containing approximately 28 eggs with diameter 39-42 µm. Another egg sac (fig. 10f) 148 x 78 µm with approximately 13 eggs.

Rostral area (fig. 10g) broad, median posteroventral border incompletely defined. First antenna (fig. 10h) 278 µm long. Lengths of its 7 segments: 40 (50 µm along anterior margin), 107, 29, 34, 23, 16, and 13 µm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7+ 1 aesthete. Certain setae on second segment with delicate lateral setules.

Second antenna (fig. 11a) 4-segmented, 195 µm long without claw. Armature: 1, 1,

3, and 1 claw + several small setae. Fourth segment 60 μm along outer side, 36 μm along inner side, and 25 μm wide. Claw 52 μm.

Labrum (fig. 11b), mandible (fig. 11c), paragnath (fig. 11b), first maxilla (fig. 11d), second maxilla (fig. 11e), and maxilliped (fig. 11f) similar in major respects to those of congeners.

Ventral area between maxillipeds and first pair of legs resembling that of *Colobomolgus epaxius* spec. nov.(see below) but slightly protuberant.

Legs 1-4 (figs. 11g-i,12a) segmented and armed as in congeners. Inner seta on coxa of leg 4 much reduced, only 7 μm long. Outer seta on basis in all 4 legs with delicate setules. Leg 4 (fig. 12a) with exopod 78 μm long. Endopod elongate and slender. First segment 21 x 8 μm, its distal inner plumose seta 31 μm. Second segment 44 x 5 μm (ratio 8.8:1), its 2 terminal barbed spines 18 μm and 31 μm. Both segments with outer marginal setules. Another female with endopod (fig. 12b) somewhat longer, first segment 23 x 8 μm, second segment 52 μm (ratio 13:1).

Leg 5 (fig. 12c) with unornamented free segment 55 x 15 μm, ratio 3.7:1, with slight proximal inner expansion. Two terminal smooth setae 52 μm and 44 μm. Dorsal seta 75 μm with few strong proximal setules followed by more delicate lateral setules.

Leg 6 represented by 2 minute setae on genital area (fig. 10c).

Colour of living specimens in transmitted light hyaline and translucent, eye red, egg sacs light gray.

Male.— Body (fig. 12d) more slender than in female. Length 0.56 mm (0.54-0.59 mm) and greatest width 0.23 (0.23-0.24 mm), based on 10 specimens. Greatest dorsoventral thickness 0.23 mm. Ratio of length to width of prosome 1.49:1. Ratio of length of prosome to that of urosome 1.55:1.

Segment bearing leg 5 (fig. 12e) 26 x 74 μm. Genital segment 140 x 126 μm, longer than wide. Four postgenital segments from anterior to posterior 18 x 34, 18 x 36, 11 x 34, and 18 x 39 μm.

Caudal ramus (fig. 12e) 14 x 16 μm, slightly wider than long, ratio 1:1.14, otherwise as in female.

Rostral area as in female. First antenna like that of female but 3 aesthetes added at locations shown by dots in fig. 10h. Second antenna resembling that of female, but row of minute spinules along inner side of second segment.

Labrum, mandible, paragnath, first maxilla, and second maxilla similar to those in female. Maxilliped (fig. 12f) resembling that of congeners, claw 94 μm long.

Ventral area between maxillipeds and first pair of legs resembling that of female.

Legs 1-4 segmented and armed as in female except endopod of leg 1 (fig. 12g), where third segment with formula I,I,4. Legs 2-4 similar to those of female.

Leg 5 (fig. 12h) with unornamented free segment 14 x 5.5 μm.

Leg 6 (fig. 12i) with 2 slender setae approximately 30 μm long.

Spermatophore (fig. 12j) 109 x 52 μm not including neck.

Colour as in female.

Etymology.— The specific name is a combination of Banda, the name given to the group of islands where the type specimens were collected, and the Latin suffix *-ensis* meaning living in.

Remarks.— *Colobomolgus bandensis* may be recognized by the elongate slender endopod of leg 4. The shape of the genital segment, widest in the anterior third,

forming shoulders, is also distinctive.

Colobomolgus cristatus (Humes & Ho, 1968)

Lichomolgus cristatus Humes & Ho, 1968c: 644, figs. 29 - 50.
Colobomolgus cristatus; Humes & Stock, 1973: 150.

Hosts.— *Sinularia leptoclados* (Ehrenberg): Region of Nosy Bé, Madagascar (Humes & Ho, 1968c; Humes & Stock, 1973). New record: 37 ♀ ♀, in 2 m, western end of Ile Maitre, near Noumea, New Caledonia, 22°20'05"S, 166°24'05" E, 21.vi.1971 (RMNH F 820). *Sinularia firma* Tixier-Durivault (new host): 24 ♀ ♀, in 3 m, Rocher à la Voile, Noumea, New Caledonia, 22°18'24"S, 166°25'50"E, 2.viii.1971; 4 ♀ ♀, in 4 m, Ricaudy Reef, near Noumea, 22°19'00"S, 166°26'44"E, 28.vii.1971.

Colobomolgus dentipes (Thompson & A. Scott, 1903)

Lichomolgus dentipes Thompson & A. Scott, 1903: 203, pl.16, figs.27-30; Humes & Ho, 1968c: 637, figs.1-28.
Lichomolgus (Stellicola) dentipes; Monod & Dollfus, 1932: 139.
Colobomolgus dentipes; Humes & Stock, 1973: 150.

Hosts.— *Sinularia humesi* Versevelt: Region of Nosy Bé, Madagascar (Humes & Ho, 1968c; Humes & Stock, 1973). *Sinularia polydactyla* (Ehrenberg): Near Noumea, New Caledonia (Humes, 1975). *Sinularia firma* Tixier-Durivault (new host): 2 ♀ ♀, in 3 m, Rocher à la Voile, Noumea, New Caledonia, 22°18'24"S, 166°25'50"E, 2.viii.1971.

Colobomolgus epaxius spec. nov.
(figs. 13a-f, 14a-i, 15a-e, 16a-d)

Type material.— 7 ♀♀, 10 ♂♂, from 1 colony of *Sinularia firma* Tixier-Durivault, in 3 m, Rocher à la Voile, Noumea, New Caledonia, 22°18'24"S, 166°25'50"E, 2.viii.1971. Holotype ♀ (RMNH F 821), allotype ♂ (RMNH F 822), and 10 paratypes (3 ♀♀, 7 ♂♂) (RMNH F 823).

Female.— Body (fig. 13a) with broad flattened prosome. Length 1.11 mm (1.03-1.21 mm) and greatest width 0.52 mm (0.51-0.54 mm), based on 5 specimens. Segment bearing leg 1 set off from cephalosome by transverse dorsal furrow. Epimera of all prosomal pedigerous segments rounded. Ratio of length to width of prosome 1.29:1. Ratio of length of prosome to that of urosome 1.54:1.

Segment bearing leg 5 (fig. 13b) 109 x 180 µm. Genital segment 151 µm long, divided dorsally into anterior two-thirds 104 µm long, and narrower posterior third 47 µm, ventrally these 2 regions not completely separated. In dorsal view segment subglobular, lateral margins rounded, width of anterior part 166 µm, that of posterior part 122 µm. Genital areas located dorsolaterally near middle of anterior section. Each area (fig. 13c) with 2 very small setae approximately 5 µm. Three postgenital segments from anterior to posterior 65 x 94, 42 x 78, and 38 x 75 µm. Posterolateral border of anal segment smooth.

Caudal ramus (fig. 13d) relatively short, 49 x 29 μm, ratio 1.69:1. Outer lateral seta 57 μm, dorsal seta 31 μm, both smooth. Outermost terminal seta 78 μm, innermost terminal seta 165 μm, and 2 long median terminal setae 350 μm (outer) and 610 μm (inner), all lightly feathered. Small ventral terminal flange smooth.

Body surface without visible sensilla.

Egg sac seen only as fragments. Eggs 42-47 μm in diameter.

Rostral area (fig. 13e) weak, posteroventral margin incomplete. First antenna (13f) 363 μm long. Lengths of its 7 segments: 75 (68 μm along anterior margin), 120, 42, 42, 27, 26, and 18 μm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. Certain setae on segments 1-4 with lateral setules.

Second antenna (fig. 14a) 4-segmented, 263 μm long including claw. Armature: 1, 1, 3, and 1 claw + at least 1 minute setule. Setae on segments 1 and 2 very small. Fourth segment 75 μm along outer edge, 49 μm along inner edge, and 26 μm wide at midregion. Claw 75 μm.

Labrum (fig. 14b) with 2 broadly rounded posteroventral lobes. Mandible (fig. 14c) with flagellum reduced to small pointed process, with adjacent spiniform process of nearly equal size. Convex margin of mandible with scalelike area having row of prominent spinules, followed by row of smaller spinules. Concave margin with area beyond indentation truncate with row of small setules. Paragnath (fig. 14b) small lobe. First maxilla (fig. 14d) with 2 unequal terminal setae. Second maxilla (fig.14e) 2-segmented. First segment unarmed. Second segment bearing minute outer proximal setule, surficial posterior seta, and inner long seta with prominent spinules along distal side, minute spinules on proximal side; segment terminating in long bilaterally setulose lash having crest of very long slender spinules proximally. Maxilliped (fig. 14f) 3-segmented, resembling that of *Colobomolgus cristatus* (Humes & Ho, 1968), but lacking surficial spinules on first segment seen in that species.

Ventral area between maxillipeds and first pair of legs (fig. 14g) not protuberant.

Legs 1-4 (figs. 14h,i,15a,b) with 3-segmented rami except for 2-segmented endopod in leg 4, as in congeners. Armature as in congeners. Outer seta on basis of leg 1 long, 83 μm, with lateral setules. Inner coxal seta on leg 4 much reduced, 9 μm, and smooth. Exopod of leg 4 104 μm long; first segment of endopod 29 x 13 μm, its inner distal plumose seta 42 μm, second segment 52 μm long without terminal process, 57 μm with process, 11 μm wide, its 2 terminal barbed spines 26 μm and 40 μm.

Leg 5 (fig. 15c) with elongate slender unornamented free segment 82 x 18 μm, ratio 4.56:1, its setae 23 μm and 47 μm. Dorsal seta 47 μm. All setae smooth.

Leg 6 represented by 2 setae on genital area (fig. 13c).

Colour of living specimens in transmitted light opaque gray, eye red, eggs gray.

Male.— Body (fig. 15d) more slender than in female. Length 0.72 mm (0.67-0.74 mm) and greatest width 0.28 mm (0.23-0.30 mm), based on 6 specimens. Ratio of length to width of prosome 1.69:1. Ratio of length of prosome to that of urosome 1.41:1.

Segment of leg 5 (fig. 15e) 29 x 80 μm. Genital segment 172 x 156 μm, little longer than wide, in dorsal view with lateral margins in posterior half of segment subparallel. Four postgenital segments from anterior to posterior 26 x 45, 29 x 47, 15.5 x 42, and 39 x 44 μm.

Caudal ramus (fig. 15e) 26 x 18 μm, ratio 1.44:1, shorter than in female but otherwise similar.

Rostral area as in female. First antenna like that of female, but 3 aesthetes added (at points indicated by dots in fig. 13f). Second antenna resembling that of female but with minute spinules on inner edge of second segment.

Labrum, mandible, paragnath, first maxilla, and second maxilla as in female. Maxilliped (fig. 16a) 4-segmented, assuming proximal part of claw to represent fourth segment. First segment unarmed. Slender second segment with 2 inner setae and inner surface ornamented proximally with row of strong stout spines and distally with 2 rows of slender spinules. Small third segment unarmed. Claw 134 µm, with recurved tip, and bearing 2 very unequal proximal setae.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female except endopod of leg 1 (fig. 16b) with third segment armed as I,I,4. Third segment of this endopod 42 x 23 µm, with distal spine arising on anterior surface of segment rather than on outer edge as usual; segment with terminal hooked spiniform process and small rounded prominence. Exopod 57 µm long, endopod 87 µm. No sexual dimorphism in legs 2-4.

Leg 5 (fig. 16c) with slender unornamented free segment 21 x 8 µm, ratio 2.6:1, its setae 25 µm and 21 µm. Dorsal seta 29 µm.

Leg 6 (fig. 16d) with 2 small setae 20 µm long.

Spermatophore not seen.

Colour as in female.

Etymology.— The specific name *epaxius* is from Greek *epaxios* meaning worthy.

Remarks.— *Colobomolgus epaxius* may be differentiated from the three known species in the genus as follows: the free segment of leg 5 in the female has subparallel unornamented margins, while in *C. dentipes* leg 5 has outer spinules and a large dentiform inner process; the caudal ramus in the female is relatively short, 49 x 29 µm, ratio 1.69:1, while in *C. cristatus* the caudal ramus is elongate, 89 x 20 µm, ratio 4.5:1, the free segment of leg 5 in the female is unornamented, the anterior section of the genital segment in the female is only a little wider than the posterior section, and the claw of the male maxilliped is long, 134 µm, while in *C. laboutei* the free segment of leg 5 has outer spinules, the anterior section of the genital segment in the female is much wider than the posterior section, and the claw of the male maxilliped is short, 86 µm.

Colobomolgus laboutei Humes & Stock, 1973

Colobomolgus laboutei Humes & Stock, 1973: 151, figs. 85, 86.

Host.— *Sinularia leptoclados* (Ehrenberg): Region of Nosy Bé, Madagascar (Humes & Stock, 1973).

Genus *Contomolgus* Humes & Stock, 1972

Contomolgus lokobeensis Humes & Stock, 1973

Contomolgus lokobeensis Humes & Stock, 1973: 155, figs. 87-90.

Hosts.— *Studeriotes semperi* (Studer): Region of Nosy Bé, Madagascar (Humes & Stock, 1973). New record: 8 ♀♀, 18 ♂♂, in 17 m, in pass between Nosy Bé and Nosy Komba, Madagascar, 10.viii.1967. *Dendronephthya stocki* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973).

Genus *Critomolgus* Humes & Stock, 1983: key to species (based on females)

1. Free segment of leg 5 approximately 100 µm long, with spinules on outer edge ... 2
- Free segment of leg 5 shorter, less than 35 µm long, smooth, without spinules ... 3
2. Caudal ramus 43 x 37 µm, ratio 1.16:1; free segment of leg 5 with large prominent proximal inner expansion, distal two-thirds of segment slender ..... ***C. foxi***
- Caudal ramus 30 x 34 µm, wider than long; free segment of leg 5 with less prominent proximal inner expansion, distal half of segment almost as broad as expansion ..... ***C. cladiellae***
3. Leg 5 directed posterolaterally; caudal ramus 29 x 19 µm, longer than wide; fourth segment of second antenna short, stout ..... ***C. antennulus***
- Leg 5 directed outwardly at angle from body; caudal ramus 18 x 21 µm, wider than long; fourth segment of second antenna elongate, slender ..... ***C. orectopus***

Critomolgus antennulus spec. nov.
(figs 17a-i, 18a-j, 19a-i)

Type material.— 47 ♀♀, 41 ♂♂, from 1 colony of *Cladiella pachyclados* (Klunzinger), in 2 m, west of Isle Ngou, near Noumea, New Caledonia, 22°10'42"S, 166°16'30"E, 29.vii.1971. Holotype ♀ (RMNH F 824), allotype ♂ (RMNH F 825), and 82 paratypes (44 ♀♀, 38 ♂♂) (RMNH F 826).
Other specimens.— From *Cladiella pachyclados*: 25 ♀♀, 9 ♂♂, in 1 m, Ile To N'du, near Noumea, New Caledonia, 22°10'42"S, 166°25'53"E, 29.vi.1971(RMNH 827); 3 ♀♀, 5 ♂♂, in 0.5 m, Ile aux Serpents, near Noumea, 22°16'52"S, 166°25'12"E, 28.vi.1971; 46 ♀♀, 19 ♂♂, in 1 m, west of Ile To N'du, near Noumea, 22°10'42"S, 166°16'30"E, 29.vi.1971 (USNM 239176); 7 ♀♀, 10 ♂♂, in 1 m, Ile aux Serpents, near Noumea, 22°16'52"S, 166°25'12"E, 19.vii.1971.

Female.— Body (fig. 17a) with moderately broad prosome rounded anteriorly. Length 0.77 mm (0.73-0.81 mm) and greatest width 0.32 mm (0.31-0.33 mm), based on 10 specimens. Greatest dorsoventral thickness 0.30 mm. Epimera of segments bearing legs 1-4 rounded. Segment bearing leg 1 separated from head by weak transverse dorsal furrow. Ratio of length to width of prosome 1.41:1. Ratio of length of prosome to that of urosome 1.62:1.

Segment bearing leg 5 (fig. 17b) 65 x 105 µm. Genital segment in dorsal view 117 x 114 µm, approximately as long as wide, with lateral margins broadly rounded. Genital areas located dorsolaterally near middle of segment. Each area (fig. 17c) with 2 minute setae 4 µm long. Between genital areas sclerotized lines as illustrated. Three postgenital segments from anterior to posterior 39 x 57, 36 x 49, and 30 x 48 µm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 17d) 29 x 19 µm, ratio 1.53:1, longer than wide. Outer lateral seta 52 µm, dorsal seta 20 µm, and outermost terminal seta 85 µm, all smooth. Innermost terminal seta 110 µm with delicate lateral hairs. Two long median terminal

setae 202 µm (outer) and 260 (inner), both with lateral spinules. Slight ventral flange on tip of ramus smooth.

Egg sac (fig. 17e) 286 x 132 µm, containing approximately 22 eggs 52-55 µm in diameter.

Surface of body without visible ornamentation.

Rostrum (fig. 17f) with incomplete posteroventral border. First antenna (fig. 17g) relatively short, 109 µm long. Lengths of its 7 segments: 30 (42 µm along anterior margin), 48, 14, 26, 28, 21, and 17 µm, respectively. Formula for armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 17h) 164 µm long not including claws and 4-segmented. Formula for armature: 1, 1, 3, and 5 + 2 unequal claws. Stout claw 36 µm, more slender claw 25 µm.

Labrum (fig. 17i) with 2 posteroventral lobes having divergent tips. Mandible (fig. 18a), paragnath (fig. 17i), first maxilla (fig. 18b), second maxilla (fig. 18c), maxilliped (fig. 18d), and ventral area between maxillipeds and first pair of legs (fig. 18e) resembling those of *Critomolgus cladiellae* (see below) and *Critomolgus foxi* (Gurney, 1927).

Legs 1-4 (fig. 18f-i) segmented and armed as in congeners. Inner coxal seta in legs 1-3 long and plumose, but this seta in leg 4 extremely small, only 2 µm in length. Leg 4 (fig. 18i) with exopod 94 µm long. Endopod with first segment 22 x 13 µm, its inner distal feathered seta 40 µm. Second segment 39 x 14 µm, its 2 terminal finely barbed spines 28 µm and 10 µm. Outer margin of both segments with fine setules.

Leg 5 (fig. 18i) with unornamented free segment 32 x 15.5 µm, ratio 2.07:1. Two terminal setae 65 µm and 52 µm. Outer margin of both segments with fine setules.

Leg 6 (fig. 17c) represented by 2 minute setae on genital area.

Colour of living specimens in transmitted light opaque gray, eye red.

Male.— Body (fig. 19a) with posterior half of prosome more slender than in female. Length 0.67 mm (0.64-0.70 mm) and greatest width 0.23 mm (0.22-0.24 mm), based on 10 specimens. Greatest dorsoventral thickness 0.19 mm. Ratio of length to width of prosome 1.58:1. Ratio of length of prosome to that of urosome 1.27:1.

Segment bearing leg 5 (fig. 19b) 26 x 73 µm. Genital segment 146 x 143 µm, nearly as long as wide. Four postgenital segments from anterior to posterior 21 x 44, 18 x 44, 13 x 42, and 21 x 47 µm.

Caudal ramus resembling that of female, but smaller, 23 x 18 µm, ratio 1.28:1.

Surface of body unornamented as in female.

Rostrum similar to that of female. First antenna like that of female but 3 aesthetes added (at locations indicated by dots in fig. 17g). Second antenna (fig. 19c) as in female, but showing sexual dimorphism in having small spinules along inner margin of second segment.

Labrum, mandible, paragnath, first maxilla, and second maxilla resembling those of female. Maxilliped (fig. 19d) similar to that of *C. cladiellae* below, but second segment with long spinules located proximally to 2 setae (rather than distally as in that species). Claw 138 µm long.

Legs 1-4 as in female except for sexual dimorphism in third segment of endopod of leg 1 (fig. 19e) with formula I,I,4 and having 1 large straight spiniform process; slight dimorphism in leg 2 (fig. 19f), with third segment of endopod having 3 spines from outer to inner 13 µm (stout, almost bottle-shaped), 10 µm, and 13 µm.

Leg 5 (fig. 19g) with small rectangular unornamented free segment 18 x 8 μm, ratio 2.25:1, its 2 terminal setae 36 μm and 20 μm. Dorsal seta 19 μm. All setae smooth.

Leg 6 (fig. 19h) with 2 smooth setae, both approximately 26 μm.

Spermatophore (fig. 19i), attached to female, 138 x 65 μm, not including neck.

Colour of living specimens as in female.

Etymology.— The specific name *antennulus*, Latin *antenna* with the diminutive suffix *-ulus*, alludes to the relatively short first antenna in this species.

Remarks.— The small size of *Critomolgus antennulus*, with the body length of the female being less than 1 mm, is distinctive. Almost all congeners are considerably larger, with the length of the female being 1 mm or more. In only three species is the length of the female less than 1 mm, but all these species can be readily distinguished from the new species on other grounds. In the female of *C. bulbipes* (Stock & Kleeton, 1963), with a length of 0.97 mm, the caudal ramus is wider than long, the shape of the genital segment is different, and the free segment of leg 5 has a proximal inner expansion and is ornamented with outer spinules. In *C. brevipes* (Shen and Lee, 1966), an inadequately described species, the female is 0.91 mm long, the claws (?) on the second antenna are slender and setiform, and the free segment of leg 5 is about 4:1. In the female of *C. orectopus* (see below), with a length of 0.77 mm, the caudal ramus is wider than long, the shape of the genital segment is different, and the free segment of leg 5 is directed outwardly rather than posteriorly.

In *Critomolgus isoawamochi* (Ho, 1981) the female is unknown, but the male is 0.85 mm in length and the two claws on the second antenna are very unequal in length, one about twice the length of the other.

Critomolgus cladiellae spec. nov.
(figs. 20a-i, 21a-g, 22a-g, 23a-e)

Type material.— 38 ♀♀, 91 ♂♂, from 1 colony of *Cladiella pachyclados* (Klunzinger), in 2 m, west of Ile Ndou, near Noumea, New Caledonia, 22°10'42"S, 166°16'30"E, 24.vii.1971. Holotype ♀ (RMNH F 828), allotype ♂ (RMNH F 829), and 122 paratypes (34 ♀♀, 88 ♂♂) (RMNH F 830).
Other specimens.— From *Cladiella pachyclados*: 10 ♀♀, 46 ♂♂, in 0.5 m, Ile aux Serpents, near Noumea, New Caledonia, 22°16'52"S, 166°25'12"E, 28.vi.1971 (USNM 239177); 15 ♀♀, 12 ♂♂, in 1 m, same locality, 19.vii.1971; 7 ♀♀, 4 ♂♂, in 0.5 m, same locality, 19.vii.1971; 14 ♀♀, 17 ♂♂, in 1 m, west of Ile To N'du, near Noumea, 22°10'42"S, 166°16'30"E, 29.vi.1971(RMNH F 831); 3 ♀♀, 3 ♂♂, in 1 m, same locality, 19.vi.1971.

Female.— Body (fig. 20a) with prosome not unusually broadened. Length 1.15 mm (1.01-1.25 mm) and greatest width 0.56 mm (0.52-0.63 mm), based on 10 specimens. Greatest dorsoventral thickness 0.39 mm. Segment bearing leg 1 indistinctly set off from head. Epimeral areas of segments bearing legs 1-4 rounded. Ratio of length to width of prosome 1.63:1. Ratio of length of prosome to that of urosome 2.15:1.

Segment bearing leg 5 (fig. 20b) 70 x 159 μm. Genital segment 160 x 143 μm, longer than wide, with pair of small lateral bulges in anterior fourth. Genital areas located dorsolaterally near middle of segment. Each area (fig. 20c) with 2 small setae 8 μm and 13 μm and thorn-shaped process. Three postgenital segments from anterior to posterior 47 x 94, 39 x 88, and 42 x 86 μm. Posteroventral border of anal segment

smooth.

Caudal ramus (fig. 20d) 30 x 34 µm, wider than long, ratio 1:1.33. Outer lateral seta 143 µm, dorsal seta 55 µm, both smooth. Outermost terminal seta 170 µm, with few obscure setules. Innermost terminal seta 265 µm with lateral setules. Two long median terminal setae 680 µm (outer) and 803 (inner), both with lateral setules. Slight ventral flange at tip of ramus smooth.

Egg sac not seen entire, but fragments with eggs 44-49 µm in diameter.

Surface of body without ornamentation.

Rostrum (fig. 20e) rounded posteroventrally. First antenna (fig. 20f) 605 µm long. Lengths of its 7 segments: 65 (109 µm along anterior margin), 185, 49, 101, 73, 58, and 36 µm, respectively. Formula for armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 20g) 308 µm long and 4-segmented. Formula: 1, 1, 3, and 5 + 2 unequal claws. Fourth segment 91 µm along outer side, 68 µm along inner side, and 26 µm wide. Stout claw 44 µm, more slender claw 30 µm.

Labrum (fig. 20h) with 2 rounded posteroventral lobes. Mandible (fig. 20i), paragnath (fig. 20h), first maxilla (fig. 21a), second maxilla (fig. 21b), maxilliped (fig. 21c), and ventral area between maxillipeds and first pair of legs (fig. 21d) similar to those of *Critomolgus foxi* (see Humes & Ho, 1968c, p.655).

Legs 1-4 (figs. 21e-g,22a) segmented and armed as in congeners. Outer posterior coxal region of leg 1 with slight protuberance. Inner coxal seta in legs 1-3 long and plumose but in leg 4 minute, 5 µm, and smooth. Outer spines on exopod of leg 1 with few prominent spinules, but in legs 2-4 these spines with reduced short spinules. Leg 4 (fig. 22a) with exopod 179 µm long. Endopod with first segment 44 µm long without spiniform processes, 53 µm with these processes, and 34 µm wide, distal inner seta short, 15 µm, and adjacent spiniform process large. Second segment 75 x 31 µm, its 2 very unequal spines 11 µm and smooth and 78 µm and finely barbed. Outer margin of both segments with fine setules.

Leg 5 (fig. 22b) with free segment 107 µm long, 30 µm wide at proximal expansion (this expansion often somewhat angular and cleaver-shaped) and 26 µm wide in slightly broadened distal half of segment. Two terminal setae 65 µm and 70 µm. Dorsal seta 44 µm. Free segment with small outer spinules. Near insertion of free segment, body segment having prominent dorsolateral pointed process. Other free segments in other fifth legs with proximal expansion less angular and more rounded (fig. 22c).

Leg 6 (fig. 20c) represented by 2 setae on genital area.

Colour of living specimens in transmitted light opaque gray, eye red.

Male.— Body (fig. 22d) with prosome less tapered posteriorly than in female. Length 0.93 mm (0.88-1.00 mm) and greatest width 0.38 mm (0.35-0.41 mm), based on 10 specimens. Greatest dorsoventral thickness 0.26 mm. Ratio of length to width of prosome 1.68:1. Ratio of length of prosome to that of urosome 1.45:1.

Segment bearing leg 5 (fig. 22e) 36 x 109 µm. Genital segment quadrate, 226 x 226 µm, in dorsal view with gently rounded lateral margins. Four postgenital segments from anterior to posterior 26 x 66, 29 x 65, 19 x 65, and 24 x 63 µm.

Caudal ramus resembling that of female but smaller, 18 x 27 µm, ratio 1:1.5.

Surface of body unornamented as in female.

Rostrum like that of female. First antenna resembling that of female, but 3 aes-

thetes added (at points indicated by dots in fig. 20f). Second antenna (fig. 22f) like that of female, but small spinules added on inner margins of segments 1, 2, and 4.

Labrum, mandible, paragnath, first maxilla, and second maxilla like those of female. Maxilliped (fig. 22g) resembling in major respects that of *C. foxi*, but spinules on inner margin of second segment beyond 2 setae much longer than in that species. Claw 187 μm.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 as in female, but sexual dimorphism in third segment of endopod of leg 1 (fig. 23a), with formula I,I,4 and having 2 very unequal spiniform processes, outer larger process recurved.

Leg 5 (fig. 23b) with slender free segment 47 x 13 μm, without proximal inner expansion, and ornamented with few minute outer spinules. Two terminal setae 29 μm and 70 μm. Dorsal seta 33 μm.

Leg 6 (fig. 23c) with 2 smooth setae 40 μm and 65 μm.

Spermatophore (fig. 23d), attached to female, 192 x 94 μm, not including neck.

Colour of living specimens as in female.

Etymology.— The specific name is the genitive form of the generic name of the host.

Remarks.— In the genus *Critomolgus* 12 species have the free segment of leg 5 in the female without a proximal inner expansion. Of those species with such an expansion, 12 have the first segment of the endopod of leg 4 with a relatively long, usually feathered seta. Thus, 24 congeners may be quickly differentiated from *C. cladiellae*. In the inadequately described *C. buddhensis* (Thompson & A. Scott, 1903) the genital segment in the female has a very different shape from that of the new species. This leaves only *C. foxi* to be compared with the new species. It is apparent that *C. foxi* and *C. cladiellae* are closely related. The salient differences between them may be indicated as follows:

C. foxi, - female: caudal ramus 43 x 37 μm; anterior half of genital segment with lateral margins smooth; free segment of leg 5 with distal half slender, 15 μm wide; - male: caudal ramus 26 x 24 μm; genital segment 211 x 172 μm, longer than wide; second segment of maxilliped with spinules on inner margin distal to 2 setae not ususually long.

C. cladiellae, - female: caudal ramus 30 x 34 μm; anterior half of genital segment with lateral margins having pair of lateral bulges; free segment of leg 5 slightly broadened, 26 μm wide in distal half; - male: caudal ramus 18 x 27 μm; genital segment 226 x 226 μm, quadrate; second segment of maxilliped with spinules on inner margin long and prominent.

On many specimens of *Critomolgus cladiellae* an epibiotic suctorian protozoan (fig. 23e), probably *Ophyrodendron* spec. (as reported on *Doridicola singularipes* by Humes & Ho, 1968c: 689, fig.187), was attached to various parts of the body, particularly on the dorsal and lateral surfaces. Attachment sites included the first and second antennae, cephalosome, metasomal segments, exopods of legs 3 and 4, leg 5, genital segment, postgenital segments, and caudal ramus and its two long median terminal setae. The incidence of this suctorian on 88 male copepods (52%) was much greater than on 35 females (9%). The number of suctorians per male was 4.55 (range 1-22) and per female 2.67 (1-5). The explanation for this apparent preference for male copepods is not known.

Critomolgus foxi (Gurney, 1927)

Lichomolgus foxi Gurney, 1927: 468, fig.113; Humes & Ho, 1968c: 655, figs. 67-88.
Doridicola foxi; Humes & Stock, 1973: 174.
Critomolgus foxi; Humes & Stock, 1983: 95.

Hosts.— *Cladiella krempfi* Hickson: Nosy Bé, Madagascar (Humes & Ho, 1968c). *Cladiella laciniosa* (Tixier-Durivault): Region of Nosy Bé, Madagascar (Humes & Ho, 1968c; Humes & Stock, 1973). *Cladiella pachyclados* (Klunzinger): Region of Nosy Bé, Madagascar (Humes & Ho,1968c). New records: 3 ♀♀, 1 ♂, in 2 m, west of Ile To N'du, near Noumea, New Caledonia, 22°10'42"S, 166°16'30"E, 24.vii.1971; 1 ♀, in 0.5 m, Ile aux Serpents, near Noumea, 22°26'52"S, 166°25'12"E, 19.vii.1971; 5 ♀♀, in 10 m, southwestern shore of Goenoeng Api, Banda Islands, Moluccas, 04°31'45"S, 129°51'55"E, 28.iv.1975. *Cladiella latissima* (Tixier-Durivault): Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Cladiella sphaerophora* (Ehrenberg): Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Cladiella humesi* Verseveldt (new host): 13 ♀♀, 13 ♂♂, in 2 m, west of Ile Mando, near Noumea, New Caledonia, 22°18'59"S, 166°09'30"E, 26.vi.1971 (RMNH F 832).

Critomolgus orectopus spec. nov.
(figs.24a-h, 25a-i, 26a-h, 27a-g)

Type material.— 332 ♀♀, 259 ♂♂, from *Cladiella pachyclados* (Klunzinger), in 1 m, west of Ile To N'du, near Noumea, New Caledonia, 22°10'42"S, 166°16'30"E, 29.vi.1971. Holotype ♀ (RMNH F 833), allotype ♂ (RMNH F 834), and 581 paratypes (327 ♀♀, 254 ♂♂) (RMNH F 835).
Other specimens.— From *Cladiella pachyclados*: 88 ♀♀, 77 ♂♂, in 1 m, west of Ile To N'du, near Noumea, New Caledonia, 22°10'42"S, 166°16'30"E, 29.vi.1971 (USNM 239178); 8 ♀♀, in 2 m, north of Pte. Pontillion, near Noumea, 22°18'18"S, 166°25'53"E, 28.vi.1971; 61 ♀♀, 10 ♂♂, in 1 m, Ile aux Serpents, west of Pte. Denouel, near Noumea, 22°16'52"S, 166°25'12"E, 19.vii.1971; 42 ♀♀, 27 ♂♂, in 0.5 m, same locality and date (RMNH F 836). From *Lobophytum pauciflorum* (Ehrenberg): 1 ♀, in 0.5 m, Ile To N'du, near Noumea, 22°10'42"S, 166°16'30"E, 29.vi.1971; 3 ♀♀, 2 ♂♂, in 1 m, west of Ile Mando, near Noumea, 22°18'59"S, 166°09'30"E, 5.vii.1971.

Female.— Body (fig. 24a) flattened with moderately broad prosome. Length 0.77 mm (0.75-0.79 mm) and greatest width 0.39 mm (0.36-0.41 mm), based on 10 specimens. Greatest dorsoventral thickness 0.19 mm. Epimera of segment bearing leg 1 pointed, those of segments bearing legs 2-4 rounded. Segment bearing leg 1 demarcated dorsally from head by distinct transverse furrow. Ratio of length to width of prosome 1.34:1. Ratio of length of prosome to that of urosome 2.25:1.

Segment bearing leg 5 (fig. 24b) 55 x 114 µm, with prominent slightly bilobed dorsolateral flaps over leg 5. Genital segment 83 x 108 µm, wider than long, with pair of rounded lobes dorsolaterally just posterior to expanded middle of segment connected dorsally by 2 transverse bars. Genital areas located laterally at middle of segment. Each area (fig. 24c) with 2 small setae 7 µm long. Three postgenital segments from anterior to posterior 21 x 57, 21 x 55, and 26 x 55 µm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 24d) 18 x 21 µm, slightly wider than long, ratio 1:1.17. Outer lateral seta 31 µm, dorsal seta 27 µm, outermost terminal seta 52 µm, all smooth.

Innermost terminal seta 96 μm and lightly haired. Two long median terminal setae 220 μm (outer) and 350 μm (inner), both with lateral setules.

Entire egg sac not seen, but fragments with eggs 47-52 μm in diameter.

Surface of body without ornamentation except for few refractile points on ventral surface of rostrum.

Rostrum (fig. 24e) broadly rounded posteroventrally. First antenna (fig. 24f) 352 μm long. Lengths of its 7 segments: 44 (60 μm along anterior margin), 136, 21, 55, 39, 26, and 25 μm, respectively. Second segment relatively longer than in congeners, and in many specimens (undissected) with posterior margin shallowly indented (fig. 24g). Formula for armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 24h) 198 μm long without claws. Formula for armature: 1, 1, 3, and 5 + 2 unequal claws. Fourth segment 70 μm along outer side, 49 μm along inner side, and 16 μm wide. Stout claw 36 μm, slender claw 30 μm.

Labrum (fig. 25a) with 2 linguiform lobes. Mandible (fig. 25b) with scalelike area not protruding. Paragnath (fig. 25a) and first maxilla (fig. 25c) like those of *Critomolgus antennulus*. Second maxilla (fig. 25d) with teeth on lash more slender and longer than in *C. antennulus*. Maxilliped (fig. 25e) with terminal spines shorter than in that species.

Ventral area between maxillipeds and first pair of legs (fig. 25f) not protuberant.

Legs 1-4 (figs. 25a-i,26a) segmented and armed as in congeners. Outer posterior area of coxa with small rounded protuberance. Inner coxal seta in legs 1-3 long and plumose but in leg 4 minute, 5 μm long. Leg 4 (fig. 26a) with exopod 81 μm long. Endopod with first segment 20 x 11 μm, its relatively short inner distal slightly feathered seta 19 μm. Second segment 34 x 9 μm, its 2 terminal spines 26 μm and 14 μm. Outer margin of both segments with delicate setules.

Leg 5 (fig. 26b) with unornamented free segment 29 x 16 μm (least width 12 μm), having proximal inner expansion variable in size (compare figs. 26c and 26d). Two terminal setae 39 μm and 49 μm. Dorsal seta 42 μm. All setae smooth.

Leg 6 represented by 2 setae on genital area (fig. 24c).

Colour of living specimens in transmitted light opaque gray, eye red.

Male.— Body (fig 26e) with prosome resembling that of female. Length 0.65 mm (0.56-0.67 mm) and greatest width 0.27 mm (0.25-0.29 mm), based on 10 specimens. Greatest dorsoventral thickness 0.14 mm. Ratio of length to width of prosome 1.53:1. Ratio of length of prosome to that of urosome 1.58:1.

Segment bearing leg 5 (fig. 26f) 26 x 75 μm. Genital segment 151 x 146 μm, in dorsal view its lateral margins only slightly convex. Four postgenital segments from anterior to posterior 18 x 43, 18 x 43, 13 x 44, and 21 x 48 μm.

Caudal ramus like that of female but smaller, 15.5 x 20 μm, ratio 1:1.29.

Surface of body generally unornamented as in female.

Rostrum like that of female. First antenna similar to that of female, but 3 aesthetes added (at points indicated by dots in fig. 24f). Second antenna (fig. 26g) resembling that of female, but with minute spinules along inner margin of second segment. Fourth segment with proportions slightly different from those of female, length along outer side 60 μm, along inner side 49 μm, and width at middle 13 μm.

Labrum, mandible, paragnath, first maxilla, and second maxilla as in female. Maxilliped (fig. 26h) resembling that of *Critomolgus cladiellae*, but second segment

much more slender proximally than distally. Claw 125 µm.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 as in female, but sexual dimorphism in third segment of endopod of leg 1 (fig. 27a,b) with formula I,I,4. Two spines separated by prominent long slender spiniform process.

Leg 5 (fig. 27c) with unornamented free segment 18 x 9 µm, its setae 26 µm and 34 µm. Dorsal seta 25 µm.

Leg 6 (fig. 27d) with 2 setae approximately 25 µm long.

Spermatophore (fig. 27e) unusual in having bulbous distal end. Length 130 µm (not including neck), width at bulbous part 60 µm, width more proximally 47 µm. Attached to genital segment of female just anterior to 2 transverse bars, often in a pair (fig. 27f), or rarely with 2 pairs (fig. 27g).

Colour of living specimens as in female.

Etymology.— The specific name *orectopus*, from Greek *orektos* meaning held out or stretched out and *pous* meaning foot, alludes to the outwardly directed leg 5 in the female.

Remarks.— As in *Critomolgus antennulus*, the small size of *Critomolgus orectopus* is distinctive. The new species may be distinguished in a similar manner from its congeners. However, *C. antennulus* and *C. orectopus* show certain similar features in addition to their small size, such as the unornamented free segment of leg 5 and similar dimorphism in the second antenna. In view of this, the two may be regarded as sister species.

The chief differences between *C. antennulus* and *C. orectopus* may be summarized as follows:

C. antennulus - female: orientation of leg 5 posterolateral; segment bearing leg 5 without dorsolateral processes; position of genital area dorsolateral; second segment of first antenna 25% of antennal length, posterior margin not indented; fourth segment of second antenna short, stout; - male: second segment of maxilliped with proximal half not more slender than distal half and bearing long spinules; spermatophore teardrop-shaped.

C. orectopus - female: leg 5 held out at angle to body; segment bearing leg 5 with pair of prominent dorsolateral processes; position of genital area lateral; caudal ramus wider than long, 18 x 21 µm; second segment of first antenna 39 % of antennal length, posterior margin often indented; fourth segment of second antenna elongate, slender; - male: proximal half of second segment of maxilliped distinctly more slender than distal half and bearing short spinules; spermatophore with bulbous distal end.

No protozoans were attached to specimens of *Critomolgus orectopus*, although both *C. orectopus* and *C. cladiellae* were associated with the same species of alcyonacean.

Genus *Doridicola* Leydig, 1853: key to species (based on females)

1. Claws on second antenna elongate, more than 100 µm long equal to or longer than fourth segment 2
- Claws on second antenna shorter than fourth segment 4

2. Free segment of leg 5 with spinules on both outer and inner sides; caudal ramus 3.58:1 ..... *D. capnellae*
- Free segment of leg 5 with spinules only on outer side; caudal ramus less than 3:1 3
3. Caudal ramus 2.55:1; free segment of leg 5 with inner proximal expansion having distally directed thornlike process ..... *D. lumarius*
- Caudal ramus 2.08:1; free segment of leg 5 having rounded proximal expansion ..... *D. aculeatus*
4. Length of body more than 1.75 mm 5
- Length of body less than 1.75 mm 6
5. Free segment of leg 5 424 x 95 µm, reaching to posterior end of genital segment ... . *D. praelongipes*
- Free segment of leg 5 297 x 78 µm, not reaching posterior end of genital segment ..... *D. comparatus*
6. Caudal ramus elongate, ratio greater than 3:1 7
- Caudal ramus short, ratio less than 3:1 9
7. Free segment of leg 5 large oval leaflike unornamented; second segment of seond antenna with additional disto-inner seta ..... *D. petalopus*
- Free segment of leg 5 elongate, outer side with spinules; second segment of second antenna without additional seta 8
8. Caudal ramus 169 x 35 µm, ratio 4.83:1; endopod of leg 4 distinctly shorter than exopod ..... *D. cincinnatus*
- Caudal ramus 126 x 38 µm, ratio 3.32:1; endopod of leg 4 equal in length to exopod ..... *D. spinulifer*
9. Free segment of leg 5 with prominent inner beaklike process ..... *D. rostripes*
- Free segment of leg 5 without such process 10
10. Free segment of leg 5 minute, less than 30 µm long 11
- Free segment of leg 5 longer, up to 96 µm long 12
11. Caudal ramus 22 x 23 µm, slightly wider than long ..... *D. hetaericus*
- Caudal ramus 73 x 47 µm, ratio 1.55:1 ..... *D. senticauda*
12. Caudal ramus with ratio 1.52:1 or greater 13
- Caudal ramus quadrate or subquadrate 14
13 Body length 1.59 mm (1.50-1.73 mm); caudal ramus with ratio 2.63:1 *D. mimicus*
- Body length 1.01 mm (0.87-1.08 mm);caudal ramus with ratio 1.52:1 *D. vulcanius*
14. Genital segment very broad, 151 x 324 µm; caudal ramus wider than long, 36 x 42 µm ..... *D. patulus*
- Genital segment longer than wide; caudal ramus quadrate or slightly longer than wide 15
15. Free segment of leg 5 elongate, slender, 75 x 25 µm, with very few minute spinules; caudal ramus slightly longer than wide 28 x 25 µm ..... *D. antheliae*
- Free segment of leg 5 broad, 81 x 34 µm, with many scalelike spines; caudal ramus quadrate, 24 x 25 µm ..... *D. singularipes*

Doridicola aculeatus (Humes & Ho, 1968)

Lichomolgus aculeatus Humes & Ho, 1968a: 20, figs. 97-113.

Metaxymolgus aculeatus; Humes & Stock, 1973: 222.
Doridicola aculeatus; Humes & Stock, 1983: 94.

Hosts.— *Nephthea aberrans* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Ho, 1968a). *Nephthea sphaerophora* Kükenthal: Nosy Bé, Madagascar (Humes & Ho, 1968a); Poelau Parang, Ceram, Moluccas (Humes, 1980). *Nephthea crassa* Kükenthal: Region of Nosy Bé, Madagascar (Humes & Ho, 1968a). *Nephthea tixierae* VerseveldtL: Nosy Ovy, Iles Radama, south of Nosy Bé, Madagascar (Humes & Ho, 1968a). *Nephthea amentacea* Studer: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Nephthea bumasta* Verseveldt: Nosy Bé, Madagascar (Humes & Stock, 1973). *Nephthea filamentosa* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Nephthea galbuloides* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973; Amboina, Moluccas (Humes, 1980). *Nephthea lanternaria* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Nephthea chabrolii* Audouin: Enewetak Atoll, Marshall Islands (Humes, 1979); Poelau Marsegoe, Ceram, Moluccas (Humes, 1980). *Nephthea cupressiformis* Kükenthal: Karang Mie, eastern Halmahera, Moluccas (Humes, 1980). *Nephthea albida* (Holm): Poelau Gomumu, south of Obi, Moluccas (Humes, 1980). *Stereonephthea nosybearia* Verseveldt: Nosy Bé, Madagascar (Humes & Stock, 1973). *Stereonephthya scaphis* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Stereonephthya inordinata* (Tixier-Durivault): Near Noumea, New Caledonia (Humes & Stock, 1973). *Litophyton acutifolium* Kükenthal: Goenoeng Api, Banda Islands, Moluccas (Humes & Dojiri, 1979b). *Litophyton arboreum* (Forskål): Region of Nosy Bé, Madagascar (Humes & Ho, 1968a). *Litophyton stuhlmanni* (May): Poelau Gomumu, south of Obi, Moluccas (Humes, 1980).

Doridicola antheliae (Humes & Stock, 1973)

Metaxymolgus antheliae Humes & Stock, 1973: 222, figs. 124-126.
Doridicola antheliae; Humes & Stock, 1983: 94.

Hosts.— *Anthelia glauca* Lamarck: Nosy Bé, Madagascar (Humes & Stock, 1973). New record: 7 ♀♀, 11 ♂♂, in 8 m, Nosy Ovy, Iles Radama, south of Nosy Bé, Madagascar, 13°59'S, 47°46.5'E, 30.ix.1964. *Anthelia ternatana* (Schenk): Region of Nosy Bé, Madagascar (Humes & Stock, 1973).

Doridicola capnellae spec. nov.
(figs. 28a-i, 29a-h, 30a-f)

Type material.— 7 ♀♀, 2 ♂♂, from 1 small colony of *Capnella imbricata* Quoy & Gaimard, in 10 m, southwestern shore of Goenoeng Api, Banda Islands, Moluccas, 04°31'45"S, 129°51'55"E, 25.iv.1975. Holotype ♀ (RMNH F 837), allotype ♂ (RMNH F 838), and 5 paratype ♀♀ (RMNH F 839).

Female.— Body (fig. 28a) with moderately broad prosome. Length 1.11 mm (1.06-1.16 mm) and greatest width 0.49 mm (0.46-0.53 mm), based on 7 specimens. Greatest dorsoventral thickness 0.35 mm. Segment bearing leg 1 separated from head by transverse dorsal furrow. Ratio of length to width of prosome 1.50:1. Ratio of

length of prosome to that of urosome 1.89:1.

Segment bearing leg 5 (fig. 28b) 75 x 148 μm. Genital segment 114 x 143 μm, wider than long, in dorsal view with posterior fourth indented. Genital areas situated dorsolaterally just forward of middle of segment. Each area (fig. 28c) with 2 small setae approximately 7 μm. Three postgenital segments from anterior to posterior 44 x 86, 31 x 75, and 34 x 77 μm. Posteroventral border of anal segment with row of minute spinules near insertion of caudal rami.

Caudal ramus (fig. 28d) elongate, 143 x 40 μm, ratio 3.58:1 (width taken at middle), slightly wider distally than proximally. Outer lateral seta 109 μm, dorsal seta 65 μm, both smooth. Outermost terminal seta 130 μm, innermost terminal seta 150 μm, and 2 long median terminal setae 210 μm (outer) and 286 μm (inner), all 4 terminal setae with lateral setules, those on 2 median setae strong and widely spaced.

Egg sac not seen.

Dorsal surface of body lacking visible ornamentation, except for minute points on rostrum.

Rostrum (fig. 28e) broadly rounded posteroventrally. First antenna (fig. 28f) 385 μm long. Lengths of its 7 segments: 36 (52 μm along anterior margin), 99, 29, 69, 62, 39, and 26 μm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 28g) 255 μm long not including claws, 4-segmented. Armature: 1, 1, 3, and 2 long claws + 4 setae. Second segment robust with small spinules along outer margin. Fourth segment 109 μm along outer side, 73 μm along inner side, and 29 μm wide at midregion. One claw (105 μm long) slightly stouter than other claw (112 μm).

Labrum with 2 broad rounded lobes as in *Doridicola petalopus* (see below). Mandible (fig. 28h), paragnath, first maxilla (fig. 28i), and second maxilla (fig. 29a) resembling in major respects those of congeners. Maxilliped (fig. 29b) with 2 setae on second segment very unequal in length, longer seta unilaterally pectinate along midregion; third segment with 2 minutely barbed spiniform setae and 1 small slender smooth seta.

Ventral area between maxillipeds and first pair of legs (fig. 29c) very slightly protuberant.

Legs 1-4 (fig. 29d-g) segmented and armed as in congeners. Inner seta on coxa in legs 1-3 long and plumose, but in leg 4 this seta short, 18 μm, and very weakly feathered. Outer margin of coxa of leg 1 protruded. Proximalmost spine on third segment of exopod of leg 1 distinctly shorter than other exopod spines. Leg 4 with exopod 143 μm long. Endopod with first segment 36 μm long without terminal process, 43 μm with process, 31 μm wide, its distal inner plumose seta 65 μm. Second segment 91 μm long with process, 23.5 μm in greatest width, 15.5 μm in least width, its 2 terminal barbed spines 21 μm and 59 μm. Both segments with short outer spinules.

Leg 5 (fig. 29h) with broad free segment 73 x 37 μm, ratio 1.97:1, having straight outer margin but expanded inner margin, both margins with minute spinules. Two terminal setae 50 μm and 65 μm. Dorsal seta 52 μm. All setae smooth.

Leg 6 represented by 2 minute setae on genital area (fig. 28c).

Colour of living specimens in transmitted light opaque gray, eye red.

Male.— Body (fig. 30a) more slender than in female. Length 0.86 mm (0.84-0.88 mm) and greatest width 0.29 mm (0.27-0.30 mm), based on 2 specimens. Greatest

dorsoventral thickness 0.23 mm. Ratio of length to width of prosome 1.58:1. Ratio of length of prosome to that of urosome 1.26:1.

Segment bearing leg 5 (fig. 30b) 47 x 83 µm. Genital segment 177 x 166 µm. Four postgenital segments from anterior to posterior 26 x 55, 26 x 54, 16 x 52, and 18 x 53 µm.

Caudal ramus (fig. 30b) 83 x 29 µm, resembling that of female in shape and armature.

Body surface unornamented.

Rostrum like that of female. First antenna similar to that of female but usual 3 aesthetes added (at locations indicated by dots in fig. 28f). Second antenna (fig. 30c) resembling that of female but first segment with few small spinules near insertion of seta, second segment with inner pectinate fringe of spinules, and third segment with 1 small spinule on inner margin.

Labrum, mandible, paragnath, first maxilla, and second maxilla like those of female. Maxilliped (fig. 30d) segmented and armed as in congeners. Claw 172 µm.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female, but endopod of leg 1 (fig. 30e) geniculate, third segment with I,I,4, outer spine 42 µm, inner spine 26 µm.

Leg 5 (fig. 30f) with free segment more slender than in female, 34 x 12.5 µm, ratio 1.72:1, with inner and outer small spinules. Two very unequal terminal setae 42 µm and 10.5 µm. Dorsal seta 31 µm.

Leg 6 with 2 small setae approximately 25 µm long.

Spermatophore not seen.

Colour as in female.

Etymology.— The specific name *capnellae* is formed from the generic name of the host.

Remarks.— *Doridicola capnellae* may be recognized by the nature of the broad free segment of leg 5 in the female, with small spinules on both outer and inner sides. Only one other species in the genus, *D. cinctus* (Humes & Stock, 1973), is similarly ornamented. This species, from the gorgonacean *Psammogorgia ramosa* Kükenthal in Madagascar, differs from the new species in several ways: the medially constricted genital segment of the female, the short claws on the second antenna, and the short caudal ramus in the female (39 x 31 µm). In having a geniculate endopod in leg 1 of the male, the new species resembles *D. aculeatus* and *D. mimicus* (Humes, 1975). In these two species, however, the size and shape of the free segment of the female leg 5 and the form of the female genital segment are very different from *D. capnellae.*

Doridicola cincinnatus (Humes, 1975)

Metaxymolgus cincinnatus Humes, 1975: 16, figs. 8-11.
Doridicola cincinnatus; Humes & Stock, 1983: 94.

Hosts.— *Cladiella pachyclados* (Klunzinger): Near Noumea, New Caledonia (Humes, 1975). *Cladiella humesi* Verseveldt (new host): 5 ♀ ♀, 7 ♂ ♂, in 3 m, west of Ile Mando, near Noumea, New Caledonia, 22°18'59"S, 166°09'30"E, 26.vi.1971. *Cladiella rotundata* Tixier-Durivault (new host): 53 ♀ ♀ 48 ♂ ♂ intertidal, on algal ridge, 5 km

south of Yaté, southeastern New Caledonia, 22°11'00"S, 166°59'00"E, 23.vi.1971 (RMNH F 840). *Cladiella similis* Tixier-Durivault (new host): 1 ♂ in 2 m, west of Ile Ngou, near Noumea, 22°13'44"S, 166°23'01"E, 29.vii.1971. *Cladiella sphaerophora* (Ehrenberg) (new host): 11 ♀♀ 16 ♂♂ in 20 cm, Poe, near Bourail, northwest of Noumea, 21°40'00"S, 165°27'00"E, 4.viii.1971 (RMNH F 907).

Doridicola comparatus (Humes, 1975)

Metaxymolgus comparatus Humes, 1975: 11, figs. 6-8.
Doridicola comparatus; Humes & Stock, 1983: 94.

Host.— *Xenia membranacea* Schenk: Near Yaté, southeastern New Caledonia (Humes, 1975). In fig. 7c accompanying the original description of this species, the drawing represents the maxilliped, not the second maxilla as inadvertently indicated.

Doridicola hetaericus (Humes & Ho, 1968)

Lichomolgus hetaericus Humes & Ho, 1968c: 663, figs. 89-106.
Metaxymolgus hetaericus; Humes & Stock, 1973: 241.
Doridicola hetaericus; Humes & Stock, 1983: 94.

Hosts.— *Cladiella pachyclados* (Klunzinger): Region of Nosy Bé, Madagascar (Humes & Ho, 1968c). *Cladiella krempfi* Hickson: Nosy Bé, Madagascar (Humes & Ho, 1968c). *Cladiella laciniosa* (Tixier-Durivault): Nosy Bé, Madagascar (Humes & Stock, 1973).

Doridicola lumarius (Humes, 1980)

Metaxymolgus lumarius Humes, 1980: 66, figs. 94-114.
Doridicola lumarius; Humes & Stock, 1983: 94.

Hosts.— *Nephthea galbuloides* Verseveldt: Amboina, Moluccas (Humes, 1980). *Nephthea cupressiformis* Kükenthal: Karang Mie, eastern Halmahera, Moluccas (Humes, 1980).

Doridicola mimicus (Humes, 1975)

Metaxymolgus mimicus Humes, 1975: 21, figs. 11-13.
Doridicola mimicus; Humes & Stock, 1983: 94.

Host.— *Cladiella pachyclados* (Klunzinger): Near Noumea, New Caledonia (Humes, 1975).

Doridicola patulus (Humes, 1959)

Lichomolgus patulus Humes, 1959: 298, figs. 65-96.
Metaxymolgus patulus; Humes & Stock, 1973: 247.
Doridicola patulus; Humes & Stock, 1983: 94.

Host.— *Sinularia mayi* Lüttschwager: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). The presence of this copepod on two colonies of the alcyonacean host is perhaps accidental; it was found in Madagascar in larger numbers on the nudibranch *Phyllidea trilineata* Cuvier by Humes (1959).

Doridicola petalopus spec. nov.
(figs. 31a-i, 32a-i, 33a-g)

Type material.— 30 ♀♀, 37 ♂♂, from 13 colonies of *?Xenia* spec., in 3 m, Poelau Marsegoe, Moluccas, 02°59'30"S, 128°03'30"E, 15.v.1975. Holotype ♀ (RMNH F 841), allotype ♂ (RMNH F 842), and 61 paratypes (26 ♀♀, 35 ♂♂) (RMNH F 843).
Other specimens.— 15 ♀♀, 9 ♂♂, from 7 colonies of *?Xenia* spec., in 3 m, Poelau Gomumu, Moluccas, 01°50'00"S, 127°30'54"E, 30.v.1975 (USNM 239179); 2 ♀♀, 6 ♂♂, from 4 colonies of *?Xenia* spec., same locality and date; 1 ♀, 3 ♂♂, from 9 colonies of *Heteroxenia* spec., in 0.5 m, on reef south of Yaté, south-eastern New Caledonia, 22°11'S, 166°59'E, 23.vi.1971.

Female.— Body (fig. 31a) with moderately broad prosome rounded anteriorly. Length 1.51 mm (1.41-1.60 mm) and greatest width 0.52 mm (0.48-0.57 mm), based on 10 specimens. Greatest dorsoventral thickness 0.25 mm. Segment bearing leg 1 separated from head by dorsal transverse furrow. Ratio of length to width of prosome 1.65:1. Ratio of length of prosome to that of urosome 1.39:1.

Segment bearing leg 5 (fig. 31b) 78 x 169 µm. Genital segment subrectangular, 177 x 153 µm, longer than wide, in dorsal view with lateral margins slightly indented between anterior and middle thirds of segment. Genital areas located just anterior to middle of segment. Each area (fig. 31c) with 2 extremely small setae about 4 µm long. Three postgenital segments from anterior to posterior 86 x 109, 55 x 94, and 135 x 107µm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 31d) elongate, 148 x 42 µm, ratio 3.52:1. Outer lateral seta 39 µm, dorsal seta 22 µm. outermost terminal seta 50 µm, innermost terminal seta 40 µm, and 2 median terminal setae, slightly stouter than other setae, 78 µm (outer) and 90 µm (inner). All setae smooth.

Dorsal surface of body with almost no discernible ornamentation except for pair of small sensilla on anal segment.

Egg sac (fig. 31e) elongate oval, 430 x 232 µm, eggs 83-90 µm in diameter.

Rostrum (fig. 31f) incomplete posteroventrally. First antenna (fig. 31g) 418 µm long. Lengths of its 7 segments: 40 (91 µm along anterior margin), 125, 39, 60, 70, 44, and 10 µm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 31h) robust, 252 µm long including claws, 4-segmented, formula 1, 1, 3, and 2 claws + few minute setae. Second segment robust and bearing in addition to usual inner seta prominent disto-inner recurved seta. Third segment very

short, 7 μm. Fourth segment 42 μm along outer side, 21 μm along inner side, and 30 μm in greatest width. Both terminal claws approximately 36 μm.

Labrum (fig. 31i) with 2 broad posteroventral lobes. Mandible (fig. 32a) resembling that of congeners, for example, *Doridicola praelongipes* (Humes, 1975). Paragnath small lobe with minute spinules (fig. 31i). First maxilla (fig. 32b) having small inner process and 3 terminal naked setae, one stouter than other 2. Second maxilla (fig. 32c) similar to that of congeners; 2 minute spiniform processes near small seta on its proximal outer surface. Maxilliped (fig. 32d) with 2 unequal setae on second segment; third segment with 1 spiniform seta, 1 slender seta, and having nipple-shaped tip with minute marginal barbules; small rounded lobe near insertion of larger seta.

Ventral area between maxillipeds and first pair of legs (fig. 32e) not protuberant.

Legs 1-4 (fig. 32f-i) segmented and armed as in congeners. Postero-outer corner of coxa of leg 1 with small lobe. Inner coxal seta on legs 1-4 recurved posteriorly. Outer seta on basis of all 4 legs unusually small and inconspicuous. Leg 4 with exopod 148 μm long. Endopod with first segment 39 μm long without process, 43 μm with process, and 34 μm wide, its distal inner plumose seta 29 μm. Second segment 96 μm without processes, 108 μm long with processes, 29 μm wide proximally, 21 μm wide distally, its 2 terminal barbed spines 32 μm and 49 μm. Both segments with small outer spinules.

Leg 5 (fig. 33a) with large oval leaflike unornamented free segment 148 x 99 μm, its 2 small terminal setae 36 μm and 29 μm. Dorsal seta 39 μm. All setae smooth.

Leg 6 represented by 2 minute setae on genital area (fig. 31c).

Colour of living specimens in transmitted light opaque gray, eye red, egg sacs gray.

Male.— Body (fig. 33b) slender. Length 1.31 mm (1.20-1.36 mm) and greatest width 0.40 mm (0.37-0.43 mm), based on 10 specimens. Greatest dorsoventral thickness 0.23 mm. Ratio of length to width of prosome 1.87:1. Ratio of length of prosome to that of urosome 1.15:1.

Segment bearing leg 5 (fig. 33c) 42 x 122 μm. Genital segment 244 x 226 μm, slightly longer than wide. Four postgenital segments from anterior to posterior 47 x 80, 48 x 74, 32 x 68, and 95 x 83 μm.

Caudal ramus (fig. 33c) 117 x 31 μm, ratio 3.77:1. Setae relatively little longer than in female, longest seta 107 μm. Otherwise resembling that of female.

Body surface unornamented.

Rostrum like that of female. First antenna similar to that of female, but 3 aesthetes added (at locations shown by dots in fig. 31g. Second antenna, labrum, mandible, paragnath, first maxilla, and second maxilla like those of female. Maxilliped (fig. 33d) segmented as in congeners. Second segment with 2 setae and row of spinules. Claw 211 μm long including terminal lamella and bearing 2 proximal unequal setae, larger seta showing break in sclerotization midway and its tip slightly expanded and hyaline.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female, except endopod of leg 1 (fig. 33e) with third segment having I,I,4, outer spine 23 μm, inner spine 34 μm, more slender and somewhat setiform. Endopod of leg 4 as in female.

Leg 5 (fig. 33f) with small unornamented free segment 21 x 13 μm, its 2 setae 19 μm and 26 μm. All setae smooth.

Leg 6 (fig. 33g) with 2 small setae, both approximately 18 µm.

Spermatophore not seen.

Colour as in female.

Etymology.— The specific name *petalopus* is a combination of the Greek words *petalon* meaning leaf and *pous* meaning a foot, alluding to the leaflike free segment of leg 5 in the female.

Remarks.— *Doridicola petalopus* may be distinguished from all congeners by two features: (1) the large oval unornamented leaflike free segment of leg 5 in the female, and (2) the supernumerary distal seta on the second segment of the second antenna.

Doridicola praelongipes (Humes, 1975)

Metaxymolgus praelongipes Humes, 1975: 7, figs. 3-6.
Doridicola praelongipes; Humes & Stock, 1983: 94.

Hosts.— *Xenia membranacea* Schenk: Near Yaté, southeastern New Caledonia, 22°11'00"S, 166°59'00"E (Humes, 1975). *Xenia viridis* Schenk (new host): 10 ♀♀, 6 ♂♂, in 3 m, Poelau Marsegoe, Ceram, Moluccas, 02°59'30"S, 128°03'30"E, 15.v.1975; 8 ♀♀, 10 ♂♂, same locality and date (RMNH F 844).

Doridicola rostripes spec. nov.
(figs. 34a-h, 35a-h, 36a-g, 37a-d)

Type material.— 12 ♀♀, 7 ♂♂, from 7 colonies of ?*Xenia* spec., in 3 m, Poelau Gumumu, Moluccas, 01°50'00"S, 127°30'54"E, 30.v.1975. Holotype ♀ (RMNH F 845), allotype ♂ (RMNH F 846), and 14 paratypes (9 ♀♀, 5 ♂♂) (RMNH F 847).
Other specimens.— 4 ♀♀, from 4 colonies of ?*Xenia* spec., type locality, same date; 3 ♀♀, 11 ♂♂, from 15 colonies of ?*Xenia* spec., Poelau Marsegoe, Moluccas, 02°59'30"S, 128°03'30"E, 15.v.1975; 10 ♀♀, 14 ♂♂, from 9 colonies of *Heteroxenia* spec., in 0.5 m, on reef south of Yaté, southeastern New Caledonia, 22°11'S, 166°59'E, 23.vi.1971.

Female.— Body (fig. 34a) with broad flattened prosome. Length 1.50 mm (1.44-1.53 mm) and greatest width 0.85 mm (0.78-0.94 mm), based on 10 specimens. Greatest dorsoventral thickness 0.33 mm. Segment bearing leg 1 separated from head by transverse dorsal furrow. Epimera of segments bearing legs 1-4 rounded. Ratio of length to width of prosome 1.2:1. Ratio of length of prosome to that of urosome 1.97:1.

Segment bearing leg 5 (fig. 34b) 78 x 226 µm. Genital segment 185 x 187 µm, broader with rounded lateral margins in anterior half than posteriorly. Genital areas situated laterally near middle of segment. Each area (fig. 34c) with 2 small setae, both approximately 8 µm. Three postgenital segments from anterior to posterior 70 x 114, 47 x 109, and 94 x 120 µm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 34d) short, 65 x 55 µm, only little longer than wide, ratio 1.18:1. Outer lateral seta 78 µm, dorsal seta approximately 30 µm, outermost terminal seta 90 µm, innermost terminal seta 174 µm, and 2 long median terminal setae 303 µm (outer) and 412 µm (inner). All setae smooth.

Dorsal surface of body without sensilla except for few on anal segment and caudal rami.

Egg sac (fig. 34e) oval, 462 x 297 μm, containing many eggs 94-97 μm in diameter.

Rostrum (fig. 34f) broadly rounded posteroventrally. First antenna (fig. 34g) 490 μm long. Lengths of its 7 segments: 53 (107 μm along anterior margin), 153, 29, 83, 57, 42, and 20 μm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 34h) robust, 330 μm long including claws, 4-segmented, formula for armature 1, 1, 3, and 2 claws + few minute setules. Fourth segment 78 μm along outer side, 49 μm along inner side, and 31 μm wide. Both claws approximately 41 μm.

Labrum (fig. 35a) with 2 linguiform posteroventral lobes. Mandible (fig.35b) resembling that of *Doridicola petalopus*, but scalelike area apparently smooth. Paragnath (fig. 35a) small lobe with few minute spinules. First maxilla (fig. 35c) with 3 long terminal setae and 1 small lateral seta. Second maxilla (fig. 35d) and maxilliped (fig. 35e) resembling in major respects those of congeners.

Ventral area between maxillipeds and first pair of legs (fig. 35f) not protuberant.

Legs 1-4 (figs. 35g,h,36a,b) segmented and armed as in congeners. Postero-outer corner of coxa of leg 1 with small lobe. Outer seta on basis in all 4 legs unusually short. Spine on third segment of endopod of leg 1 57 μm long. Leg 4 with exopod 172 μm long. First segment of endopod 47 μm long without process, 53 μm with process, and 39 μm wide, its inner distal plumose seta 78 μm. Second segment 101 μm without processes, 110 μm with processes, 39 μm in greatest width, 29 μm in least width, its 2 terminal barbed spines 34 μm and 75 μm. Both segments with outer marginal spinules.

Leg 5 (fig. 36c) with free segment 73 x 52 μm in greatest dimensions, outer edge with several small spines, inner edge produced in prominent beaklike process. Two terminal setae 83 μm and 73 μm. Dorsal seta approximately 47 μm. All setae smooth.

Leg 6 represented by 2 minute setae on genital area (fig. 34c).

Colour of living specimens in transmitted light opaque gray, eye red, egg sacs gray.

Male.— Body (fig. 36d) with prosome more slender than in female. Length 1.07 mm (1.00-1.16 mm) and greatest width 0.41 mm (0.39-0.45 mm), based on 7 specimens. Greatest dorsoventral thickness 0.21 mm. Ratio of length of prosome to that of urosome 1.41:1. Ratio of length of prosome to that of urosome 1.32:1.

Segment bearing leg 5 (fig. 36e) 44 x 133 μm. Genital segment 230 x 229 μm, as long as wide. Four postgenital segments from anterior to posterior 36 x 73, 34 x 73, 25 x 70, and 52 x 78 μm.

Caudal ramus (fig. 36e) 40 x 34 μm, ratio 1.18:1, armature as in female.

Body surface as in female.

Rostrum resembling that of female. First antenna like that of female but 3 long aesthetes added at locations indicated by dots in fig. 34g. Second antenna (fig. 36f) with inner surface of first and second segments having peculiar mushroom-shaped structures. Two terminal claws unequal, 34 μm x 26 μm. Otherwise as in female.

Labrum, mandible, paragnath, first maxilla, and second maxilla like those of female. Maxilliped (fig. 36g) segmented as in congeners. Second segment with 2 setae, row of inner surficial spines, and few distal inner marginal spinules. Claw 180

μm including terminal lamella, showing very slight evidence of division midway, and having 2 very unequal proximal setae.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female, except endopod of leg 1 (fig. 37a) with third segment I,I,4, stouter outer spine 29 μm, more slender inner spine 31 μm, both spines minutely barbed. Endopod of leg 4 as in female.

Leg 5 (fig. 37b) with elongate narrow unornamented free segment 34 x 8 μm, its 2 terminal setae 34 μm and 47 μm. Dorsal seta 40 μm. All setae smooth.

Leg 6 (fig. 37c) with 2 setae 34 μm and 39 μm.

Spermatophore (fig. 37d) elongate, oval, 275 x 121 μm, not including neck.

Colour as in female.

Etymology.— The specific name *rostripes*, a combination of Latin *rostrum* meaning beak and *pes* meaning foot, refers to the beaklike process on the free segment of leg 5 in the female.

Remarks.— *Doridicola rostripes* may be distinguished from all congeners by the beaklike process on the free segment of leg 5 in the female and by the peculiar mushroom-shaped structures on the first and second segments of the second antenna of the male..

Doridicola senticauda spec. nov.
(figs. 38a-i, 39a-j, 40a-f)

Type material.— 7 ♀♀, 6 ♂♂, from *Paralemnalia thyrsoides* (Ehrenberg), in 3 m, eastern side of Ile Maître, near Noumea, New Caledonia, 22°20'35"S, 166°25'10"E, 8.vi.1971. Holotype ♀ (RMNH F 848), allotype ♂ (RMNH F 849), and 7 paratypes (3 ♀♀, 4 ♂♂) (RMNH F 850).

Female.— Body (fig. 38a) elongate, prosome thickened dorsoventrally. Length 1.38 mm (1.31-1.47 mm) and greatest width 0.53 mm (0.48-0.62 mm), based on 4 specimens. Greatest dorsoventral thickness 0.47 mm. Segment bearing leg 1 separated from head by dorsal transverse furrow. Epimeral areas of segments bearing legs 1-4 rounded. Ratio of length to width of prosome 1.60:1. Ratio of length of prosome to that of urosome 1.58:1.

Segment bearing leg 5 (fig. 38b) 96 x 263 μm. Genital segment subquadrate, 220 x 231 μm, a little wider than long, with lateral margins in dorsal view nearly parallel. Genital areas located dorsolaterally in anterior half of segment. Each area (fig. 38c) with 2 minute setae. Three postgenital segments from anterior to posterior 99 x 190, 62 x 159, and 65 x 138 μm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 38d) 73 x 47 μm, ratio 1.55:1, terminally with small outwardly directed thornlike process. Outer lateral seta 55 μm, dorsal seta 11 μm, and outermost terminal seta 52 μm, all smooth. Innermost terminal seta 60 μm, 2 median terminal setae 165 μm (outer) and 260 μm (inner), all with lateral setules.

Dorsal surface of body devoid of visible sensilla.

Egg sac (fig. 38e) 319 x 220 μm, containing 5 large eggs 117-133 μm in diameter.

Rostrum (fig. 38f) slightly raised in lateral view, without distinct posteroventral border. First antenna (fig. 38g) 385 μm long. Lengths of its 7 segments: 42 (68 μm along anterior margin), 127, 35, 57, 52, 34, and 26 μm, respectively. Formula for arma-

ture: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 38h) 255 μm long, 4-segmented, robust, formula 1, 1, 3, and 2 claws + 5 prominent setules. Fourth segment 60 μm along outer side, 30 μm along inner side, and 31 μm wide. Terminal recurved claws 39 μm and 34 μm.

Labrum (fig. 38i) with 2 broad rounded posteroventral lobes. Mandible fFig. 39a) with unusually large prominent protruding scalelike area. Beyond scale, series of long setules instead of hyaline serrated fringe seen in many lichomolgids. Lash long. Paragnath (fig. 38i) small lobe with hairlike setules. First maxilla (fig. 39b) with 4 setae, proximalmost very small. Second maxilla (fig. 39c) and maxilliped (fig. 39d) differing only in minor details from those of *Doridicola rostripes* and other congeners.

Ventral area between maxillipeds and first pair of legs (fig. 39e) slightly protuberant. Sclerite in front of intercoxal plate of leg 1 incompletely formed.

Legs 1-4 (fig. 39f-i) segmented and armed as in congeners, except for variation in armature of endopod of leg 4. Spine and setal formula as follows:

P_1	coxa 0-1	basis 1-0	exp I-0;	I-1;III,I,4	enp 0-1; 0-1; I,5
P_2	coxa 0-1	basis 1-0	exp I-0;	I-1; III,I,5	enp 0-1; 0-2; I,II,3
P_3	coxa 0-1	basis 1-0	exp I-0;	I-1; III,I,5	enp 0-1; 0-2; I,II,2
P_4	coxa 0-1	basis 1-0	exp I-0;	I-1; II,I,5	enp 0-0 (or 0-1); II

Postero-outer area of coxa of leg 1 with small lobe. Leg 4 with exopod 135 μm long. Endopod with first segment 31 x 24 μm. (In 2 females this segment of both right and left endopods unarmed. In 1 female right endopod unarmed but left endopod with inner distal seta as in fig. 39j.) Second segment 57 μm long without terminal processes, 62 μm with processes, and 23 μm in greatest width. Two unequal barbed spines 26 μm and 41 μm. Outer margin of both endopod segments with slender setules.

Leg 5 (fig. 40a,b) with small unornamented free segment 17 x 10.5 μm, placed ventrally, bearing 2 setae 34 μm and 57 μm. Adjacent seta 48 μm, arising slightly on ventral surface of body.

Leg 6 represented by 2 minute setae on genital area (fig. 38c).

Colour of living specimens in transmitted light opaque gray, eye red.

Male.— Body (fig. 40c) elongate, prosome widened. Length 1.22 mm (1.10-1.30 mm) and greatest width 0.49 mm (0.47-0.51 mm), based on 3 specimens. Greatest dorsoventral thickness 0.37 mm. Epimeral areas of segments bearing legs 2-4 more prominent than in female. Ratio of length to width of prosome 1.55:1. Ratio of length of prosome to that of urosome 1.66:1.

Segment bearing leg 5 (fig. 40d) 65 x 247 μm. Genital segment 220 x 270 μm, wider than long, tapering posteriorly. Four postgenital segments from anterior to posterior 60 x 130, 60 x 130, 39 x 117, and 44 x 101 μm.

Caudal ramus 52 x 36 μm, ratio 1.44:1, resembling that of female.

Body surface unornamented.

Rostrum like that of female. First antenna similar to that of female but 3 long aesthetes added (at locations indicated by dots in fig. 38g). Second antenna, labrum, mandible, paragnath, first maxilla, and second maxilla as in female. Maxilliped (fig. 40e) segmented as in congeners. Second segment with 2 rows of spinules and 2 inner setae. Claw 203 μm long, not strongly recurved. Larger of 2 proximal setae with obliquely swollen, minutely serrated tip.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female. (In 1 male leg 4 with right endopod armed with 0-1;II, left endopod with 0-0;II.)

Leg 5 (fig. 40f) with minute free segment 12 x 8 μm, bearing setae as in female.

Leg 6 (fig. 40d) with 2 slender setae approximately 39 μm long.

Spermatophore not seen.

Colour as in female.

Etymology.— The specific name *senticauda* is a combination of the Latin words *sentis*, a thorn, and *cauda*, a tail, alluding to the thornlike process on the caudal ramus.

Remarks.— *Doridicola senticauda* may be distinguished from its congeners by several features: (1) the large protruding scalelike area on the mandible, (2) the frequent absence of an inner seta on the first segment of the endopod of leg 4, (3) the minute ventrally placed free segment of leg 5, (4) the terminal thornlike process on the caudal ramus, and (5) the larger of the two proximal setae on the claw of the maxilliped in the male having an obliquely swollen tip.

Doridicola singularipes (Humes & Ho, 1968)

Lichomolgus singularipes Humes & Ho, 1968c: 685, figs. 168-187.
Metaxymolgus singularipes; Humes & Stock, 1973: 247.
Doridicola singularipes; Humes & Stock, 1983: 95.

Hosts.— *Parerythropodium rubiginosum* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Ho, 1968c; Humes & Stock, 1973). *Parerythropodium* spec: Nosy Bé, Madagascar (Humes & Stock, 1973). *Parerythropodium fulvum obtusispiculatum* Verseveldt (new host): 65 ♀♀, 23 ♂♂, in 0.5 m, Antsamantsara, Nosy Bé, Madagascar, 31.x.1960 (RMNH F 911); 49 ♀♀, 12 ♂♂, in 20 cm, Pointe Mahatsinjo, Nosy Bé, 11.viii.1960; 15 ♀♀, 2 ♂♂, in 20 cm, Antsamantsara, Nosy Bé, 6.xi.1960.

Doridicola spinulifer (Humes & Frost, 1964)

Lichomolgus spinulifer Humes & Frost, 1964: 142, figs.134-166; Bouligand, 1966: 269; Humes & Ho, 1968a: 23; Humes, 1970: 160.
Metaxymolgus spinulifer; Humes & Stock, 1973: 247.
Doridicola spinulifer; Humes & Stock, 1983: 95

Hosts.— *Lemnalia* spec.: Nosy Bé, Madagascar (Humes & Frost, 1964). *Lemnalia flava* May: Region of Nosy Bé, Madagascar (Humes & Ho, 1968a; Humes & Stock, 1973). *Lemnalia elegans* (May): Region of Nosy Bé, Madagascar (Humes & Ho, 1968a). *Lemnalia amabilis* Tixier-Durivault: Region of Nosy Bé, Madagascar (Humes & Ho, 1968a). *Lemnalia africana* (May): Region of Nosy Bé, Madagascar (Humes & Ho, 1968a; Humes & Stock, 1973). *Lemnalia digitata* (May): Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Lemnalia cervicornis* (May): Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Lemnalia crassicaulis* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Lemnalia longiramus* Verseveldt: Nosy Bé, Madagascar (Humes & Stock, 1973). *Lemnalia madagascarensis* Verseveldt: Banc des

Frères, Iles Mitsio, northeast of Nosy Bé, Madagascar (Humes & Stock, 1973). *Lemnalia tenuis* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Paralemnalia thyrsoides* (Ehrenberg): Nosy Bé, Madagascar (Humes & Ho, 1968a; Humes & Stock, 1973). near Noumea New Caledonia (Humes, 1975). New records: 30 ♀♀, 29 ♂♂, in 3 m, southwestern shore of Goenoeng Api, Banda Islands, Moluccas, 04°31'55"S, 129°52'12"E, 8.v.1975; 1 ♀, 2 ♂♂, in 3 m, Poelau Gomumu, south of Obi, Moluccas, 01°50'00"S, 127°30'45"E, 30.v.1975; 5 ♀♀, 2 ♂♂, in 10 m, southern shore of Goenoeng Api, Banda Islands, Moluccas, 04°32'05"S, 129°42'30"E, 26.iv.1975. *Paralemnalia clavata* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Sinularia polydactyla* (Ehrenberg): Region of Nosy Bé, Madagascar (Humes & Stock, 1973).

Doridicola vulcanius spec. nov.
(figs. 41a-f, 42a-l, 43a-i)

Type material.— 20 ♀♀, 42 ♂♂, from *Paralemnalia thyrsoides* (Ehrenberg), in 3 m, southwestern shore of Goenoeng Api, Banda Islands, Moluccas, 04°31'55"S, 129°52'12"E, 8.v.1975. Holotype ♀ (RMNH F 853), allotype ♂ (RMNH F 854), and 55 paratypes (15 ♀♀, 40 ♂♂) (RMNH F 855).

Female.— Body (fig. 41a) with broad prosome. Length 1.01 mm (0.87-1.08 mm) and greatest width 0.52 mm (0.47-0.59 mm), based on 10 specimens. Greatest dorsoventral thickness 0.33 mm. Segment bearing leg 1 distinctly separated from head by dorsal transverse furrow. Epimera of segments bearing legs 2-4 rounded with minute crenulations; those of segment bearing leg 1 pointed with similar crenulations. Ratio of length to width of prosome 1.24:1. Ratio of length of prosome to that of urosome 2.02:1.

Segment bearing leg 5 (fig. 41b) 73 x 152 µm. Genital segment 140 x 146 µm, subquadrate, with irregular lateral margins. Genital areas located dorsolaterally near middle of segment. Each area (fig. 41c) with 2 setae approximately 11 µm long. Three postgenital segments from anterior to posterior 34 x 75, 30 x 71, and 39 x 68 µm. Posteroventral margin of anal segment smooth.

Caudal ramus (fig. 41d) short, 47 x 31 µm, ratio 1.52:1. Outer lateral seta 109 µm, dorsal seta 65 µm, and outermost terminal seta 122 µm, all naked. Innermost terminal seta 174 µm, and 2 long median terminal setae 352 µm (outer) and 418 µm (inner), all with lateral setules.

Dorsal surface of body with few sensilla (figs. 41a,b).

Entire egg sac not seen, but fragments with eggs 78-83 µm in diameter.

Rostrum (fig. 41e) with broadly rounded posteroventral margin. First antenna (fig. 41f) 396 µm long. Lengths of its 7 segments: 35 (70 µm along anterior margin), 133, 24, 62, 52, 39, and 25 µm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae naked.

Second antenna (fig. 42a) 236 µm long, 4-segmented, slender. Formula for armature: 1, 1, 3, and 2 claws + 5 setae. Fourth segment 68 µm along outer side, 42 µm along inner side, and 18 µm wide. Two terminal claws 31 µm long but 1 claw stouter than other (fig. 42b).

Labrum (fig. 42c) with 2 broad posteroventral lobes. Mandible (fig. 42d), parag-

nath (fig. 42c), and first maxilla (fig. 42e) similar in major respects to that of congeners, for example, *Doridicola rostripes*, described above. Second maxilla (fig. 42f) with lash having row of slender graduated teeth suggesting cock's comb. Maxilliped (fig. 42g) with third segment having 2 long slender minutely barbed setae and 1 small smooth seta.

Ventral area between maxillipeds and first pair of legs (fig. 42h) not protuberant.

Legs 1-4 (fig. 42a-l) segmented and armed as in congeners. Postero-outer corner of coxa of leg 1 with small lobe. Inner coxal seta in legs 1-3 long and plumose, but in leg 4 short, 11 μm, and weakly plumose. Endopod of leg 1 with seta adjacent to outer spine on third segment slightly spiniform. Leg 4 with exopod 127 μm. Endopod with first segment 36 μm long without spiniform process, 40 μm with this process, and 23 μm wide, its seta 42 μm. Second segment 75 μm long with process, 16 μm wide, its terminal barbed spines 21 μm and 55 μm. Both segments with outer setules.

Leg 5 (fig. 43a) with long free segment 96 μm long, 23.5 μm wide at proximal inner expansion, and 18 μm wide distally. Two terminal setae 59 μm and 86 μm. Adjacent dorsal seta 81 μm. All setae smooth. Outer side of free segment ornamented with small spines.

Leg 6 represented by 2 setae on genital area (fig. 41c).

Colour of living specimens in transmitted light opaque gray, eye red.

Male.— Body (fig. 43b) more slender than in female. Length 0.89 mm (0.80-0.97 mm) and greatest width 0.37 mm (0.34-0.41 mm), based on 10 specimens. Ratio of length to width of prosome 1.61:1. Ratio of length of prosome to that of urosome 1.64:1.

Segment bearing leg 5 (fig. 43c) 44 x 125 μm. Genital segment 237 x 247 μm, slightly wider than long, with rounded lateral margins. Four postgenital segments from anterior to posterior 29 x 60, 29 x 60, 18 x 60, and 31 x 65 μm.

Caudal ramus resembling that of female but slightly shorter, 41 x 30 μm, ratio 1.37:1.

Body surface with sparse sensilla as in female.

Rostrum like that of female. First antenna similar to that of female, but 3 aesthetes added (at points indicated by dots in fig. 41f). Second antenna (fig. 43d) showing sexual dimorphism in having small spines on inner side of second segment.

Labrum, mandible, paragnath, first maxilla, and second maxilla like those of female. Maxilliped (fig. 43e) elongate, slender. Second segment with 2 inner setae and 3 rows of spinules. Recurved claw 195 μm long including terminal lamella, 192 μm without lamella.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female except for sexual dimorphism in endopods of legs 1 and 2. Endopod of leg 1 (fig. 43f) with third segment I,I,4, outer spine 34 μm with short stout barbs and inner spine 31 μm. Endopod of leg 2 (fig. 43g) with third segment having swollen minutely barbed area distal to proximalmost spine and long pointed smooth process approximately 14 μm long between 2 terminal spines. Endopods of legs 3 and 4 as in female.

Leg 5 (fig. 43h) with elongate rectangular free segment 52 x 13 μm, bearing 2 very unequal terminal smooth setae 25 μm (inner) and 83 μm (outer) and ornamented along outer side with minute spines. Adjacent smooth dorsal seta 60 μm.

Leg 6 (fig. 43i) with 2 slender naked setae 86 μm and 40 μm.

Colour as in female.

Etymology.— The specific name *vulcanius*, Latin meaning pertaining to Vulcan, god of fire, is chosen to suggest the type locality, in Malay gunong api, a volcano.

Remarks.— *Doridicola vulcanius*, while lacking an obvious single unique feature, may be distinguished from its many congeners by a combination of the body size, the shape of the genital segment in the female, the shape and size of leg 5 in the female, and the length of the caudal ramus.

Genus *Mecra* Humes, 1980

Mecra ellipsaria Humes, 1980

Mecra ellipsaria Humes, 1980: 62, figs. 66-93.

Host.— *Nephthea sphaerophora* Kükenthal: Poelau Parang, Ceram, Moluccas (Humes, 1980).

Genus *Meringomolgus* Humes & Stock, 1972: key to the species (based on females)

1. Genital segment not sharply incised laterally ..... ***M. facetus***
- Genital segment sharply incised laterally 2
2. Second antenna with outer side of second segment smooth; first segment of leg 4 endopod with inner element plumose proximally but barbed distally ..... ***M. hamatus***
- Second antenna with outer side of second segment with spinules; first segment of leg 4 endopod with inner element barbed ..... ***M. devotus***

Meringomolgus devotus Humes & Stock, 1973

Meringomolgus devotus Humes & Stock, 1973: 211, figs. 118-120.

Host.— *Sinularia leptoclados* (Ehrenberg): Region of Nosy Bé, Madagascar (Humes & Stock, 1973).

Meringomolgus facetus Humes & Stock, 1973

Meringomolgus facetus Humes & Stock, 1973: 205, figs. 113-117.

Hosts.— *Sinularia polydactyla* (Ehrenberg): Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Sinularia minima* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973).

Meringomolgus hamatus Humes & Stock, 1973

Meringomolgus hamatus. Humes & Stock, 1973: 216, figs. 121-123.

Hosts.— *Sinularia leptoclados* (Ehrenberg): Region of Nosy Bé, Madagascar (Humes & Stock, 1973). New record: 6 ♀♀, 4 ♂♂, in 2 m, western end of Ile Maître, near Noumea, New Caledonia, 22°20'05"S, 166°24'05"E, 21.vi.1971. *Sinularia maxima* Verseveldt: Nosy Bé, Madagascar (Humes & Stock, 1973). *Sinularia humesi* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973).

Genus *Monomolgus* Humes & Frost, 1964

Monomolgus unihastatus Humes & Frost, 1964

Monomolgus unihastatus Humes & Frost, 1964: 132, figs. 1-35.

Host.— *Parerythropodium fulvum* (Forskål): Nosy Bé, Madagascar (Humes & Stock, 1973). This is perhaps an accidental host, since only a few specimens were found on the soft coral. Much larger numbers occurred on the scleractinian coral *Porites cf. P. andrewsi* Vaughan (see Humes and Frost, 1964).

Genus *Notoxynus* Humes, 1975

Notoxynus mundus Humes, 1975

Notoxynus mundus Humes, 1975: 2, figs. 1-3h.

Host.— *Xenia membranacea* Schenk: Near Yaté, southeastern New Caledonia (Humes, 1975).

Genus *Panjakus* Humes & Dojiri, 1979

Panjakus auriculatus Humes & Dojiri, 1979

Panjakus auriculatus Humes & Dojiri, 1979a: 559, figs. 28-54.

Host.— *Lobophytum crassum* von Marenzeller: Poelau Marsegoe, Ceram, Moluccas (Humes & Dojiri, 1979a).

Genus *Paradoridicola* Humes & Stock, 1972: key to species (based on females)

Note. *Paradoridicola robustus* (Thompson & A. Scott, 1903) is not included because of very incomplete information. The large size of this species, length 2 mm, would probably be sufficient to differentiate it, since the maximum length of congeners is 1.52 mm.

1. Caudal ramus with ratio of length to width more than 2.5:1 2
- Caudal ramus with ratio of length to width less than 2.5:1 4
2. Genital segment laterally notched; free segment of leg 5 small 44 x 24 µm ..... ***P. spinulatus***
- Genital segment laterally smoothly rounded; free segment of leg 5 elongate, ratio at least 3.87:1 3
3. Caudal ramus with ratio 3.44:1; free segment of leg 5 smooth, without spinules, ratio 4.36:1 ..... ***P. glabripes***
- Caudal ramus with ratio 2.93:1; free segment of leg 5 with minute spinules on outer edge, ratio 3.87:1 ..... ***P. simulator***
4. Third segment of second antenna with 1 bent seta; free segment of leg 5 smooth 5
- Third segment of second antenna without bent seta; free segment of leg 5 with outer spinules 6
5. Caudal ramus with ratio 1.09:1; free segment of leg 5 90 x 27 µm with pronounced outer proximal expansion ..... ***P. angularis***
- Caudal ramus with ratio 1.89:1; free segment of leg 107 x 30 µm, without pronounced outer proximal expansion ..... ***P. drepanophorus***
6. Free segment of leg 5 relatively short, not more than 65 µm long 7
- Free segment of leg 5 long, at least 82 µm in length 8
7. Leg 4 with endopod approximately as long as exopod; genital segment wider than long; free segment of leg 5 with several prominent outer spinules ..... ***P. sinularianus***
- Leg 4 with endopod distinctly shorter than exopod; genital segment longer than wide; free segment of leg 5 with small outer spinules ..... ***P. triquetrus***
8. Caudal ramus with dorsal seta directed outwardly, and 2 outermost setae bluntly tipped and rodlike ..... ***P. virgulifer***
- Caudal ramus with dorsal seta directed subposteriorly, and 2 outermost setae normally tapered, not rodlike 9
9. Free segment of leg 5 240 x 36 µm, reaching almost to middle of first postgenital segment ..... ***P. sinulariae***
- Free segment of leg 5 less than 200 µm in length, at most reaching to posterior end of genital segment 10
10. Free segment of leg 5 short, 82 x 34 µm, reaching only to lateral indentation on genital segment ..... ***P. squamiger***
- Free segment of leg 5 long, 166-195 µm in length reaching posteriorly beyond lateral indentation on genital segment 11
11. Rounded hyaline lobe posterolaterally to genital area ..... ***P. hystricosus***
- Without such hyaline lobe 12
12. Genital segment a little wider than long, 130 x 143 µm, its lateral margins anterior to indentation rounded ..... ***P. adelphus***
- Genital segment longer than wide, 169 x 151 µm, its lateral margins anterior to indentation subparallel ..... ***P. contiguus***

Paradoridicola adelphus (Humes & Ho, 1968)

Lichomolgus adelphus Humes & Ho, 1968c: 650, figs. 51-66.
Paradoridicola adelphus; Humes & Stock, 1973: 265.

Hosts.— *Sinularia whiteleggei* Lüttschwager: Nosy Bé, Madagascar (Humes & Ho, 1968c). *Sinularia pedunculata* Tixier-Durivault: Region of Nosy Bé, Madagascar (Humes & Ho, 1968c). *Sinularia polydactyla* (Ehrenberg): Region of Nosy Bé, Madagascar (Humes & Ho, 1968c); Enewetak Atoll, Marshall Islands (Humes, 1973); near Noumea, New Caledonia (Humes, 1975).

Paradoridicola angularis spec. nov.
(figs. 44a-f, 45a-i, 46a-e, 47a-i)

Type material.— 210 ♀♀, 203 ♂♂, from *Alcyonium flaccidum* Tixier-Durivault, in 12 m, west of harbor at Hellville, Nosy Bé, northwestern Madagascar, 4.viii.1967. Holotype ♀ (RMNH F 856), allotype ♂ (RMNH F 857), and 402 paratypes (204 ♀♀, 198 ♂♂) (RMNH F 858).
Other specimens.— 22 ♀♀, 43 ♂♂, from *Alcyonium flaccidum* Tixier-Durivault, in 20 m, Banc de Cinq Mètres, near Nosy Bé, Madagascar, 13°23'30"S, 48°04'00"E, 6.viii.1967 (RMNH F 859); 76 ♀♀, 84 ♂♂, from 1 colony of *Alcyonium utinomii* Verseveldt, in 12 m, west of harbor at Hellville, Nosy Bé, 4.viii.1967 (USNM 239181); 2 ♀♀, 1 ♂, from 1 colony of *Alcyonium molle* Thomson & Dean, in 3 m, Poelau Marsegoe, Moluccas, 02°59'30"S, 128°03'30"E, 15.v.1975; 8 ♀♀, 8 ♂♂, from 3 colonies of *Alcyonium simplex* Thomson & Dean, in 2 m, west of Ile Ngou, north of Noumea, New Caledonia, 22°13'44"S, 166°23'01"E, 29.vii.1971.

Female.— Body (fig. 44a) with moderately slender prosome. Length 1.25 mm (1.20-1.31 mm) and greatest width 0.51 mm (0.50-0.54 mm), based on 10 specimens. Dorsoventral thickness at level immediately posterior to maxillipeds 0.37 mm. Segment bearing leg 1 weakly set off from cephalosome. Epimera of segments bearing legs 2-4 expanded and rounded. Ratio of length to width of prosome 1.73:1. Ratio of length of prosome to that of urosome 2.27:1.

Segment bearing leg 5 (fig. 44b) 83 x 165 µm. Genital segment 161 x 169 µm, very slightly wider than long, expanded laterally in midregion. Genital areas situated dorsolaterally near widest part of segment. Each area (fig. 44c) with 2 small naked setae 6 µm and 14 µm. Three postgenital segments from anterior to posterior 60 x 101, 52 x 91, and 87 x 89 µm.

Caudal ramus (fig. 44d) short, 37 x 34 µm, ratio 1.09:1. Outer lateral seta 286 µm and smooth. Dorsal seta 90 µm, outermost terminal seta 308 µm, innermost terminal seta 440 µm, and 2 median terminal setae 605 µm (outer) and 792 µm (inner), all these setae with lateral setules. Small terminal ventral flange of ramus smooth.

Body surface smooth except for pair of minute sensilla on caudal ramus.

Egg sac (fig. 44e) elongate, slender, 517 x 110 µm, containing many eggs 44-49 µm in diameter.

Rostrum (fig. 44f) weak, with indistinctly defined posteroventral margin. First antenna (fig. 45a) 638 µm long, slender. Lengths of its 7 segments: 60 (99 µm along anterior margin), 200, 39, 125, 70, 66, and 45 µm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 45b) 4-segmented, 320 µm long including claw. Armature: 1, 1, 3, and 5 + claw. One seta on third segment bent at angle. Fourth segment 91 µm

along outer edge, 73 μm along inner edge, and 18 μm wide. Claw 55 μm.

Labrum (fig. 45c) with 2 rounded posteroventral lobes. Mandible (fig. 45d) resembling that of congeners; distalmost spine on scalelike area larger than other more proximal spines. Paragnath small lobe. First maxilla (fig. 45e) slender with 3 smooth setae. Second maxilla (fig. 45f) and maxilliped (fig. 45g) similar to those of congeners.

Ventral area between maxillipeds and first pair of legs (fig. 45h) only slightly protuberant.

Legs 1-4 (figs. 45i, 46a-c) with 3-segmented rami except for 2-segmented endopod in leg 4. Armature as follows:

P_1	coxa 0-1	basis 1-0	exp I-0;	I-1:	III,I,4	enp 0-1; 0-1;	I,5
P_2	coxa 0-1	basis 1-0	exp I-0;	I-1;	III,I,5	enp 0-1; 0-2;	I,II,3
P_3	coxa 0-1	basis 1-0	exp I-0;	I-1;	III,I,5	enp 0-1; 0-2;	I,II,2
P_4	coxa 0-1	basis 1-0	exp I-0;	I-1;	III,I,5	enp 0-1;	II

Inner seta on coxa long and plumose in legs 1 and 2, shorter but still plumose in leg 3, and very short, 13 μm, and smooth in leg 4. Inner margin of basis in legs 1-3 with row of hairlike setules, but in leg 4 this margin smooth. Leg 4 (fig. 46c) with exopod 159 μm long. First segment of endopod 31 x 26 μm (not including spiniform processes), its feathered seta short, 23 μm. Second segment 62 x 24 μm, its 2 barbed spines 26 μm and 53 μm. Outer margin of both segments haired.

Leg 5 (fig. 46d) with unornamented free segment 90 μm long, 13 μm wide at midregion, having proximally small inner expansion and outer slightly angular expansion, width of segment here 27 μm. Two terminal setae 135 μm (outer) and 122 μm (inner). Dorsal seta on body adjacent to free segment 55 μm. All setae smooth.

Leg 6 represented by 2 setae on genital area (fig. 44c).

Colour of living specimens in transmitted light opaque gray, eye red, egg sacs gray.

Male.— Body (fig. 46e) with prosome slender as in female. Length 0.89 mm (0.82-0.92 mm) and greatest width 0.29 mm (0.26-0.32 mm), based on 10 specimens. Dorsoventral thickness posterior to maxillipeds 0.24 mm. Ratio of length to width of prosome 1.83:1. Ratio of length of prosome to that of urosome 1.35:1.

Segment of leg 5 (fig. 47a) 36 x 91 μm. Genital segment 198 x 174 μm, with rounded lateral margins. Four postgenital segments from anterior to posterior 31 x 61, 31 x 57, 21 x 55, and 31 x 56 μm.

Caudal ramus 30 x 32 μm, resembling that of female.

Rostrum as in female. First antenna similar to that of female but 3 aesthetes added (at points indicated by dots in fig. 45a; see also fig. 46e). Second antenna showing slight sexual dimorphism in having minute spines along inner margin of second segment (fig. 47b).

Labrum, mandible, paragnath, first maxilla, and second maxilla as in female. Maxilliped (fig. 47c) 4-segmented. First segment unarmed. Second segment with 2 setae and 2 rows of spines. Small third segment unarmed. Claw (with proximal half probably representing fourth segment) 174-185 μm long with terminal lamella and 2 unequal proximal setae (fig. 47d).

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female except endopod of leg 1 with third segment I,I,4 and having 2 large terminal spiniform processes (fig. 47e). Endopod of

leg 2 (fig. 47f) with armature as in female but outer spine swollen. Legs 3 and 4 without sexual dimorphism.

Leg 5 (fig. 47g) with slender unornamented free segment 37 x 9 µm, lacking proximal expansions seen in female. Two terminal setae 90 µm and 52 µm. Dorsal seta 40 µm. All setae smooth.

Leg 6 (fig. 47h) consisting of usual posteroventral flap on genital segment bearing 2 smooth setae 22 µm and 42 µm.

Spermatophore (fig. 47i), seen attached to female in pairs and empty, approximately 170 x 88 µm, not including neck.

Colour in living specimens like that of female.

Etymology.— The specific name *angularis*, Latin meaning having corners or angles, alludes to the angularly bent seta on the second antenna and to the somewhat angular proximal expansion on the free segment of leg 5 in the female.

Remarks.— Two features of *Paradoridicola angularis*, taken in combination, distinguish it from all congeners: (1) the angularly bent seta on the third segment of the second antenna, and (2) the somewhat angular proximal expansion on the free segment of leg 5 in the female. The new species differs from 10 congeners (*P. adelphus*, *P. contiguus* spec. nov., see below, *P. hystricosus* spec. nov., see below, *P. simulator* spec. nov., see below, *P. sinulariae* Humes & Stock, 1973, *P. sinularianus* spec. nov., see below, *P. spinulatus* Humes, 1982, *P. squamiger* (Humes & Frost, 1964), *P. triquetrus* (Humes & Ho, 1968)), and *P. virgulifer* spec. nov., see below, in which the free segment is ornamented with spinules. Only two congeners, *P. drepanophorus* spec. nov., see below, and *P. glabripes* (Humes & Ho, 1968), have an unornamented leg 5 in the female as in the new species. Apparently these two species are closely related. Both have an angularly bent seta on the third segment of the second antenna. However, in *P. drepanophorus* the female caudal ramus is 70 x 37 µm, ratio 1.89:1, while in *P. angularis* the caudal ramus is much shorter, 37 x 34 µm, ratio 1.09:1. A further easily observed difference lies in the more elongate female genital segment in *P. drepanophorus*.

Paradoridicola robustus (Thompson & A. Scott, 1903) remains inadequately described from one female only, but, judging from Thompson & A. Scott's pl. xvi, 14, the caudal ramus is longer and the free segment of leg 5 is shorter than in *P. angularis*.

Paradoridicola contiguus spec. nov.
(figs. 48a-f, 49a-g)

Type material.— 83 ♀♀, 92 ♂♂, from 2 colonies of *Sinularia flexibilis* (Quoy & Gaimard), in 3 m, Poelau Naira, Banda Islands, Moluccas, 04°32'05"S, 129°52'30"E, 26.iv.1975. Holotype ♀ (RMNH F 860), allotype ♂ (RMNH F 861), and 169 paratypes (79 ♀♀, 90 ♂♂) (RMNH F 862).
Other specimens.— From *Sinularia flexibilis*: 45 ♀♀, 47 ♂♂, from 2 colonies, in 3 m, Karang Mie, eastern Halmahera, Moluccas, 00°20'07"N, 128°25'00"E, 19.v.1975; 1 ♀, from 1 colony, in 4 m, southwestern shore of Goenoeng Api, Banda Islands, 04°31'45"S, 129°51'55"E, 4.v.1975.

Female.— Following features similar to those of *Paradoridicola sinulariae* (Humes & Stock, 1973) and not redescribed here: rostral area, labrum, mandible, paragnath, first maxilla, second maxilla, maxilliped, ventral area between maxillipeds and first pair of legs, legs 1-3, genital area, and caudal ramus.

Body (fig. 48a) with slender prosome. Length 1.32 mm (1.21-1.42 mm) and greatest width 0.51 mm (0.48-0.55 mm), based on 10 specimens. Greatest dorsoventral thickness 0.42 mm. Ratio of length to width of prosome 1.63:1. Ratio of length of prosome to that of urosome 2:1.

Segment bearing leg 5 (fig. 48b) 91 x 185 μm. Genital segment 169 μm long, in dorsal view sharply indented at junction of middle and posterior thirds, width in anterior two-thirds 151 μm, in posterior third 107 μm. Genital areas located dorsolaterally at level of junction of anterior two-thirds of segment. Three postgenital segments from anterior to posterior 68 x 91, 52 x 79, and 55 x 75 μm.

Egg sac (fig. 48c) elongate, 550 x 220 μm, containing many relatively small eggs 36-42 μm in diameter.

First antenna (fig. 48d) 429 μm long. Lengths of its 7 segments: 68 (78 μm along anterior margin), 122, 35, 93, 36, 27, and 21 μm, respectively. Second segment distinctly longer than fourth segment and having swollen distoposterior margin (this swelling seen also in ventral view in *P. sinulariae*, see below).

Second antenna (fig. 48e) 330 μm long. Armature as in *P. sinulariae*. Claw 60 μm long and more recurved than in *P. sinulariae*. Fourth segment 91 μm along outer side, 65 μm along inner side, and 20.5 μm wide; relatively shorter than in *P. sinulariae*. In another female these measurements 91, 73, and 18 μm, respectively.

Leg 4 (fig. 48f) resembling in major respects that of *P. sinulariae*. Exopod 153 μm long. Endopod with first segment 42 μm long without spiniform process, 55 μm with process, 26 μm wide, its distal inner plumose seta 90 μm. Second segment relatively shorter than in *P. sinulariae*, 107 μm long without spiniform process, 122 μm with process, 18 μm wide proximally, 13 μm in least width, and 23 μm wide distally;its 2 terminal barbed spines 30 μm (outer) and 77 μm (inner). Barbules along outer edge of long spine longer and more conspicuous than on inner edge.

Leg 5 (fig. 49a) with elongate recurved free segment 190 x 23.5 μm (width at midregion), ratio 8.09:1, not reaching to posterior end of genital segment. Two terminal setae 60 μm and 36 μm. Dorsal seta 26 μm. Free segment ornamented with many broad scalelike spines. On body segment near insertion of free segment few outer spinules (as in *P. sinulariae*).

Colour of living specimens in transmitted light opaque gray, eye red, egg sacs gray.

Male.— Following features like those of male of *P. sinulariae* and not redescribed here: rostral area, first antenna, labrum, mandible, paragnath, first maxilla, second maxilla, ventral area between maxillipeds and first pair of legs, legs 1-4, caudal ramus, and spermatophore.

Body (fig. 49b) slender. Length 0.96 mm (0.89-1.07 mm) and greatest width 0.30 mm (0.28-0.32 mm), based on 10 specimens. Greatest dorsoventral thickness 0.24 mm. Ratio of length to width of prosome 1.82:1. Ratio of length of prosome to that of urosome 1.41:1.

Segment bearing leg 5 (fig. 49c) 39 x 83 μm. Genital segment elongate oval, 177 x 153 μm. Four postgenital segments from anterior to posterior 36 x 62, 36 x 60, 24 x 57, and 31 x 55 μm.

Second antenna (fig. 49d) resembling in general form that of *P. sinulariae*. Second segment with marginal obtuse outer spines more numerous than in that species. Fourth segment 68 μm along outer side, 55 μm along inner side, and 15 μm wide;

inner margin smooth. Claw 52 µm.

Maxilliped (fig. 49e) resembling that of *P. sinulariae*. Claw 260 µm long, distinctly flexed midway.

Leg 5 (fig. 49f) with elongate, slender, unornamented free segment 44 x 10.5 µm, ratio 4.19:1. Two terminal setae 26 µm and 29 µm. Dorsal seta 18 µm.

Leg 6 (fig. 49g) with 2 setae 24 µm.

Colour as in female.

Etymology.— The specific name *contiguus*, Latin meaning near or bordering on, alludes to the apparent close relationship of this species with *Paradoridicola squamiger* (Humes & Frost, 1964) and *P. sinulariae*.

Remarks.— Salient differences useful for distinguishing *P. squamiger*, *P. sinulariae*, and *P. contiguus* are as follows:

P. squamiger - female: genital segment with lateral margins indented; second antenna with segment 2 longer than segment 4 (104:70 µm), and with segment 4 having maximum length 70 µm, width 20 µm, ratio 3.5:1; endopod of leg 4 with segment 2 having maximum length 127 µm, width 17 µm, ratio 7.47:1; free segment of leg 5 82 µm long, reaching to lateral indentation on genital segment; egg sac with about 30 eggs; - male: second antenna with second segment having small obtuse spinules on inner margin, claw gently recurved.

P. sinulariae - female: genital segment with lateral margins tapered, only slightly indented; first antenna with segments 2 and 4 nearly equal in length (141:139 µm); second antenna with segment 4 having maximum length 107 µm, width 17 µm, ratio 6.29:1; endopod of leg 4 with segment 2 having maximum length 159 µm, least width 15.5 µm, ratio 10.3:1; free segment of leg 5 240 µm long, reaching to middle of first postgenital segment; egg sac unknown; - male: second antenna with second segment having many inner marginal obtuse spines, fourth segment with small spinules, and having maximum length 76 µm, width 13 µm, ratio 5.85:1, claw gently recurved.

P. contiguus - female: genital segment with lateral margins sharply indented; first antenna with segment 2 distinctly longer than segment 4 (122:93 µm); second antenna with segment 4 having maximum length 91 µm, width 20.5, ratio 4.44:1; endopod of leg 4 with segment 2 having maximum length 122 µm, least width 13 µm, ratio 9.39:1; free segment of leg 5 190 µm long, not reaching posterior end of genital segment; egg sac with many eggs; - male: second antenna with second segment having inner marginal obtuse spines, fourth segment with smooth inner margin and having maximum length 68 µm, width 15 µm, ratio 4.53:1, claw strongly recurved.

Paradoridicola drepanophorus spec. nov.
(figs. 50a-g, 51a-f, 52a-f, 53a-e)

Type material.— 45 ♀♀, 31 ♂♂, from *Alcyonium flaccidum* Tixier-Durivault, in 12 m, west of harbor at Hellville, Nosy Bé, northwestern Madagascar, 4.viii.1967. Holotype ♀ (RMNH F 863), allotype ♂ (RMNH F 864), and 69 paratypes (41 ♀♀, 28 ♂♂) (RMNH F 865).

Other specimens.— 8 ♀♀, 14 ♂♂, from *Alcyonium flaccidum*, in 20 m, Banc de Cinq Mètres, near Nosy Bé, Madagascar, 13°23'30"S, 48°04'00"E, 6.viii.1967 (USNM 239183); 16 ♀♀, 7 ♂♂, from 3 colonies of *Alcyonium simplex* Thomson & Dean, in 2 m, west of Ile Ngou, north of Noumea, New Caledonia, 22°13'44"S, 166°23'01"E, 29.vii.1971; 4 ♀♀, 2 ♂♂, from 1 colony of *Alcyonium molle* Thomson & Dean, in 3 m, Poelau Marsegoe, Moluccas, 02°59'30"S, 128°03'30"E, 15.v.1975.

Female.— Body (fig. 50a) with prosome slightly pointed anteriorly. Length 1.41 mm (1.30-1.52 mm) and greatest width 0.52 mm (0.50-0.54 mm), based on 10 specimens. Dorsoventral thickness at level immediately posterior to maxillipeds 0.37 mm. Segment bearing leg 1 set off from head by weak dorsal transverse furrow. Epimera of segments bearing legs 2-4 expanded and rounded. Ratio of length to width of prosome 1.52:1. Ratio of length of prosome to that of urosome 1.54:1.

Segment bearing leg 5 (fig. 50b) 57 x 80 μm. Genital segment 198 x 151 μm, longer than wide, in dorsal view expanded laterally in midregion with rounded margins. Genital areas located dorsolaterally at level of expansions. Each area (fig. 50c) with 2 small naked setae 13 μm. Three postgenital segments from anterior to posterior 81 x 96, 65 x 94, and 81 x 91 μm.

Caudal ramus (fig. 50d) 70 x 37 μm, ratio 1.89:1. Outer lateral seta 195 μm, dorsal seta 40 μm, outermost terminal seta 210 μm, innermost terminal seta 440 μm, and 2 long median terminal setae 715 μm (outer) and 880 μm (inner). All these setae without visible lateral setules and apparently smooth. Ventral flange at distal end of segment smooth.

Body surface without ornamentation.

Egg sac (fig. 50e) elongate, 704 x 200 μm, containing many eggs 42-47 μm in diameter.

Rostrum as in *Paradoridicola angularis*, above. First antenna (fig. 50f) 704 μm long. Lengths of its 7 segments: 104 (114 μm along anterior margin), 239, 49, 133, 62, 62, and 52 μm, respectively. Armature as in *P. angularis*. All setae smooth.

Second antenna (fig. 50g) 4-segmented, 363 μm long including claw. Armed as in *P. angularis*. Fourth segment 109 x 21 μm. Claw 60 μm.

Labrum, mandible, and paragnath as in *P. angularis*. First maxilla (51a) with 3 setae. Second maxilla (fig. 51b) and maxilliped (51c) resembling those of congeners.

Ventral area between maxillipeds and first pair of legs as in *P. angularis*.

Legs 1-4 (figs. 51d-f,52a) similar to those of *P. angularis* and having same armature. Leg 4 with inner coxal seta very small, only 2 μm long. Exopod 154 μm. First segment of endopod 31 x 23 μm, its inner feathered seta 27 μm. Second segment of endopod 65 x 26 μm (not including spiniform processes), its 2 barbed spines 24 μm and 55 μm.

Leg 5 (fig. 52b,c) with unornamented free segment 107 μm long, 30 μm wide at level of outer slightly angular bulge and conspicuous inner expansion, 14 μm wide distally. (In some specimens outer edge of free segment lacking angular expansion.) Two terminal setae 122 μm (outer) and 100 μm (inner). Dorsal seta adjacent to free segment 50 μm. All setae smooth.

Leg 6 represented by 2 setae on genital area (fig. 50c).

Colour as in *P. angularis*.

Male.— Body (fig. 52d) moderately slender. Length 1.05 mm (0.98-1.12 mm) and greatest width 0.29 mm (0.28-0.31 mm), based on 10 specimens. Greatest dorsoventral thickness behind maxillipeds 0.23 mm. Ratio of length to width of prosome 1.81:1. Ratio of length of prosome to that of urosome 1.03:1.

Segment of leg 5 (fig. 52e) 34 x 99 μm. Genital segment 220 x 160 μm, more elongate than in *P. angularis* and having slightly indented lateral margins. Four postgenital segments from anterior to posterior (with first segment partly concealed dorsally by genital segment) 40 x 62, 36 x 58, 26 x 56, and 40 x 55 μm.

Caudal ramus 49 x 23 µm, ratio 2.13:1, resembling that of female.

Rostrum as in female. First antenna similar to that of female but 3 aesthetes added as in male of *P. angularis*. Second antenna (fig. 52f) showing sexual dimorphism in having small spines along inner surface of second segment.

Labrum, mandible, paragnath, first maxilla, and second maxilla as in female. Maxilliped (fig. 53a) similar to that of *P. angularis*. Claw 203 µm including terminal lamella.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female, except endopod of leg 1 (fig. 53b) with third segment I,I,4 and having 1 large and 1 small terminal spiniform processes. Endopod of leg 2 (fig. 53c) armed as in female but outer spine swollen. Legs 3 and 4 not showing sexual dimorphism.

Leg 5 (fig. 53d) resembling that of *P. angularis*. Two terminal setae 90 µm and 60 µm. Dorsal seta 55 µm. All setae smooth.

Leg 6 (fig. 53e) similar to that of *P. angularis*, its 2 setae 34 µm and 55 µm.

Spermatophore not seen.

Colour as in male of *P. angularis*.

Etymology.— The name *drepanophorus*, Greek *drepanon* meaning a sickle, and the combining form *-phoros*, carrying, refers to the bent seta on the third segment of the second antenna.

Remarks.— Four features of *Paradoridicola drepanophotus* distinguish it from *P. angularis*: (1) the body length, (2) the shape of the genital segment in both sexes, (3) the length of the caudal ramus, and (4) the relative length of the second segment of the second antenna.

In spite of these clear differences, *P. drepanophorus* and *P. angularis* have one striking feature in common, the bent seta on the third segment of the second antenna. In view of this common feature, and the general similarities of the prosomal appendages, the two species appear to be closely related.

A comparison of salient features of the two species follows:

P. angularis - female: body length 1.25 mm (1.20-1.31 mm); length to width ratio of genital segment 0.95:1; caudal ramus 37 x 34 µm, ratio 1.09:1; first antenna with length of second segment in relation to fourth segment 200:125 µm, ratio 1.6:1; - male: body length 0.89 mm (0.82-0.92 mm); length to width ratio of genital segment 1.14:1.

P. drepanophorus - female: body length 1.41 mm (1.30-1.52 mm); length to width ratio of genital segment 1.31:1; caudal ramus 70 x 37 µm ratio 1:89:1; first antenna with length of second segment in relation to fourth segment 239:133 µm, ratio 1.80:1; - male body length 1.05 mm (0.98-1.12 mm); length to width ratio of genital segment 1.38:1.

Paradoridicola glabripes (Humes & Ho, 1968)

Lichomolgus glabripes Humes & Ho, 1968b: 707, figs. 49-68.
Paradoridicola glabripes; Humes & Stock, 1973: 265.

Hosts.— *Xenia umbellata* Lamarck: Nosy Bé, Madagascar (Humes & Ho, 1968b).

Xenia macrospiculata Gohar: Region of Nosy Bé, Madagascar (Humes & Stock, 1973).
Xenia viridis Schenk: Nosy Bé, Madagascar (Humes & Stock, 1973).

Paradoridicola hystricosus spec. nov.
(figs. 54a-h, 55a-h, 56a-f, 57a-i)

Type material.— 24 ♀♀, 55 ♂♂, from *Sinularia gravis* Tixier-Durivault, in 1 m, west of Ile Mando, near Noumea, New Caledonia, 22°18'59"S, 166°09'30"E, 5.vii.1971. Holotype ♀ (RMNH F 866), allotype ♂ (RMNH 867), and 72 paratypes (20 ♀♀, 52 ♂♂) (RMNH F 868).

Female.— Body (fig. 54a) with moderately broad prosome. Length 1.33 mm (1.25-1.41 mm) and greatest width 0.54 mm (0.51-0.57 mm), based on 10 specimens. Greatest dorsoventral thickness 0.42 mm. Segment bearing leg 1 set off only very slightly from cephalosome. Epimera of pedigerous segments 2-4 expanded and rounded. Ratio of length to width of prosome 1.65:1, Ratio of length of prosome to that of urosome 2.21:1.

Segment bearing leg 5 (fig. 54b) 104 x 180 µm. Genital segment 130 x 143 µm a little wider than long, broadest in anterior two-thirds, narrower in posterior third (width here 91 µm). Genital areas located dorsolaterally near middle of segment; immediately posterior to these areas a rounded hyaline lobe. Each genital area (fig. 54c) with 2 small setae approximately 8 µm and 16 µm. Three postgenital segments from anterior to posterior 70 x 86, 70 x 79, and 60 x 70 µm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 54d) quadrate, 30 x 30 µm. Outer lateral seta 68 µm, dorsal seta 57 µm, outermost terminal seta 109 µm, innermost terminal seta 250 µm, and 2 long median terminal setae 330 µm (outer) and 480 µm (inner). All setae smooth.

Body surface without visible sensilla or refractile points.

Egg sac (fig. 54e) elongate, tapered posteriorly, 572 x 242 µm, containing many eggs 47-53 µm in diameter.

Rostral area (fig. 54e) incompletely developed. First antenna (fig. 54g) 458 µm long. Lengths of its 7 segments: 73 (57 µm along anterior margin), 133, 39, 107, 38, 27, and 23 µm, respectively. Formula for armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 54h) 4-segmented, 263 µm long. Formula: 1, 1, 3, and 1 claw + 5. Fourth segment 75 µm along outer side, 52 µm along inner side, and 21 µm wide. Claw 57 µm.

Labrum (fig. 55a) medially incised, with 2 truncate posteroventral lobes.

Mandible (fig. 55b) resembling that in congeners; spines on outer scalelike area equal in length. Paragnath small lobe with setules (fig. 55a). First maxilla (fig. 55c) with 4 setae. Second maxilla (fig. 55d) similar to that in congeners, but second spine in graded series on terminal lash distinctly larger than other spines. Maxilliped (fig. 55e) much like that in congeners; few setae on distal inner margin of second segment.

Ventral area between maxillipeds and first pair of legs (fig. 55f) not protuberant.

Legs 1-4 (figs. 55g,h,56a,b) segmented and armed as in other species in genus. Coxa of leg 1 with postero-outer lobe. Leg 4 (fig. 56b) with exopod 159 µm, and inner

seta on coxa well developed and plumose. Endopod with first segment 49 µm long not including spiniform process, 57 µm long with process, 26 µm wide, inner distal plumose seta 104 µm Second segment with slight notch near middle of outer margin; two terminal barbed spines 38 µm (outer) and 62 µm (inner). Both segments with setules along outer sides. Apparently variation in this endopod, as in fig. 56c (length of first segment 47 µm without process, second segment 117 µm, its 2 terminal spines 26 µm and 72 µm) and in fig. 56d (first segment 47 µm, second segment 122 µm, its spines 44 µm and 61 µm).

Leg 5 (fig. 56e) with free segment 166 x 39 µm, ornamented on outer surface with many broad scalelike spines, its 2 terminal setae 36 µm and 78 µm. Adjacent dorsal seta 30 µm. All setae smooth.

Leg 6 represented by 2 setae on genital area (fig. 54c).

Colour of living specimens in transmitted light glassy opaque gray, eye red, egg sacs gray.

Male.— Body (fig. 56f) slender. Length 0.95 mm (0.81-0.98 mm) and greatest width 0.32 (0.31-0.33 mm), based on 10 specimens. Ratio of length to width of prosome 1.89:1. Ratio of length of prosome to that of urosome 1.75:1.

Segment bearing leg 5 (fig. 57a) 39 x 99 µm. Genital segment 169 x 159 µm, slightly longer than wide. Four postgenital segments from anterior to posterior 34 x 70, 39 x 66, 29 x 62, and 38 x 60 µm.

Caudal ramus (fig. 57a) similar to that of female but slightly wider than long, 18 x 23 µm, ratio 1:1.28.

Body surface as in female.

Rostral area as in female. First antenna like that of female but 3 aesthetes added (at locations indicated by dots in fig. 54g). Second antenna (fig. 57b) sexually dimorphic, first segment with few blunt spines near seta, second segment with 4 blunt spines on inner side and long submarginal row of small spines, and fourth segment with very small spines along inner margin. Claw 60 µm.

Labrum, mandible, paragnath, first maxilla, and second maxilla like those of female. Maxilliped (fig. 57c) slender. Second segment with long row of spines on inner surface, distal marginal row of setules, 1 long slender midmarginal seta, and 1 stout proximal seta with terminal flagellum. Claw 286 µm long.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female, but sexual dimorphism in third segment of endopods of legs 1 and 2. Endopod of leg 1 (fig. 57d) with third segment I,I,4, its spines 30 µm and 46 µm. Endopod of leg 2 (fig. 57e) with spines on third segment from proximal to distal 13, 11, and 15.5 µm (these spines shorter than those in female) and having terminal bulbous process between 2 spines. Leg 4 similar to that of female, but endopod (fig. 54f) lacking notch on outer margin of second segment.

Leg 5 (fig. 57g) with elongate unornamented free segment 39 x 10 µm, its terminal setae approximately 35 µm. Adjacent dorsal seta 25 µm. All setae smooth.

Leg 6 (fig. 57h) with 2 small setae approximately 15 µm long.

Colour as in female.

Etymology.— The specific name *hystricosus*, Latin meaning prickly or thorny, refers to the appearance of leg 5 in the female.

Remarks.— *Paradoridicola hystricosus* may be separated from all congeners by presence of rounded hyaline lobes posterior to the genital areas of the female. The

male of the new species has a terminal bulbous process on the endopod of leg 2, a sexually dimorphic feature not seen in congeners.

Paradoridicola simulator spec. nov.
(figs. 58a-g, 59a-h, 60a-i)

Type material.— 20 ♀♀, 9 ♂♂, from *Alcyonium simplex* Thomson & Dean, in 2 m, Rocher à la Voile, Noumea, New Caledonia, 22°18'24"S, 166°25'50"E, 2.viii.1971. Holotype ♀ (RMNH F 869), allotype ♂ (RMNH F 870), and 24 paratypes (17 ♀♀, 7 ♂♂) (RMNH F 871).
Other specimens.— 15 ♀♀, 1 ♂, from *Alcyonium simplex*, in 0.5 m, west of Ile Maitre, near Noumea, New Caledonia, 22°20'05"S, 166°24'05"E, 11.vi.1971 (USNM 239184).

Female.— Body (fig. 58a) with broad prosome. Length 1.32 mm (1.20-1.44 mm) and greatest width 0.54 mm (0.46-0.58 mm), based in 10 specimens. Dorsoventral thickness at level immediately behind maxillipeds 0.41 mm. Segment bearing leg 1 set off from cephalosome by dorsal transverse furrow. Epimera of segments bearing legs 2-4 expanded and rounded. Ratio of length to width of prosome 1.42:1, Ratio of length of prosome to that of urosome 1.35:1.

Segment bearing leg 5 (fig. 58b) 91 x 174 µm, with rounded lobelike area laterally near each fifth leg. Genital segment 195 x 156 µm, longer than wide, in dorsal view with gently rounded lateral margins in anterior two-thirds and smoothly constricted in posterior third. Genital areas located dorsolaterally at widest part of segment. Each area (fig. 58c) with 2 small setae approximately 12 µm. Three postgenital segments from anterior to posterior 88 x 99, 75 x 88, and 90 x 78 µm.

Caudal ramus (fig. 58d) moderately elongate, 88 x 30 µm, ratio 2.93:1. Outer lateral seta 117 µm, dorsal seta 18 µm, outermost terminal seta 135 µm, innermost terminal seta 200 µm, and 2 long median terminal setae 440 µm (outer) and 550 µm (inner), all smooth. Ramus without fine ornamentation and ventral terminal flange smooth.

Surface of body without visible sensilla.

Egg sac incomplete in specimens seen. Fragments with eggs 44-51 µm.

Rostrum (fig. 58e) broadly rounded posteroventrally. First antenna (58f) 539 µm long. Lengths of its 7 segments: 52 (83 µm along anterior margin), 185, 36, 91, 49, 47, and 44 µm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 58g) 4-segmented, 310 µm long. Armature: 1, 1, 3, and 1 claw + 6 setules. Fourth segment 91 µm along outer side, 63 µm along inner side, and 26 µm wide. Claw (fig. 58h) 65 µm, with tip slightly flexed.

Labrum fig. (59a) with 2 broad posteroventral lobes. Mandible (fig. 59b), paragnath (fig. 59a), first maxilla (fig. 59c), second maxilla (fig. 59d), and maxilliped (fig. 59e) resembling those of congeners.

Ventral area between maxillipeds and first pair of legs similar to other species in genus and only slightly protuberant.

Legs 1-4 (figs. 59f-h,60a) with 3-segmented rami except for 2-segmented endopod in leg 4. Armature as in *Paradoridicola angularis*. Coxa of leg 1with postero-outer lobe. Inner coxal seta long and plumose in legs 1-3, but minute, only 3 µm long, in leg 4. Third endopod segment of leg 2 with 3 spines approximately 20 µm. Leg 4 with exo-

pod 235 µm long. Endopod with first segment 31 µm long without terminal processes, 33 µm with processes, 21 µm wide, and inner distal plumose seta 50 µm. Second segment relatively short, 60 µm without terminal spiniform process, 65 µm with process, 23.5 µm in greatest width, 16 µm in least width, and 2 terminal unequal barbed spines 23 µm and 39 µm. Outer margins of both segments with hairlike setules.

Leg 5 (fig. 60b) with elongate slender free segment 91 µm long, 23.5 µm wide at proximal inner expansion, and 13 µm wide distally. Ratio 7.2:1 (taking width as 13 µm). Two terminal setae 81 µm (outer) and 94µm (inner). Dorsal seta on body adjacent to insertion of free segment 52 µm. Free segment ornamented along outer edge with minute spinules.

Leg 6 represented by 2 setae on genital area (fig. 58c).

Colour of living specimens in transmitted light opaque gray, eye red.

Male.— Body (fig. 60c) slender. Length 1.14 mm (1.07-1.18 mm) and greatest width 0.31 mm (0.29-0.34 mm), based on 8 specimens. Dorsoventral thickness posterior to maxillipeds 0.26 mm. Ratio of length to width of prosome 1.84:1. Ratio of length of prosome to that of urosome 1.13:1.

Segment bearing leg 5 (fig. 60d) 49 x 107 µm. Genital segment elongate, 247 x 177 µm, with nearly parallel lateral margins in dorsal view. Four postgenital segments from anterior to posterior 52 x 75, 52 x 68, 31 x 61, and 57 x 61 µm.

Caudal ramus 65 x 24 µm, ratio 2.71:1, resembling that of female.

Rostrum as in female. First antenna similar to that of female but 3 aesthetes added (at points shown by dots in fig. 58f). Second antenna like that of female but showing sexual dimorphism in having small spinules along inner side of second segment (fig. 60e).

Labrum, mandible, paragnath, first maxilla, and second maxilla as in female. Maxilliped (fig. 60f) resembling that of *Paradoridicola drepanophorus*, above. Claw 156 µm long without prominent terminal lamella, 164 µm with lamella.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female, but sexual dimorphism in third segment of endopods of legs 1 and 2. Endopod of leg 1 (fig. 60g) with third segment having formula I,I,4, 2 spines 18 µm (outer) and 26 µm (inner), segment terminating in prominent recurved spiniform process over base of longer spine. Endopod of leg 3 (fig. 60h) with third segment having same formula as in female, but spines much shorter, outer spine stout, 15.5 x 6 µm, 2 terminal spines more slender, both 13 µm. Legs 3 and 4 without sexual dimorphism.

Leg 5 (fig. 60i) elongate, 39 x 8 µm, ratio 4.88:1, unornamented and without proximal inner expansion. Two terminal setae 65 µm and 50 µm. Adjacent dorsal seta 23 µm.

Leg 6 with 2 setae 44 µm and 52 µm long.

Spermatophore not seen.

Colour as in female.

Etymology.— The specific name *simulator*, Latin meaning imitator, refers to the many similarities of this species with *P. drepanophorus*.

Remarks.— Although *Paradoridicola simulator* resembles *P. drepanophorus* in several features, the two species may be separated by the following salient features:

P. drepanophorus - female: caudal ramus 70 x 37 µm, ratio 1.89:1; length of first antenna 704 µm; second antenna with 1 seta on third segment bent at angle, claw

smoothly recurved; - male: claw of maxilliped 203 µm; endopod of leg 1 with third segment having spines 23.5 µm and 31 µm; endopod of leg 2 with third segment having spines 23.5 x 3.5 µm, 18 µm, and 21 µm.

P. simulator - female: caudal ramus 88 x 30 µm, ratio 2.93:1; length of first antenna 529 µm; second antenna with setae on third segment not bent at angle, claw with tip slightly flexed; - male: claw of maxilliped 164 µm; endopod of leg 1 with third segment having spines 28 µm and 26 µm; endopod of leg 2 with third segment having 3 spines 15.5 x 6 µm, 13 µm, and 13 µm.

Paradoridicola sinulariae Humes & Stock, 1973

Paradoridicola sinulariae Humes & Stock, 1973: 266, figs. 147-149.

Hosts.— *Sinularia arborea* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Sinularia flexibilis* (Quoy & Gaimard): Near Noumea, New Caledonia (Humes, 1975).

Paradoridicola sinularianus spec. nov.
(figs. 61a-g, 62a-i, 63a-g, 64a-d)

Type material.— 8 ♀♀, 9 ♂♂, from *Sinularia gravis* Tixier-Durivault, in 1 m, west of Ile Mando, near Noumea, New Caledonia, 22°18'59"S, 166°09'30"E, 5.vii.1971. Holotype ♀ (RMNH F 872), allotype ♂ (RMNH F 873), and 12 paratypes (5 ♀♀, 7 ♂♂) (RMNH F 874).
Other specimens.— 7 ♀♀, 18 ♂♂, from *Sinularia nanolobata* Verseveldt, in 2 m, Karang Mie, eastern Halmahera, 00°20'07"N, 128°25'10"E, 19.v.1975.

Female.— Body (fig. 61a) with only slightly broadened prosome. Length 1.34 mm (1.28-1.43 mm) and greatest width 0.57 mm (0.53-0.62 mm), based on 7 specimens. Greatest dorsoventral thickness 0.45 mm. Segment bearing leg 1 very slightly set off from cephalosome by weak transverse dorsal furrow. Epimera of pedigerous segments 2-4 expanded and rounded. Ratio of length to width of prosome 1.51:1. Ratio of length of prosome to that of urosome 1.68:1.

Segment bearing leg 5 (fig. 61b) 86 x 216 µm. Genital segment 172 x 226 µm, widest in anterior half with rounded lateral margins, narrower in posterior third (width here 130 µm) with parallel margins. Genital areas situated dorsolaterally near middle of segment. Each genital area (fig. 61c) with 2 unequal setae 47 µm and approximately 15 µm. Three postgenital segments from anterior to posterior 81 x 117, 57 x 107, and 99 x 106 µm. Last segment with very slightly swollen lateral margins. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 61d) subquadrate in dorsal view, 46 x 41 µm, in ventral view 39 x 39 µm. Outer lateral seta 44 µm, dorsal seta 29 µm, outermost terminal seta 80 µm, innermost terminal seta 180 µm, and 2 long median terminal setae 374 µm (outer) and 605 µm (inner). All setae smooth.

Surface of body lacking visible sensilla or refractile points.

Egg sac not seen.

Rostrum (fig. 61e) with complete but weak posteroventral margin. First antenna

(fig. 61f) 473 µm long. Lengths of its 7 segments: 52 (81 µm along anterior margin), 109, 42, 99, 52, 36, and 33 µm, respectively. Formula for armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 61g) 4-segmented, 264 µm long. Formula: 1, 1, 3, and 1 claw + 5 small setae. Fourth segment 94 µm along outer side, 62 µm along inner side, and 24 µm wide. Claw 56 µm.

Labrum (fig. 62a) with 2 broad subtruncate posteroventral lobes. Mandible (fig. 62b), paragnath (fig. 62a), and first maxilla (fig. 62c) resembling those in congeners. Second maxilla (fig. 62d) with terminal lash having graduated series of spines. Maxilliped (fig. 62e) resembling that of *P. hystricosus*, above.

Ventral area between maxillipeds and first pair of legs (fig. 62f) not protuberant. Sclerite in front of intercoxal plate of leg 1 very weakly sclerotized.

Legs 1-4 (figs. 62g-i,63a) segmented and armed as in congeners. Coxa of leg 1 with postero-outer lobe. Leg 4 with inner seta on coxa approximately 18 µm long and apparently smooth. Exopod 156 µm long. First segment of endopod 49 x 28 µm (52 µm long with spiniform process), its inner distal plumose seta 81 µm. Second segment elongate, 120 µm long including spiniform process, 18 µm in greatest width, 14 µm in least width; its 2 terminal barbed spines 30 µm and 55 µm. Outer margin of both segments with setules.

Leg 5 (fig. 63b,c) set slightly ventrally, with free segment 55 µm long, 29 µm wide at proximal rounded inner expansion, and 13 µm wide distally. Two smooth terminal setae 60 µm and 29 µm. Dorsal seta 28 µm. Six or 7 prominent spines along outer margin of free segment.

Leg 6 represented by 2 setae on genital area (fig. 61c).

Colour of living specimens in transmitted light opaque gray, eye red.

Male.— Body (fig. 63d) slender. Length 1.00 mm (0.94-1.05 mm) and greatest width 0.32 mm (0.32-0.33 mm), based on 7 specimens. Greatest dorsoventral thickness 0.25 mm. Ratio of length to width of prosome 1.84:1. Ratio of length of prosome to that of urosome 1.41:1.

Segment bearing leg 5 (fig. 63e) 39 x 99 µm. Genital segment 203 x 174 µm, longer than wide. Four postgenital segments from anterior to posterior 39 x 66, 42 x 68, 26 x 65, and 39 x 66 µm.

Caudal ramus (fig. 63e) resembling that of female, subquadrate, 26 x 29 µm, ratio 1:1.12, slightly wider than long.

Surface of body as in female.

Rostrum similar to that of female. First antenna like that of female but 3 aesthetes added (at locations shown by dots in fig. 61f). Second antenna (fig. 63f) resembling that of female, but showing sexual dimorphism in having row of spinules on second segment. Claw 49 µm.

Labrum, mandible, paragnath, first maxilla, and second maxilla like those of female. Maxilliped (fig. 63g) elongate, slender. Second segment with 2 marginal setae and surficial row of spinules, those in proximal half of row stouter than those in distal half. Claw slender, 215 µm long, bearing proximally 2 very unequal setae.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female, but sexual dimorphism shown in third segment of endopod of leg 1 (fig. 64a) with formula I,I,4, instead of I,5 as in female, outer spine 23 µm, inner spine 26 µm.. Third segment of endopod of leg 2

(fig. 64b) resembling that of female but outer margin just distal to proximal spine having minute bifurcation.

Leg 5 (fig. 63e) with unornamented subrectangular free segment 23 x 8 μm, its 2 terminal setae 36 μm and 31 μm. Dorsal seta approximately 16 μm. All setae smooth.

Leg 6 (fig. 64d) with 2 small setae 18 μm and 23 μm.

Colour as in female.

Etymology.— The specific name *sinularianus*, from *Sinularia*, the generic name of the host, and the Latin suffix *-anus* meaning belonging to, alludes to the habitat of the copepod.

Remarks.— *Paradoridicola sinularianus* has certain features in common with *P. triquetrus* (Humes & Ho, 1968), for example, the relatively short free segment in leg 5 in the female. However, comparison of the two species reveals several differences. In the new species the free segment of leg 5 in the female has several prominent spines on the outer margin and the ratio of length to width of the segment at the level of the expansion is 1.90:1, and more distally 4.23:1, the genital segment of the female is constricted posteriorly, and the fourth segment of the second antenna is moderately elongate. In *P. triquetrus* the subtriangular free segment of leg 5 in the female has numerous small spinules on the outer surface and the ratio is 1.6:1, the genital segment of the female is tapered posteriorly, and the fourth segment of the second antenna is relatively short and robust.

Paradoridicola spinulatus Humes, 1982

Paradoridicola spinulatus Humes, 1982: 26, figs. 1-3.

Host.— *Sarcophyton glaucum* (Quoy & Gaimard): Goenoeng Api, Banda Islands, Moluccas; Poelau Parang, Ceram, Moluccas (Humes, 1982).

Paradoridicola squamiger (Humes & Frost, 1964)

Lichomolgus squamiger Humes & Frost, 1964: 145, figs. 167-202; Bouligand, 1966: 269; Humes & Ho, 1968c: 689.
Paradoridicola squamiger; Humes & Stock, 1973: 265.

Hosts.— *Sinularia polydactyla* (Ehrenberg): Region of Nosy Bé, Madagascar (Humes & Ho, 1968c; Humes & Stock, 1973). Near Noumea, New Caledonia (Humes, 1975). *Sinularia whiteleggei* Lüttschwager: Nosy Bé, Madagascar (Humes & Ho, 1968c). *Sinularia ceramensis* Verseveldt (new host): 4 ♀ ♀.,27 ♂ ♂, in 2 m, Poelau Parang, Ceram, Moluccas, 03°17'00"S, 130°44'48"E, 23.v.1975 (RMNH F 851).

Paradoridicola triquetrus (Humes & Ho, 1968).

Lichomolgus triquetrus Humes & Ho, 1968b: 702, figs. 27-48.
Paradoridicola triquetrus;Humes & Stock, 1973: 271.

Host.— *Anthelia gracilis* (May): Nosy Bé, Madagascar (Humes & Ho, 1968b).

Paradoridicola virgulifer spec. nov.
(figs. 65a-h, 66a-j, 67a-h)

Type material.— 4 ♀♀, 9 ♂♂, from 1 colony of *Sinularia polydactyla* (Ehrenberg), in 2 m, Poelau Marsegoe, Moluccas, 02°59'30"S, 128°03'30"E, 15.v.1975. Holotype ♀ (RMNH F 876), allotype ♂ (RMNH F 877), and 9 paratypes (2 ♀♀, 7 ♂♂) (RMNH F 878).
Other specimens.— 8 ♂♂, from 1 colony of *Sinularia polydactyla*, in 3 m, Poelau Parang, Ceram, Moluccas 03°17'00"S, 130°44'48"E, 23.v.1975 (USNM 239185).

Female.— Body (fig. 65a) slender. Length 1.22 mm (1.20-1.27 mm) and greatest width 0.47 mm (0.46-0.50 mm), based on 4 specimens. Greatest dorsoventral thickness 0.36 mm. Segments bearing legs 1, 2, and 4 rounded, but those of segment bearing leg 2 pointed. Ratio of length to width of prosome 1.67:1. Ratio of length of prosome to that of urosome 1.80:1.

Segment bearing leg 5 (fig. 65b) 78 x 172 µm. Genital segment 190 x 174 µm, in dorsal view expanded in anterior two-thirds but abruptly narrowed in posterior third (width 96 µm). Genital areas located dorsally at middle of expanded part of segment. Each area (fig. 65c) with 2 small setae 7 µm and 16 µm. Three postgenital segments from anterior to posterior 65 x 88, 47 x 86, and 68 x 83 µm.

Caudal ramus (fig. 65d) subquadrate, 34 x 36 µm, slightly wider than long, ratio of length to width 0.94:1. Outer slightly recurved lateral seta 60 µm and outermost terminal seta 114 µm, both stout, bluntly tipped, rodlike, and smooth. Dorsal seta 65 µm, with lateral setules and directed outwardly. Innermost slender terminal seta 247 µm, 2 median terminal setae 410 µm (outer) and 638 µm (inner), all smooth. Caudal ramus with slight transverse dorsal terminal sclerotized band.

Surface of body smooth, without visible sensilla.

Egg sac not seen.

Rostrum (fig. 65e) with rounded posteroventral margin. First antenna (fig. 65f) 375 µm long. Lengths of its 7 segments : 56 (62 µm along posterior margin), 107, 30, 61, 47, 34, and 24 µm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 65g) 4-segmented, 244 µm long without claw, 270 µm including claw. Armature: 1, 1, 3, and 1 claw + several small setae. Fourth segment 80 µm along outer side, 57 µm along inner side, and 19 µm wide. Claw 58 µm.

Labrum (fig. 65h) with 2 broad subtruncate posteroventral lobes. Mandible (fig. 66a), paragnath (fig. 65h), first maxilla (fig. 66b), second maxilla (fig. 66c), maxilliped (fig. 66d), and ventral area between maxillipeds and first pair of legs (fig. 66e) resembling in major respects those of *Paradoridicola sinulariae* and other congeners.

Legs 1-4 (fig. 66f-i) with 3-segmented rami except for 2-segmented endopod in leg 4. Spine and setal formula as in congeners. Coxa of leg 1 with small outer posterior lobe (fig. 66f). Inner seta on coxa long and plumose in legs 1-3 but distinctly shorter, 32 µm, in leg 4. Leg 4 (fig. 66i) with exopod 140 µm long. Endopod with first segment 40 µm long without terminal spiniform process, 47 µm with this process, and 27 µm wide, its inner distal plumose seta 70 µm. Second segment 94 µm without terminal process, 112 µm with process, and 15 µm wide at middle, its finely barbed

spines 21 μm and 68 μm. Outer margins of both segments haired.

Leg 5 (fig. 66j) with elongate free segment 133 μm long, 23 μm wide proximally, and 16 μm wide distally. Segment ornamented along outer surface with many small slender spines. Two terminal setae 39 μm and 75 μm. Adjacent dorsal seta 42 μm. All setae smooth.

Leg 6 represented by 2 small setae on genital area (fig. 65c).

Colour of living specimens in transmitted light opaque gray, eye red.

Male.— Body (fig. 67a) slender. Length 1.04 mm (0.89-1.14 mm) and greatest width 0.31 mm (0.28-0.35 mm), based on 10 specimens. Greatest dorsoventral thickness 0.24 mm. Epimera of segments bearing legs 1-4 rounded. Ratio of length to width of prosome 2:1. Ratio of length of prosome to that of urosome 1.53:1.

Segment bearing leg 5 (fig. 67b) 44 x 95 μm. Genital segment 187 x 155 μm. Four postgenital segments from anterior to posterior 55 x 73, 47 x 66, 32 x 58, and 46 x 62 μm.

Caudal ramus 27 x 29 μm, ratio 0.93:1, otherwise resembling that of female.

Rostrum like that of female. First antenna similar to that of female but 3 aesthetes added (at locations indicated by dots in fig. 65f). Second antenna (fig. 67c,d) slender, 290 μm long, not including claw. First segment with seta, few small spinules, and small spiniform process at distal inner corner. Second segment with inner surface bearing 2 rows of spines and long ridge bearing row of long slender setules appearing as pectinate lamella. Fourth segment 88 μm along outer side, 70 μm along inner side, and 28 μm wide. Claw 68 μm.

Labrum, mandible, paragnath, first maxilla, and second maxilla as in female. Maxilliped (fig. 67e) long and slender, 4-segmented. First segment unarmed. Second segment with 2 long slender setae and 2 rows of spines. Small third segment unarmed. Claw (with proximal half probably representing fourth segment) 327 μm long and bearing 2 very unequal proximal setae.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 similar to those of female, but endopod of leg 1 showing sexual dimorphism (fig. 67f), third segment with I,I,4, 1 spine unmodified (23 μm), other spine stout, long (57 μm), slightly recurved with several widely spaced teeth on convex edge.

Leg 5 (fig. 67g) with rectangular unornamented free segment 36 x 8 μm. Two terminal setae 26 μm and 45 μm. Dorsal seta 38 μm. All setae smooth.

Leg 6 (fig. 67h) with 2 setae 44 μm and 31 μm.

Spermatophore not seen.

Colour as in female.

Etymology.— The specific name is a combination of the Latin words *virgula*, meaning a little rod, and *fero*, to bear or carry, alluding to the rodlike setae on the caudal rami.

Remarks.— *Paradoridicola virgulifer* may be recognized by the two rodlike setae on the caudal ramus, setae unlike those in any congener. The new species resembles closely *P. sinulariae* and the two species described above, *P. contiguus* and *P. hystricosus*, all associated, like the new species, with alcyonaceans belonging to the genus *Sinularia*. Features common to all four species include: the quadrate or subquadrate caudal ramus, the elongate free segment of leg 5 in the female with many outer spines, and the nature of the two spines on the third segment of the endopod of leg 1 in the male, one spine being much larger and bearing strong dentiform spinules.

Genus *Paramolgus* Humes & Stock, 1972: key to species (based on females)

1. Caudal ramus with ratio of length to width 3.70:1 or greater 2
- Caudal ramus with this ratio less than 2.6:1 7
2. Caudal ramus very slender, ratio 9.46:1 ..... *P. extendens*
- Caudal ramus less slender, ratio 3.70:1 to 4.97:1 3
3. Body length 2.23 mm (2.13-2.37 mm) 4
- Body length not exceeding 1 mm 5
4. Cephalosome unusually broad, average width 1.09 mm; free segment of leg 5 170 x 32 µm ..... *P. clavatus*
- Cephalosome not unusually broad, average width 0.87 mm; free segment of leg 5 75 x 17 µm ..... *P. inconstans*
5. Setae on caudal ramus unusually short, longest seta only 42% of length of ramus ..... *P. resectus*
- Setae on caudal ramus not unusually short, almost as long as ramus or longer .. 6
6. Caudal ramus with ratio 4.97:1; free segment of leg 5 110 x 25 µm; genital segment with rounded lateral margins constricted posteriorly ..... *P. nephtheanus*
- Caudal ramus with ratio 3.71:1; free segment of leg 5 52 x 13 µm; genital segment barrel-shaped, without posterior constriction ..... *P. prominulus*
7. Free segment of leg 5 with greatly expanded lobelike inner margin and having spinules on both outer and inner edges 8
- Free segment of leg 5 with inner margin not greatly expanded, either smooth or with spinules on outer side only 9
8. Body length 0.99 mm (0.88-1.13 mm); free segment of leg 5 39 x 30 µm ..... *P. eniwetokensis*
- Body length 1.31 mm (1.20-1.36 mm); free segment of leg 5 41 x 36 µm ..... *P. abruptus*
9. Free segment of leg 5 smooth, without spinules 10
- Free segment of leg 5 with spinules along outer side 14
10. Genital segment longer than wide 11
- Genital segment wider than long 13
11. Free segment of leg 5 with thumblike process on inner margin ..... *P. pollicaris*
- Free segment of leg 5 without thumblike process 12
12. Free segment of leg 5 with inner margin nearly straight; caudal ramus 60 x 26 µm, ratio 2.31:1 ..... *P. alcyoniicus*
- Free segment of leg 5 with inner margin slightly uneven, with small proximal expansion; caudal ramus 42 x 29 µm, ratio 1.45:1 ..... *P. modicus*
13. Body length 0.86 mm (0.77-0.94 mm); free segment of leg 5 slightly oval; caudal ramus 36 x 21 µm, ratio 1.71:1 ..... *P. congruus*
- Body length 1.19 mm (1.06-1.27 mm); free segment of leg 5 rectangular; caudal ramus 68 x 39 µm, ratio 1.74:1 ..... *P. centor*
14. Body length more than 1.5 mm 15
- Body length less than 1.5 mm 16
15. Caudal ramus 133 x 48 µm, ratio 2.77:1; genital segment 330 x 231 µm, ratio 1.43:1, with smoothly rounded lateral margins ..... *P. timendus*

- Caudal ramus 109 x 52 μm, ratio 2.10:1; genital segment 198 x 192 μm, very slightly longer than wide, with lateral margins subparallel and not smoothly rounded ..... ***P. subincisus***

16. Free segment of leg 5 almost sigmoid and directed outwardly and slightly anteriorly ..... ***P. ostentus***
- Free segment of leg 5 not sigmoid, directed outwardly and posteriorly 17
17. Caudal ramus quadrate or very nearly so 18
- Caudal ramus with ratio at least 2:1 19
18. Free segment of leg 5 long, 122 x 22 μm, ratio 5.55:1, with proximal inner expansion; genital area having large pointed bladelike process ..... ***P. spathophorus***
- Free segment of leg 5 short, 29 x 12 μm, ratio 2.42:1, without proximal inner expansion; genital area without such pointed process ..... ***P. quadrangulus***
19. Genital segment 112 x 112 μm; claw on second antenna 32 μm, free segment of leg 5 43 x 13 μm, ratio 3.31:1 ..... ***P. accinctus***
- Genital segment 127 x 111 μm; claw on second antenna 53 μm; free segment of leg 5 111 x 26 μm, ratio 4.27:1 ..... ***P. litophyticus***

Paramolgus abruptus spec. nov.
(figs. 68a-e, 69a-h, 70a-h, 71a-j)

Type material.— 13 ♀♀, 20 ♂♂, from 1 colony of *Lobophytum cristagalli* von Marenzeller, in 25 m, Tany Kely, near Nosy Bé, northwestern Madagascar, 14.viii. 1967. Holotype ♀ (RMNH F 879), allotype ♂ (RMNH F 880), and 26 paratypes (9 ♀♀, 17 ♂♂) (RMNH F 881).

Female.— Body (fig. 68a) with slightly pointed, flattened prosome. Length 1.31 mm (1.30-1.36 mm) and greatest width 0.56 mm (0.51-0.58 mm), based on 10 specimens. Greatest dorsoventral thickness 0.37 mm. Segment bearing leg 1 separated from head by dorsal transverse suture. Epimeral areas of segments bearing legs 1-3 sharply pointed, but those of segment bearing leg 4 rounded. Ratio of length to width of prosome 1.58:1. Ratio of length of prosome to that of urosome 1.98:1.

Segment bearing leg 5 (fig. 68b) 81 x 159 μm. Genital segment 130 μm long. Laterally expanded anterior part 143 μm wide, with shoulders and nearly parallel margins, posteriorly pointed and abruptly insected. Posterior part of genital segment 94 μm wide, with subparallel slightly expanded lateral margins. Genital areas located dorsolaterally on expanded anterior part of segment. Each area (fig. 68c) with 2 minute setae and small bladelike process. Three postgenital segments from anterior to posterior 65 x 80, 47 x 68, and 95 x 69 μm, anal segment by far longest. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 68d) 49 x 27 μm, approximately one-half length of anal segment, ratio 1.82:1. Outer lateral seta 47 μm, dorsal seta 68 μm, and outermost terminal seta 107 μm, all these setae smooth. Innermost terminal seta 160 μm, and 2 long median terminal setae 260 μm (outer) and 400 μm (inner), all with lateral setules. Slight ventral terminal flange with few extremely minute spinules.

Dorsal surface of body without visible sensilla.

Egg sacs broken in all specimens seen, but apparently elongate, with numerous

eggs 47-52 µm in diameter.

Rostral area (fig. 68e) not developed. First antenna (fig. 69a) 440 µm long. Lengths of its 7 segments: 65 (69 µm along anterior margin), 174, 34, 65, 29, 30, and 17 µm, respectively. Second segment with small notch or angle near middle of its posterior margin. Formula for armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. Certain setae on segments 1-3 plumose, all others smooth.

Second antenna (fig. 69b) 308 µm long and 4-segmented. Formula: 1, 1, 3, and 1 claw + several minute hyaline setules. All setae naked. Fourth segment 96 µm along outer side, 60 µm along inner side, and 21 µm wide. Claw 31 µm long.

Labrum (fig. 69c) with 2 broad posteroventral lobes. Mandible fig. 69d), paragnath (fig. 69c), and first maxilla (fig. 69e) closely resembling those of *Paramolgus eniwetokensis* Humes, 1973. Second maxilla (fig. 69f) also similar to that of *P. eniwetokensis*, but spines along elongated terminal lash smoothly graduated in size. Maxilliped (fig. 69g) similar to that of *P. eniwetokensis* but lacking surficial spinules on second segment.

Ventral area between maxillipeds and first pair of legs (fig. 69h) slightly protuberant. Sclerite anterior to intercoxal plate of leg 1 not visible.

Legs 1-4 (fig. 70a,c-e) segmented and armed as in congeners. Leg 1 (fig. 70a) with prominent outer bulge on coxa, long feathered outer seta 160 µm on basis, and spine on third segment of endopod 35 µm long with excrescence of spinules on its outer margin (fig. 70b). Leg 3 (fig. 70d) with outer margin of coxa excavated. Leg 4 (fig. 70e) also with outer margin of coxa excavated, exopod 105 µm long, endopod (fig.70f) with first segment 37 x 16 µm, having inner marginal hairlike setules, its inner distal plumose seta 60 µm, second segment 62 x 18 µm (length including prominent terminal spinous process, length without this process 52 µm), its 2 barbed spines 36 µm, and having hairlike setules along both inner and outer margins, and larger subterminal inner setule.

Leg 5 (fig. 70g,h) with free segment 41 x 36 µm, having greatly expanded lobelike inner margin, its 2 terminal setae 52 µm (outer) and 29 µm (inner). Dorsal seta 55 µm. All setae smooth. Free segment with both outer and inner margins bearing spinules, those on outer margin arranged in 2 groups. All setae naked.

Leg 6 represented by 2 minute setae on genital area.

Colour of living specimens in transmitted light hyaline to opaque gray, eye red, egg sacs gray.

Male.— Body (fig. 71a) more slender than in female and anterior part of prosome less pointed. Length 0.71 mm (0.69-0.74 mm) and greatest width 0.24 mm (0.24-0.25 mm), based on 9 specimens. Greatest dorsoventral thickness 0.20 mm. Ratio of length to width of prosome 1.85:1. Ratio of length of prosome to that of urosome 1.79:1.

Segment of leg 5 (fig. 71b) 26 x 78 µm. Genital segment 117 x 122 µm, nearly quadrate, with rounded lateral margins. Four postgenital segments from anterior to posterior 26 x 47, 23x 43, 15 x 42, and 34 x 43 µm. Anal segment shorter in relation to preceding segments than in female.

Caudal ramus (fig. 71b) smaller than in female, 22 x 18 µm, ratio 1.22:1, otherwise similar.

Surface of body smooth.

Rostral area as in female. First antenna segmented and armed as in female, but 3 aesthetes added (at locations indicated by dots in fig. 69a). Second antenna resem-

bling that of female but showing sexual dimorphism in having fine spinules along inner margin of second segment (fig. 71c).

Labrum, mandible, paragnath, first maxilla, and second maxilla like those of female. Maxilliped (fig. 71d) closely resembling that of *P. eniwetokensis*. Claw 132 μm.

Ventral area between maxillipeds and first pair of legs like that of female.

Legs 1-4 segmented and armed as in female, except for last segment of endopod of leg 1 (fig. 71e) with I,I,4, 2 spines being 14 μm long, showing outer excresence of spinules, and 20 μm. Leg 3 with outer coxal margin (fig. 71f) not excavated as in female. Leg 4 (fig. 71g) with unexcavated outer coxal margin. Two spines on second endopodal segment 18 μm (straight) and 10 μm (recurved).

Leg 5 (fig. 71h) with slender elongate free segment 22 x 8 μm, showing slight inner proximal bulge and both margins bearing spinules as in female.

Leg 6 (fig. 71i) with 2 small naked setae approximately 15 μm long.

Spermatophore not seen.

Colour as in female.

Etymology.— The specific name *abruptus*, Latin meaning broken off, alludes to the sharp demarcation between the anterior and posterior parts of the genital segment of the female.

Remarks.— The relatively large body size of the female, coupled with the form of the genital segment (with lateral margins abruptly insected) and the nature of leg 5 (with spinules on both outer and inner margins), sets the new species apart from all known congeners.

Although *P. abruptus* resembles *P. eniwetokensis* in several respects, there are important differences between the two species, both of which occur on alcyonaceans belonging to the genus *Lobophytum*. These differences are as follows:

P. eniwetokensis - female: length of body 0.99 mm (0.88-1.13 mm); prosome with anterior part rounded; genital segment expanded in anterior three-fourths, with irregular posterior corners; caudal ramus 34 x 23 μm, ratio 1.42:1; lash of second maxilla with one spine larger than others; legs 3 and 4 with outer coxal margin entire; leg 5 with expansion on free segment subtriangular, 2 setae nearly equal; - male: length of body 0.63 mm (0.59-0.68 mm); free segment of leg 5 with very little expansion and having outer spinules only.

P. abruptus - female: length of body 1.31 mm (1.20-1.36 mm); prosome with anterior part pointed; genital segment expanded in anterior half with abruptly insected pointed corners; caudal ramus 49 x 27 μm, ratio 1.82:1; second maxilla with lash having evenly graduated spines; legs 3 and 4 with outer coxal margin excavated; leg 5 with expansion on free segment lobular, 2 setae nearly 2:1; - male: length of body 0.63 mm (0.59-0.68 mm); leg 5 with free segment having distinct inner expansion and ornamented with both outer and inner spinules.

An epibiotic suctorian protozoan, probably *Ophryodendron* spec., occurred on both sexes of *P. abruptus* and on various parts of the body. Among five females the suctorian was attached in various individuals to the first antenna, the tergum of the segments bearing legs 3 and 4, leg 5 (as in fig. 71g), and the long setae of the caudal ramus. In one male the protozoan was attached to the first segment of the first antenna. A preferred site of attachment is not apparent.

A similar suctorian was reported on *Doridicola singularipes* (see Humes & Ho, 1968c), living on *Parerythropodium rubiginosum* Verseveldt, but was found only on the

caudal rami and only on females, males being unknown (Humes & Ho, 1968c: 689, fig.187).

Suctorians occurred also on *Critomolgus cladiellae* (see above).

Paramolgus accinctus Humes, 1980

Paramolgus accinctus Humes, 1980: 57, figs. 41-65.

Hosts.— *Nephthea sphaerophora* Kükenthal: Poelau Parang, Ceram, Moluccas (Humes, 1980). *Nephthea cupressiformis* Kükenthal: Karang Mie, eastern Halmahera, Moluccas (Humes, 1980). *Nephthea albida* (Holm): Poelau Gomumu, south of Obi, Moluccas (Humes, 1980).*N. ephthea galbuloides* Verseveldt: Amboina, Moluccas (Humes, 1980). *Litophyton stuhlmanni* (May): Poelau Gomumu, south of Obi, Moluccas (Humes & Dojiri, 1979b).

Paramolgus alcyoniicus spec. nov.
(figs. 72a-h, 73a-j, 74a-f, 75a-e)

Type material.— 96 ♀♀, 64 ♂♂, from 3 colonies of *Alcyonium simplex* Thomson & Dean, in 2 m, west of Ile Ngou, north of Noumea, New Caledonia, 22°13'44"S, 166°23'01"E, 29.vii.1971. Holotype ♀ (RMNH F 882), allotype ♂ (RMNH F 883), and 152 paratypes (92 ♀♀, 60 ♂♂) (RMNH F 884).
Other specimens.— 75 ♀♀, 80 ♂♂, from 1 colony of *Alcyonium simplex*, in 2 m, Rocher à la Voile, Noumea, New Caledonia, 22°18'24"S, 166°25'50"E, 2.viii.1971; 12 ♀♀, 10 ♂♂, from 1 colony of *Alcyonium simplex*, in 0.5 m, western side of Ile Maître, near Noumea, 22°20'05"S, 166°24'05"E, 11.vi.1971; 6 ♀♀, 11 ♂♂, from 1 colony of *Alcyonium legitimum* Tixier-Durivault, in 30 m, Récif Mtere, 1 km northeast of Passe de Dumbea, near Noumea, 22°20'40"S, 166°13'55"E, 23.vii.1971; 2 ♀♀, 2 ♂♂, from 2 fragments of colony of *Alcyonium legitimum*, in 2 m, Rocher à la Voile, Noumea, 3.vi.1971.

Female.— Body (fig. 72a) with broad prosome. Length 1.20 mm (1.16-1.31 mm) and greatest width 0.52 mm (0.51-0.57 mm), based on 10 specimens. Greatest dorsoventral thickness 0.37 mm. Segment bearing leg 1 very weakly separated dorsally from cephalosome. Ratio of length to width of prosome 1.51:1. Ratio of length of prosome to that of urosome 1.68:1.

Segment bearing leg 5 (fig. 72b) 78 x 180 µm. Genital segment subrectangular or slightly barrel-shaped, 208 x 163 µm, longer than wide, ratio 1.28:1. Genital areas located dorsolaterally at middle of segment. Each area (fig. 72c) with 2 very small setae approximately 6 µm long. Three postgenital segments from anterior to posterior 78 x 109, 55 x 95, and 49 x 82 µm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 72d) moderately elongate, 60 x 26 µm, ratio 2.8:1. Outer lateral seta 68 µm, dorsal seta 41 µm, both smooth. Outermost terminal seta 109 µm, innermost terminal seta 156 µm, and 2 median terminal setae 200 µm (outer) and 226 µm (inner), all with lateral setules.

Dorsal surface of body smooth, except for 4 minute sensilla on dorsal surface of segment bearing leg 5 (fig. 72b).

Egg sac oval, 330 x 215 µm, containing 7 eggs (fig. 72e) or less often 231 x 233 µm, containing 6 eggs (fig. 72f) (these 2 egg sacs drawn from 1 female). One female with only 5 eggs (fig. 72g) in egg sac 233 x 185 µm. Diameter of eggs 104-135 µm.

Rostrum (fig. 72h) weak. First antenna (fig. 73a) 300 μm long. Lengths of its 7 segments: 29 (47 μm along anterior margin), 84, 24, 41, 44, 31, and 21 μm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 73b) 4-segmented, 250 μm long including claw. Armature: 1, 1, 3, and 1 claw + 5 setae (longest with slightly mucronate tip as in fig. 73c). Fourth segment 70 μm along outer side, 42 μm along inner side, and 29 μm wide.

Labrum (fig. 73d) with 2 posteroventral lobes. Mandible (fig. 73e), paragnath (fig. 73d), first maxilla (fig. 73f), second maxilla (fig. 73g), and maxilliped (fig. 73h) similar to those in *Paramolgus nephtheanus*, below.

Ventral area between maxillipeds and first pair of legs (fig. 73i) slightly protuberant.

Legs 1-4 (figs. 73j,74a-c) segmented and armed as in congeners. Leg 1(fig. 73j) with small process on outer posterior surface of coxa. Inner coxal seta long and plumose in legs 1-3, but short, 30 μm, and smooth in leg 4 (fig. 74c). Inner margin of basis with row of hairs in legs 1-3 but smooth in leg 4. Exopod of leg 4 177 μm long. Endopod with first segment 39 x 29 μm, its inner distal feathered seta 47 μm; second segment 76 μm long without processes, 79 μm with processes, 21 μm wide, its 2 terminal barbed spines 26 μm and 40 μm. Outer margin of both segments with small spinules.

Leg 5 (fig. 74d) with free segment elongate, subrectangular, 68 x 18 μm, ratio 3.78:1, without fine ornamentation. Two distal smooth setae 42 μm and 78 μm. Adjacent dorsal seta 31 μm.

Leg 6 represented by 2 very small setae on genital area (fig. 72c).

Colour of living specimens in transmitted light opaque gray, eye red, egg sacs grayish black.

Male.— Body (fig. 74e) more slender than in female. Length 1.19 mm (1.08-1.24 mm) and greatest width 0.35 mm (0.33-0.38 mm), based on 10 specimens. Greatest dorsoventral thickness 0.31 mm. Ratio of length to width of prosome 1.84:1. Ratio of length of prosome to that of urosome 1.09:1.

Segment bearing leg 5 (fig. 74f) 57 x 122 μm. Genital segment 263 x 208 μm, longer than wide. Four postgenital segments from anterior to posterior 56 x 86, 59 x 75, 39 x 63, and 41 x 63 μm.

Caudal ramus (fig. 74f) 75 x 27 μm, ratio 2.8:1, little longer than in female but similar in other respects.

Surface of body as in female.

Rostrum like that of female. First antenna resembling that of female but 3 long aesthetes added (at locations shown by dots in fig. 73a). Distal aesthete on second segment 221 μm long; length of entire first antenna 263 μm without terminal setae. Second antenna with broad flat spines along inner margin of first and second segments (fig. 75a), otherwise as in female.

Mandible, paragnath, first maxilla, and second maxilla similar to those of female. Maxilliped (fig. 75b) resembling that of *Paramolgus timendus* (see below). Claw 247 μm long including terminal lamella.

Ventral area posterior to maxillipeds as in female.

Legs 1-4 segmented as in female. Sexual dimorphism in geniculate endopod of leg 1 (fig. 75c), with third segment 80 μm long and armed as I,I,4, its large recurved

clawlike spine 70 µm and bearing 2 rows of prominent spines. Otherwise legs 1-4 as in female. Legs 2-4 not showing sexual dimorphism.

Leg 5 (fig. 75d) with unornamented free segment 29 x 10 µm, ratio 2.9:1. Two terminal setae 35 µm and 36 µm. Adjacent dorsal seta 44 µm. All setae smooth.

Leg 6 (fig. 75e) with 2 setae 29 µm and 44 µm.

Spermatophore not seen.

Colour as in female.

Etymology.— The specific name *alcyoniicus* is a combination of the generic name of the host and the Latin suffix *-icus* meaning belonging to.

Remarks.— *Paramolgus alcyoniicus* may be distinguished from those congeners in which the female has ornamentation on the free segment of leg 5, the genital segment in the female is not subrectangular but has a distinctly different form, or the average length of the body is longer or shorter than in the new species. The male of *P. alcyoniicus* may be recognized by its larger size from those seven congeners in which the endopod of leg 1 is geniculate and shows strong sexual dimorphism (see Remarks under *Paramolgus timendus* spec. nov., below).

Paramolgus centor spec. nov.
(figs. 76a-h, 77a-i, 78a-h)

Type material.— 12 ♀♀, 8 ♂♂, from *Paralemnalia thyrsoides* (Ehrenberg), in 3 m, eastern side of Ile Maître, near Noumea, New Caledonia, 22°20'35"S, 166°25'10"E, 8.vi.1971. Holotype ♀ (RMNH F 885), allotype ♂ (RMNH F 886), and 15 paratypes (9 ♀♀, 6 ♂♂) (RMNH F 887).
Other specimens.— From *Paralemnalia thyrsoides*: 18 ♀♀, 19 ♂♂, in 3 m, southwestern shore of Goenoeng Api, Banda Islands, Moluccas 04°31'55"S, 129°52'12"E, 8.v.1975 (USNM 239187); 19 ♀♀, 6 ♂♂ in 3 m, Poelau Gomumu, south of Obi, Moluccas, 01°50'00"S, 127°30'45"E, 30.v.1975; 2 ♂♂, in 10 m, southern shore of Goenoeng Api, Banda Islands, 04°32'05"S, 129°52'30"E, 26.iv.1975.

Female.— Body (fig. 76a) with broad prosome. Length 1.19 mm (1.06-1.27 mm) and greatest width 0.51 mm (0.48-0.53 mm), based on 6 specimens. Greatest dorsoventral thickness at level of postoral protuberance 0.43 mm. Segment bearing leg 1 set off from head by weak dorsal furrow. Epimera of segment bearing leg 2 pointed, those of other segments rounded. Ratio of length to width of prosome 1.35:1. Ratio of length of prosome to that of urosome 1.48:1.

Segment bearing leg 5 (fig. 76b) 88 x 221 µm. Genital segment 187 x 208 µm, slightly wider than long, in dorsal view with smooth lateral margins, broadest in anterior half of segment and tapering posteriorly. Genital areas located dorsolaterally just in front of middle of segment. Each area (fig. 76c) with 2 minute setae. Three postgenital segments from anterior to posterior 91 x 127, 68 x 101, and 60 x 91 µm. Posteroventral margin of anal segment smooth.

Caudal ramus (fig. 76d) unornamented, 68 x 39 µm, ratio 1.74:1. Outer lateral seta 73 µm, dorsal seta unusually short, 26 µm, outermost terminal seta 86 µm, and innermost terminal seta 81 µm. All these setae smooth. Two long terminal setae 198 µm (outer) and 220 µm (inner), both with unusually long and widely spaced lateral spinules.

Surface of body without visible sensilla.

Egg sac (fig. 76e) 380 x 275 µm, containing approximately 9 large eggs 112-148

μm in diameter.

Rostrum (fig. 76f) raised in lateral view, in ventral view with posteroventral margin not well developed. First antenna (fig. 76g) 313 μm long. Lengths of its 7 segments: 44 (70 μm along anterior margin), 81, 42, 39, 36, 26, and 20 μm, respectively. Formula for armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 76h) 210 μm long, 4-segmented, formula 1, 1, 3, and 1 claw + 5 setules. Fourth segment 53 μm along outer side, 34 μm along inner side, and 26 μm wide. Claw 42 μm.

Labrum (fig. 77a) with 2 laterally flaring posteroventral lobes. Mandible (fig. 77b) with prominent scalelike area bearing marginal spinules. Paragnath (fig. 77a) rounded lobe with hairlike setules. First maxilla (fig. 77c) with 4 setae. Second maxilla (fig. 77d) slender, second segment with row of slender evenly graduated teeth on outer side of lash. Proximal outer seta on second segment unusually long, 17 μm. Maxilliped (fig. 77e) segmented and armed as in congeners.

Ventral area between maxillipeds and first pair of legs (fig. 77f) with sclerite in front of intercoxal plate of leg 1 and only slightly protuberant.

Legs 1-4 (figs. 77g-i, 78a) segmented and armed as in congeners. Inner coxal seta on leg 4 43 μm long. Leg 4 with exopod 135 μm. Endopod with first segment 31 x 24 μm, its plumose inner distal seta 51 μm; second segment 65 μm long, 21 μm in greatest width, 13 μm in least width. Two terminal spines 42 μm and 27 μm. Inner margins of both segments with strong lateral setules.

Leg 5 (fig. 78b) with unornamented rectangular free segment 39 x 18 μm, ratio 2.17:1, its terminal setae 47 μm and 65 μm. Dorsal seta 47 μm. All setae smooth.

Leg 6 represented by 2 minute setae on genital area (fig. 76c).

Colour of living specimens in transmitted light opaque gray, eye red.

Male.— Body (fig. 78c) relatively more elongate than in female, but prosome similarly broadened. Length 1.01 mm (0.99-1.08 mm) and greatest width 0.40 mm (0.39-0.44 mm), based on 6 specimens. Greatest dorsoventral thickness 0.35 mm. Ratio of length to width of prosome 1.46:1. Ratio of length of prosome to that of urosome 1.11.1.

Segment bearing leg 5 (fig. 78d) 49 x 161 μm. Genital segment subquadrate, 190 x 208 μm, slightly longer than wide. Four postgenital segments from anterior to posterior 47 x 86, 49 x 75, 39 x 63, and 49 x 65 μm.

Caudal ramus similar to that of female but smaller, 55 x 26 μm, ratio 2.12:1.

Surface of body without sensilla.

Rostrum like that of female. First segment similar to that of female, but 3 long aesthetes added (at locations indicated by dots in fig. 76g), with aesthete on fourth segment 220 μm long. Second antenna, labrum, mandible, paragnath, first maxilla, and second maxilla as in female. Maxilliped (fig. 78e) elongate, slender, second segment with 2 inner setae and 2 rows of spines, one inner marginal row containing 4 relatively large spines, other inner surficial row with many small spines. Claw 179 μm including terminal lamella, 176 μm without lamella. Concave margin of claw with prominent, often pointed, process.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female. Slight sexual dimorphism in third segment of endopod of leg 1 (fig. 78f), with outer terminal spiniform process promi-

nent and digitiform. Legs 2-4 without sexual dimorphism. Leg 4 in 1 male with left exopod having third segment with abnormal armature of IV,I,5 (fig. 78g); right endopod with armature of this segment normal, II,I,5.

Leg 5 resembling that of female but free segment smaller, 21 x 10.5 µm, ratio 2:1.

Leg 6 (fig. 78h) with 2 slender setae 42 µm and 49 µm.

Spermatophore not seen.

Colour as in female.

Etymology.— The specific name *centor*, Greek *centor*, one who goads or spurs, alludes to the imagined function of the process on the concave side of the male maxilliped.

Remarks.— *Paramolgus centor* differs from nearly all congeners by its lack of sexual dimorphism in the formula for the third endopod segment of leg 1. Only one species, *Paramolgus clavatus* (Humes & Ho, 1968), lacks such sexual dimorphism. Both *P. centor* and *P. clavatus* show no sexual dimorphism in the second antenna, and both have an unornamented free segment in leg 5.

Paramolgus centor may be distinguished from *P. clavatus* which has the following features: (1) a body length in the female of 2.27 mm (2.19-2.37 mm), (2) a caudal ramus in the female with the ratio of 3.7:1, (3) a very broad prosome with a length to width ratio of 1.08:1, (4) a relatively short lash on the second maxilla with two large spines and two spinules, and (5) the claw of the male maxilliped with a smooth concave margin.

The specimens from Goenoeng Api in the Moluccas are smaller than the type specimens, the length of the female being 0.84 mm (0.79-0.94 mm) and the greatest width 0.37 mm (0.34-0.40 mm), the length of the male being 0.78 mm (0.73-0.80 mm) and the greatest width 0.31 mm (0.28-0.33 mm), based on 10 specimens of both sexes. In details of the external anatomy, however, the Moluccan species are like those from New Caledonia.

Paramolgus clavatus (Humes & Ho, 1968)

Lichomolgus clavatus Humes & Ho, 1968b: 730, figs. 128-148.
Paramolgus clavatus; Humes & Stock, 1973: 274.

Hosts.— *Lemnalia longiramus* Verseveldt: Nosy Bé, Madagascar (Humes & Stock, 1973). *Lemnalia cervicornis* (May): Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Lemnalia crassicaulis* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Stereonephthya inordinata* (Tixier-Durivault): Near Noumea, New Caledonia (Humes, 1975).

Paramolgus congruus spec. nov.
(figs. 79a-h, 80a-k, 81a-g)

Type material.— 22 ♀♀, 32 ♂♂, from *Parerythropodium fulvum* (Forskål) *fuscum* (Thomson & Henderson), in 0.5 m, Antsamantsara, north of Madirokely, Nosy Bé, northwestern Madagascar, 31.x.1960. Holotype ♀ (RMNH F 888), allotype ♂ (RMNH F 889), and 45 paratypes (17 ♀♀, 28 ♂♂) (RMNH F 890).

Other specimens.— 1 ♀, 19 ♂♂, from *Parerythropodium fulvum fuscum*, in 15 cm, Pte. Mahatsinjo, Nosy Bé, 11.viii.1960; 17 ♀♀, 20 ♂♂, from same host species, in 20 cm, Antsamantsara, Nosy Bé, 6.xi.1960 (USNM 239188); 5 ♀♀, 4 ♂♂, from same host species, in 1 m, Ambariobe, near Nosy Bé, 15.i.1964.

Female.— Body (fig. 79a) with broadened prosome. Length 0.86 mm (0.77-0.94 mm) and greatest width 0.36 mm (0.33-0.38 mm), based on 10 specimens. Greatest dorsoventral thickness 0.25 mm. Segment bearing leg 1 demarcated dorsally from head by strong transverse furrow. Epimera of segment bearing leg 2 rounded and expanded, those of segments bearing legs 3 and 4 bluntly rounded. Ratio of length to width of prosome 1.46:1. Ratio of length of prosome to that of urosome 1.58:1.

Segment bearing leg 5 (fig. 79b) 44 x 143 µm. Genital segment 165 x 179 µm, slightly wider than long, in dorsal view with lateral margins very slightly flattened, posterior fourth of segment narrowing. Genital areas located dorsolaterally just posterior to middle of segment. Each genital area (fig. 79c) with 2 very small setae approximately 7 µm. Three postgenital segments from anterior to posterior 39 x 78, 31 x 68, and 44 x 65 µm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 79d) 36 x 21 µm, ratio 1.71:1, unornamented. Outer lateral seta 34 µm, dorsal seta 15 µm, outermost terminal seta 34 µm, and innermost terminal seta 70 µm, all smooth. Two long median terminal setae 94 µm (outer) and 130 µm (inner), both with few delicate lateral setules. One female with both caudal rami showing indentation on inner margin as in fig. 79e.

Dorsal surface of body unornamented, without visible sensilla.

Entire egg sac not seen, but single eggs 60-68 µm in diameter.

Rostrum (fig. 79f) narrow and linguiform, posteroventrally subacute. First antenna (fig. 79g) 192 µm long not including apical setae. Lengths of its 7 segments: 16 (42 µm along anterior margin), 65, 16, 27, 26, 21, and 18 µm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 79h) robust, 169 µm long not including claw and 4-segmented. Formula: 1, 1, 3, and 1 claw + several setae. Fourth segment 39 µm along outer side, 24 µm along inner side, and 21 µm wide. Claw 30 µm.

Labrum (fig. 80a) with 2 lobes truncate posteroventrally. Mandible (fig. 80b) with scalelike area forming angle, and with hyaline weakly striated fringe. Paragnath small lobe as in congeners. First maxilla (fig. 80c) with 4 setae. Second maxilla (fig. 80d), maxilliped (fig. 80e), and ventral area between maxillipeds and first pair of legs resembling in major features those of congeners.

Legs 1-4 (fig. 80f,g,i,j) segmented and armed as in congeners. Outer seta on basis of leg 1 small; inner seta on coxa of legs 1-3 long and plumose but greatly reduced and smooth, 6 µm, in leg 4. Leg 4 (fig. 80j) with exopod 94 µm long. Endopod, much shorter than exopod, with first segment 20 x 17.5 µm, its distal inner seta 28 µm. Second segment 32 x 16.5 µm, its 2 terminal spines 18.5 µm and 32 µm. Both segments with delicate setules along outer margin. One female with abnormal left endopod of leg 2 as in fig. 80h.

Leg 5 (fig. 80k) with unornamented free segment 29 x 13 µm, its 2 terminal setae 23 µm and 26 µm. Adjacent dorsal seta 16 µm. All setae smooth.

Leg 6 represented by 2 small setae on genital area (fig. 79c).

Colour of living specimens in transmitted light opaque gray, ovary slightly greenish, eye red.

Male.— Body (fig. 81a) with prosome resembling that of female. Length 0.72 mm (0.68-0.75 mm) and greatest width 0.28 mm (0.26-0.30 mm), based on 10 specimens. Greatest dorsoventral thickness 0.22 mm. Ratio of length to width of prosome 1.39:1. Ratio of length of prosome to that of urosome 1.22:1.

Segment bearing leg 5 (fig. 81b) 39 x 146 µm. Genital segment 161 x 159 µm, about as long as wide. Four postgenital segments from anterior to posterior 26 x 49, 24 x 45, 21 x 43, and 31 x 46 µm.

Caudal ramus (fig. 81b) 31 x 15.5 µm, ratio 2:1, relatively little longer than in female.

Surface of body unornamented as in female.

Rostrum similar to that of female. First antenna like that of female, but 3 aesthetes added (at points shown by dots in fig. 79g). Second antenna like that of female.

Labrum, mandible, paragnath, first maxilla, and second maxilla resembling those of female. Maxilliped (fig. 81c) small, in major respects similar to that of congeners. Claw 90 µm.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 like those of female, but third segment of endopod of leg 1 with I,I,4 (fig. 81d).

Leg 5 (fig. 81e) with unornamented free segment 23 x 8 µm. Armature as in female.

Leg 6 (fig. 81f) with 2 slender setae approximately 23 µm.

Spermatophore (fig. 81g), attached to female in pairs, oval, 148 x 71 µm, not including neck.

Colour as in female.

Etymology.— The specific name *congruus*, Latin meaning agreeing or suitable, alludes to the general agreement of characters with the concept of the genus.

Remarks.— In 19 species of *Paramolgus* the free segment of leg 5 of the female is ornamented to some degree with spinules, thus differing from *Paramolgus congruus*. Among the remaining species, which have leg 5 unornamented, two of them, *Paramolgus clavatus* and *Paramolgus inconstans* Humes & Dojiri, 1979, have the caudal ramus of the female more than 3.5:1. In two other species, *Paramolgus alcyoniicus*, described above, and *Paramolgus pollicaris* Humes & Dojiri, 1979, the female genital segment is subcylindrical, not laterally expanded as in the new species. In *Paramolgus centor*, described above, the male lacks the usual sexually dimorphic formula of I,I,4 for the third segment of the endopod of leg 1 and the claw of the male maxilliped has a prominent pointed process on its concave margin. In *Paramolgus modicus* spec. nov., see below, the length of the female is 1.23 mm (1.13-1.32 mm), the second antenna shows sexual dimorphism, and the endopod of leg 4 is approximately as long as the exopod.

Paramolgus eniwetokensis Humes, 1973

Paramolgus eniwetokensis Humes, 1973: 137, figs. 1-29.

Host.— *Lobophytum pauciflorum* (Ehrenberg): Enewetak Atoll, Marshall Islands

(Humes, 1973). New records: 1 ♀, 4 ♂♂, in 0.5 m, Ile To N'du, near Noumea, New Caledonia, 22°13'15"S, 166°24'26"E, 29.vi.1971; 1 ♀, in 1 m, west of Ile Mando, near Noumea 22°18'59"S, 166°09'30"E, 15.vii.1971; 1 ♀, in 1 m, Ile aux Serpents, near Noumea, 22°16'51"S, 166°25'12"E, 19.vii.1971. *Lobophytum crassum* von Marenzeller: near Noumea, New Caledonia (Humes, 1975). *Lobophytum crebriplicatum* von Marenzeller: Near Noumea, New Caledonia (Humes, 1975).

Paramolgus extendens Humes & Dojiri, 1979

Paramolgus extendens Humes & Dojiri, 1979c: 53, figs. 1-28.

Host.— *Cespitularia multipinnata* (Quoy & Gaimard): Goenoeng Api, Banda Islands, Moluccas (Humes & Dojiri, 1979c).

Paramolgus inconstans Humes & Dojiri, 1979

Paramolgus inconstans Humes & Dojiri, 1979a: 567, figs. 55-80.

Hosts.— *Lobophytum crassum* von Marenzeller: Goenoeng Api, Banda Islands, Moluccas (Humes & Dojiri, 1979a). *Lobophytum pauciflorum* (Ehrenberg) (new host): 1 ♀, 3 ♂♂, in 2 m, west of Ile Mando, near Noumea, New Caledonia, 22°18'59"S, 166°09'30"E, 5.vii.1971 (RMNH F 891).

Paramolgus litophyticus Humes & Dojiri, 1979

Paramolgus litophyticus Humes & Dojiri, 1979b: 342, figs. 26-51.

Host.— *Litophyton acutifolium* Kükenthal: Goenoeng Api, Banda Islands, Moluccas (Humes & Dojiri, 1979b).

Paramolgus modicus spec. nov.
(figs. 82a-g, 83a-j, 84a-i)

Type material.— 8 ♀♀, 16 ♂♂, from 1 colony of *Lobophytum latilobatum* Verseveldt, in 1 m, Nosy N'Tangam, near Nosy Bé, northwestern Madagascar, 21.vii.1967. Holotype ♀ (RMNH F 892), allotype ♂ (RMNH F 893), and 19 paratypes (5 ♀♀, 14 ♂♂) (RMNH F 894).

Female.— Body (fig. 82a) with moderately broad prosome. Length 1.23 mm (1.13-1.32 mm) and greatest width 0.50 mm (0.48-0.55 mm), based on 8 specimens. Greatest dorsoventral thickness 0.37 mm. Segment bearing leg 1 separated from head by transverse dorsal furrow. Epimera of segment bearing leg 1 small, but those of segments bearing legs 2-4 conspicuous and rounded. Ratio of length to width of prosome 1.60:1. Ratio of length of prosome to that of urosome 1.83:1.

Segment bearing leg 5 (fig. 82b) 91 x 140 µm. Genital segment elongate, 143 x 122 µm, ratio 1.17:1, with 2 small swollen areas laterally. Genital areas located just anterior to midregion of segment at level of anterior swellings. Each area (fig. 82c) with 2 very small setae 8 µm long. Three postgenital segments from anterior to posterior 55 x 71, 36 x 70, and 57 x 68 µm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 82d) short, 42 x 29 µm, ratio 1.45:1. Outer lateral seta 50 µm, outermost terminal seta 104 µm, and dorsal seta 22 µm, all smooth. Innermost terminal seta 220 µm with lateral setules, those on inner margin longer than those on outer side. Two median terminal setae 330 µm (outer) and 495 µm (inner), both with conspicuous lateral setules.

Dorsal surface of body smooth, lacking visible sensilla.

Egg sac (fig. 82e) elongate, 550 x 300 µm, containing many eggs 40-44 µm in diameter.

Rostrum (fig. 82f) very broadly rounded posteroventrally. First antenna (fig. 82g) 390 µm long. Lengths of its 7 segments: 44 (55 µm along anterior margin), 130, 26, 55, 44, 35, and 29 µm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 83a) 253 µm long not including claw, 4-segmented, with formula 1, 1, 3, and 1 claw + 4 setae. Fourth segment 57 µm along outer side, 50 µm along inner side, and 21 µm wide. Claw 42 µm.

Labrum (fig. 83b) with 2 posteroventral lobes. Mandible (fig. 83c) resembling that in congeners. Paragnath a small lobe. First maxilla (fig. 83d) with 4 setae. Second maxilla (fig. 83e) with first spine on lash large and dentiform, as in *Paramolgus quadrangulus*, described below. Maxilliped (fig. 83f) resembling in major respects that of congeners.

Ventral area between maxillipeds and first pair of legs (fig. 83g) slightly protuberant.

Legs 1-4 (figs. 83h-j,84a) segmented and armed as in congeners. Leg 1 with small outer lobe on posterior surface of coxa. Inner margin of basis with long plumose seta in legs 1-3, but this seta in leg 4 short, 20 µm. Leg 4 with exopod 131 µm long. First segment of endopod 42 x 24 µm including terminal spinous process, its plumose seta 65 µm. Second segment 91 x 15.5 µm including terminal spiniform process and width taken at middle, its 2 terminal unequal spines 68 µm and 16 µm. Outer margins of both endopod segments with spinules.

Leg 5 (fig. 84b) with unornamented free segment elongate, 47 µm long, 16 µm wide at small proximal inner expansion. Two terminal setae 47 µm and 55 µm. Dorsal seta 39 µm. All setae smooth.

Leg 6 represented by 2 very small setae on genital area (fig. 82c).

Colour of living specimens in transmitted light opaque gray, eye red.

Male.— Body (fig. 84c) more slender than in female. Length 0.87 mm (0.86-0.89 mm) and greatest width 0.30 mm (0.30-0.31 mm), based on 10 specimens. Greatest dorsoventral thickness 0.23 mm. Ratio of length to width of prosome 1.60:1. Ratio of length of prosome to that of urosome 1.26:1.

Segment bearing leg 5 (fig. 84d) 42 x 81 µm. Genital segment 166 x 146 µm. Four postgenital segments from anterior to posterior 31 x 57, 34 x 55, 26 x 52, and 36 x 53 µm.

Caudal ramus (fig. 84d) quadrate, 23 x 23 µm, armed as in female.

Surface of body unornamented as in female.

Rostrum like that of female. First antenna similar to that of female but 3 aesthetes added (at points indicated by dots in fig. 82g). Second antenna (fig. 84e) resembling that of female but showing sexual dimorphism, first segment having several spinules near seta, second segment having long pectinate row of small spinules near inner margin, few small spinules on inner margin distal to seta.

Mandible, paragnath, first maxilla, and second maxilla as in female. Maxilliped (fig. 84f) armed as in congeners. Claw 195 μm.

Ventral area between maxillipeds and first pair of legs as in female.

Legs 1-4 segmented and armed as in female, except sexual dimorphism in leg 1, with third segment of endopod having formula I,I,4 (fig. 84g).

Leg 5 (fig. 84h) with unornamented free segment 18 x 10 μm, ratio 1.81:1, its 2 terminal setae 21 μm and 42 μm. Dorsal seta 39 μm. All setae smooth.

Leg 6 (fig. 84i) with both setae approximately 30 μm long.

Spermatophore not seen.

Colour as in female.

Etymology.— The specific name *modicus*, Latin meaning moderate, having a proper measure, alludes to the moderate expression of features in this species.

Remarks.— Females of *Paramolgus modicus* may be distinguished from congeners by a combination of three characters: (1) the short caudal ramus, ratio 1.45:1, (2) the elongate genital segment with two pairs of small lateral swellings, and (3) the unornamented elongate free segment of leg 5 with a small inner proximal expansion.

Paramolgus nephtheanus Humes, 1980

Paramolgus nephtheanus Humes, 1980: 50, figs. 1-27.

Hosts.— *Nephthea chabrolii* Audouin: Poelau Marsegoe, Ceram, Moluccas (Humes, 1980). *Nephthea sphaerophora* Kükenthal: Poelau Parang, Ceram, Moluccas (Humes, 1980). *Nephthea cupressiformis* Kükenthal: Karang Mie, eastern Halmahera, Moluccas (Humes, 1980). *Nephthea albida* (Holm): Poelau Gomumu, south of Obi, Moluccas (Humes, 1980). *Nephthea galbuloides* Verseveldt: Amboina, Moluccas (Humes, 1980)

Paramolgus ostentus Humes, 1973

Paramolgus ostentus Humes, 1973: 144, figs. 30-47.

Host.— *Lobophytum pauciflorum* (Ehrenberg): Enewetak Atoll, Marshall Islands (Humes & Dojiri, 1973).

Paramolgus pollicaris Humes & Dojiri, 1979

Paramolgus pollicaris Humes & Dojiri, 1979c: 56, figs. 28-57.

Host.— *Cespitularia multipinnata* (Quoy & Gaimard): Goenoeng Api, Banda Islands, Moluccas (Humes & Dojiri, 1979c).

Paramolgus prominulus Humes, 1980

Paramolgus prominulus Humes, 1980: 54, figs. 28-40.

Hosts.— *Nephthea sphaerophora* Kükenthal: Poelau Parang, Ceram, Moluccas (Humes, 1980). *Nephthea cupressiformis* Kükenthal: Karang Mie, eastern Halmahera, Moluccas (Humes, 1980). *Nephthea albida* (Holm): Poelau Gomumu, south of Obi, Moluccas (Humes, 1980). New record: 18 ♀♀, 17 ♂♂, from *Nephthea albida*, in 30 m, Récif Mtere, 1 km northeast of Passe de Dumbea, near Noumea, New Caledonia, 22°20'40"S, 166°13'55"E, 23.vii.1971 (RMNH F 895). *Litophyton acutifolium* Kükenthal: Goenoeng Api, Banda Islands, Moluccas (Humes & Dojiri, 1979b). *Litophyton stuhlmanni* Kükenthal: Poelau Gomumu, south of Obi, Moluccas (Humes & Dojiri, 1979b).

Paramolgus quadrangulus spec. nov.
(figs. 85a-f, 86a-i, 87a-f, 88a-j)

Type material.— 111 ♀♀, 72 ♂♂, from *Sinularia dura* (Pratt), in 2 m, west of Ile Maître, near Noumea, New Caledonia, 22°20'05"S, 166°24'05"E, 20.vi.1971. Holotype ♀ (RMNH F 896), allotype ♂ (RMNH F 897), and 175 paratypes (106 ♀♀, 69 ♂♂) (RMNH F 898).
Other specimens.— From *Sinularia dura*: 35 ♀♀, 7 ♂♂, in 2 m, west of Ile Maître, near Noumea, New Caledonia, 22°20'05"S, 166°24'05"E, 11.vi.1971; 55 ♀♀, 57 ♂♂, in 2 m, north of Pointe Pontillion, Noumea, 22°18'18"S, 166°25'53"E, 28.vi.1971; 38 ♀♀, 44 ♂♂, in 3 m, west of Ile Ngou, north of Noumea, 22°13'44"S, 166°23'01"E, 29.vii.1971; 129 ♀♀, 86 ♂♂, in 3 m, west of Ile Ngou, west of Noumea, 22°13'44"S, 166°23'01"E, 3.viii.1971 (USNM 239189); 1 ♂, in 10 m, Poelau Gomumu, Moluccas, 01°50'00"S, 127°30'54"E, 30.v.1975.

Female.— Body (fig. 85a) with broad flattened prosome. Length 1.04 mm (1.00-1.09 mm) and greatest width 0.56 mm (0.52-0.58 mm), based on 10 specimens. Greatest dorsoventral thickness 0.25 mm. Segment bearing leg 1 fused with cephalosome. Segment bearing leg 2 separated from cephalosome by dorsal transverse furrow. Epimera of segment bearing leg 2 pointed posteriorly, those of segments bearing legs 3 and 4 rounded; edges of these segments crenulated (fig. 85b). Ratio of length to width of prosome 1.20:1. Ratio of length of prosome to that of urosome 2.06:1.

Segment bearing leg 5 (fig. 85c) 62 x 146 µm, dorsally with pair of lateral projections either rounded or with slight point as in fig. 87f. Genital segment 130 x 130 µm, with lateral margins constricted both anteriorly and posteriorly. Genital areas located dorsolaterally in posterior half of segment. Each area (fig. 85d) with 2 small setae about 10 µm long. Three postgenital segments from anterior to posterior 52 x 68, 42 x 65, and 49 x 62 µm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 85e) nearly quadrate, 31 x 29 µm, ratio 1.07:1. Outer lateral seta 47 µm, dorsal seta 68 µm, both smooth. Outermost terminal seta 34 µm, lightly haired. Innermost terminal seta 148 µm and feathered. Two long median terminal setae 407 µm (outer) and 670 µm (inner), both with lateral setules.

Dorsal surface of prosome with few sensilla (fig. 85a) and ventral surfaces of epimera of segments bearing legs 2-4 with few refractile points (fig. 85b).

Egg sac (fig. 85f) elongate, 760 x 170 μm, containing many eggs 44-49 μm in diameter.

Rostral area (fig. 86a) weakly developed and incomplete posteroventrally. First antenna (fig. 86b) 407 μm long. Lengths of its 7 segments: 78 (88 μm along anterior margin), 150, 25, 56, 29, 29, and 23 μm, respectively. Formula for armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 86c) 4-segmented, 229 μm long including claw. Formula: 1, 1, 3, and 1 claw + 5 setae. Fourth segment 73 μm along outer edge, 43 μm along inner edge, and 23 μm wide. Claw 47 μm.

Labrum (fig. 86d) with 2 posteroventral lobes. Mandible (fig. 86e) resembling that of congeners, but outer convex edge having prominent slender teeth on scale, followed by minutely serrated edge on hyaline area. Paragnath (fig. 86d) small lobe with few hairlike setules. First maxilla (fig. 86f) with 3 setae. Second maxilla (fig. 86g,h) 2-segmented, second segment with very minute proximal setule, blunt smooth surficial posterior seta, inner spine with lateral setules, and terminating in flagellum having unilaterally 1 prominent large spine followed by graded series of more slender spines. Maxilliped (fig. 86i) resembling that of congeners.

Ventral area between maxillipeds and first pair of legs (fig. 87a) only slightly protuberant.

Legs 1-4 (fig. 87b-e) segmented and armed as in other species of genus. Outer seta on basis unusually long, in leg 1 100 μm, compared to length of 95 μm for entire exopod. In legs 1-3, proximal outer spine on third segment of exopod small, 13 μm, as compared to 21 μm for next distal spine. Leg 4 (fig. 87e) with exopod 96 μm long, and inner seta on coxa minute, only 3 μm. Endopod with first segment 29 x 13 μm, its inner seta 16 μm. Second segment elongate 78 x 10 μm, including terminal process, its finely barbed spines 13 μm (outer) and 35 μm (inner). Both segments of endopod with hairlike setules along inner margin.

Leg 5 (fig. 87f) with free segment 29 x 12 μm, ornamented on its anterior outer edge with few minute spinules, its 2 setae both approximately 36 μm. Dorsal adjacent seta about 26 μm. All setae smooth.

Leg 6 represented by 2 setae on genital area (fig. 85d).

Colour of living specimens in transmitted light opaque gray, eye red, egg sacs gray.

Male.— Body (fig. 88a) more slender than in female. Length 0.82 mm (0.77-0.89 mm) and greatest width 0.36 mm (0.34-0.40 mm), based on 10 specimens. Greatest dorsoventral thickness 0.20 mm. Ratio of length to width of prosome 1.5:1. Ratio of length of prosome to that of urosome 1.65:1.

Segment bearing leg 5 (fig. 88b) 34 x 83 μm, lacking pair of projections seen in female. Genital segment 156 x 143 μm, longer than wide. Four postgenital segments from anterior to posterior 29 x 44, 31 x 44, 30 x 44, and 30 x 47 μm.

Caudal ramus quadrate, 23 x 23 μm, resembling that of female.

Surface of body ornamented as in female.

Rostral area like that of female. First antenna similar to that of female but 3 aesthetes added (at locations indicated by dots in fig. 86b). Second antenna, labrum, mandible, paragnath, first maxilla, and second maxilla like those of female.

Maxilliped (fig. 88c) slender. Armature similar to that in congeners. Claw 170 µm including terminal lamella.

Ventral area between maxillipeds and first pair of legs (fig. 88d) differing from that of female in having pair of anteriorly directed bars in front of median sclerotization.

Legs 1-4 segmented and armed as in female, except for sexual dimorphism in third segment of endopods of legs 1-3. Endopod of leg 1 (fig. 88e) with I,I,4, its 2 spines from proximal to distal 11 µm and 19 µm. Endopod of leg 2 (fig. 88f) with spines on third segment 8, 6.5, and 10 µm (shorter than in female, 13, 11.5, and 12 µm). Endopod of leg 3 (fig. 88g) with spines on third segment 8, 10, and 15 µm (shorter than in female, 15.5, 15, and 17 µm). Leg 4 like that of female.

Leg 5 (fig. 88h) with free segment 20 x 5.5 µm, its 2 setae about 34 µm, and dorsal adjacent seta 23 µm. All setae naked.

Leg 6 (fig. 88i) with 2 setae approximately 21 µm.

Spermatophore (fig. 88j) 150 x 65 µm, not including neck, attached to female singly or in pairs. In exceptional case illustrated, 3 spermatophores cemented to genital segment and 2 to segment bearing leg 5.

Colour as in female.

Etymology.— The specific name *quadrangulus*, Latin meaning quadrangular, alludes to the quadrate nature of the caudal ramus and female genital segment.

Remarks.— The combination of the following two characters found in *Paramolgus quadrangulus* serves to distinguish the new species from its congeners: (1) the quadrate caudal ramus, and (2) the long outer seta on the basis of leg 1. Only *P. spathophorus* (Humes & Ho, 1968) shows these two features. However, in *P. spathophorus* the female genital segment is wider than long with two large pointed bladelike processes on the genital area, the lash on the second maxilla lacks a large initial spine, and the free segment of leg 5 in the female is elongate, 6:1.

Paramolgus resectus Humes & Dojiri, 1979

Paramolgus resectus Humes & Dojiri, 1979b: 338, figs. 1-25.

Host.— *Litophyton stuhlmanni* (May): Poelau Gomumu, south of Obi, Moluccas (Humes & Dojiri, 1979b).

Paramolgus spathophorus (Humes & Ho, 1968)

Lichomolgus spathophorus Humes & Ho, 1968c: 674, figs. 128-147.
Paramolgus spathophorus; Humes & Stock, 1973: 275; Humes, 1975: 26; Humes 1983: 73.

Hosts.— *Sarcophyton trocheliophorum* von Marenzeller: Region of Nosy Bé, Madagascar (Humes & Ho, 1968c; Humes & Stock, 1973). The host was originally reported as *Sarcophyton glaucum*, but Dr. Verseveldt later changed the identification to *Sarcophyton trocheliophorum* . *Sarcophyton acutangulum* (von Marenzeller): Region of Nosy Bé, Madagascar (Humes & Stock, 1973; Humes, 1982); near Noumea, New

Caledonia (Humes, 1982). *Sarcophyton elegans* Moser: Near Noumea, New Caledonia (Humes, 1982). *Sarcophyton glaucum* (Quoy & Gaimard): Region of Nosy Bé, Madagascar; near Noumea, New Caledonia (Humes, 1982). *Sarcophyton stolidotum* Verseveldt: Region of Nosy Bé, Madagascar (Humes, 1982). *Lobophytum crebriplicatum* von Marenzeller: Near Noumea, New Caledonia (Humes, 1975). *Lobophytum pauciflorum* (Ehrenberg) (new host): 1 ♀, 4 ♂♂, in 1 m, west of Ile Mando, near Noumea, near New Caledonia, 22°18'59"S, 166°09'30"E, 5.vii.1971; 3 ♀♀, 4 ♂♂, same locality, 15.vii.1971; 3 ♀♀, 12 ♂♂, in 2 m, Pointe Pontillion, Noumea, 22°18'24 S, 166°25'50"E, 9.vi.1971 (RMNH F 900); 3 ♀♀, 9 ♂♂, in 0.5 m, Ile To N'du, near Noumea, 22°10'41"S, 166°16'30"E, 29.vi.1971; 1 ♂, in 4 m, western side of Ricaudy Reef, near Noumea, 22°19'05"S, 166°26'28"E, 28.vii.1971; 1 ♂, in 1 m, Ile aux Serpents, near Noumea, 22°16'52"S, 166°25'12"E, 19.vii.1971; 1 ♀, 3 ♂♂, in 1 m, east of Ile To N'du, near Noumea, 22°10'49"S, 166°17'12"E, 12.vii.1971; 1 ♀, in 17 m, in pass between Nosy Bé and Nosy Komba, Madagascar, 10.viii.1967.

Paramolgus subincisus spec. nov.
(figs. 89a-g, 90a-i, 91a-j)

Type material.— 37 ♀♀, 43 ♂♂, from 15 colonies of ?*Xenia* spec.,in 3 m, Poelau Marsegoe, Moluccas, 02°59'30"S, 128°03'30"E, 15.v.1975. Holotype ♀ (RMNH F 901), allotype ♂ (RMNH F 902), and 74 paratypes (34 ♀♀, 40 ♂♂) (RMNH F 903).
Other specimens.— 2 ♀♀, 1 ♂, from 7 colonies of ?*Xenia* spec., in 3 m, Poelau Gomumu, south of Obi, Moluccas, 01°50'00"S, 127°30'54"E, 30.v.1975; 1 ♀, from 4 colonies of ?*Xenia* spec., in 3 m, Poelau Gomumu, 01°50'00"S, 127°30'54"E, 30.v.1975; 4 ♀♀, 4 ♂♂, from 9 colonies of *Heteroxenia* spec., on reef south of Yaté, southeastern New Caledonia, 22°11'S, 166°59'E, 23.vi.1971 (USNM 239190).

Female.— Body (fig. 89a) relatively slender, prosome moderately pointed anteriorly. Length 1.67 mm (1.51-1.93 mm) and greatest width 0.61 (0.53-0.68 mm), based on 10 specimens. Greatest dorsoventral thickness 0.52 mm. Segment bearing leg 1 separated from head by weak transverse dorsal furrow. Epimera of segments bearing legs 1-4 narrowly rounded. Ratio of length to width of prosome 1.74:1. Ratio of length of prosome to that of urosome 1.54:1.

Segment bearing leg 5 (fig. 89b) 121 x 180 µm. Genital segment 192 x 198 µm (greatest width in anterior third), in dorsal view essentially subquadrate, with lateral margins showing 2 slight expansions. Genital areas situated dorsolaterally in anterior half of segment immediately posterior to anterior expansions. Each area (fig. 89c) with 2 small setae 10 µm and 13 µm. Three postgenital segments from anterior to posterior 83 x 125, 60 x 117, and 99 x 110 µm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 89d) moderately elongate, 109 x 52 µm, ratio 2.10:1. Outer lateral seta 100 µm, outermost terminal seta 145 µm, and innermost terminal seta 250 µm, all with lateral setules. Dorsal seta short, 35 µm, and smooth. Two median terminal setae 360 µm (outer) and 550 µm (inner), both smooth and having abrupt notch-like constrictions. Terminal ventral flange with very small marginal spinules.

Dorsal surface of body with few refractile points and sensilla on urosome.

Egg sacs seen only as fragments, eggs 99-112 µm in diameter.

Rostrum (fig. 89e) incompletely formed posteroventrally. First antenna (fig. 89f)

539 µm long. Lengths of its 7 segments: 55 (109 µm along anterior margin), 130, 36, 104, 86, 65, and 26 µm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 89g) 396 µm long including claw, 4-segmented, with formula 1, 1, 3, and 1 claw + 5 setules. Fourth segment 66 µm along outer side, 42 µm along inner side, and greatest width 29 µm.

Labrum (fig. 90a) with 2 broad, rounded, posteroventral lobes. Mandible (fig. 90b) with basal part constricted, forming slender "waist." Scalelike area with row of very small spinules. Paragnath small lobe (fig. 90a). First maxilla (fig.90c) with 4 setae. Second maxilla (fig. 90d) armed as in congeners, but proximal outer area of lash much expanded with row of graduated teeth. Maxilliped (fig. 90e) also armed as in congeners. Larger seta on second segment bent and with minute spinules distally. Terminal process on third segment with row of 5 small spinules.

Ventral area between maxillipeds and first pair of legs (fig. 90f) slightly protuberant.

Legs 1-4 (figs. 90g-i,91a) segmented and armed as in congeners. Leg 1 with coxa having outer posterior rounded lobe. Exopod with spines on third segment having stronger lateral spinules than those on first and second segments. Spine on third segment of endopod shaped like bowling pin. Inner margin of basis with row of setules in legs 1-3 but smooth in leg 4. Leg 4 with inner coxal seta smooth, 21 µm long. Exopod of leg 4 247 µm long. First segment of endopod 57 µm without terminal spiniform processes, 68 µm with these processes, and 52 µm wide, its distal plumose seta 88 µm. Second segment 148 µm long without processes, 161 µm with processes, 44 µm wide proximally, 31 µm wide distally, its 2 terminal barbed spines 26 µm and 48 µm. First segment with small spinules along outer margin. Second segment with outer margin having similar small spinules on proximal half but fewer and larger spinules on distal half.

Leg 5 (fig. 91b) with large free segment 265 µm long, 91 µm wide at proximal inner expansion, approximately 52 µm wide distal to expansion. Expansion abruptly set off from rest of segment. Two subterminal setae 34 µm and 42 µm, both slender and smooth. Dorsal seta unusually short, 30 µm, and naked. Outer dorsal surface of free segment beyond level of expansion ornamented with many small spinules.

Leg 6 represented by 2 small setae on genital area (fig. 89c).

Colour of living specimens in transmitted light opaque gray with occasionally orange globules, eye red.

Male.— Body (fig. 91c) slender. Length 1.33 mm (1.24-1.31 mm) and greatest width 0.40 mm (0.36-0.43 mm), based on 10 specimens. Greatest dorsoventral thickness 0.32 mm. Ratio of length to width of prosome 1.79:1. Ratio of length of prosome to that of urosome 1.18:1.

Segment bearing leg 5 (fig. 91d) 68 x 159 µm. Genital segment elongate, 295 x 253 µm. Four postgenital segments from anterior to posterior 52 x 105, 55 x 105, 33 x 101, and 75 x 104 µm.

Caudal ramus (fig. 91d) 91 x 47 µm, ratio 1.94:1, armed as in female.

Surface of body without obvious surficial ornamentation.

Rostrum as in female. First antenna similar to that of female but 3 aesthetes added (at points indicated by dots in fig. 89f). Second antenna (fig. 91e) with many spinules on inner surfaces of first and second segments, but otherwise as in female.

Mandible, paragnath, first maxilla, and second maxilla like those of female. Maxilliped (fig. 91f) segmented and armed as in congeners. Second segment with only 1 row of spinules. Claw 318 µm long including terminal lamella.

Legs 1-4 segmented and armed as in female except for endopod of leg 1 (fig. 91g) with third segment I,I,4, its 2 spines 46 µm and 44 µm, both with extremely minute lateral barbules.

Leg 5 (fig. 91h) with elongate unornamented free segment 44 x 14 µm, its 2 setae approximately 26 µm. Dorsal seta 23 µm. All setae smooth.

Leg 6 (fig. 91i) with 2 slender setae 29 µm and 31 µm.

Spermatophore (fig. 91j), attached to female, 297 x 109 µm.

Colour as in female.

Etymology.— The specific name *subincisus*, a combination of Latin *sub-*, meaning somewhat, and *subincisus*, meaning cut into or incised, alludes to the indentation on the free segment of leg 5 in the female and to the small abrupt constrictions on the two long median terminal setae on the caudal rami of both sexes.

Remarks.— Four criteria may be used collectively to distinguish *Paramolgus subincisus* from its congeners: (1) the body length less than 1 mm, (2) the genital segment of the female of very different form, (3) leg 5 of the female not ornamented with spinules and lacking a proximal expansion marked off by an abrupt incision, and (4) the endopod of leg 1 in the male strongly geniculate. The application of these criteria establishes the identity of *P. incisus*, where the body length is more than 1 mm, the genital segment of the female is subquadrate, leg 5 of the female has a large free segment 265 x 91 µm ornamented with spinules with the proximal expansion marked off by an abrupt incision, and the endopod of leg 1 in the male is not geniculate.

Paramolgus subincisus resembles *P. timendus* spec. nov., described below, in the form of its leg 5 in the female, but marked differences are to be seen in the shape of the genital segment, the nature of the second maxilla, and the two spines on the third segment of the endopod of leg 1.

The two long insected setae on the caudal rami provide a unique recognition character readily seen without dissection. No other species in the genus has similar setae.

Paramolgus timendus spec. nov.
(figs. 92a-g, 93a-i, 94a-c, 95a-g, 96a-e)

Type material.— 148 ♀♀, 429 ♂♂, from 3 colonies of *Alcyonium simplex* Thomson & Dean, in 2 m, west of Ile Ngou, north of Noumea, New Caledonia, 22°13'44"S, 166°23'01"E, 29.vii.1971. Holotype ♀ (RMNH F 904), allotype ♂ (RMNH F 905), and 570 paratypes (144 ♀♀, 426 ♂♂) (RMNH F 906).
Other specimens.— 10 ♀♀, 11 ♂♂, from 1 colony of *Alcyonium simplex*, in 2 m, Rocher à la Voile, Noumea, New Caledonia, 22°18'24"S, 166°25'50"E, 2.viii.1971; 1 ♂, from 1 colony of *Alcyonium simplex*, in 0.5 m, western side of Ile Maître, near Noumea, 22°20'05"S, 166°24'05"E, 11.vi.1971; 1 ♂, from 1 colony of *Alcyonium molle* Thomson & Dean, in 3 m, Poelau Marsegoe, Moluccas 02°59'30"S, 128°03'30"E, 15.v.1975.

Female.— Body (fig. 92a) with moderately broad prosome. Length 1.88 mm (1.72-2.01 mm) and greatest width 0.63 mm (0.61-0.68 mm), based on 10 specimens.

Greatest dorsoventral thickness 0.50 mm. Segment bearing leg 1 separated dorsally from head by weak transverse furrow. Epimera of segments bearing legs 1-4 rounded. Ratio of length to width of prosome 1.60:1. Ratio of length of prosome to that of urosome 1.71:1.

Segment bearing leg 5 (fig. 92b) 104 x 273 µm. Genital segment 330 x 231 µm, in dorsal view with anterior two-thirds rounded and posterior third with parallel lateral margins. Genital areas situated dorsally at level of widest part of segment. Each area (fig. 93c) with 2 setae 7 µm long. Three postgenital segments from anterior to posterior 104 x 127, 70 x 114, and 78 x 117 µm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 93d) elongate, 133 x 48 µm, ratio 2.77:1. Outer lateral seta 156 µm, dorsal seta 40 µm, both smooth. Outermost terminal seta 198 µm, innermost terminal seta 231 µm, and 2 median terminal setae 264 µm (outer) and 340 µm (inner), all these setae with lateral setules. Terminal ventral flange of ramus with minute marginal spinules.

Dorsal surface of body smooth, without visible sensilla.

Egg sac (fig. 92e) elongate oval, 533 x 286 µm, containing many eggs 110-120 µm in diameter. Abnormal egg sac (fig. 92f) 396 x 280 µm, containing fewer eggs.

Rostrum (fig. 93g) rounded posteroventrally. First antenna (fig. 93a) 540 µm long. Lengths of its 7 segments: 39 (80 µm along anterior margin), 153, 36, 86, 78, 68, and 39 µm, respectively. Armature: 4, 13, 6, 3, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 93b) 400 µm long including claw, 4-segmented, with formula 1, 1, 3, and 1 claw + 5 setae (largest seta as in fig. 93c). Fourth segment 112 µm along outer side, 74 µm along inner side, and 31 µm wide. Claw 86 µm.

Labrum (fig. 93d) with 2 posteroventral lobes. Mandible (fig. 93e) resembling that of *Paramolgus nephtheanus* Humes, 1980. Paragnath small lobe with spinules (fig. 93d). First maxilla (fig. 93f) with 4 setae. Second maxilla (fig. 93g) and maxilliped (fig. 93h) differing only slightly from those of *P. nephtheanus*.

Ventral area between maxillipeds and first pair of legs (fig. 93i) only slightly protuberant.

Legs 1-4 (figs. 94a-c,95a) segmented and armed as in congeners. Leg 1 with outer hyaline rounded lobe on coxa. Inner margin of basis with row of setules in legs 1-3 but smooth in leg 4. Leg 4 with inner coxal seta smooth, 42 µm long. Exopod of leg 4 208 µm long. Endopod with first segment 52 µm long without processes, 60 µm with processes, and 42 µm wide, its inner feathered seta 117 µm; second segment 96 µm long without processes, 112 µm with processes, 31 µm in greatest width, 21 µm in least width, its 2 terminal barbed spines 30 µm and 63 µm. Outer margin of both segments with small spinules.

Leg 5 (fig. 95b) with free segment hatchet-shaped, 146 µm long, 73 µm wide at proximal expansion, 23 µm wide near distal end, bearing 2 unequal setae 30 µm and 68 µm. Dorsal seta 44 µm. All 3 setae smooth. Free segment ornamented along outer surface with small spines.

Leg 6 represented by 2 small setae on genital area (fig. 92c).

Colour of living specimens in transmitted light opaque gray, eye red, egg sacs grayish black.

Male.— Body (fig. 95c) slender. Length 1.38 mm (1.31-1.54 mm) and greatest

width 0.37 mm (0.34-0.43 mm), based on 10 specimens. Greatest dorsoventral thickness 0.31 mm. Ratio of length to width of prosome 1.96:1. Ratio of length of prosome to that of urosome 1.29:1.

Segment bearing leg 5 (fig. 95d) 47 x 122 μm. Genital segment elongate, 273 x 218 μm. Four postgenital segments from anterior to posterior 48 x 84, 48 x 78, 34 x 72, and 44 x 75 μm.

Caudal ramus (fig. 95e) 140 x 33 μm, ratio 4.2:1, relatively longer than in female but otherwise similar.

Surface of body unornamented as in female.

Rostrum like that of female. First antenna resembling that of female but 3 aesthetes added (at points indicated by dots in fig. 93a). Second antenna (fig. 95f) showing sexual dimorphism in having small spines along inner margins of first and second segments,

Mandible, paragnath, first maxilla, and second maxilla like those of female. Maxilliped (fig. 95g) in general aspect resembling that of congeners. Claw 300 μm.

Ventral area between maxillipeds and first pair of legs similar to that of female.

Legs 1-4 segmented as in female. Strong sexual dimorphism in geniculate endopod of leg 1 (fig. 96a), with third segment 81 μm long, its prominent recurved clawlike spine 73 μm and bearing 2 rows of spines (fig. 96b). Weak sexual dimorphism in third segment of endopod of leg 2 (fig. 96c), with spiniform process between 2 terminal spines long (15 μm) in relation to inner terminal spine (29 μm); in female this spiniform process also 15 μm long, but shorter in relation to inner terminal spine (39 μm). Otherwise legs 1-4 as in female.

Leg 5 (fig. 96d) with elongate slender unornamented free segment 52 x 13 μm, ratio 4:1, with 2 terminal setae 34 μm long. Adjacent dorsal seta 44 μm. All setae smooth.

Leg 6 (fig. 96e) with 2 setae 36 μm and 40 μm.

Spermatophore not seen.

Colour as in female.

Etymology.— The specific name *timendus*, Latin meaning formidable or fearful, alludes to the appearance of the endopod of leg 1 in the male.

Remarks.— *Paramolgus timendus* differs from all congeners by the form of the genital segment and leg 5 in the female, and by the nature of the sexually dimorphic endopod of leg 1 in the male. No other species in the genus has a similar hatchet-shaped free segment in leg 5 ornamented with small spines. The genital segment of the female, seen in dorsal view, with its anterior two-thirds rounded and its posterior third with parallel lateral margins, differs from all congeners.

As in the new species, the endopod of leg 1 in the male is geniculate in six congeners. Five of these have two very unequal spines on the third segment of this endopod, the longer spine clawlike and conspicuously barbed. (The two spines appear to be subequal in the incompletely described *Paramolgus anomalus* (A. Scott, 1909, fig. LXVII,14), although the endopod is shown as distinctly geniculate.) From these congeners with similar sexual dimorphism in leg 1, the male of *P. timendus* may be distinguished by its much greater length, 1.38 mm, as opposed to less than 0.80 mm in *P. prominulus, P. anomalus, P. litophyticus, P. accinctus, P. nephtheanus*, and *P. resectus*. Other subtle differences may be found in the ratio of the caudal ramus among these species.

Genus *Paredromolgus* Humes & Stock, 1972

Paredromolgus decorus (Humes & Frost, 1964)

Lichomolgus decorus Humes & Frost, 1964: 140, figs. 99-133; Bouligand, 1966: 269.
Paredromolgus decorus; Humes & Stock, 1973: 276.

Hosts.— *Cladiella humesi* Verseveldt (new host): 20 ♀♀, 31 ♂♂, in 2 m, west side of Ile Mando (Ile des Canards), near Noumea, New Caledonia, 22°18'59"S, 166°09'30"E, 26.vi.1971. *Cladiella laciniosa* (Tixier-Durivault): Nosy Bé, Madagascar (Humes & Frost, 1964). *Cladiella latissima* (Tixier-Durivault): Region of Nosy Bé, Madagascar (Humes & Stock, 1973). *Cladiella pachyclados* (Klunzinger): Near Noumea, New Caledonia (Humes, 1975). *Cladiella rotundata* Tixier-Durivault (new host): 13 ♀♀, 2 ♂♂, intertidal, on algal ridge, 5 km south of Yaté, southeastern New Caledonia, 22°11'00"S, 166°27'18"E, 23.vi.1971; 20 ♀♀, 31 ♂♂, from *Cladiella humesi* Verseveldt, in 2 m, west of Ile Mando (Ile des Canards), near Noumea, New Caledonia, 22°18'59"S, 166°09'30"E, 26.vi.1971. *Cladiella sphaerophora* (Ehrenberg): Region of Nosy Bé, Madagascar (Humes & Stock, 1973).

Genus *Perosyna* Humes, 1982

Perosyna indonesica Humes, 1982

Perosyna indonesica Humes, 1982: 32, figs. 4-6.

Host.— *Sarcophyton glaucum* (Quoy & Gaimard): Goenoeng Api, Banda Islands, Moluccas (Humes, 1982).

Genus *Telestacicola* Humes & Stock, 1972

Telestacicola lobophyti spec. nov.
(figs. 97a-g, 98a-h, 99a-i)

Type material.— 5 ♀♀, 8 ♂♂, from *Lobophytum pauciflorum* (Ehrenberg), in 17 m, in pass between Nosy Bé and Nosy Komba, northwestern Madagascar, 10.viii.1967. Holotype ♂ (RMNH F 908), allotype ♀ (RMNH F 909), and 7 paratypes (3 ♀♀, 4 ♂♂) (RMNH F 910).

Male.— Body (fig. 97a) elongate and slender. Length 0.74 mm (0.72-0.79 mm) and greatest width 0.22 mm (0.21-0.23 mm), based on 5 specimens. Greatest dorsoventral thickness 0.20 mm. Segment bearing leg 1 distinctly demarcated from head by dorsal transverse furrow. Epimera of segments bearing legs 1-4 rounded. Ratio of length to width of prosome 2:1. Ratio of length of prosome to that of urosome 1.3:1.

Segment bearing leg 5 (fig. 97b) 34 x 48 µm. Genital segment in dorsal view elongate, 94 x 73 µm. Four postgenital segments from anterior to posterior 49 x 49, 44 x 44, 34 x 38, and 39 x 34 µm. Posteroventral border of anal segment smooth.

Caudal ramus (fig. 97c) elongate, 57 x 18 µm, ratio 3.17:1. Outer lateral seta 47

μm, dorsal seta 22 μm, both smooth. Outermost terminal seta 60 μm, innermost terminal seta 65 μm, and 2 long median terminal setae 156 μm (outer) and 239 μm (inner), all with lateral setules.

Surface of body unornamented.

Rostrum (fig. 97d) projecting in lateral view. First antenna (fig. 97e) 190 μm long. Lengths of its 7 segments: 16 (31 μm along anterior margin), 40, 13, 26, 29, 24, and 29 μm, respectively. Armature: 4, 13 + 1 aesthete, 6, 3 + 1 aesthete, 4 + 1 aesthete, 2 + 1 aesthete, and 7 + 1 aesthete. All setae smooth.

Second antenna (fig. 97f) slender, 4-segmented, 174 μm long including claws. Armature: 1, 1, 3, and 2 slender weakly jointed smooth claws and 5 long setae. Claws 28 μm and 34 μm long. Fourth segment 58 μm along outer side, 42 μm along inner side, and 14 μm wide.

Labrum (fig. 97g) with 2 truncated posteroventral lobes. Mandible (fig. 98a), paragnath (fig. 97g), first maxilla (fig. 98b), and second maxilla (fig. 98c) similar in major respects to those of *Telestacicola angoti* Humes & Stock, 1973. Maxilliped (fig. 98d) slender. Second segment with 2 slender setae and 2 rows of spinules. Claw 112 μm with 2 very unequal proximal setae, longer seta approaching one-half length of claw.

Ventral area between maxillipeds and first pair of legs (fig. 98e) protruding ventrally (fig. 97a), sclerotized bars anterior to weak median plate unusually prominent.

Legs 1-4 (figs. 98a-f,99a) with 3-segmented rami except endopod of leg 4 being 1-segmented. Formula for armature as in *T. angoti*. Inner coxal seta long and plumose in legs 1-3 but minute, 6 μm, and smooth in leg 4. Outer seta on basis short and inconspicuous in all 4 legs. Third segment of endopod of leg 1 with I,I,4, outer spine 22 μm, inner spine 38 μm. Leg 4 with exopod 120 μm long. Endopod 73 x 17 μm, with slight notch on outer margin suggesting division of segment. Inner plumose seta 36 μm. Two terminal barbed spines very unequal in length, outer spine 26 μm, inner spine 55 μm. Row of fine setules along outer edge of segment.

Leg 5 (fig. 99b) with minute unornamented free segment 10 x 9 μm. Two terminal setae 31 μm and slender, and 29 μm and slightly stouter. Dorsal seta 30 μm. All setae smooth.

Leg 6 (figs. 97b,99b) with 2 slender smooth setae 35 μm.

Spermatophore not seen.

Colour of living specimens in transmitted light opaque gray, eye red.

Female.— Body (fig. 99c) slender as in male. Length 0.88 mm (0.85-0.94 mm) and greatest width 0.27 mm (0.25-0.29 mm), based on 5 specimens. Greatest dorsoventral thickness 0.28 mm. Ratio of length to width of prosome 1.88:1. Ratio of length of prosome to that of urosome 1.31:1.

Segment bearing leg 5 (fig. 99d) 52 x 60 μm. Genital segment in dorsal view 153 μm long, 86 μm wide anteriorly, and 55 μm wide posteriorly, ratio of length to greatest width 1.78:1. Genital areas located dorsolaterally just anterior to middle of segment. Each area (fig. 99e) with 2 unequal setae 8 μm and 36 μm. Three postgenital segments from anterior to posterior 57 x 49, 45 x 42, and 50 x 37 μm.

Caudal ramus resembling that of male but slightly longer, 88 x 18 μm, ratio 4.8:1.

Egg sac (fig. 99f) elongate oval, 297 x 137 μm, containing approximately 28 eggs 49-57 μm in diameter.

Rostrum as in male. First antenna similar to that of male, but lacking aesthete on

second and fourth segments. Second antenna like that of male.

Labrum, mandible, paragnath, first maxilla, and second maxilla resembling those of male. Maxilliped (fig. 99g) similar to that of *T. angoti*.

Ventral area between maxillipeds and first pair of legs as in male.

Legs 1-4 similar to those of male except third segment of endopod of leg 1 with I,5 (fig. 99h).

Leg 5 (fig. 99i) with small unornamented free segment 14 x 9.5 µm, its 2 terminal setae very unequal, outer seta 47 µm, inner seta 10 µm. Dorsal seta 31 µm. All setae smooth.

Leg 6 represented by 2 setae on genital area (fig. 99e).

Colour like that of male.

Etymology.— The specific name *lobophyti* is the genitive form of the generic name of the host.

Remarks.— *Telestacicola lobophyti* has two congeners, *T. angoti* Humes and Stock, 1973, from the telestacean *Coelogorgia palmosa* Milne Edwards & Haime and the gorgonacean *Muricella rubra robusta* Thompson and Simpson (see Humes & Stock, 1973: 304), and *T. sertus* Humes, 1977, from a hydroid. In the new species the two claws on the second antenna are smooth, while they are pectinate in *T. angoti* and dentate in *T. sertus*. The free segment of leg 5 in the female is small, 14 x 9.5 µm, ratio 1.47:1, in *T. lobophyti*, but larger in *T. angoti*, 55 x 20, ratio 3.75:1, and in *T. sertus*, 78 x 15.5 µm, ratio 5.03:1.

Genus *Zamolgus* Humes & Stock, 1972

Genus *Zamolgus* Humes & Stock, 1972: key to species (based on females)

1. Free segment of leg 5 elongate, reaching almost to posterior end of genital segment 2
- Free segment of leg 5 short, not reaching middle of genital segment .... ***Z. tridens***
2. Free segment of leg 5 ornamented with conspicuous spines; third segment of exopod of leg 4 with III,I,5 ..... ***Z. acanthodes***
- Free segment of leg 5 with very small spinules; third segment of exopod of leg 4 with II,I,5 ..... ***Z. cracens***

Zamolgus acanthodes Humes & Stock, 1973

Zamolgus acanthodes Humes & Stock, 1973: 320, figs. 179-181.

Host.— *Sinularia arborea* Verseveldt: Region of Nosy Bé, Madagascar (Humes & Stock, 1973).

Zamolgus cracens Humes & Dojiri, 1979

Zamolgus cracens Humes & Dojiri, 1979c: 64, figs. 58-83.

Host.— *Cespitularia multipinnata* (Quoy & Gaimard): Goenoeng Api, Banda Islands, Moluccas (Humes & Dojiri, 1979c).

Zamolgus tridens Humes & Stock, 1973

Zamolgus tridens Humes & Stock, 1973: 315, figs. 176-178.

Host.— *Cespitularia turgida* Verseveldt: Nosy Bé, Madagascar (Humes & Stock, 1973).

Discussion
(tables 1, 2, 3)

Copepods living in association with alcyonaceans are apparently common throughout the Indo-Pacific. At present, collections have been made in only a few areas, however, and from only a small number of the species of Alcyonacea occurring in any given region.

Information available suggests that host specificity exists to some degree. Nineteen lichomolgid species included in this synopsis occurred on 3-6 alcyonacean species belonging to one genus. Eight other copepods were associated with 3-11 hosts belonging predominantly to a single genus. Thus, in approximately one-fourth of the associations there appears to be a preference at the generic level in the selection of a host.

Available information suggests that, wherever the alcyonacean hosts live, their copepod associates will be found also. Seventeen copepod species were associated with the same host species both in Madagascar and in the Moluccas-New Caledonia area, regions separated by thousands of kilometers.

One lichomolgid species may be associated with several alcyonacean species. The greatest number occurred in the cases of *Doridicola aculeatus*, on 17 host species, and *D. spinulifer*, on 13 host species. Fifty-three species of copepods were recorded from only a single alcyonacean species.

The number of copepods of a single species associated with one colony of Alcyonacea is not known in most cases, since during collection several colonies were often pooled or in cases of massive colonies only fragments could be examined. However, in one instance, 830 individuals of *Colobomolgus bandensis* were recovered from a single colony of the alcyonacean *Siphonogorgia polydactyla* in the Moluccas. One alcyonacean colony may harbor as many as five species of lichomolgids, e.g., *Sarcophyton glaucum* in the Moluccas with *Paradoridicola spinulatus, Alcyonomolgus sarcophyticus, Anisomolgus protentus, A. pterolobatus,* and *Perosyna indonesica.*

Table 1: Lichomolgid copepods and their alcyonacean hosts in the Indo-Pacific

Acanthomolgus boholensis spec. nov.: *Dendronephthya puetteri.*
Acanthomolgus brevifurca spec. nov.: *Siphonogorgia variabilis.*
Acanthomolgus cuneipes (Humes & Ho, 1968): *Dendronephthya mucronata; Stereonephthya acaulis.*
Acanthomolgus exilipes (Humes & Ho, 1968): *Dendronephthya mucronata; D. speciosa;;D. stocki; Dendronephthya* spec.; *Stereonephthya cordylophora.*
Acanthomolgus fissisetiger (Humes & Ho, 1968): *Lemnalia elegans; L. humesi; Stereonephthya acaulis.*
Acanthomolgus gentilis (Humes & Ho, 1968): *Dendronephthya koellikeri; D.lokobeensis; D. mucronata; D. speciosa; D. stocki; Dendronephthya* spec.; *Stereonephthya acaulis; S. cordylophora; Umbellulifera striata.*
Acanthomolgus hians (Humes & Ho, 1968): *Siphonogorgia pichoni.*
Acanthomolgus longispinifer (Humes & Ho, 1968): *Siphonogorgia pichoni.*
Acanthomolgus plantei Humes & Stock, 1973: *Umbellulifera striata.*
Acanthomolgus varirostratus (Humes & Ho, 1968): *Dendronephthya cirsium; D. koellikeri; D. lokobeensis; D. mucronata; D. regia; D. speciosa; D. stocki; Dendronephthya* spec.; *Stereonephthya cordylophora.*
Acanthomolgus verseveldti (Humes & Ho, 1968): *Heteroxenia elisabethae; H. fuscescens; Xenia lepida.*
Alcyonomolgus bicrenatus Humes, 1982: *Sarcophyton ehrenbergi.*
Alcyonomolgus dissimilis Humes, 1982: *Lobophytum depressum; Sarcophyton acutangulum.*
Alcyonomolgus incisus (Humes & Ho, 1968): *Sarcophyton ehrenbergi.*
Alcyonomolgus insolens (Humes & Ho, 1968): *Lobophytum caledonense; L. crassum; L. crebriplicatum; L. pauciflorum.*
Alcyonomolgus lumellifer spec. nov.: *Lobophytum pauciflorum.*
Alcyonomolgus petalophorus Humes, 1982: *Sarcophyton acutangulum.*
Alcyonomolgus relativus Humes, 1982: *Sarcophyton ehrenbergi.*
Alcyonomolgus sarcophyticus: *Sarcophyton cornispiculatum; S. elegans; S. glaucum; S. manifestum*
Anisomolgus ensifer Humes, 1982: *Sarcophyton glaucum.*
Anisomolgus goniodes Humes, 1982: *Sarcophyton manifestum; S. trocheliophorum.*
Anisomolgus limbatus Humes & Dojiri, 1979: *Lobophytum crassum.*
Anisomolgus protentus (Humes & Frost, 1964): *Sarcophyton crassum; S. elegans; S. glaucum; S. trocheliophorum.*
Anisomolgus pterolobatus Humes, 1982: *Sarcophyton crassum; S. elegans; S. glaucum.*
Ascetomolgus plicatus Humes & Stock, 1973: *Studeriotes semperi.*
Colobomolgus bandensis spec. nov.: *Sinularia polydactyla.*
Colobomolgus cristatus (Humes & Ho, 1968): *Sinularia firma; S. leptoclados.*
Colobomolgus dentipes (Thompson & A. Scott, 1903): *Sinularia firma; S. humesi; S. polydactyla.*
Colobomolgus epaxius spec. nov.: *Sinularia firma.*
Colobomolgus laboutei Humes & Stock, 1973: *Sinularia leptoclados.*
Contomolgus lokobeensis Humes & Stock, 1973: *Dendronephthya stocki; Studeriotes semperi.*
Critomolgus antennulus spec. nov.:*Cladiella pachyclados.*
Critomolgus cladiellae spec. nov.:*Cladiella pachyclados.*
Critomolgus foxi (Gurney, 1927): *Cladiella humesi; C. krempfi; C. laciniosa; C. latissima; C. pachyclados; C. sphaerophora.*
Critomolgus orectopus spec. nov.: *Cladiella pachyclados; Lobophytum pauciflorum.*
Doridicola aculeatus (Humes & Ho, 1968): *Litophyton acutifolium; L. arboreum; L.stuhlmanni; Nephthea aberrans; N. albida; N. amentacea; N. bumasta; N. chabrolii.; N. crassa; N. cupressiformis; N. filamentosa; N. galbuloides; N. lanternaria; N. sphaerophora; N. tixierae; Stereonephthya inordinata; S. nosybearia; S. scaphis.*
Doridicola antheliae (Humes & Stock, 1973): *Anthelia glauca; A. ternatana.*
Doridicola capnellae spec. nov.: *Capnella imbricata.*
Doridicola cincinnatus (Humes, 1975): *Cladiella humesi; C. pachyclados; C. rotundata; C. similis; C. sphaerophora.*
Doridicola comparatus (Humes, 1975): *Xenia membranacea.*
Doridicola hetaericus (Humes & Ho, 1968): *Cladiella krempfi; C. laciniosa; C. pachyclados.*
Doridicola lumarius (Humes, 1980): *Nephthea cupressiformis; N. galbuloides.*

Doridicola mimicus (Humes, 1975): *Cladiella pachyclados.*
Doridicola patulus (Humes, 1959): *Sinularia mayi.*
Doridicola petalopus spec. nov.: ?*Xenia* spec.
Doridicola praelongipes Humes, 1975: *Xenia membranacea; X. viridis.*
Doridicola rostripes spec. nov.: ?*Xenia* spec.
Doridicola senticauda spec. nov.: *Paralemnalia thyrsoides.*
Doridicola singularipes (Humes & Ho, 1968): *Parerythropodium fulvum; P. rubiginosum; Parerythropodium* spec.
Doridicola spinulifer (Humes & Frost, 1964): *Lemnalia africana; L. amabilis; L. cervicornis; L. crassicaulis; L. digitata; L. elegans; L. flava; L. longiramus. L. madagascariensis; L. tenuis; Lemnalia* spec.; *Paralemnalia clavata; P. thyrsoides; Sinularia polydactyla.*
Doridicola vulcanius spec. nov.: *Paralemnalia thyrsoides.*
Mecra ellipsaria Humes, 1980: *Nephthea sphaerophora.*
Meringomolgus devotus Humes & Stock, 1973: *Sinularia leptoclados.*
Meringomolgus facetus Humes & Stock, 1973: *Sinularia minima; S. polydactyla.*
Meringomolgus hamatus Humes & Stock, 1973: *Sinularia humesi; S. leptoclados;S. maxima.*
Monomolgus unihastatus Humes & Frost, 1964: *Parerythropodium fulvum.*
Notoxynus mundus Humes, 1975: *Xenia membranacea.*
Panjakus auriculatus Humes & Dojiri, 1979: *Lobophytum crassum.*
Paradoridicola adelphus (Humes & Ho, 1968): *Sinularia pedunculata; S. polydactyla; S. whiteleggei.*
Paradoridicola angularis spec. nov.: *Alcyonium flaccidum; A. molle; A. simplex; A. utinomii.*
Paradoridicola contiguus spec. nov.: *Sinularia flexibilis.*
Paradoridicola drepanophorus spec. nov.: *Alcyonium flaccidum; A. molle; A. simplex.*
Paradoridicola glabripes (Humes & Ho, 1968): *Xenia macrospiculata; X. umbellata; X,.viridis.*
Paradoridicola hystricosus spec. nov.: *Sinularia gravis.*
Paradoridicola simulator spec. nov.: *Alcyonium simplex.*
Paradoridicola sinulariae Humes & Stock, 1973: *Sinularia arborea; S. flexibilis.*
Paradoridicola sinularianus spec. nov.: *Sinularia gravis; S. nanolobata.*
Paradoridicola spinulatus Humes, 1982: *Sarcophyton glaucum.*
Paradoridicola squamiger (Humes & Frost, 1964): *Sinularia ceramensis; S. polydactyla; S. whiteleggei.*
Paradoridicola triquetrus (Humes & Ho, 1968): *Anthelia gracilis.*
Paradoridicola virgulifer spec. nov.: *Sinularia polydactyla.*
Paramolgus abruptus spec. nov.: *Lobophytum cristagalli.*
Paramolgus accinctus Humes, 1980: *Nephthea albida; N. cupressiformis; N. galbuloides; N. sphaerophora; Litophyton stuhlmanni.*
Paramolgus alcyoniicus spec. nov.: *Alcyonium legitimum; A. simplex.*
Paramolgus centor spec. nov.: *Paralemnalia thyrsoides.*
Paramolgus clavatus (Humes & Ho, 1968); *Lemnalia cervicornis; L. crassicaulis; L. longiramus; Stereonephthya inordinata.*
Paramolgus congruus spec. nov.: *Parerythropodium fulvum.*
Paramolgus eniwetokensis Humes, 1973: *Lobophytum crebriplicatum; L. crassum; L. pauciflorum.*
Paramolgus extendens Humes & Dojiri, 1979: *Cespitularia multipinnata.*
Paramolgus inconstans Humes & Dojiri, 1979: *Lobophytum crassum; L. pauciflorum.*
Paramolgus litophyticus Humes & Dojiri, 1979: *Litophyton acutifolium.*
Paramolgus modicus spec. nov.: *Lobophytum latilobatum.*
Paramolgus nephtheanus Humes, 1980: *Nephthea albida; N. chabrolii; N. cupressiformis; N. galbuloides; N. sphaerophora.*
Paramolgus ostentus Humes, 1973: *Lobophytum pauciflorum.*
Paramolgus pollicaris Humes & Dojiri, 1979: *Cespitularia multipinnata.*
Paramolgus prominulus Humes, 1980: *Litophyton acutifolium; L. stuhlmanni; Nephthea. albida; N. cupressiformis; N. sphaerophora.*
Paramolgus quadrangulus spec. nov.: *Sinularia dura.*
Paramolgus resectus Humes & Dojiri, 1979: *Litophyton stuhlmanni.*
Paramolgus spathophorus (Humes & Ho, 1968): *Lobophytum crebriplicatum; L. pauciflorum; Sarcophyton*

acutangulum; S. elegans; S. glaucum; S. stolidotum; S. trocheliophorum.
Paramolgus subincisus spec. nov.: *Heteroxenia* spec.; *?Xenia* spec.
Paramolgus timendus spec. nov.: *Alyconium molle; A. simplex.*
Paredromolgus decorus (Humes & Frost, 1964): *Cladiella humesi; C. laciniosa; C. latissima; C. pachyclados; C. rotundata; C. sphaerophora.*
Perosyna indonesica Humes, 1982: *Sarcophyton glaucum.*
Telestacicola lobophyti spec. nov.: *Lobophytum pauciflorum.*
Zamolgus acanthodes Humes & Stock, 1973: *Sinularia arborea.*
Zamolgus cracens Humes & Dojiri, 1979: *Cespitularia multipinnata.*
Zamolgus tridens Humes & Dojiri, 1973: *Cespitularia turgida.*

Table 2: Indo-Pacific Alcyonacea, their associated lichomolgid copepods, and general regions where found.

M = Madagascar, NC = New Caledonia, MO = Moluccas, P = Philippines, and E = Enewetak Atoll.

Alcyonium flaccidum Tixier-Durivault, 1966: *Paradoridicola angularis* spec. nov. (M); *P. drepanophorus* spec. nov. (M).
Alcyonium legitimum Tixier-Durivault, 1970: *Paramolgus alcyoniicus* (NC).
Alcyonium molle Thomson & Dean, 1931: *Paradoridicola angularis* spec. nov. (MO); *P. drepanophorus* spec. nov. (MO); *Paramolgus timendus* spec. nov. (MO).
Alcyonium simplex Thomson & Dean, 1931: *Paradoridicola angularis* spec. nov. (NC); *P. drepanophorus* spec. nov. (NC); *P. simulator* spec. nov. (NC); *Paramolgus alcyoniicus* spec. nov. (NC); *P. timendus* spec. nov. (NC).
Alcyonium utinomii Verseveldt, 1971: *Paradoridicola angularis* spec. nov. (M).
Anthelia glauca Lamarck, 1816: *Doridicola antheliae* spec. nov. (M).
Anthelia gracilis (May, 1899): *Paradoridicola triquetrus* (M).
Anthelia ternatana (Schenk, 1896): *Doridicola antheliae* spec. nov. (M).
Capnella imbricata Quoy & Gaimard, 1833: *Doridicola capnellae* spec. nov. (MO).
Cespitularia multipinnata (Quoy & Gaimard, 1833): *Paramolgus extendens* (MO); *P. pollicaris* (MO); *Zamolgus cracens* (MO).
Cespitularia turgida Verseveldt, 1971: *Zamolgus tridens* (M).
Cladiella humesi Verseveldt, 1974: *Critomolgus foxi* (NC); *Doridicola cincinnatus* (NC); *Paredromolgus decorus* (NC).
Cladiella krempfi (Hickson, 1919): *Critomolgus foxi* (M); *Doridicola hetaericus* (M).
Cladiella laciniosa (Tixier-Durivault, 1944): *Critomolgus foxi* (M); *Doridicola hetaericus* (M); *Paredromolgus decorus* (M).
Cladiella latissima (Tixier-Durivault, 1944): *Critomolgus foxi* (M); *Paredromolgus decorus* (M).
Cladiella pachyclados (Klunzinger, 1877): *Critomolgus antennulus* spec. nov. (NC); *C. cincinnatus* (NC); *C. foxi* (M, MO, NC); *C. orectopus* spec. nov. (NC); *Doridicola cincinnatus* (NC); *Doridicola hetaericus* (M); *D. mimicus* (NC); *Paredromolgus decorus* (NC).
Cladiella rotundata Tixier-Durivault, 1968: *Doridicola cincinnatus* (NC); *Paredromolgus decorus* (NC).
Cladiella similis Tixier-Durivault, 1944: *Doridicola cincinnatus* (NC).
Cladiella sphaerophora (Ehrenberg, 1834): *Critomolgus foxi* (NC); *Doridicola cincinnatus* (M); *Paredromolgus decorus* (M).
Dendronephthya cirsium Kükenthal, 1905: *Acanthomolgus varirostratus* (M).
Dendronephthya koellikeri Kükenthal, 1905: *Acanthomolgus exilipes* (M); *A. gentilis* (M); *A. varirostratus* (M).
Dendronephthya lokobeensis Verseveldt, 1973: *Acanthomolgus gentilis* (M); *A. varirostratus* (M).
Dendronephthya mucronata (Pütter, 1900): *Acanthomolgus cuneipes* (M); *A. exilipes* (M, NC, MO); *A. gentilis* (M, NC); *A. varirostratus* (M, NC, MO).
Dendronephthya puetteri Kükenthal, 1905: *Acanthomolgus boholensis* spec. nov. (P).
Dendronephthya regia Verseveldt, 1968: *Acanthomolgus exilipes* (M); *A. varirostratus* (M).

Dendronephthya speciosa Kükenthal, 1905: *Acanthomolgus exilipes* (M); *A. gentilis* (M); *A. varirostratus* (M).

Dendronephthya stocki Verseveldt, 1968: *Acanthomolgus exilipes* (M); *A. gentilis* (M); *A. varirostratus* (M); *Contomolgus lokobeensis* (M).

Dendronephthya spec.: *Acanthomolgus exilipes* (M); *A. gentilis* (M); *A. varirostratus* (M).

Heteroxenia elisabethae Kölliker, 1874: *Acanthomolgus verseveldti* (M).

Heteroxenia fuscescens (Ehrenberg, 1834): *Acanthomolgus verseveldti* (M).

Heteroxenia spec: *Doridicola petalopus* spec. nov. (NC); *D. rostripes* spec. nov. (NC); *Paramolgus subincisus* spec. nov. (NC).

Lemnalia africana (May, 1898): *Doridicola spinulifer* (M).

Lemnalia amabilis Tixier-Durivault, 1966: *Doridicola spinulifer* (M).

Lemnalia cervicornis (May, 1898): *Doridicola spinulifer* (M); *Paramolgus clavatus* (M).

Lemnalia crassicaulis Verseveldt, 1969: *Doridicola spinulifer* (M); *Paramolgus clavatus* (M).

Lemnalia digitata (May, 1898): *Doridicola spinulifer* (M).

Lemnalia elegans (May, 1898): *Acanthomolgus fissisetiger* (M); *Doridicola spinulifer* (M).

Lemnalia flava (May, 1898): *Doridicola spinulifer* (M).

Lemnalia humesi Verseveldt, 1969: *Acanthomolgus fissisetiger* (M).

Lemnalia longiramus Verseveldt, 1969: *Doridicola spinulifer* (M); *Paramolgus clavatus* (M).

Lemnalia madagascariensis Verseveldt, 1969: *Doridicola spinulifer* (M).

Lemnalia tenuis Verseveldt, 1969: *Doridicola spinulifer* (M).

Lemnalia spec.: *Doridicola spinulifer* (M).

Litophyton acutifolium Kükenthal, 1913: *Doridicola aculeatus* (MO); *Paramolgus litophyticus* (MO); *P. prominulus* (MO).

Litophyton arboreum Forskål, 1775: *Doridicola aculeatus* (M).

Litophyton stuhlmanni (May, 1899): *Doridicola aculeatus* (MO); *Paramolgus accinctus* (MO); *P. prominulus* (MO); *P. resectus* (MO).

Lobophytum caledonense Tixier-Durivault, 1970: *Alcyonomolgus insolens* (NC).

Lobophytum crassum von Marenzeller, 1886: *Alcyonomolgus insolens* (M, NC); *Anisomolgus limbatus* (MO); *Panjakus auriculatus* (MO); *Paramolgus eniwetokensis* (NC); *P. inconstans* (MO).

Lobophytum crebriplicatum von Marenzeller, 1886: *Alcyonomolgus insolens* (NC); *Paramolgus eniwetokensis* (NC); *Paramolgus spathophorus* (NC).

Lobophytum cristagalli von Marenzeller, 1886: *Paramolgus abruptus* spec. nov. (M).

Lobophytum depressum Tixier-Durivault, 1966: *Alcyonomolgus dissimilis* (M).

Lobophytum latilobatum Verseveldt, 1971: *Paramolgus modicus* spec. nov. (M).

Lobophytum pauciflorum (Ehrenberg, 1834): *Alcyonomolgus insolens* (NC, E); *A. lumellifer* spec. nov. (M, NC); *Critomolgus orectopus* spec. nov. (NC); *Paramolgus eniwetokensis* (NC, E); *P. inconstans* (NC); *P. ostentus* (E); *P. spathophorus* (NC); *Telestacicola lobophyti* spec. nov. (M).

Nephthea aberrans Verseveldt, 1968: *Doridicola aculeatus* (M).

Nephthea albida (Holm, 1894): *Doridicola aculeatus* (MO); *Paramolgus accinctus* (MO); *P. nephtheanus* (MO); *P. prominulus* (MO).

Nephthea amentacea Studer, 1894: *Doridicola aculeatus* (M).

Nephthea bumasta Verseveldt, 1973: *Doridicola aculeatus* (M).

Nephthea chabrolii Audouin, 1828: *Doridicola aculeatus* (MO, E); *Paramolgus nephtheanus* (MO).

Nephthea crassa Kükenthal, 1904: *Doridicola aculeatus* (M).

Nephthea cupressiformis Kükenthal, 1903: *Doridicola aculeatus* (MO); *D. lumarius* (MO); *Paramolgus accinctus* (MO); *P. nephtheanus* (MO); *Paramolgus prominulus* (MO).

Nephthea filamentosa Verseveldt, 1973: *Doridicola aculeatus* (M).

Nephthea galbuloides Verseveldt, 1973: *Doridicola aculeatus* (M, MO); *Paramolgus accinctus* (MO); *P. lumarius* (MO); *P. nephtheanus* (MO).

Nephthea lanternaria Verseveldt, 1973: *Doridicola aculeatus* (M).

Nephthea sphaerophora Kükenthal, 1903: *Doridicola aculeatus* (M, MO); *Mecra ellipsaria* (MO); *Paramolgus accinctus* (MO); *P,.nephtheanus* (MO); *P,.prominulus* (MO).

Nephthea tixierae Verseveldt, 1968: *Doridicola aculeatus* (M).

Paralemnalia clavata Verseveldt, 1969: *Doridicola spinulifer* (M).

Paralemnalia thyrsoides (Ehrenberg, 1834): *Doridicola senticauda* spec. nov. (NC); *D. spinulifer* (M, MO); *D. vulcanius* spec. nov. (MO); *Paramolgus centor* spec. nov. (NC, MO).

Parerythropodium fulvum (Forskål, 1775): *Doridicola singularipes* (M); *Monomolgus unihastatus* (M); *Paramolgus congruus* spec. nov. (M).

Parerythropodium rubiginosum Verseveldt, 1968: *Doridicola singularipes* (M).

Parerythropodium spec.: *Doridicola singularipes* (M).

Sarcophyton acutangulum (von Marenzeller, 1886): *Alcyonomolgus dissimilis* (M, NC); *A. petalophorus* (NC); *Paramolgus spathophorus* (M, NC).

Sarcophyton cornispiculatum Verseveldt, 1971: *Alcyonomolgus sarcophyticus* (M).

Sarcophyton crassum Tixier-Durivault, 1946: *Anisomolgus protentus* (M); *A. pterolobatus* (NC).

Sarcophyton ehrenbergi von Marenzeller, 1886: *Alcyonomolgus bicrenatus* (NC); *A. dissimilis* (NC); *A. incisus* (M, NC); *A. relativus* (NC, MO).

Sarcophyton elegans Moser, 1919: *Alcyonomolgus sarcophyticus* (NC); *Anisomolgus protentus* (NC); *A. pterolobatus* (NC); *Paramolgus spathophorus* (NC).

Sarcophyton glaucum (Quoy & Gaimard, 1833): *Alcyonomolgus sarcophyticus* (M, MO); *Anisomolgus ensifer* (NC); *A. protentus* (M, MO); *A. pterolobatus* (MO); *Paradoridicola spinulatus* (MO); *Paramolgus spathophorus* (M); *Perosyna indonesica* (MO).

Sarcophyton globosum Tixier-Durivault, 1966: *Anisomolgus protentus* (M).

Sarcophyton manifestum Tixier-Durivault, 1970: *Alcyonomolgus sarcophyticus* (NC); *Anisomolgus goniodes* (NC).

Sarcophyton stolidotum Verseveldt, 1971: *Paramolgus spathophorus* (M).

Sarcophyton trocheliophorum von Marenzeller, 1886: *Anisomolgus goniodes* (E); *A. protentus* (NC); *Paramolgus spathophorus* (M).

Sinularia arborea Verseveldt, 1971: *Paradoridicola sinulariae* (M); *Zamolgus acanthodes* (M).

Sinularia ceramensis Verseveldt, 1977: *Paradoridicola squamiger* (MO).

Sinularia dura (Pratt, 1903): *Paramolgus quadrangulus* spec. nov. (NC, MO).

Sinularia firma Tixier-Durivault, 1970: *Colobomolgus cristatus* (NC); *C. dentipes* (NC); *C. epaxius* spec. nov. (NC).

Sinularia flexibilis (Quoy & Gaimard, 1833): *Paradoridicola contiguus* spec. nov. (MO); *P. sinulariae* (NC).

Sinularia gravis Tixier-Durivault, 1970: *Paradoridicola hystricosus* spec. nov. (NC); *P. sinularianus* spec. nov. (NC).

Sinularia humesi Verseveldt, 1968: *Colobomolgus dentipes* (M); *Meringomolgus hamatus* (M).

Sinularia leptoclados (Ehrenberg, 1834): *Colobomolgus cristatus* (M, NC); *C. laboutei* (M); *Meringomolgus devotus* (M); *M. hamatus* (M, NC).

Sinularia maxima Verseveldt, 1971: *Meringomolgus hamatus* (M).

Sinularia mayi Lüttschwager, 1914: *Doridicola patulus* (M).

Sinularia minima Verseveldt, 1971: *Meringomolgus facetus* (M).

Sinularia nanolobata Verseveldt, 1977: *Paradoridicola sinularianus* spec. nov. (MO).

Sinularia pedunculata Tixier-Durivault, 1945: *Paradoridicola adelphus* (M).

Sinularia polydactyla (Ehrenberg, 1834): *Colobomolgus bandensis* spec. nov. (MO); *C. dentipes* (NC); *Doridicola spinulifer* (M); *Meringomolgus facetus* (M); *Paradoridicola adelphus* (M, NC, E); *P. squamiger* (M, NC); *P. virgulifer* spec. nov. (MO).

Sinularia whiteleggei Lüttschwager, 1914: *Paradoridicola adelphus* (M); *P. squamiger* (M).

Siphonogorgia pichoni Verseveldt, 1971: *Acanthomolgus hians* (M); *A. longispinifer* (M).

Siphonogorgia variabilis (Hickson, 1903): *Acanthomolgus brevifurca* spec. nov. (MO).

Stereonephthya acaulis Verseveldt, 1968: *Acanthomolgus cuneipes* (M); *A.* fissisetiger (M); *A. gentilis* (M).

Stereonephthya cordylophora Verseveldt, 1973: *Acanthomolgus exilipes* (M); *A. gentilis* (M); *A. varirostratus* (M).

Stereonephthya inordinata (Tixier-Durivault, 1968): *Doridicola aculeatus* (NC); *Paramolgus clavatus* (NC).

Stereonephthya nosybearia Verseveldt, 1973: *Doridicola aculeatus* (M).

Stereonephthya scaphis Verseveldt, 1973: *Doridicola aculeatus* (M).

Studeriotes semperi (Studer, 1888): *Ascetomolgus plicatus* (M); *Contomolgus lokobeensis* (M).

Umbellulifera striata (Thomson & Henderson, 1905): *Acanthomolgus gentilis* (M); *A. plantei* (M).

Xenia lepida Verseveldt, 1971: *Acanthomolgus verseveldti* (M).

Xenia macrospiculata Gohar, 1940: *Paradoridicola glabripes* (M).
Xenia membranacea Schenk, 1896: *Doridicola comparatus* (NC); *D. praelongipes* (NC);*Notoxynus mundus* (NC).
Xenia umbellata Lamarck, 1816: *Paradoridicola glabripes* (M).
Xenia viridis Schenk, 1896: *Doridicola praelongipes* (MO); *Paradoridicola glabripes* (M).
?*Xenia* spec.: *Doridicola petalopus* spec. nov. (MO); *D. rostripes* spec. nov. (MO); *Paramolgus subincisus* spec. nov. (MO).

Table 3. Geographical distribution of lichomolgid copepods associated with Alcyonacea in the Indo-Pacific

M = Madagascar, NC = New Caledonia, MO = Moluccas, E = Enewetak Atoll, and P = Philippines.
+ = present, - = not found.

	M	NC	MO	E	P
Acanthomolgus boholensis	-	-	-	-	+
A. brevifurca	-	-	+	-	-
A. cuneipes	+	-	-	-	-
A. exilipes	+	-	+	-	-
A. fissisetiger	+	-	-	-	-
A. gentilis	+	-	-	-	-
A. hians	+	-	-	-	-
A. plantei	+	-	-	-	-
A. varirostratus	+	-	+	-	-
A. verseveldti	+	-	-	-	-
Alcyonomolgus bicrenatus	-	+	-	-	-
A. dissimilis	+	-	-	-	-
A. incisus	+	-	-	-	-
A. insolens	+	+	-	+	-
A. lumellifer	+	+	-	-	-
A. petalophorus	-	+	-	-	-
A. relativus	-	-	+	-	-
A. sarcophyticus	+	+	+	-	-
Anisomolgus ensifer	-	+	-	-	-
A. goniodes	-	+	-	+	-
A. limbatus	-	-	+	-	-
A. protentus	+	+	+	-	-
A. pterolobatus	-	+	+	-	-
Ascetomolgus plicatus	+	-	-	-	-
Colobomolgus bandensis	-	-	+	-	-
C. cristatus	+	+	-	-	-
C. dentipes	+	+	-	-	-
C. epaxius	-	+	-	-	-
C. laboutei	+	-	-	-	-
Contomolgus lokobeensis	+	-	-	-	-
Critomolgus antennulus	-	+	-	-	-

C. cladiellae	-	+	-	-	-
C. foxi	+	+	+	-	-
C. orectopus	+	+	-	-	-
Doridicola aculeatus	+	+	+	+	-
D. antheliae	+	-	-	-	-
D. capnellae	-	-	+	-	-
D. cincinnatus	-	+	-	-	-
D. comparatus	-	+	-	-	-
D. hetaericus	+	-	-	-	-
D. lumarius	-	-	+	-	-
D. mimicus	-	+	-	-	-
D. patulus	+	-	-	-	-
D. petalopus	-	+	+	-	-
D. praelongipes	-	+	+	-	-
D. rostripes	-	-	+	-	-
D. senticauda	-	+	-	-	-
D. singularipes	+	-	-	-	-
D. spinulifer	+	-	-	-	-
D. vulcanius	-	-	+	-	-
Mecra ellipsaria	-	-	+	-	-
Meringomolgus devotus	+	-	-	-	-
M. facetus	+	-	-	-	-
M. hamatus	+	+	-	-	-
Monomolgus unihastatus	+	-	-	-	-
Notoxynus mundus	-	+	-	-	-
Panjakus auriculatus	-	-	+	-	-
Paradoridicola adelphus	+	+	-	+	-
P. angularis	+	+	+	-	-
P. contiguus	-	-	+	-	-
P. drepanophorus	+	+	+	-	-
P. glabripes	+	-	-	-	-
P. hystricosus	-	+	-	-	-
P. simulator	+	-	-	-	-
P. sinulariae	+	+	-	-	-
P. sinularianus	-	+	+	-	-
P. spinulatus	-	-	+	-	-
P. squamiger	+	-	+	-	-
P. triquetrus	+	-	-	-	-
P. virgulifer	-	-	+	-	-
Paramolgus abruptus	+	-	-	-	-
P. accinctus	-	-	+	-	-
P. alcyoniicus	-	+	-	-	-
P. centor	-	+	+	-	-
P. clavatus	+	+	-	-	-
P. congruus	+	-	-	-	-
P. eniwetokensis	-	+	-	+	-

P. extendens	-	-	+	-	-
P. inconstans	-	+	+	-	-
P. litophyticus	-	-	+	-	-
P. modicus	+	-	-	-	-
P. nephtheanus	-	-	+	-	-
P. ostentus	-	-	-	+	-
P. pollicaris	-	-	+	-	-
P. prominulus	-	+	+	-	-
P. quadrangulus	-	+	+	-	-
P. resectus	-	-	+	-	-
P. spathophorus	+	+	-	-	-
P. subincisus	-	+	+	-	-
P. timendus	-	+	+	-	-
Paredromolgus decorus	+	-	-	-	-
Perosyna indonesica	-	-	+	-	-
Telestacicola lobophyti	+	-	-	-	-
Zamolgus acanthodes	+	-	-	-	-
Z. cracens	-	-	+	-	-
Z. tridens	+	-	-	-	-

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Figures 1-99

All figures were drawn with the aid of a camera lucida. The letter after the explanation of each figure refers to the scale at which it was drawn. The abbreviations used are: A_1 = first antenna, A_2 = second antenna, R = rostrum, L = labrum, MXPD = maxilliped, and P_{1-4} = legs 1-4.

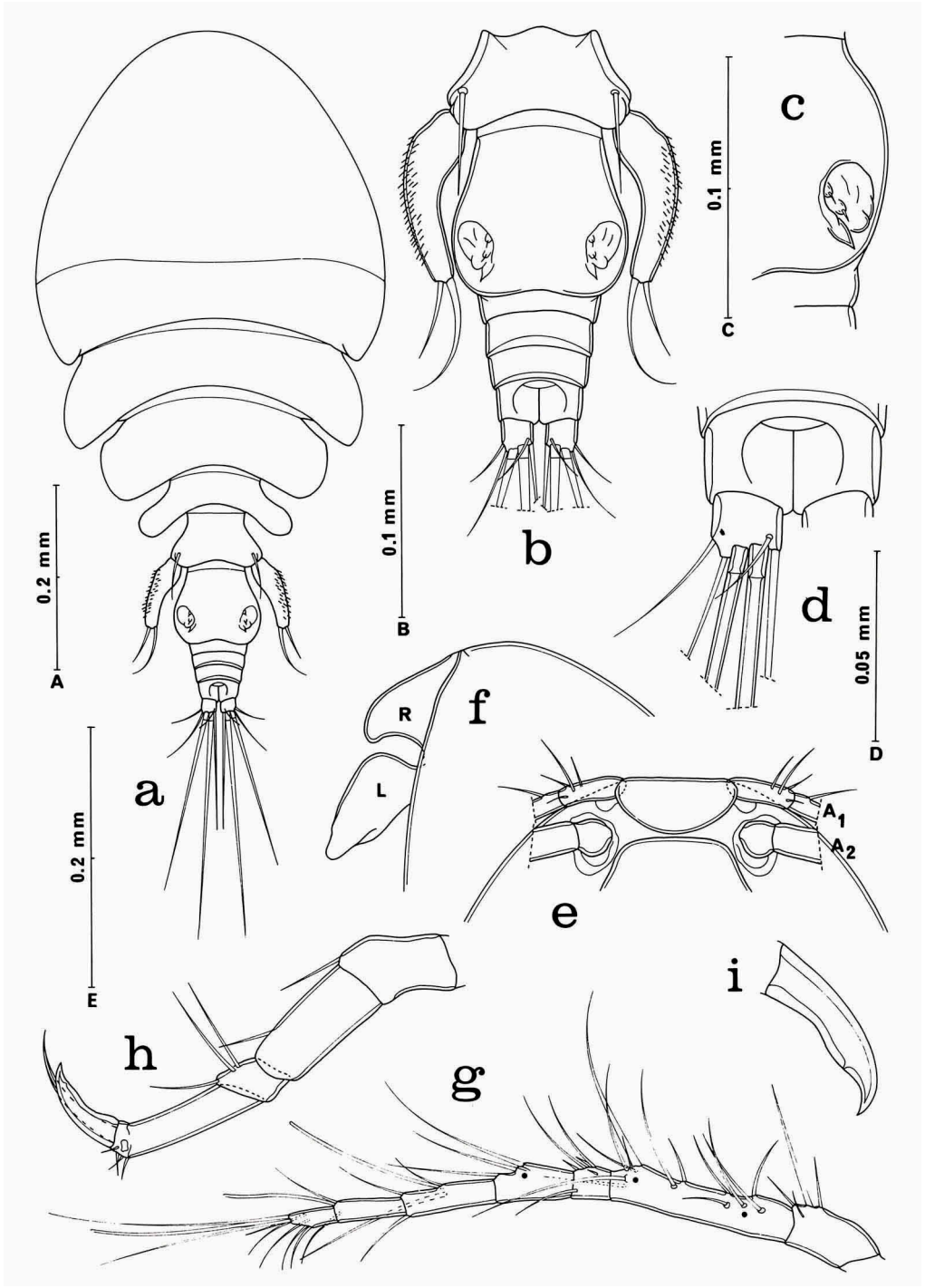

Fig. 1. a-h. *Acanthomolgus boholensis* spec. nov., ♀. a, dorsal (scale A); b, urosome, dorsal (B); c, genital area, dorsal (C); d, caudal ramus and anal segment, dorsal (D); e, rostrum, ventral (E); f, outline of rostrum and labrum, lateral (E); g, first antenna, dorsal (B); second anttenna, postero-inner (B).

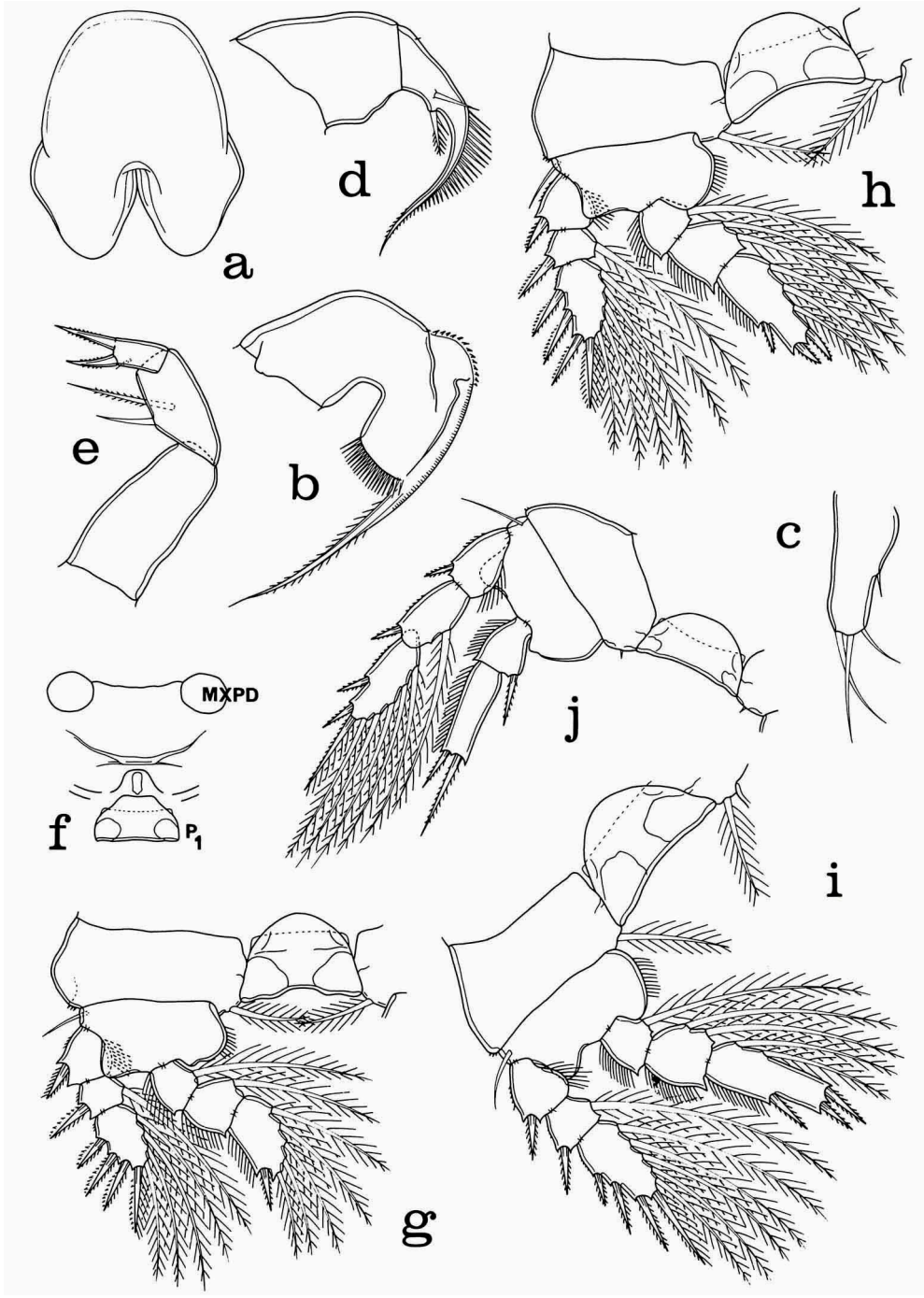

Fig. 2. a-j. *Acanthomolgus boholensis* spec. nov., ♀. a, labrum, ventral (scale B); b, mandible, posterior (B); c, first maxilla, anterior (B); d, second maxilla, posterior (C); e, maxilliped, anterior (C); f, area between maxillipeds and first pair of legs, ventral (E); g, leg 1 and intercoxal plate, anterior (B); h, leg 2 and intercoxal plate, anterior (B); i, leg 3 and intercoxal plate, posterior (B); j, leg 4 and intercoxal plate, posterior (B).

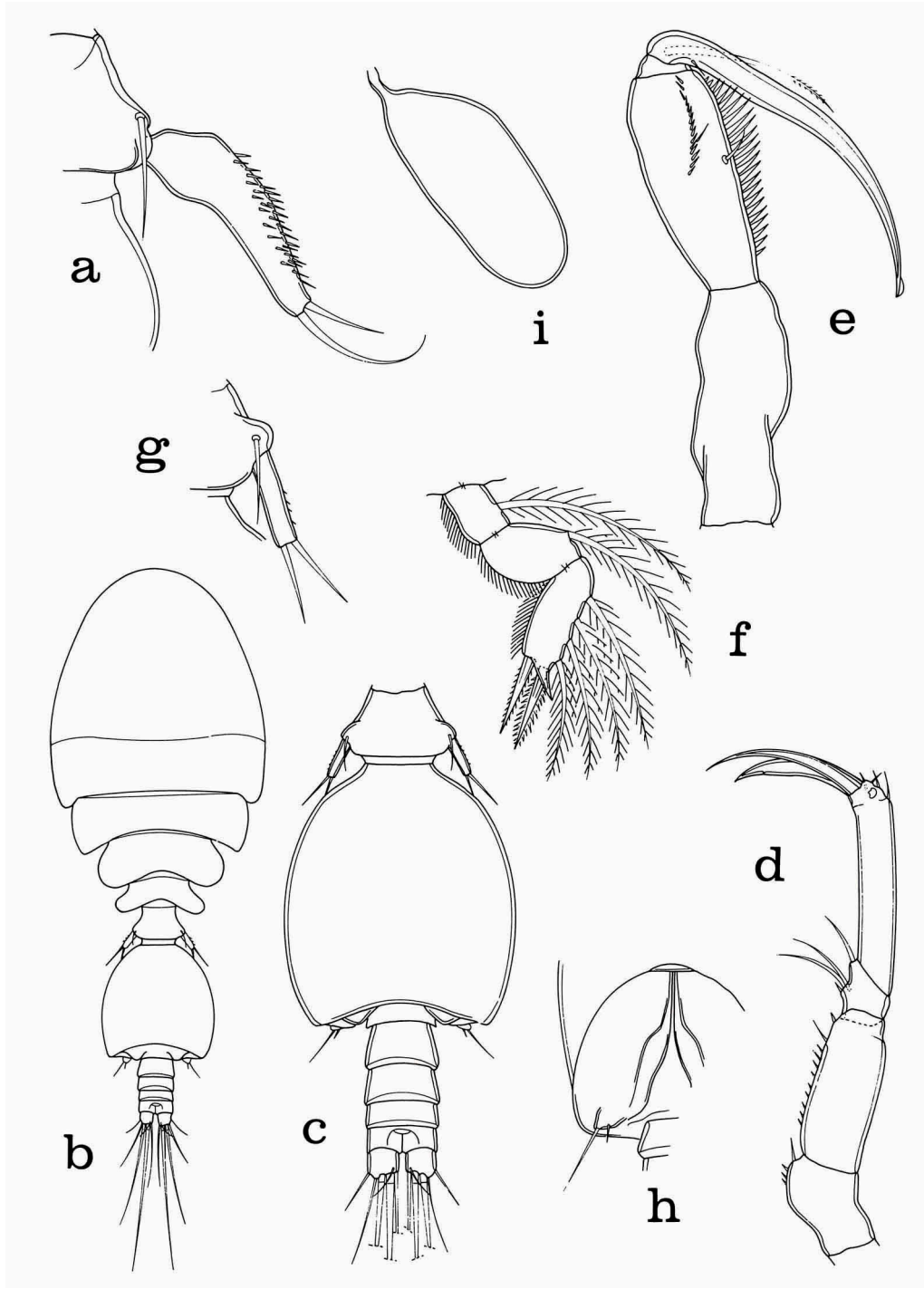

Fig. 3. a-i. *Acanthomolgus boholensis* spec. nov. ♀. a, leg 5, dorsal (scale C). ♂. b, dorsal (A); c, urosome, dorsal (B); d, second antenna, antero-outer (C); e, maxilliped, outer (C); f, endopod of leg 1, anterior (C); g, leg 5, dorsal (D); h, leg 5, ventral (B); i, spermatophore, ventral (B).

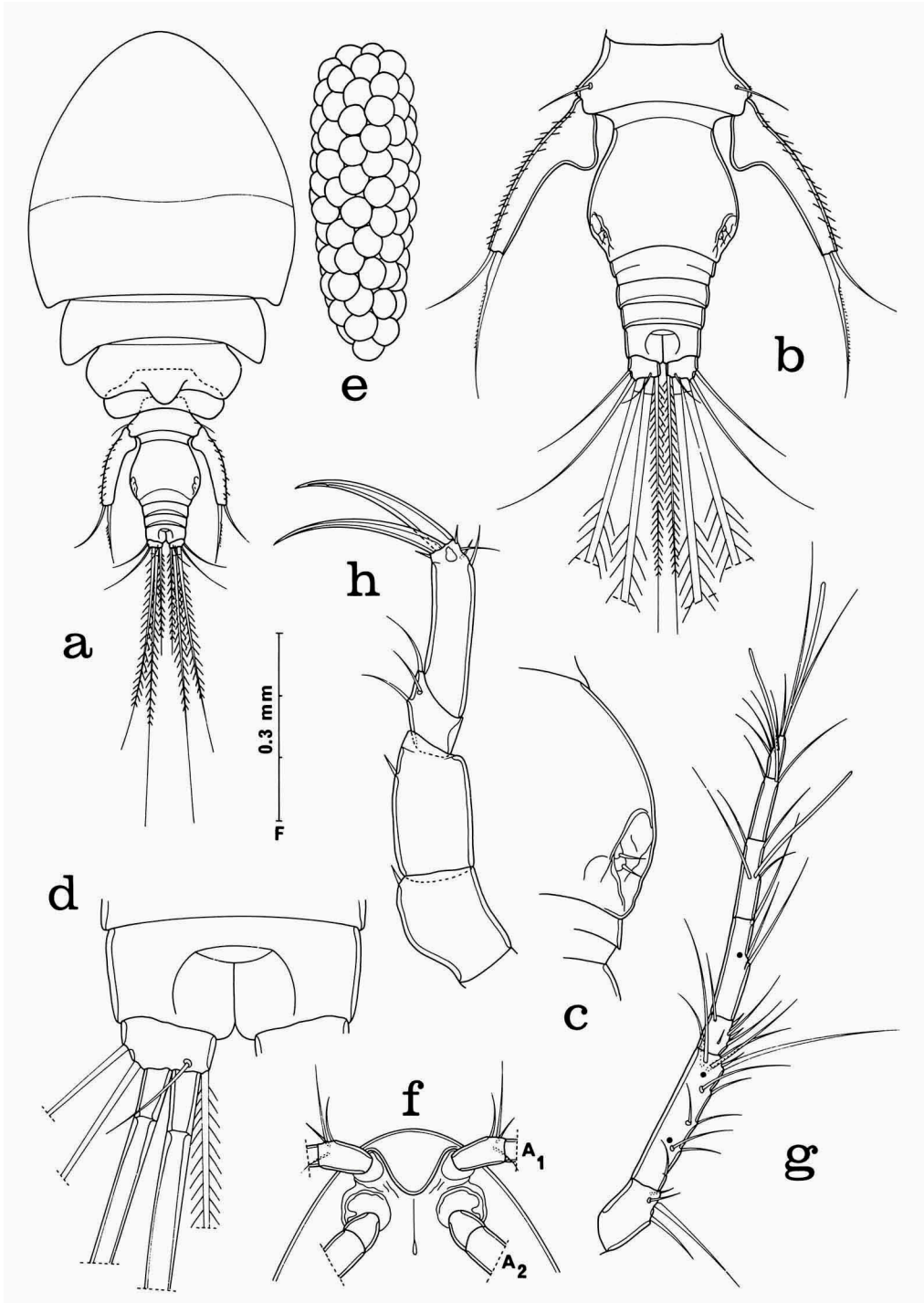

Fig. 4. a-h. *Acanthomolgus brevifurca* spec. nov., ♀. a, dorsal (scale F); b, urosome, dorsal (E); c, genital area, dorsal (C); d, caudal ramus, dorsal (D); e, egg sac, dorsal (F); f, rostrum, ventral (A); g, first antenna, dorsal (E); h, second antenna, postero-inner (B).

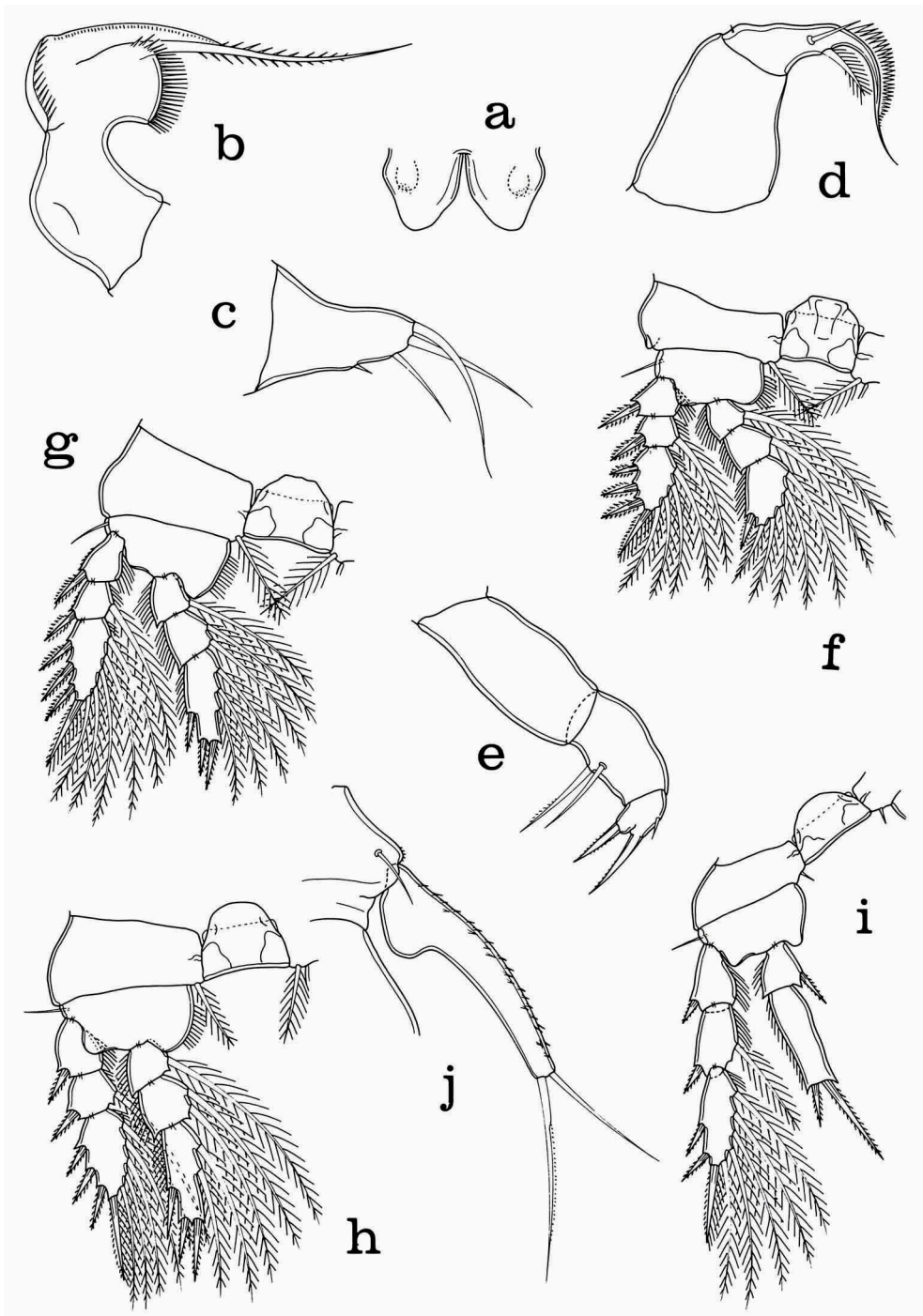

Fig. 5. a-j. *Acanthomolgus brevifurca* spec. nov., ♀. a, labrum, ventral (scale B); b, mandible, posterior (B); c, first maxilla, anterior (D); d, second maxilla, posterior (C); e, maxilliped, posterior (C); f, leg 1 and intercoxal plate, anterior (E); g, leg 2 and intercoxal plate, posterior (C); h, leg 3 and intercoxal plate, anterior (E); i, leg 4 and intercoxal plate, anterior (E); j, leg 5, dorsal (B).

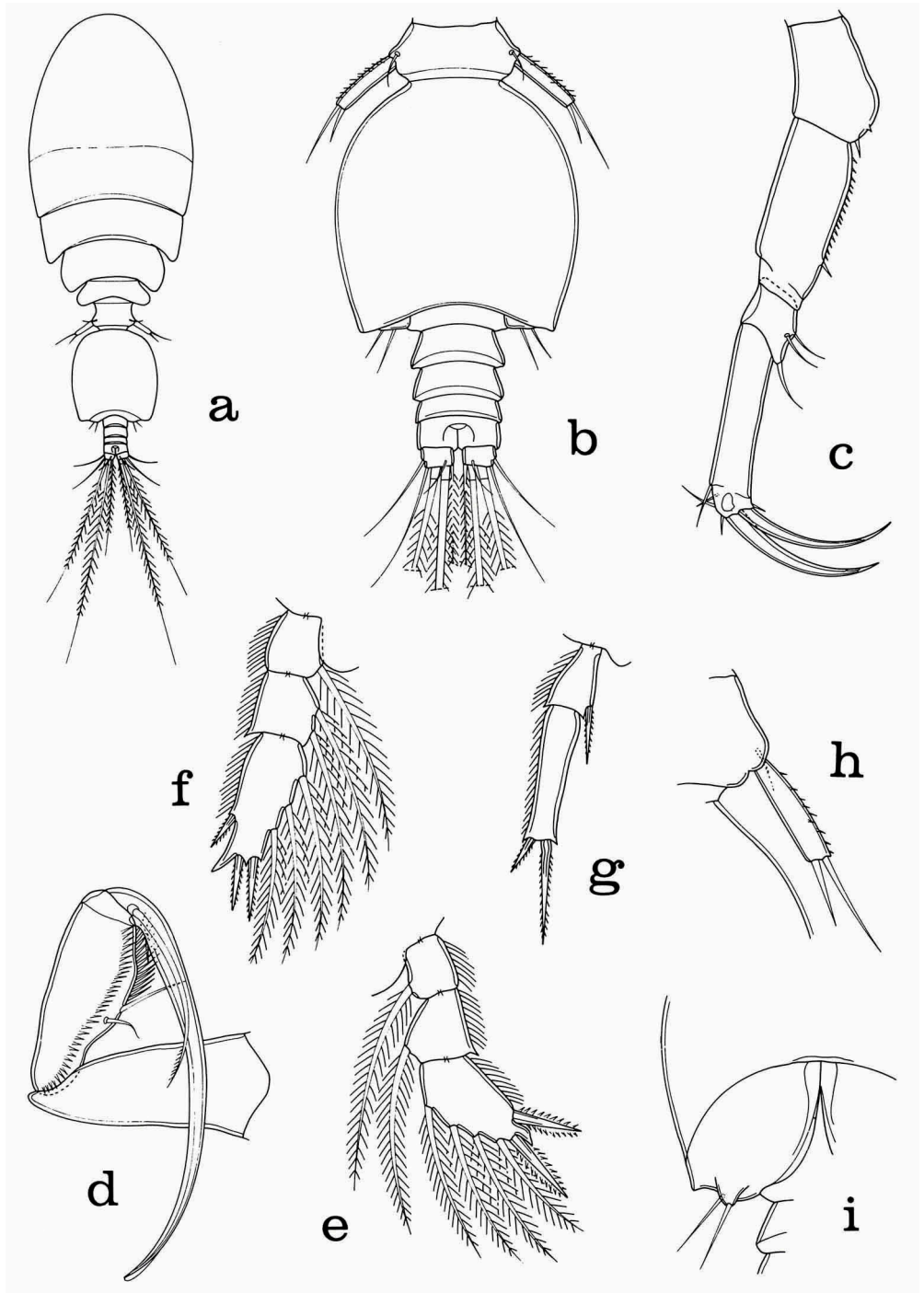

Fig. 6. a-i. *Acanthomolgus brevifurca* spec. nov., ♂. a, dorsal (scale F); b, urosome, dorsal (B); c, second antenna, postero-inner (C); d, maxilliped, inner (C); e, endopod of leg 1, posterior (C); f, endopod of leg 2, posterior (C); g, endopod of leg 4, anterior (C); h, leg 5, dorsal (D); i. leg 6, ventral (C).

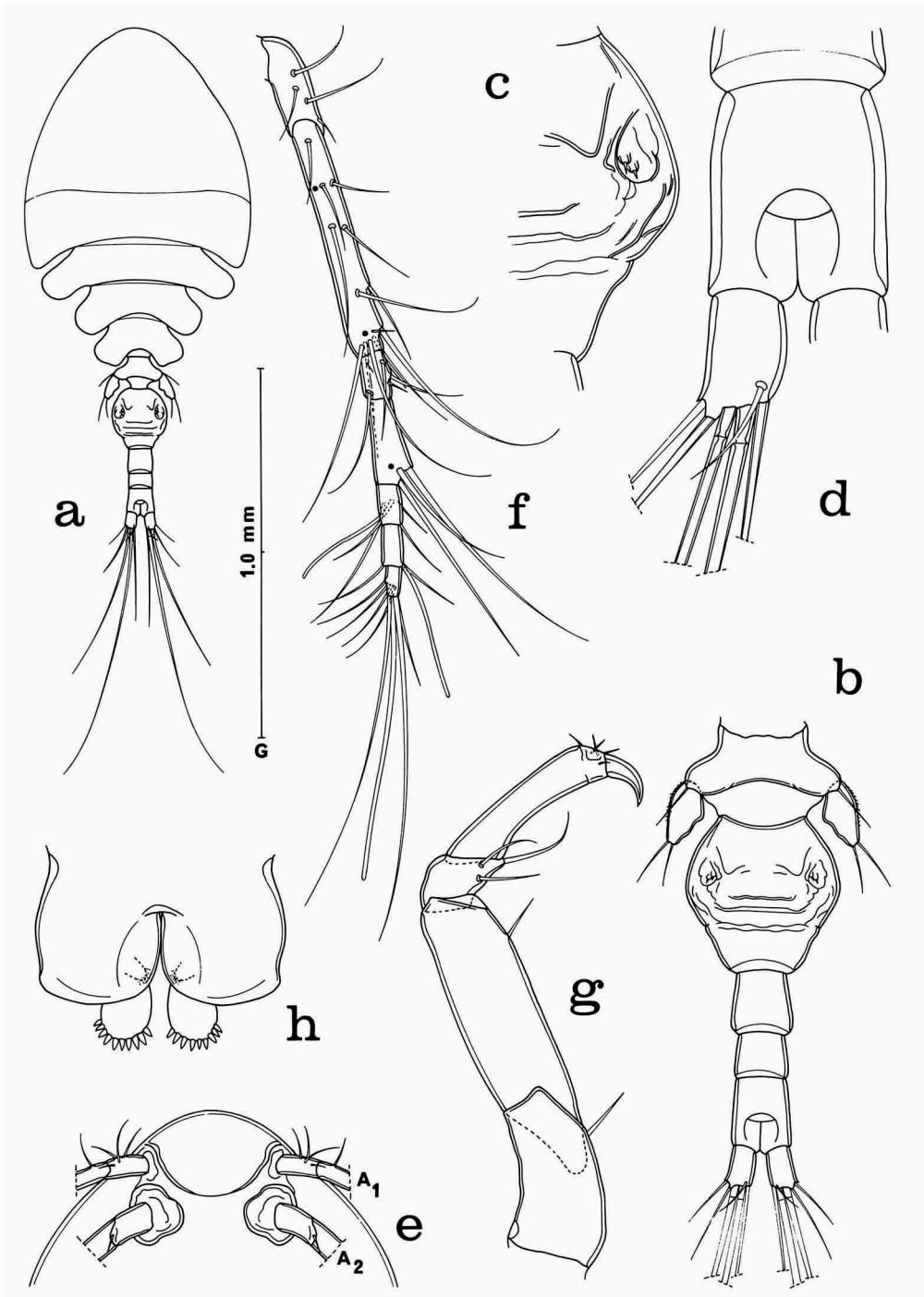

Fig. 7. a-h. *Alcyonomolgus lumellifer* gen et spec. nov., ♀. a, dorsal (scale G); b, urosome, dorsal (A); c, genital area, dorsal (B); d, caudal ramus and anal segment, dorsal (C); e, rostrum, ventral (F); f, first antenna, anterodorsal (E); g, second antenna, posterior (B); h, labrum with two petalophorous lobes, paragnaths indicated by broken lines, ventral (C).

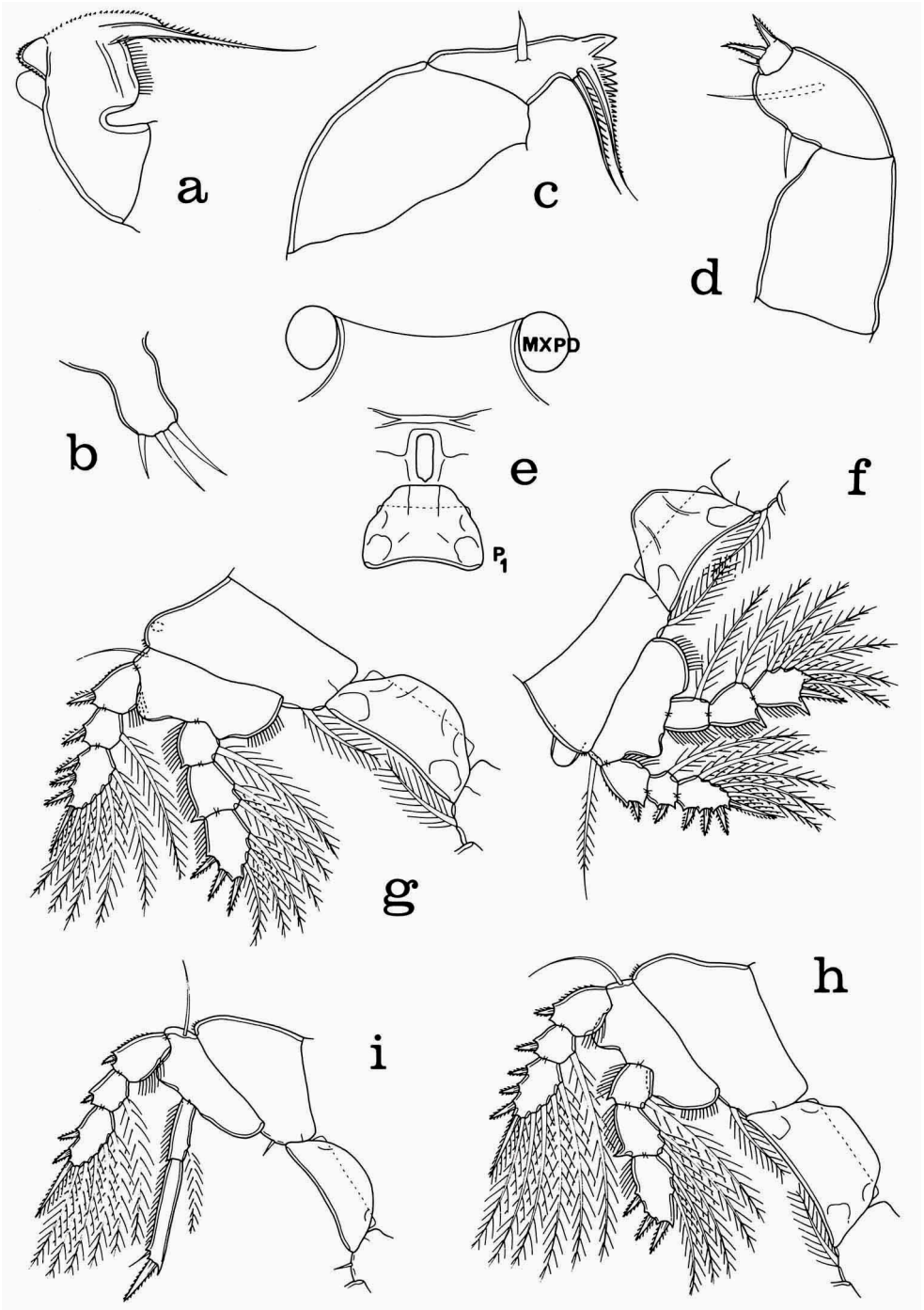

Fig. 8. a-i. *Alcyonomolgus lumellifer* gen. et spec. nov., ♀. a. mandible, posterior (scale D); b, first maxilla, posterior (D); c, second maxilla, posterior (C); d, maxilliped, anterior (C); e, ventral area between maxillipeds and first pair of legs, ventrL (E); f, leg 1 and intercoxal plate, anterior (E); g, leg 2 and intercoxal plate, anterior (E); h, leg 3 and intercoxal plate, posterior (E); i, leg 4 and intercoxal plate, posterior (E).

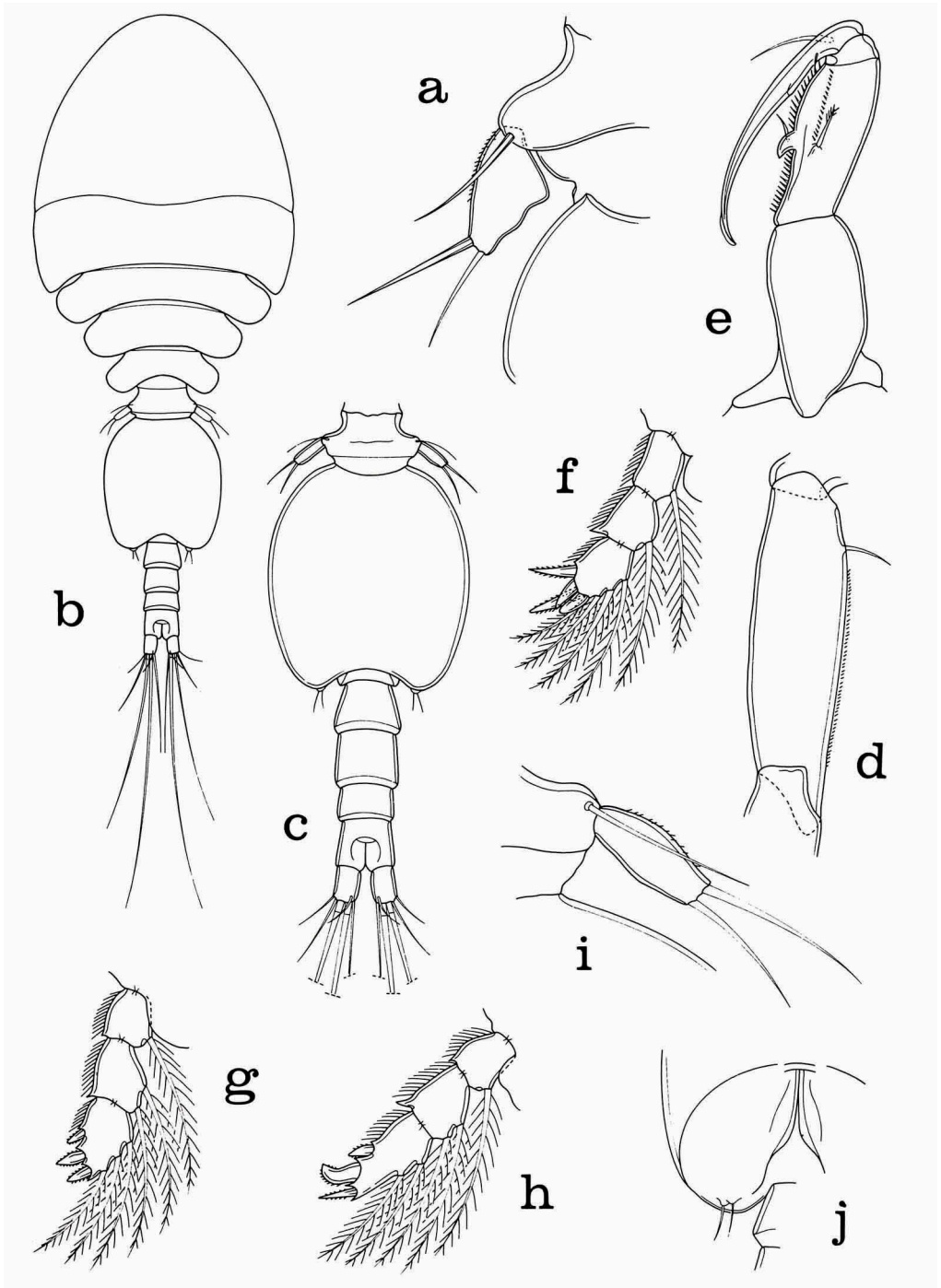

Fig. 9. a-j. *Alcyonomolgus lumellifer* gen. et spec. nov. ♀. a, leg 5, dorsal (scale B). ♂. b, dorsal (F); c, urosome, dorsal (A); d, second segment of second antenna, posterior (C); e, maxilliped, outer (B); f, endopod of leg 1, anterior (D); g, endopod of leg 2, anterior (D); h, endopod of leg 3, anterior (D); i, leg 5, dorsal (D); j, leg 6, ventral (E).

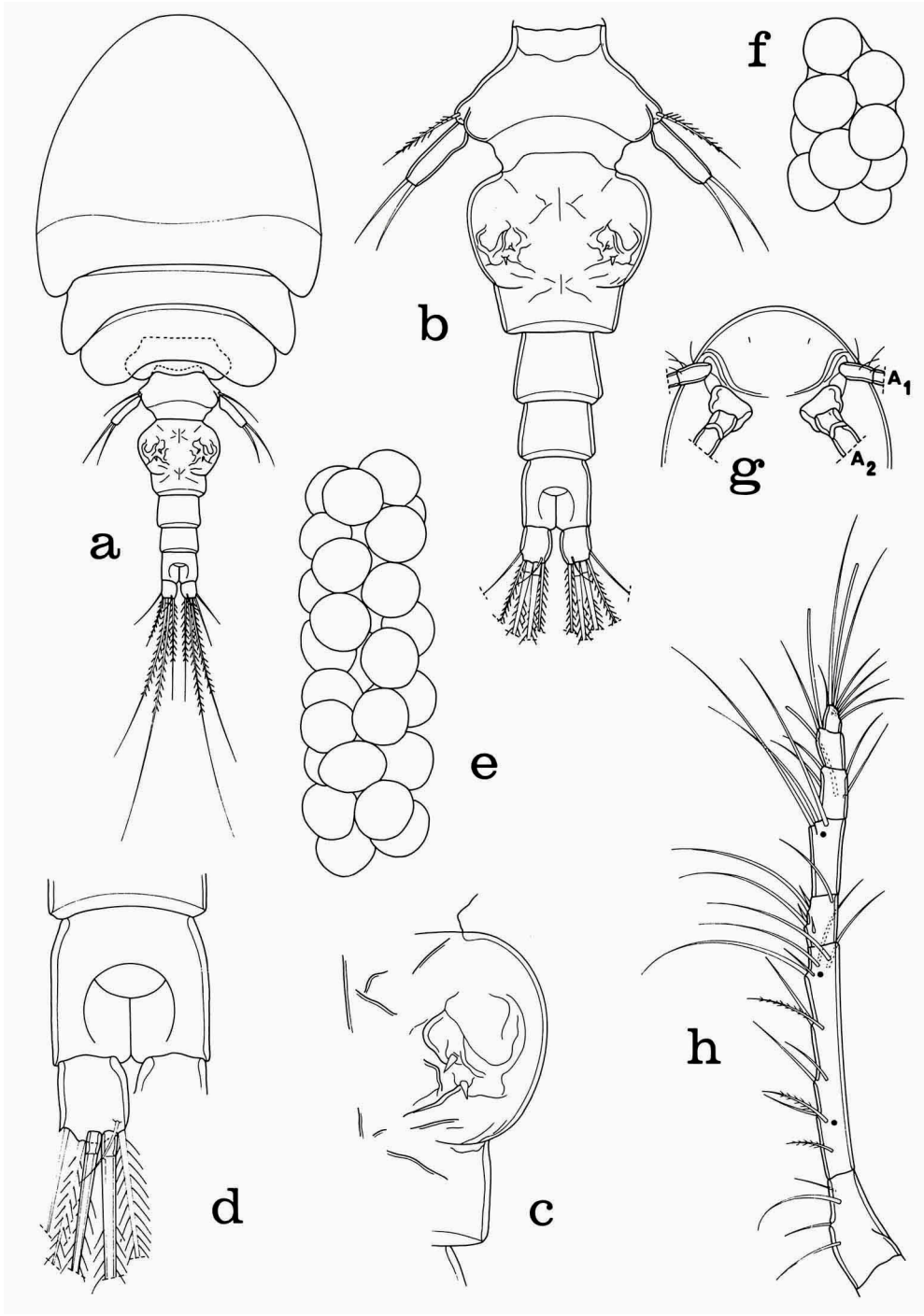

Fig. 10. a-h. *Colobomolgus bandensis* spec. nov., ♀. a, dorsal (scale A); b, urosome, dorsal (E); c, genital area, dorsal (C); d, caudal ramus and anal segment, dorsal (E); e, egg sac, ventral (E); f, egg sac, ventral (E); g, rostrum, ventral (F); h, first antenna, dorsal (B).

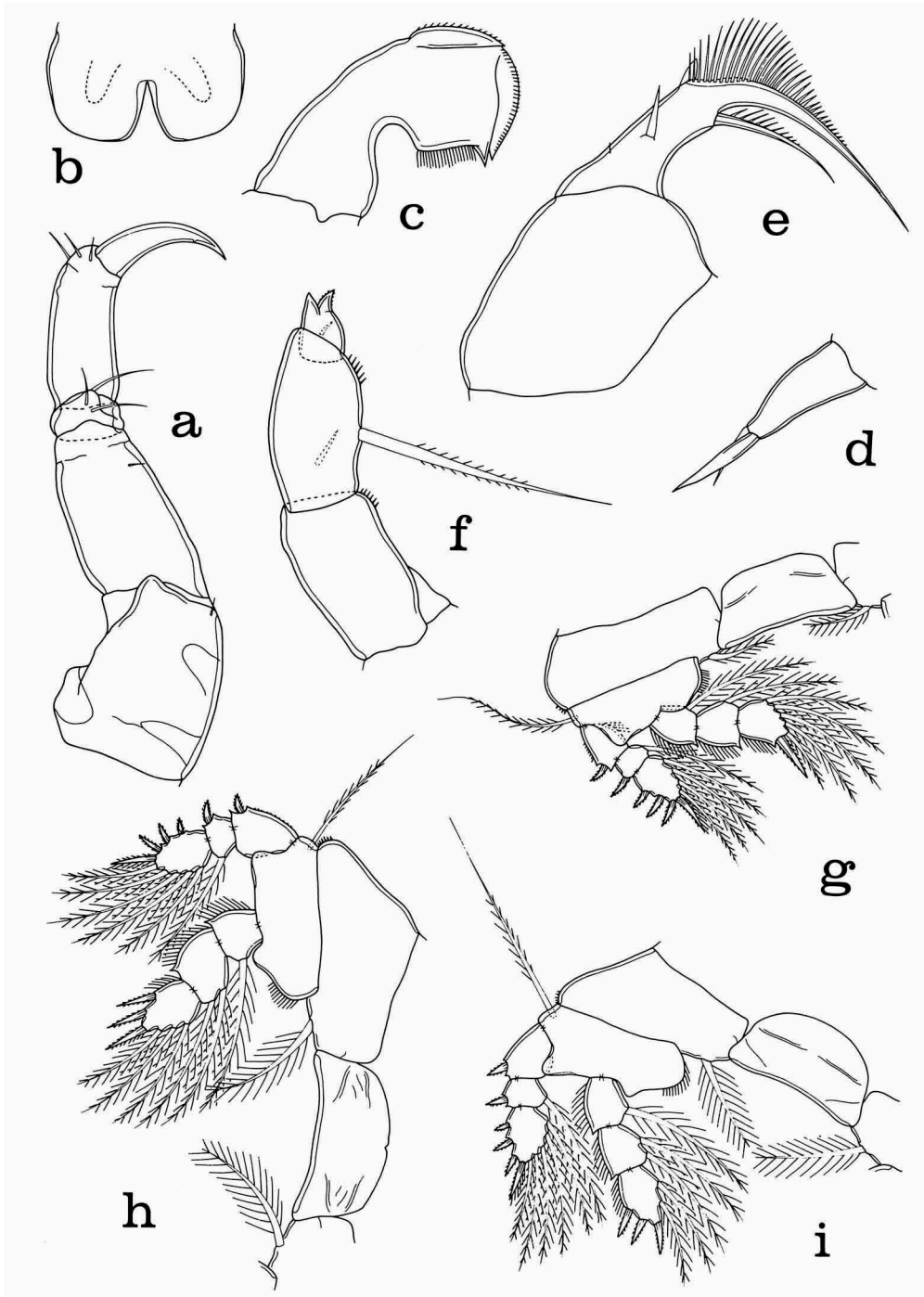

Fig. 11. a-i. *Colobomolgus bandensis* spec. nov., ♀. a, second antenna, postero-inner (scale C); b, labrum, with paragnaths indicated by broken lines, ventral (C); c, mandible, posterior (D); d, first maxilla, posterior (D); e, second maxilla, posterior (D); f, maxilliped, posterior (D); g, leg 1 and intercoxal plate, anterior (B); h, leg 2 and intercoxal plate, anterior (B); i, leg 3 and intercoxal plate, anterior (B).

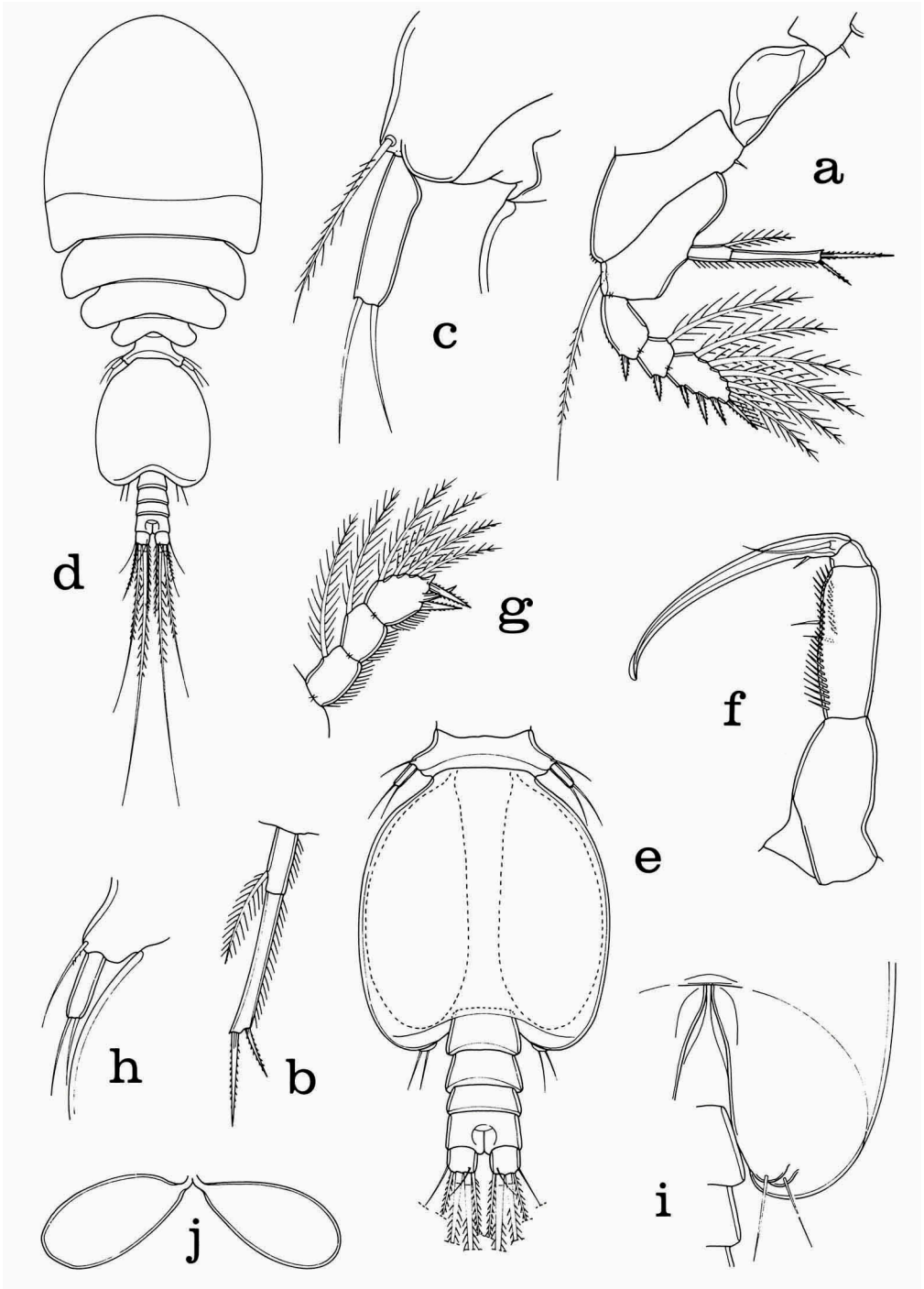

Fig. 12. a-j. *Colobomolgus bandensis* spec. nov. ♀. a, leg 4 and intercoxal plate, anterior (scale B); b, endopod of leg 4, anterior (C); leg 5, dorsal (C). ♂. d, dorsal (A); e, urosome, dorsal (B); f, maxilliped, inner (C); g, endopod of leg 1, anterior (C); h, leg 5, dorsal (D); i, leg 5, ventral (C); j, spermatophores, attached to ♀, ventral (E).

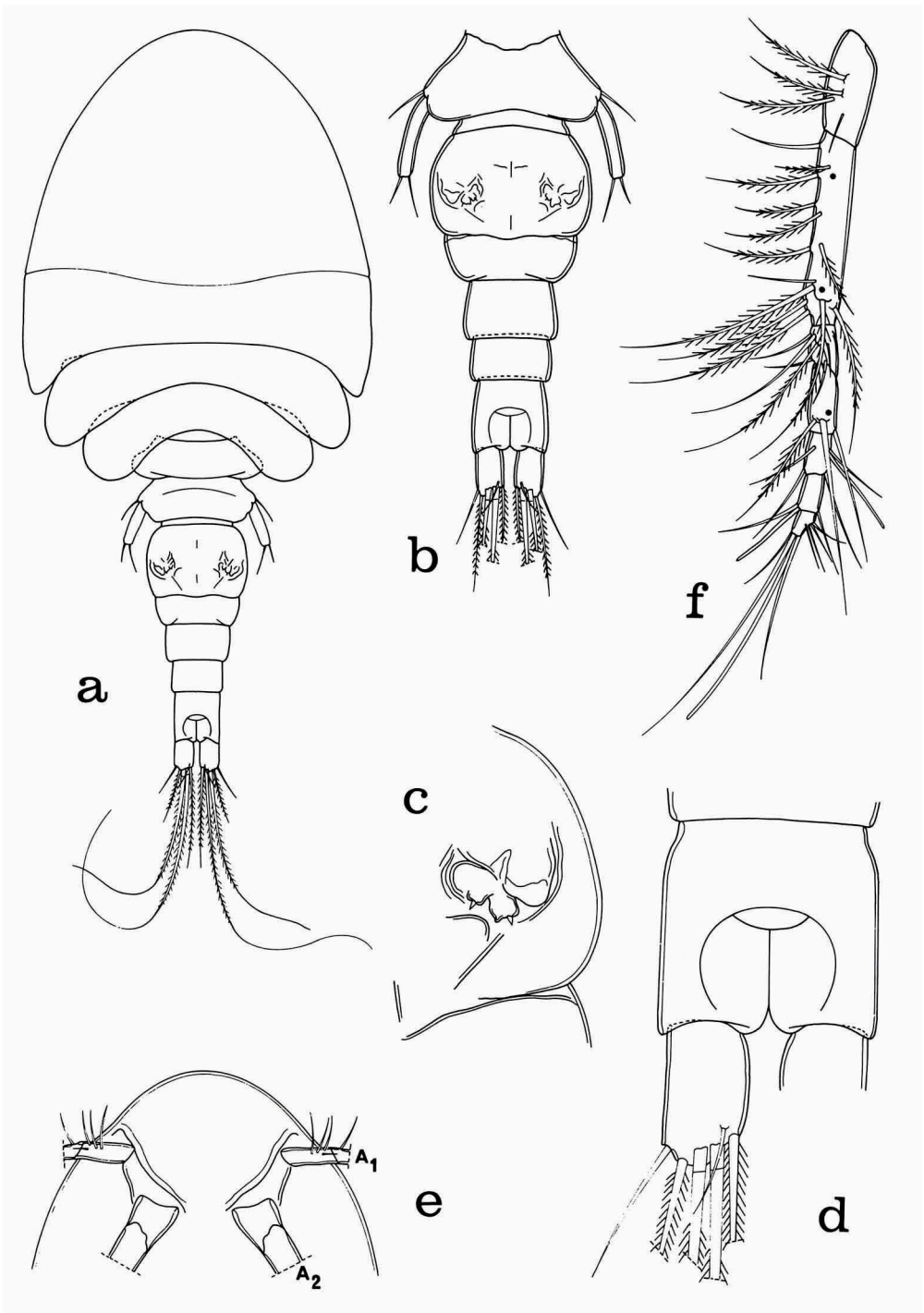

Fig. 13. a-f. *Colobomolgus epaxius* spec. nov., ♀. a, dorsal (scale F); b, urosome, dorsal (A); c, genital area, dorsal (C); d, caudal ramus and anal segment, dorsal (C); e rostral area, ventral (F); f, first antenna, ventral (E).

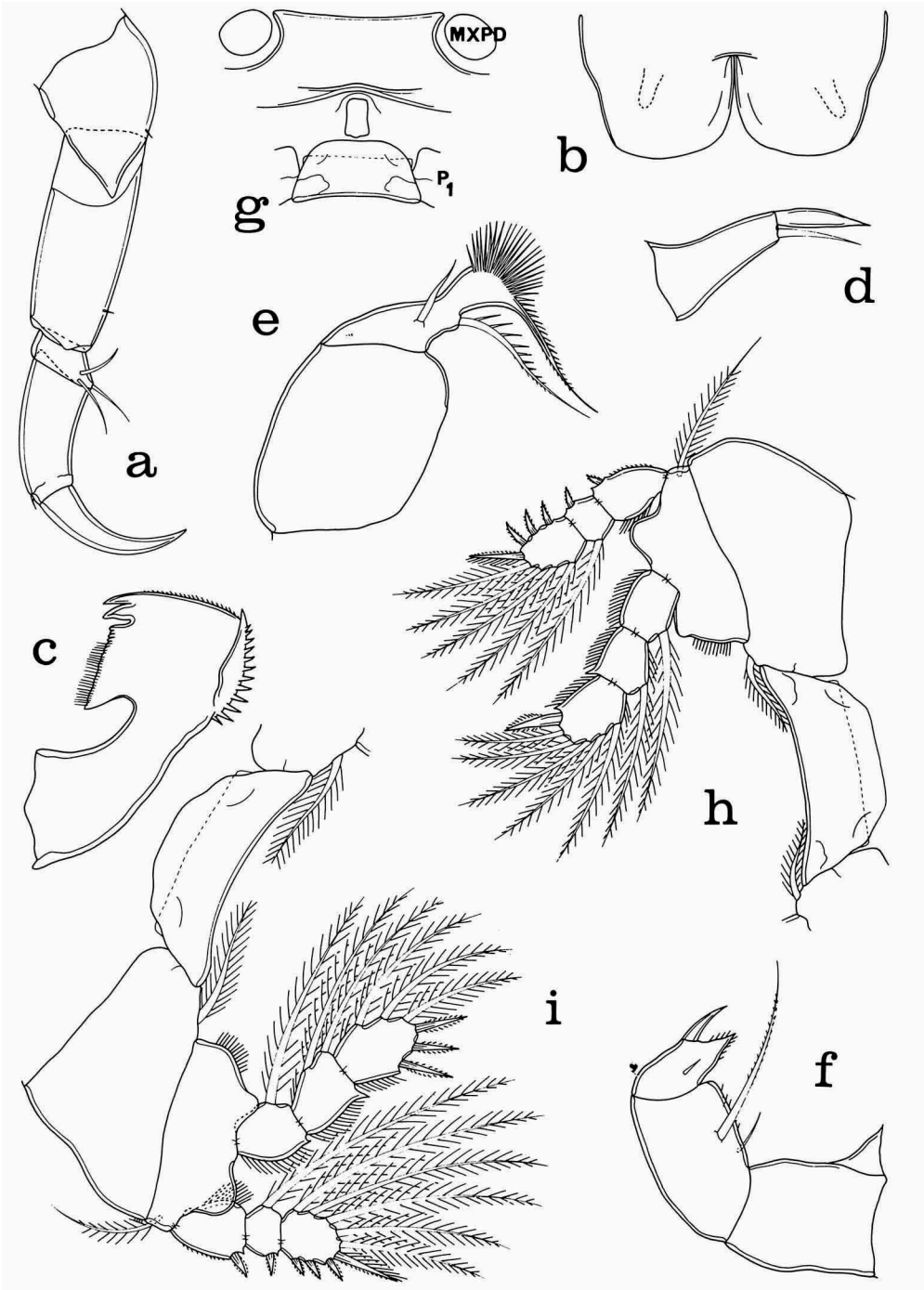

Fig. 14. a-i. *Colobomolgus epaxius* spec. nov., ♀. a, second antenna, postero-inner (scale B);b, labrum, with positions of paragnaths indicated by broken lines, ventral (C); c, mandible, anterior (D); d, first maxilla, posterior (D); e, second maxilla, posterior (C); f, maxilliped, posterior (C); g, area between maxillipeds and first pair of legs, ventral (E); h, leg 1 and intercoxal plate, anterior (B); i, leg 2 and intercoxal plate, anterior (B).

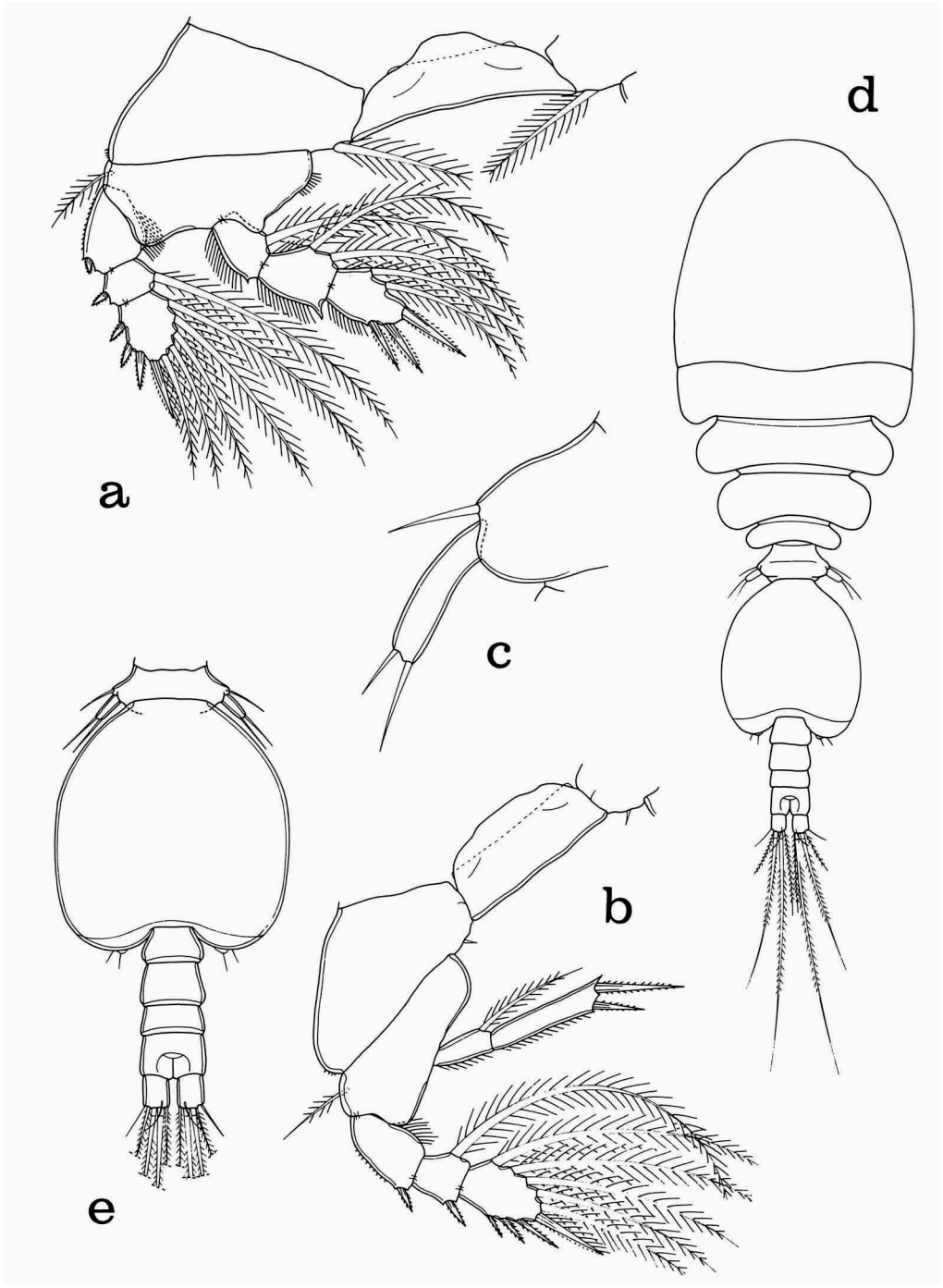

Fig. 15. a-e. *Colobomolgus epaxius* spec. nov. ♀. a, leg 3 and intercoxal plate, anterior (scale B); b, leg 4 and intercoxal plate, anterior (B); c, leg 5, dorsal (B). ♂. d, dorsal (A); e, urosome, dorsal (E).

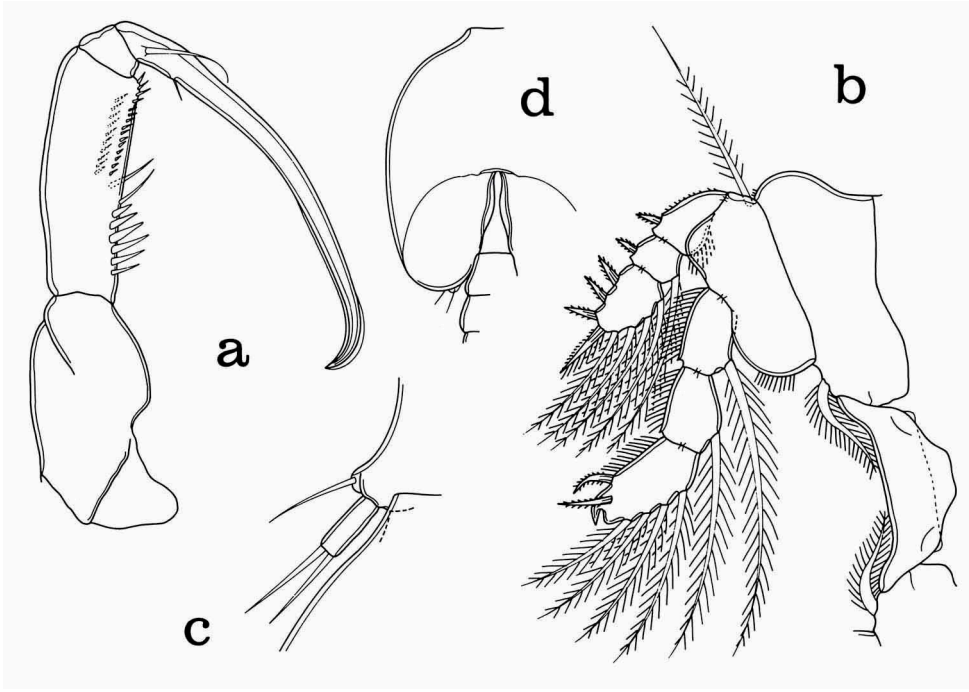

Fig. 16. a-d. *Colobomolgus epaxius* spec. nov., ♂. a, maxilliped, inner (scale E); b, leg 1 and intercoxal plate, anterior (C); c, leg 5, dorsal (D); leg 6, ventral (E).

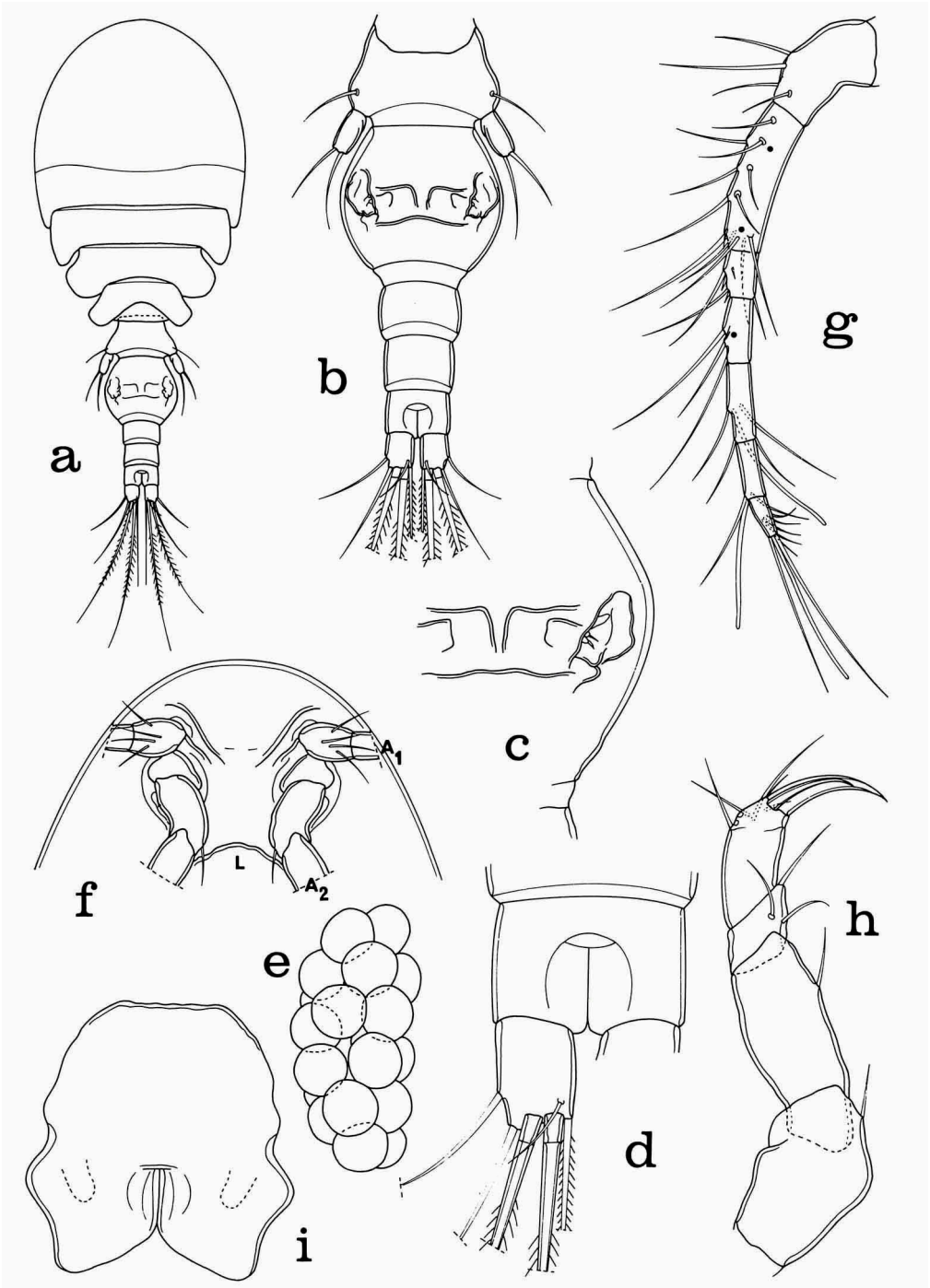

Fig. 17. a-i. *Critomolgus antennulus* spec. nov., ♀. a, dorsal (scale F); b, urosome, dorsal (E); c, genital area, dorsal (C); d, caudal; ramus and anal segment, dorsal (D); e, egg sac, ventral (A); f, rostrum, ventral (E); g, first antenna, dorsal (C); h, second antenna, posterior (C); i, labrum, with positions of paragnaths indicated by broken lines, ventral (C).

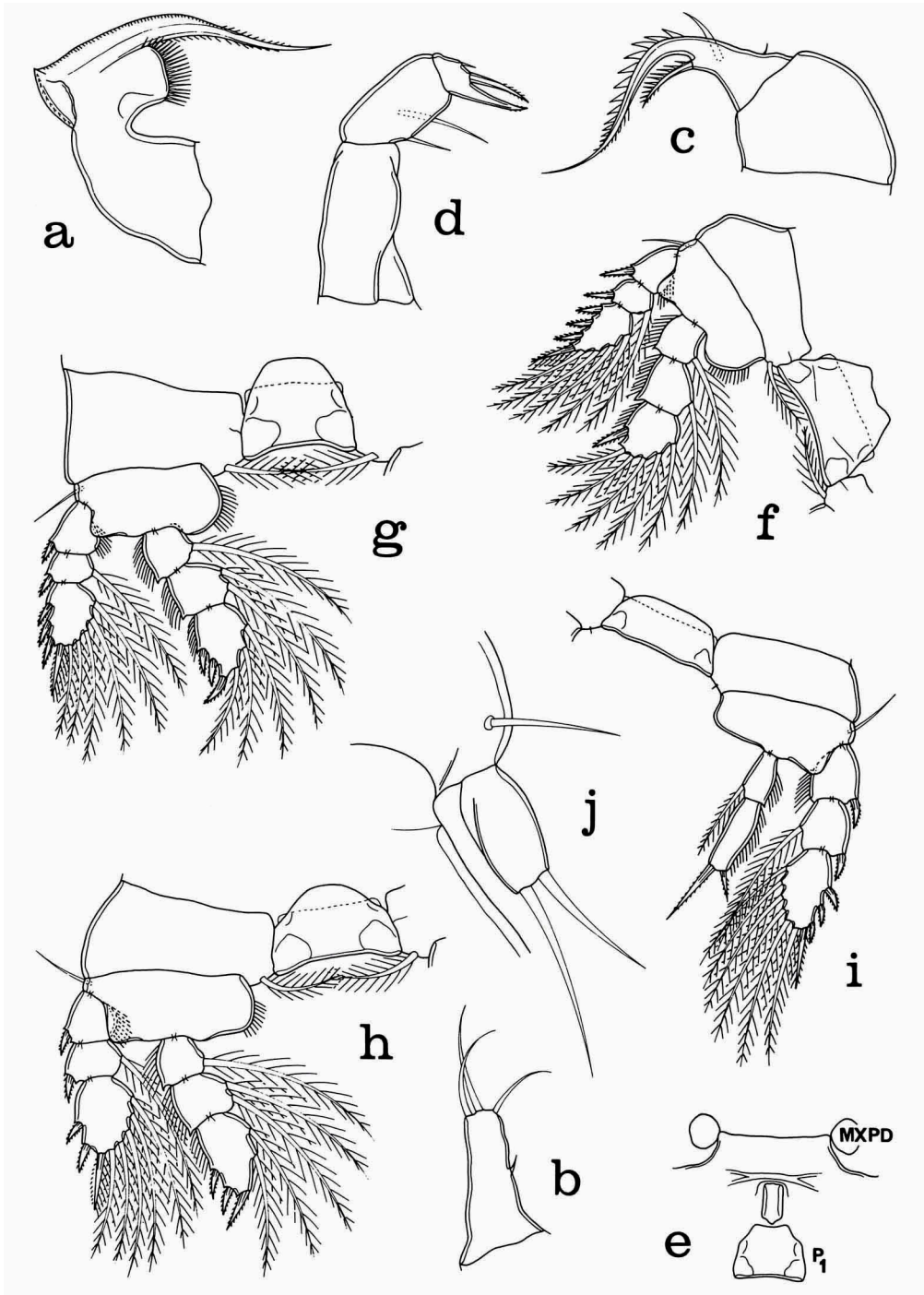

Fig. 18. a-j. *Critomolgus antennulus* spec. nov., ♀. a, mandible, posterior (scale D); b, first maxilla, posterior (D); c, second maxilla, anterior (C); d, maxilliped, anterior (C); e, area between maxillipeds and first pair of legs, ventral (E); f, leg 1 and intercoxal plate, anterior (B); g, leg 2 and intercoxal plate, anterior (B); h, leg 3 and intercoxal plate, anterior (B); i, leg 4 anmd intercoxal plate, anterior (B); j, leg 5, dorsal (D).

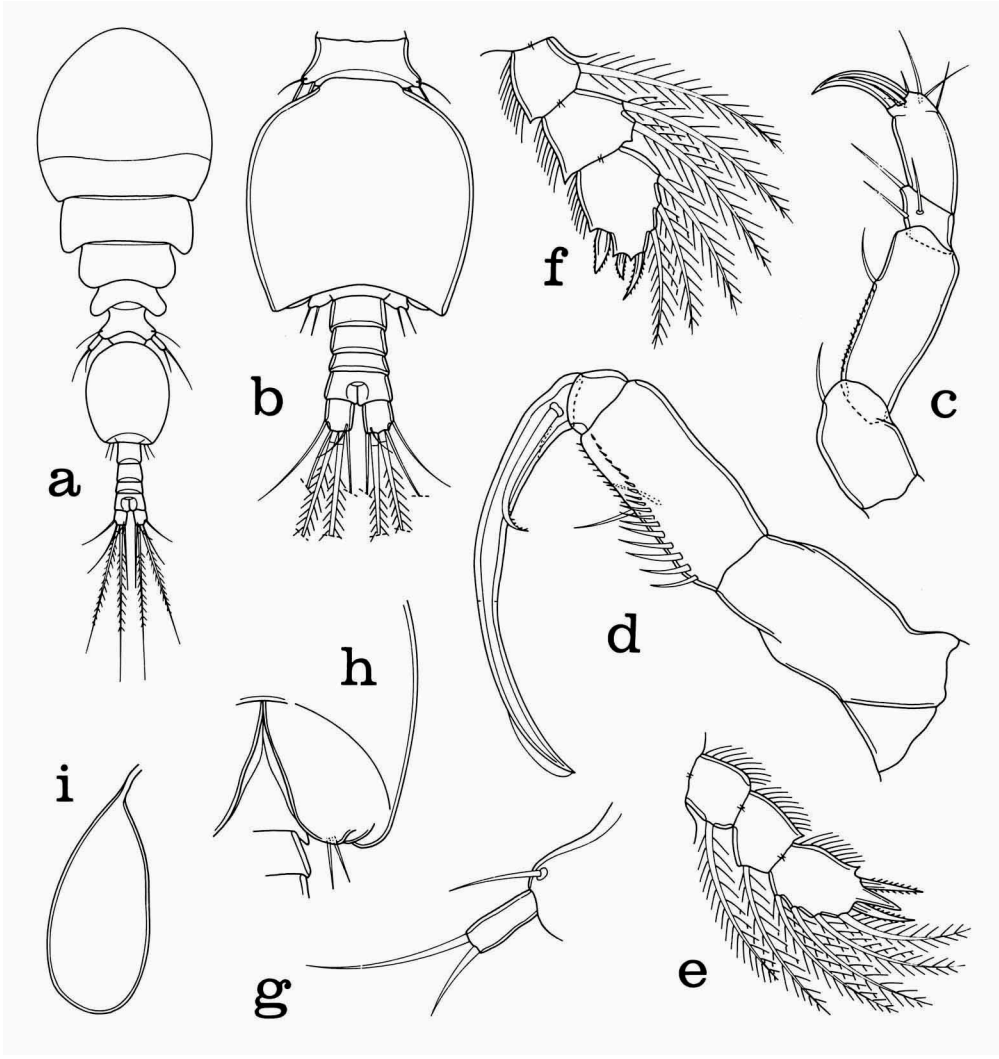

Fig. 19. a-i. *Critomolgus antennulus* spec. nov., ♂. a, dorsal (scale F); b, urosome, dorsal (E); c, second antenna, posterior (C); d, maxilliped, inner (C); e, endopod of leg 1, anterior (C); f, endopod of leg 2, anterior (C); g, leg 5, dorsal (D); h, leg 6, ventral (B); i, spermatophore, attached to ♀, ventral (E).

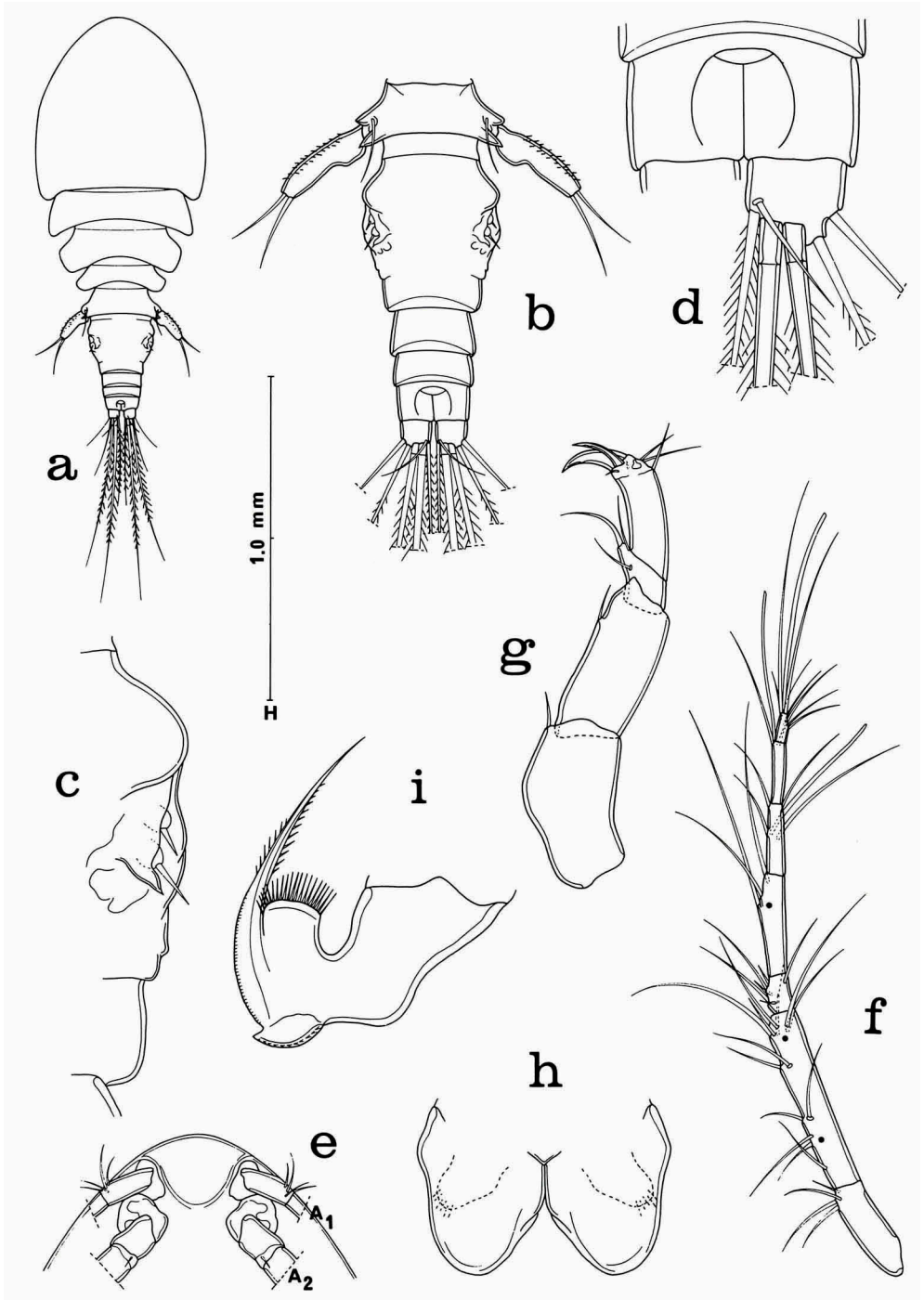

Fig. 20. a-i. *Critomolgus cladiellae* spec. nov., ♀. a, dorsal (scale H); b, urosome, dorsal (A); c, genital area, dorsal (C); d, caudal ramus and anal segment, dorsal (C); e, rostrum, ventral (F); f, first antenna, dorsal (A); g, second antenna, posterior (E); h, labrum, with paragnaths indicated by broken lines, ventral (B); i, mandible, posterior (C).

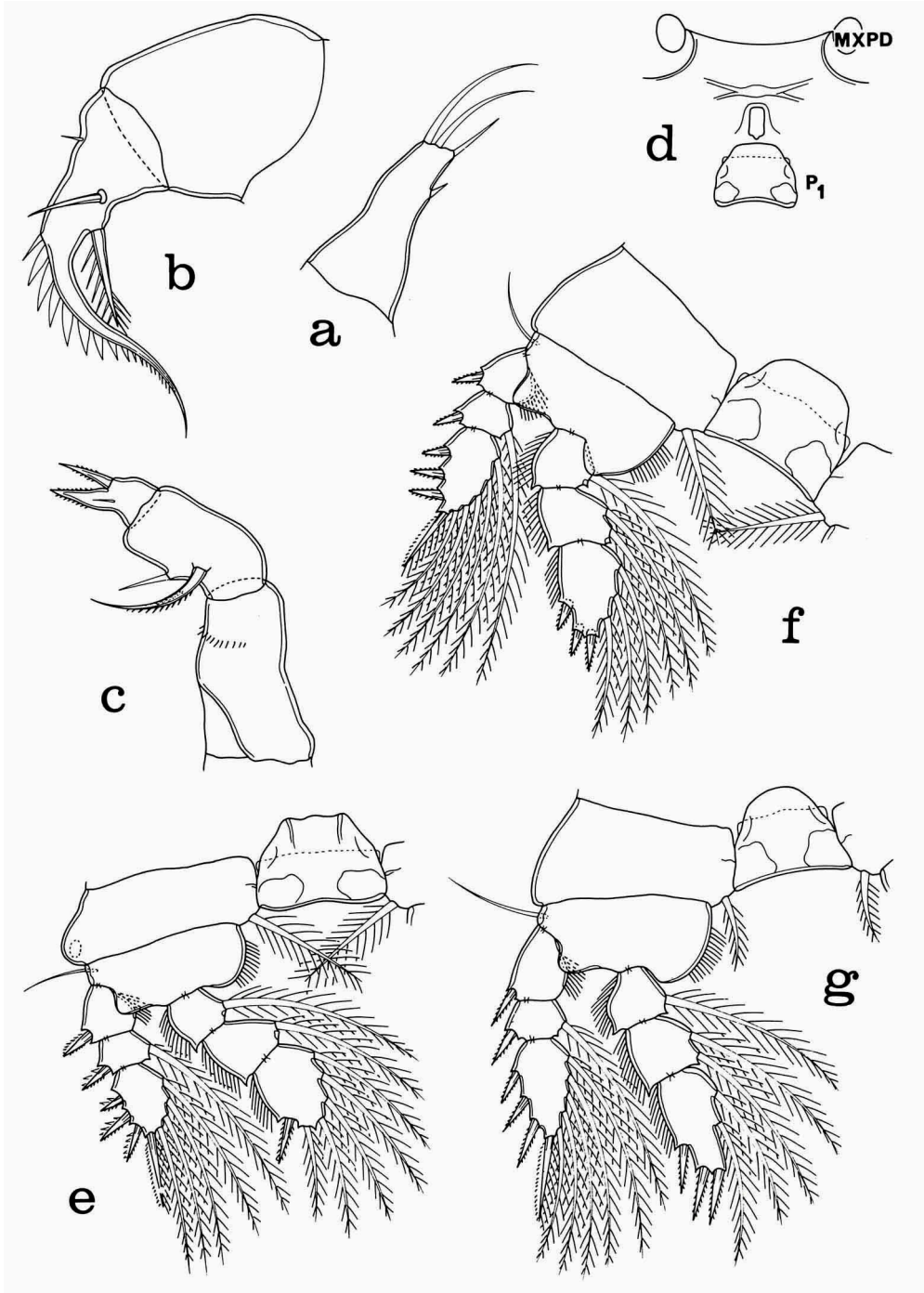

Fig. 21. a-g. *Critomolgus cladiellae* spec. nov., ♀. a, first maxilla, anterior (scale C); b, second maxilla, posterior (C); c, maxilliped, posterior (B); d, area between maxillipeds and first pair of legs, ventral (A); e, leg 1 and intercoxal plate, anterior (E); f, leg 2 and intercoxal plate, anterior (E); g, leg 3 and intercoxal plate, anterior (E).

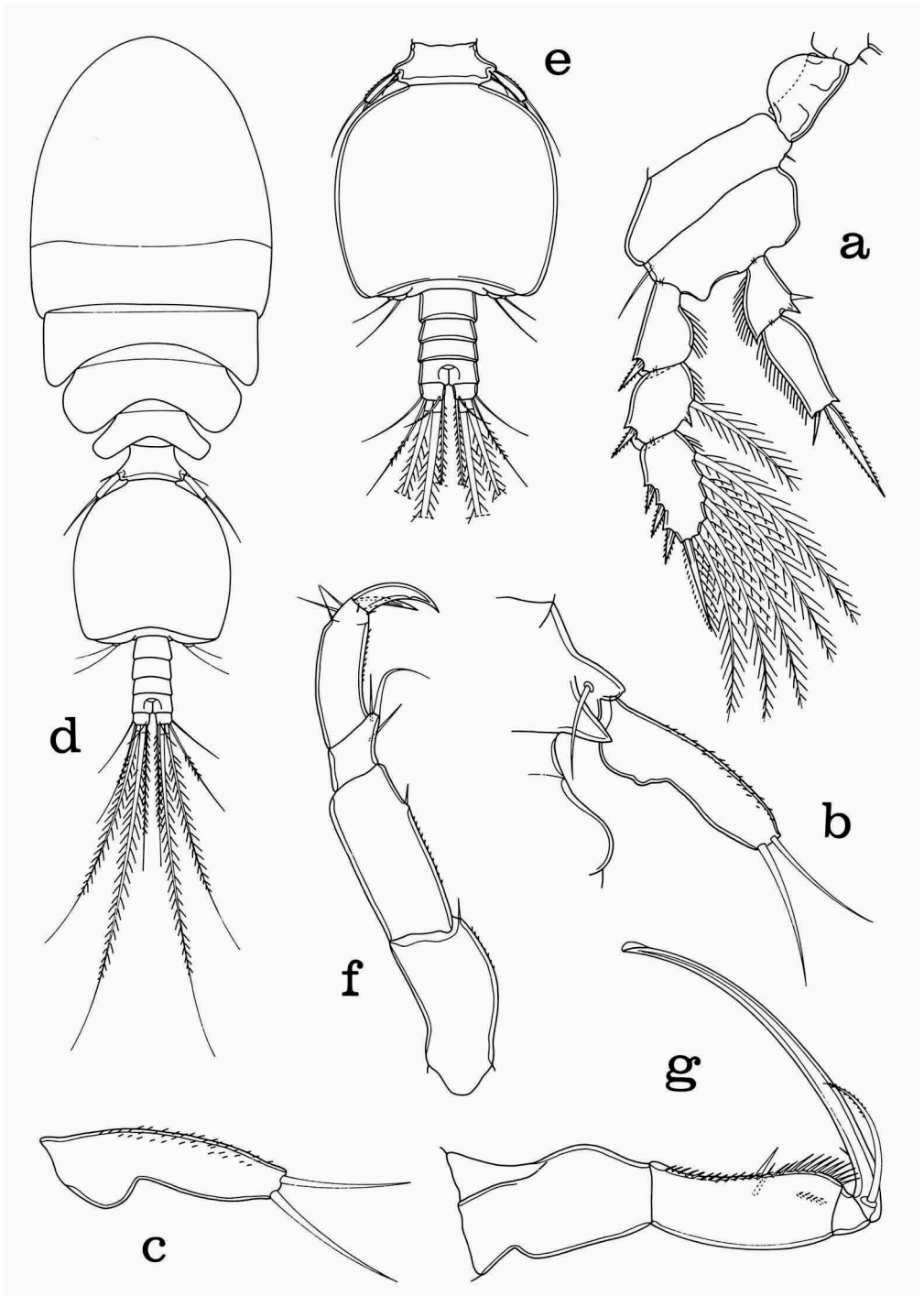

Fig. 22. a-g. *Critomolgus cladiellae* spec. nov. ♀. a, leg 4 and intercoxal plate, anterior (scale E); b, leg 5, dorsal (B); c, free segment of leg 5, dorsal (B). ♂. d, dorsal (F); e, urosome, dorsal (A); f, second antenna, anterior (B); g, maxilliped, inner (B).

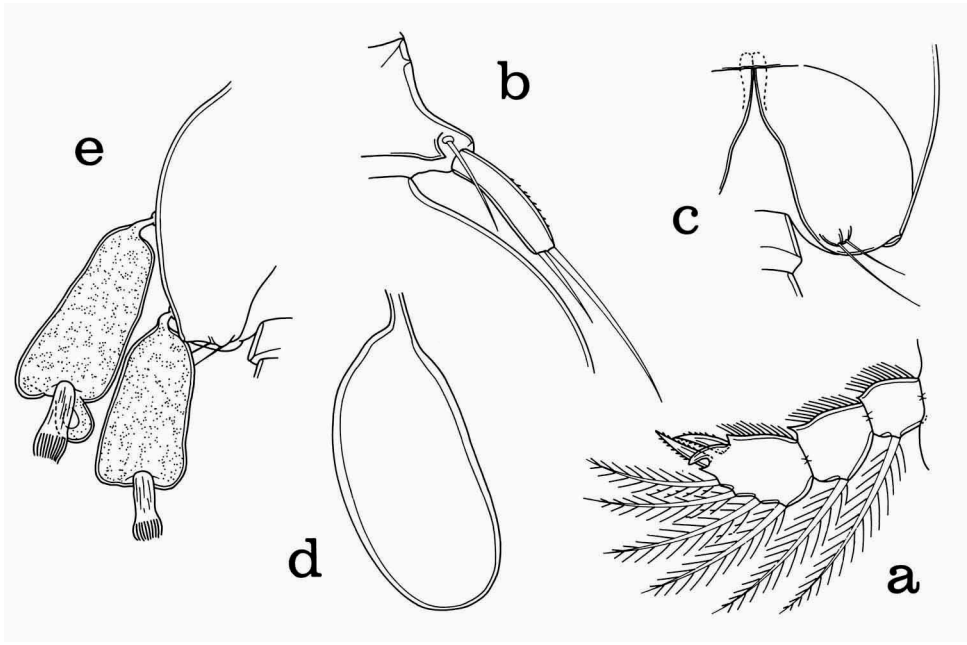

Fig. 23. a-e. *Critomolgus cladiellae* spec. nov., ♂. a, endopod of leg 1, anterior (scale B); b, leg 5, dorsal (C); c, leg 6, ventral (E); d, spermatophore, attached to ♀, ventral (E); e, suctorian (probably *Ophryodendron* sp.) attached to genital segment of ♂, ventral (A).

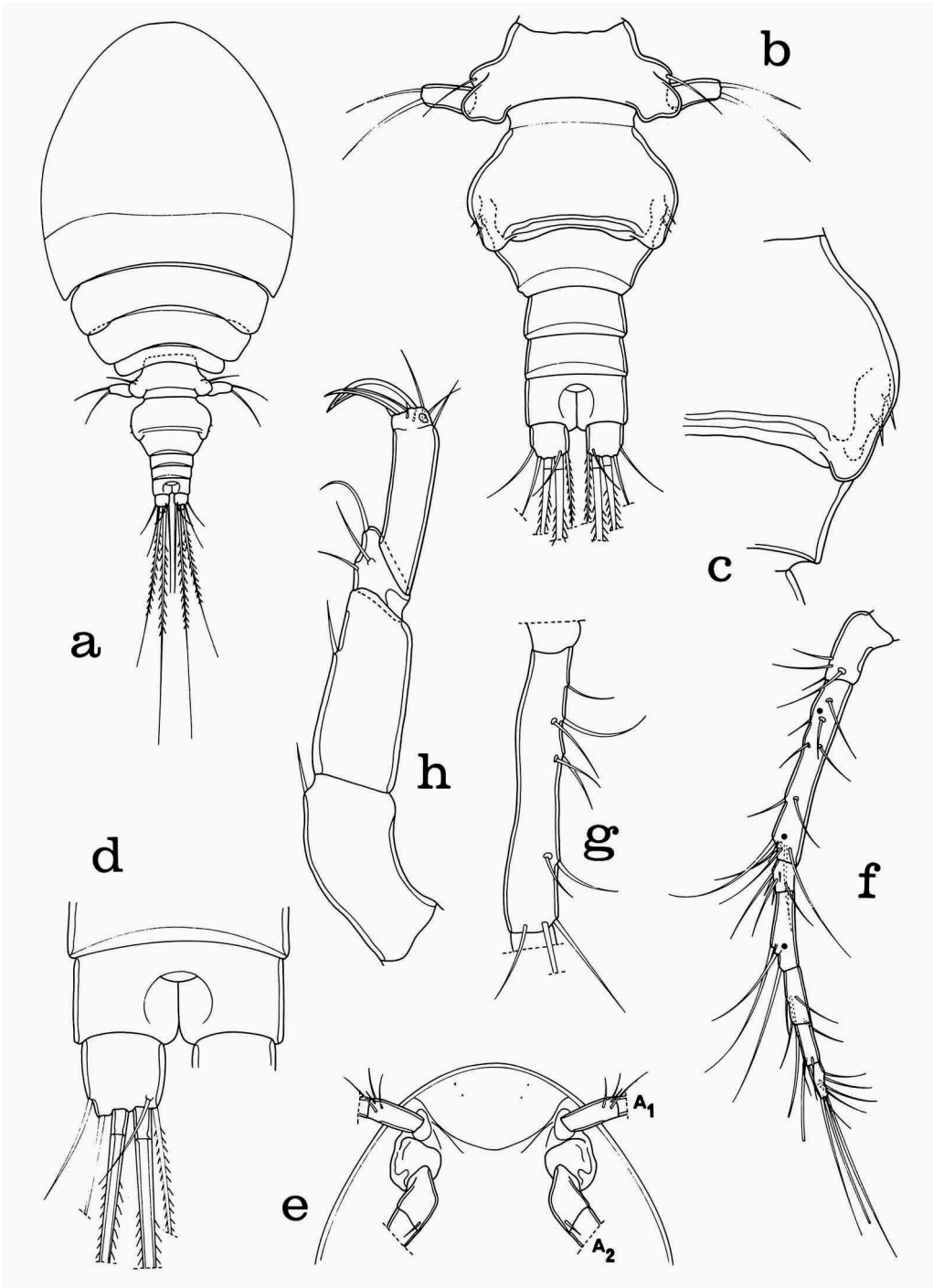

Fig. 24. a-h. *Critomolgus orectopus* spec. nov., ♀. a, dorsal (scale F); b, urosome, dorsal (B); c, genital area, dorsal (D); d, caudal ramus and anal segment, dorsal (C); e, rostrum, ventral (A); f, first antenna, dorsal (E); g, second segment of second antenna, ventral (B); h, second antenna, posterior (C).

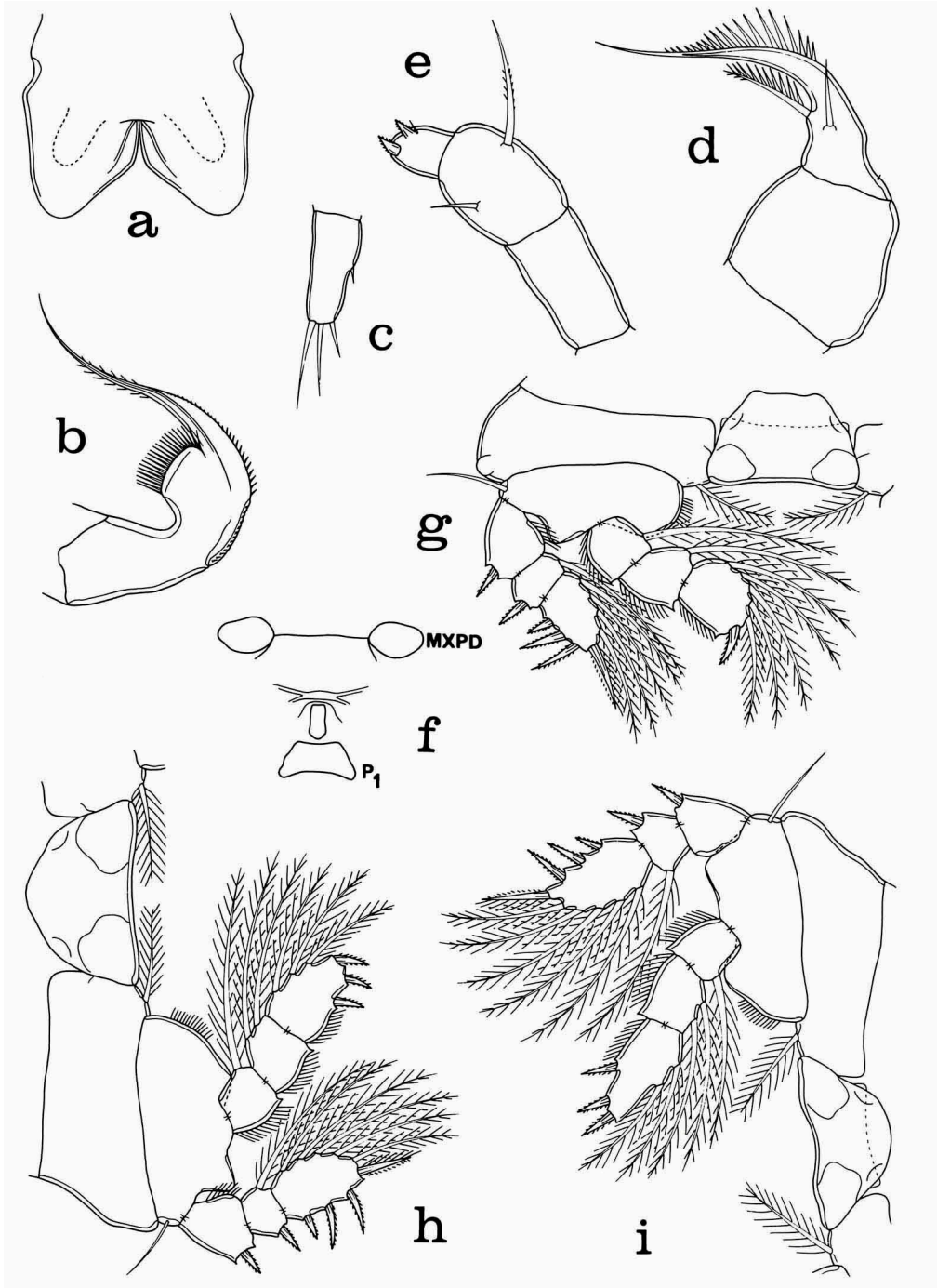

Fig. 25. a-i. *Critomolgus orectopus* spec. nov., ♀. a, labrum, with paragnaths indicated by broken lines, ventral (scale C); b, mandible posterior (D); c, first maxilla, posterior (D); d, second maxilla posterior (D); e, maxilliped, postero-inner (D); f, area between maxillipeds and first pair of legs, ventral (E);g, leg 1 and intercoxal plate, posterior (C); h, leg 2 and intercoxal plate, posterior (C); i, leg 3 and intercoxal plate, posterior (C).

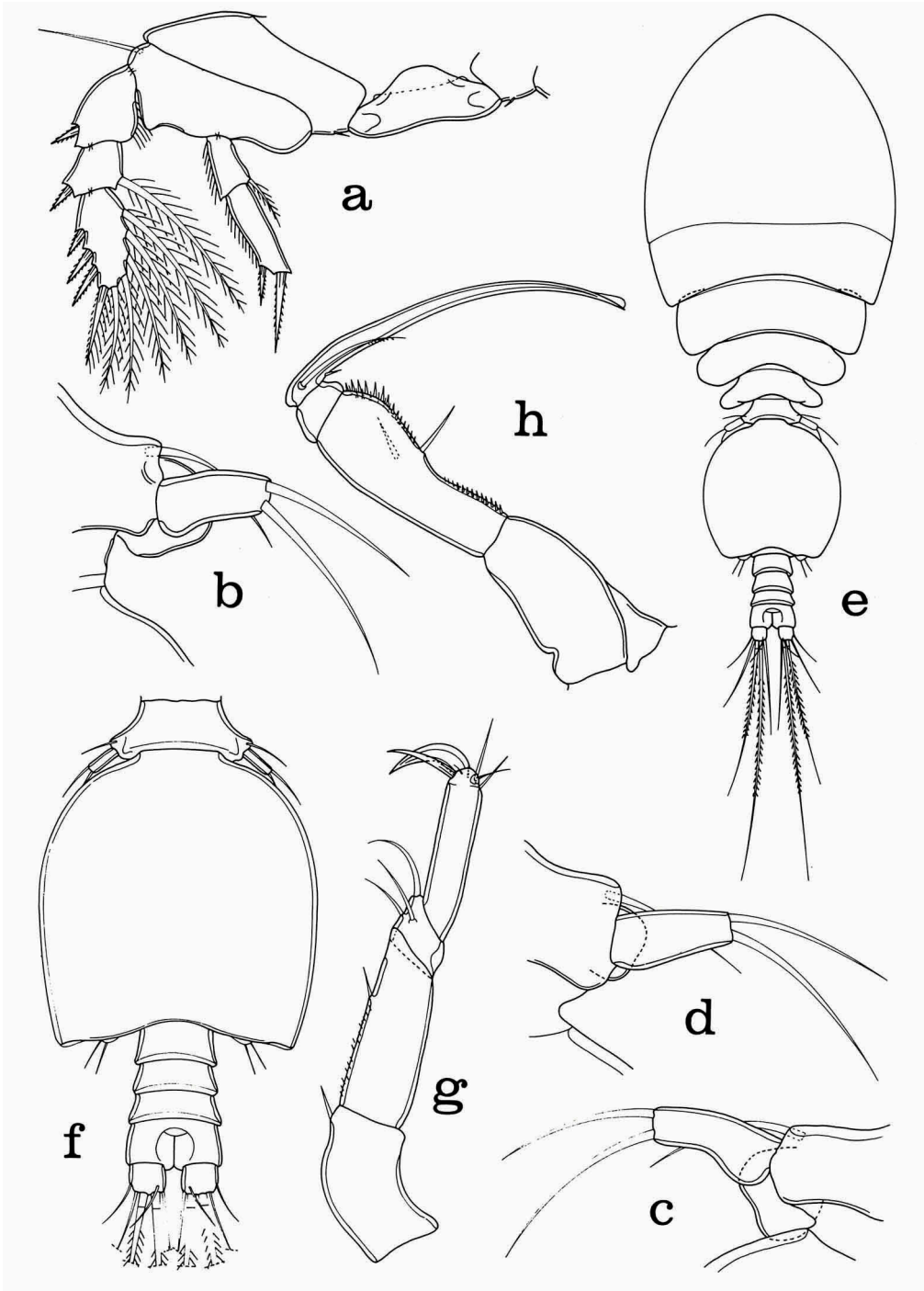

Fig. 26. a-h. *Critomolgus orectopus* spec. nov. ♀. a, leg 4 and intercoxal plate, anterior (scale C); b, leg 5, ventral (D); c, leg 5, ventral (D); d, leg 5, ventral (D). ♂. e, dorsal (A); f, urosome, dorsal (B); g, second antenna, posterior (C); h, maxilliped, inner (C).

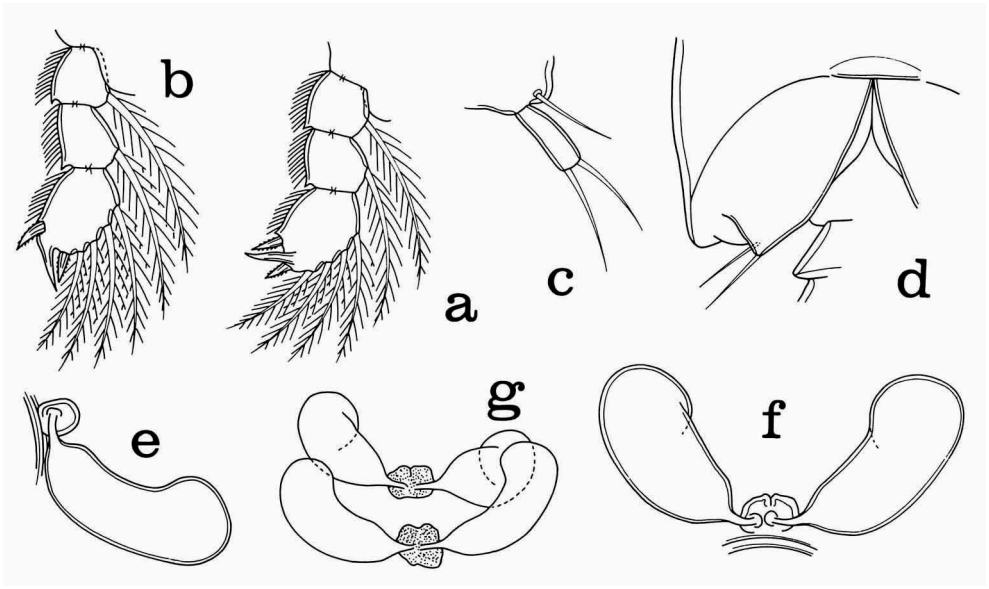

Fig. 27. a-g. *Critomolgus orectopus* spec. nov., ♂, a, endopod of leg 1, posterior (scale C); b, endopod of leg 1, anterior (C); c, leg 5, dorsal (D); d, leg 6, ventral (C); e, spermatophore, attached to ♀, dorsal (E); f, spermatophores, attached to ♀ (E); g, spermatophores, attached to genital segment of ♀, dorsal (A).

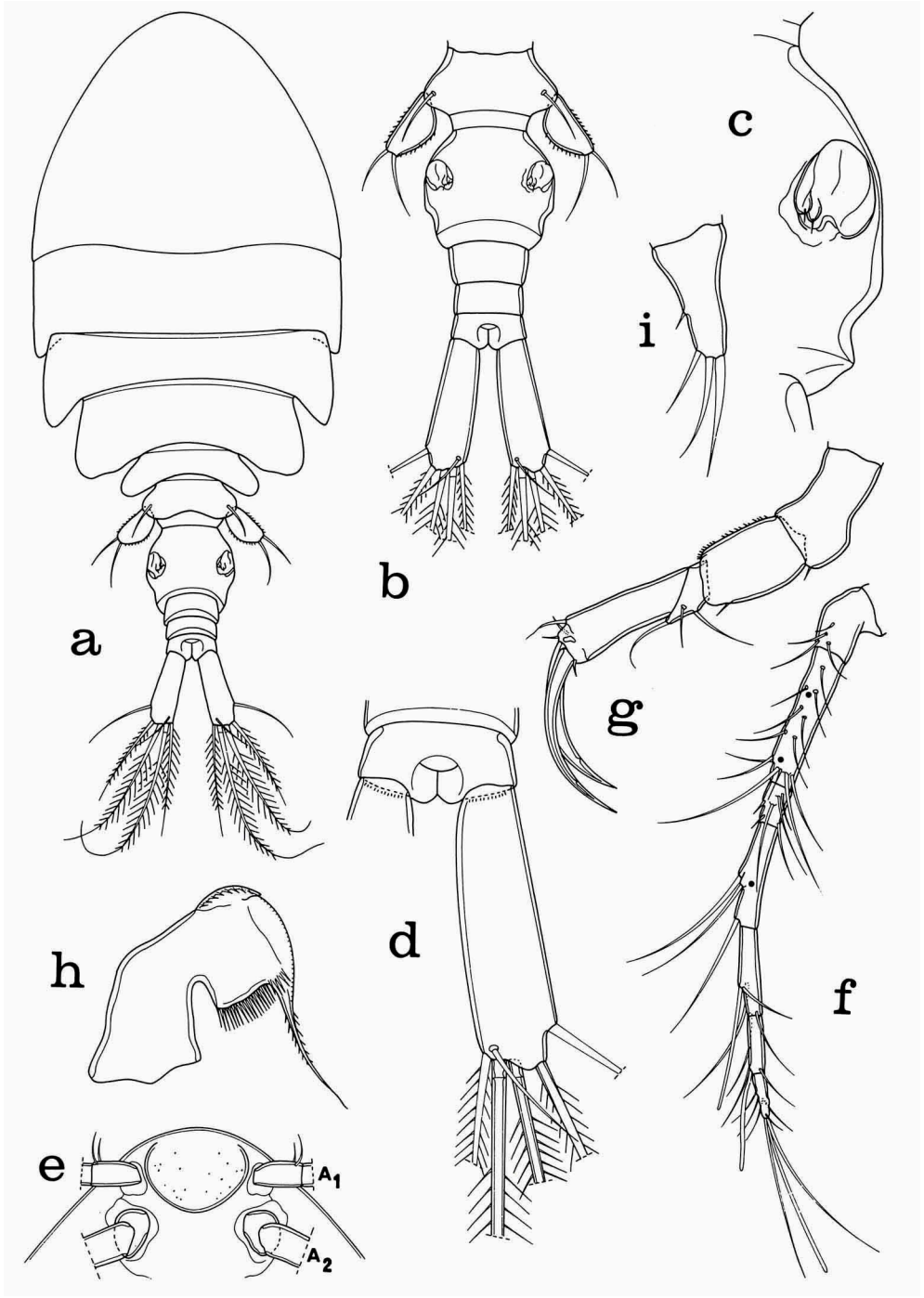

Fig. 28. a-i. *Doridicola capnellae* spec. nov., ♀. a, dorsal (scale F); b, urosome, dorsal (A); c, genital area, dorsal (C); d, caudal ramus and anal segment, dorsal (B); e, rostrum, ventral (A); f, first antenna, anteroventral (E); g, second antenna, posterior (E); h, mandible, posterior (C); i, first maxilla, anterior (C).

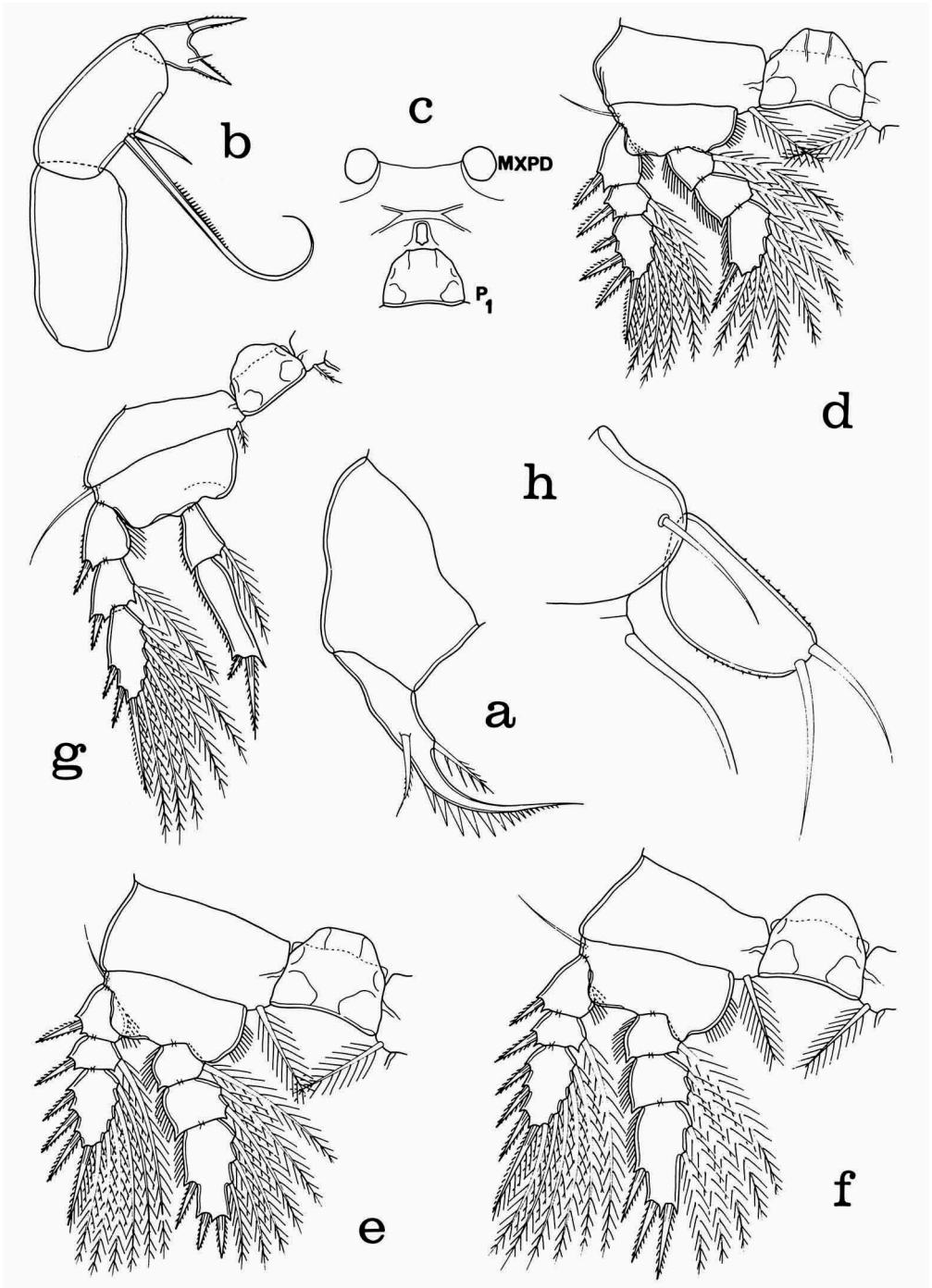

Fig. 29. a-h. *Doridicoala capnellae* spec. nov., ♀. a, second maxilla, posterior (scale C); b, maxilliped, anterior (C); c, area between maxillipeds and first pair of legs, ventral (A); d, leg 1 and intercoxal plate, anterior (E); e, leg 2 and intercoxal plate, anterior (E); f, leg 3 and intercoxal plate, anterior (E); g, leg 4 and intercoxal plate, anterior (E); h, leg 5, dorsal (C).

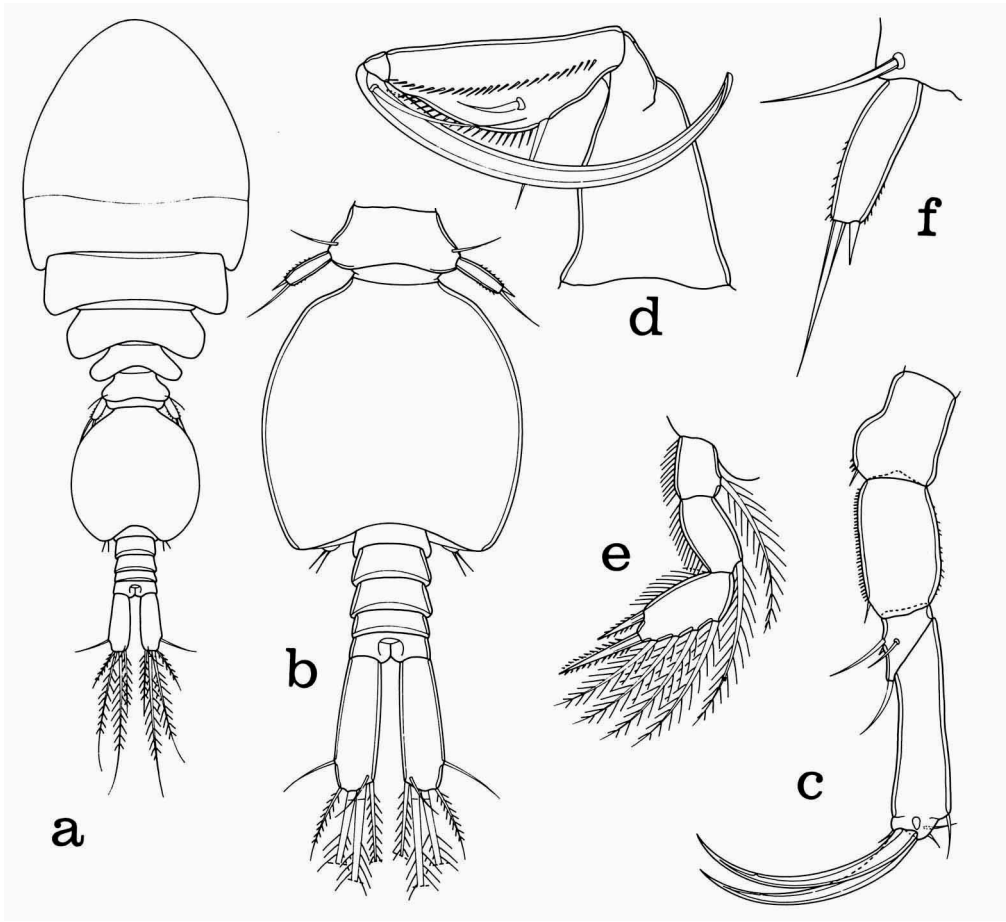

Fig. 30. a-f. *Doridicola capnellae* spec. nov., ♂. a, dorsal (scale F); b, urosome, dorsal (E); c, second antenna, posterior (B); d, maxilliped, inner (B); e, endopod of leg 1, posterior (B); f, leg 5, dorsal (D).

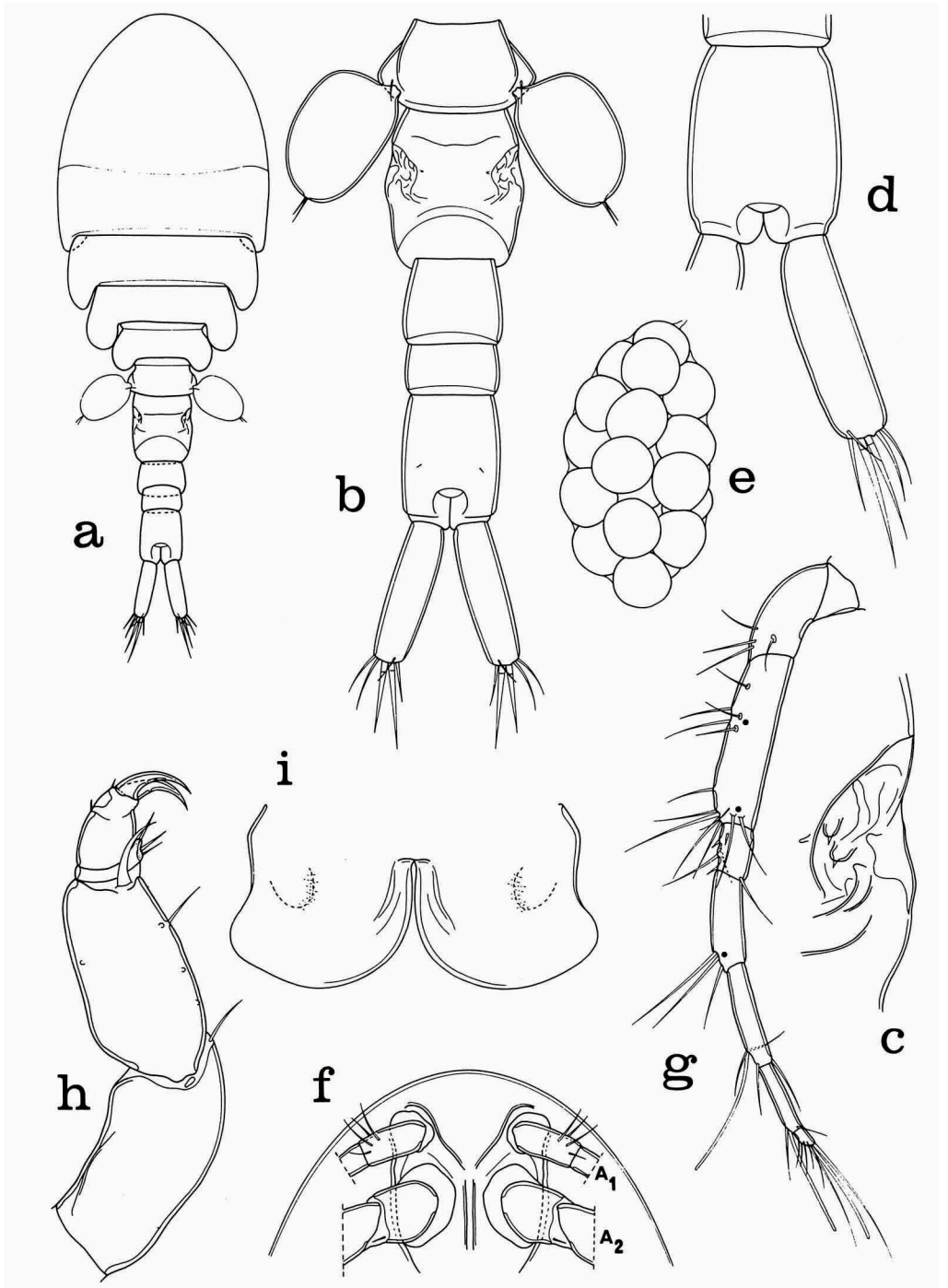

Fig. 31. a-i. *Doridicola petalopus* spec. nov., ♀. a, dorsal (scale C); b, urosome, dorsal (F); c, genital area, dorsal (C); d, caudal ramus and anal segment, dorsal (E); e, egg sac, ventral (F); f, rostrum, ventral (A); g, first antenna, dorsal (E); h, second antenna, anteroventral (B); i, labrum, with paragnaths indicated by broken lines, ventral (D).

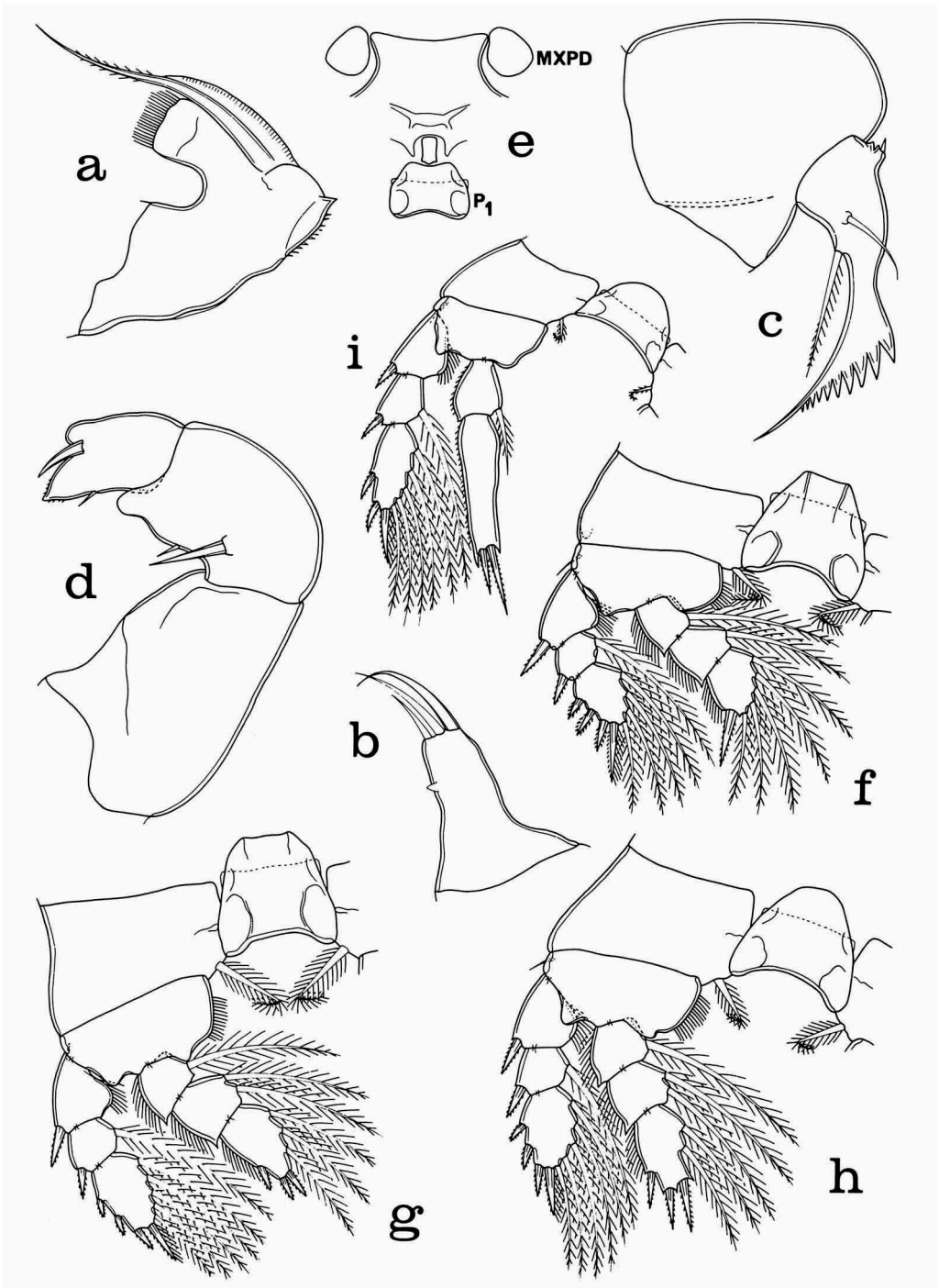

Fig. 32. a-i. *Doridicola petalopus* spec. nov., ♀. a, mandible, posterior (scale C); b, first maxilla, posterior (C); c, second maxilla, posterior (C); d, maxilliped, postero-inner (C); e, area between maxillipeds and first pair of legs, ventral (A); f, leg 1 and intercoxal plate, anterior (E); g, leg 2 and intercoxal plate, anterior (E); h, leg 3 and intercoxal plate, anterior (E); i, leg 4 and intercoxal plate, anterior (E).

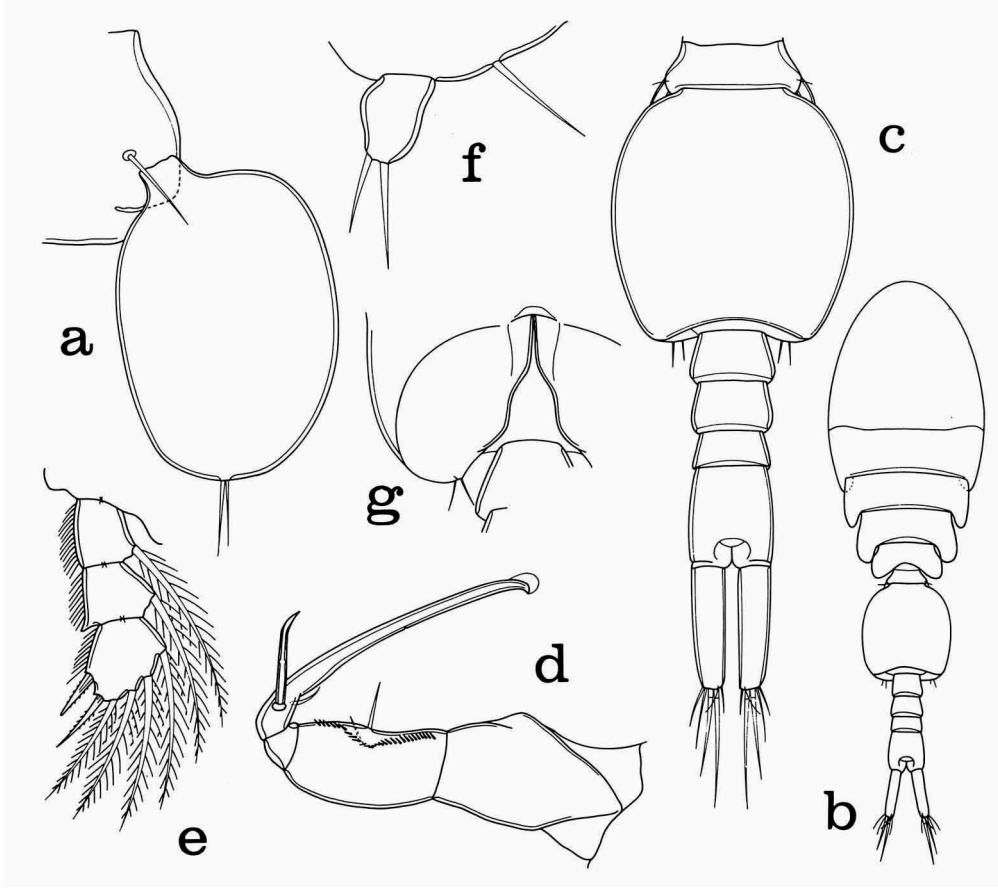

Fig. 33. a-g. *Doridicola petalopus* spec. nov. ♀. a, leg 5, dorsal (scale B). ♂. b, dorsal (G); c, urosome, dorsal (A); d, maxilliped, inner (E); e, endopod of leg 1, anterior (B); f, leg 5, dorsal, flat view (D); g, leg 6, ventral (E).

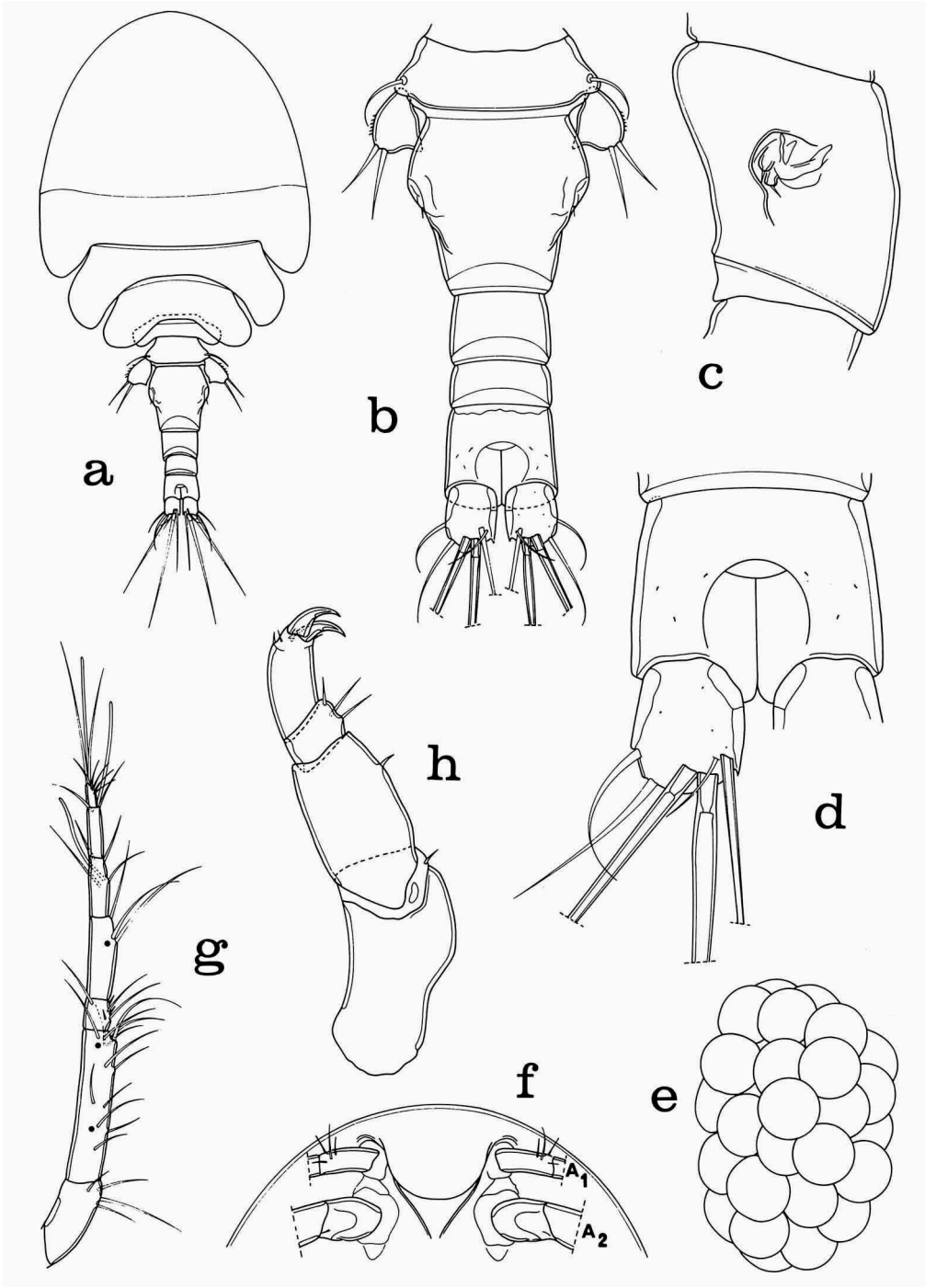

Fig. 34. a-h *Doridicola rostripes* spec. nov., ♀. a, dorsal (scale H): b, urosome, dorsal (F); c, genital segment, lateral (E); d, caudal ramus and anal segment, dorsal (B); e, egg sac, ventral (F); f, rostrum, ventral (F); g, first antenna, dorsal (A); h, second antenna, anterior (E).

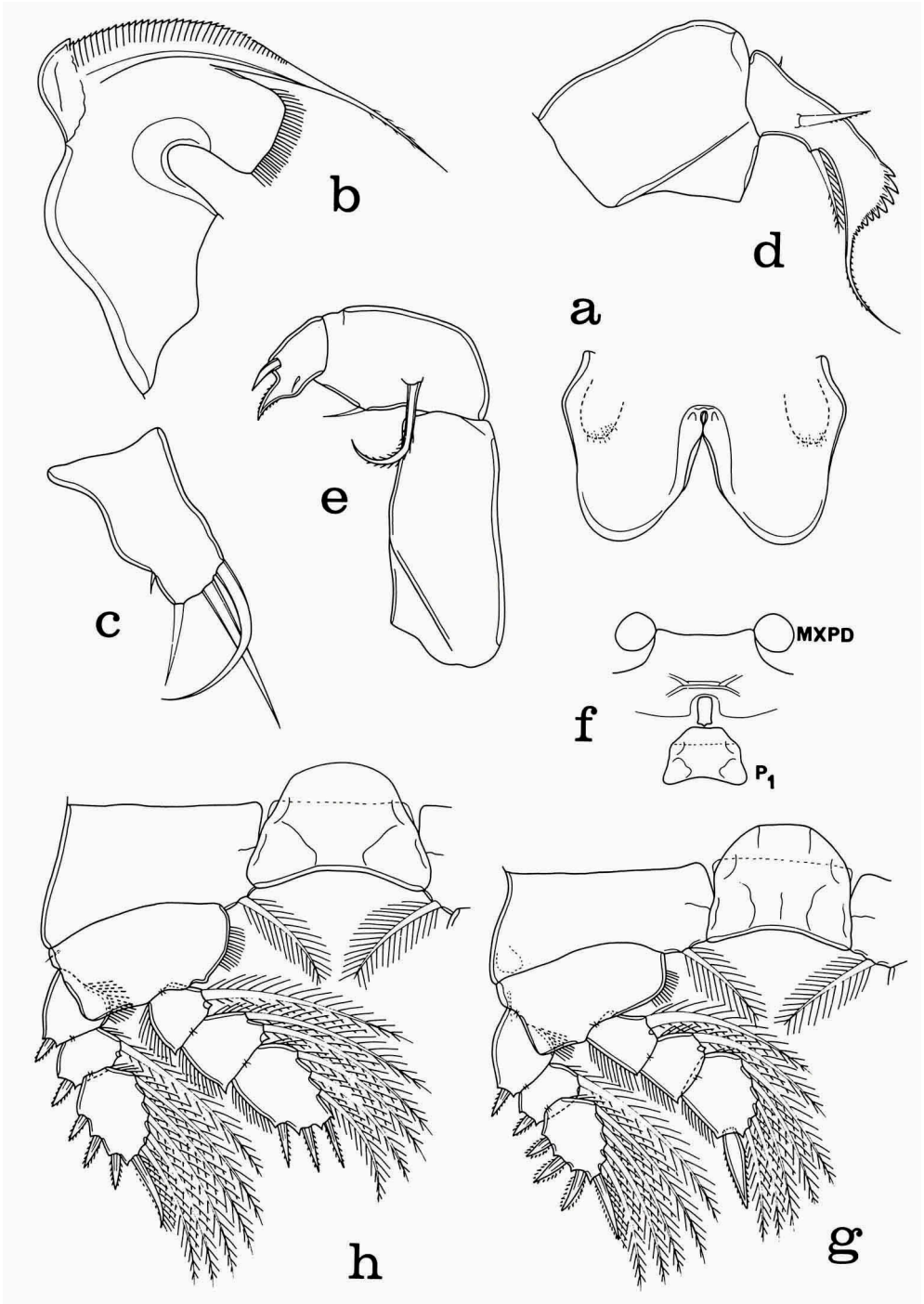

Fig. 35. a-h. *Doridicola rostripes* spec. nov., ♀. a, labrum, with paragnaths indicated by broken lines, ventral (scale B); b, mandible, posterior(C); c, first maxilla, posterior (C); d, second maxilla, posterior (B); e, maxilliped, postero-inner (B); f, area between maxillipeds and first pair of legs, ventral (F); g, leg 1 and intercoxal plate, anterior (E); h, leg 2 and intercoxal plate, anterior (E).

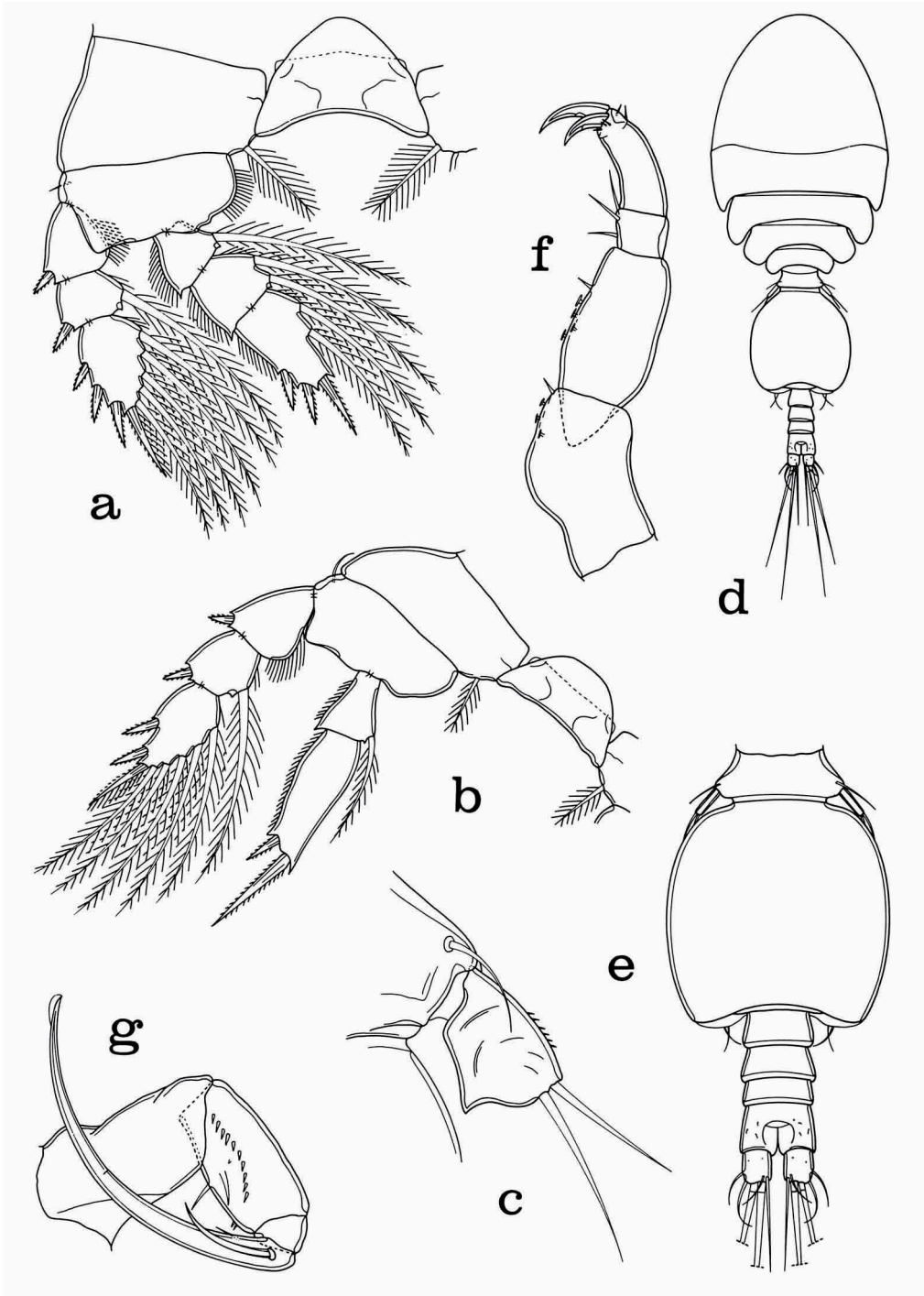

Fig. 36. a-g. *Doridicola rostripes* spec. nov. ♀. a, leg 3 and intercoxal plate, anterior (scale E); b, leg 4 and intercoxal plate, anterior (E); c, leg 5, dorsal (B). ♂. d, dorsal (G); e urosome, dorsal (A); f, second antenna, posterior (B); g, maxilliped, inner (B).

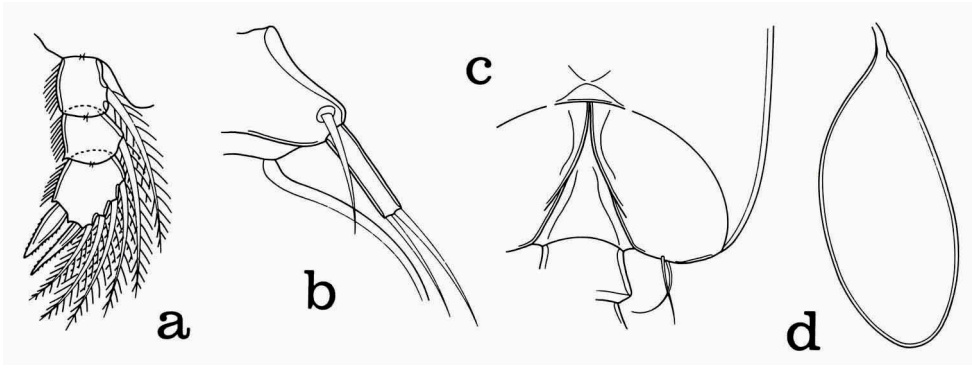

Fig. 37. a-d. *Doridicola rostripes* spec. nov., ♂. a, endopod of leg 1, anterior (scale B); b, leg 5, dorsal (C); c, leg 6, ventral (E); d, spermatophore, attached to ♀, dorsal (F).

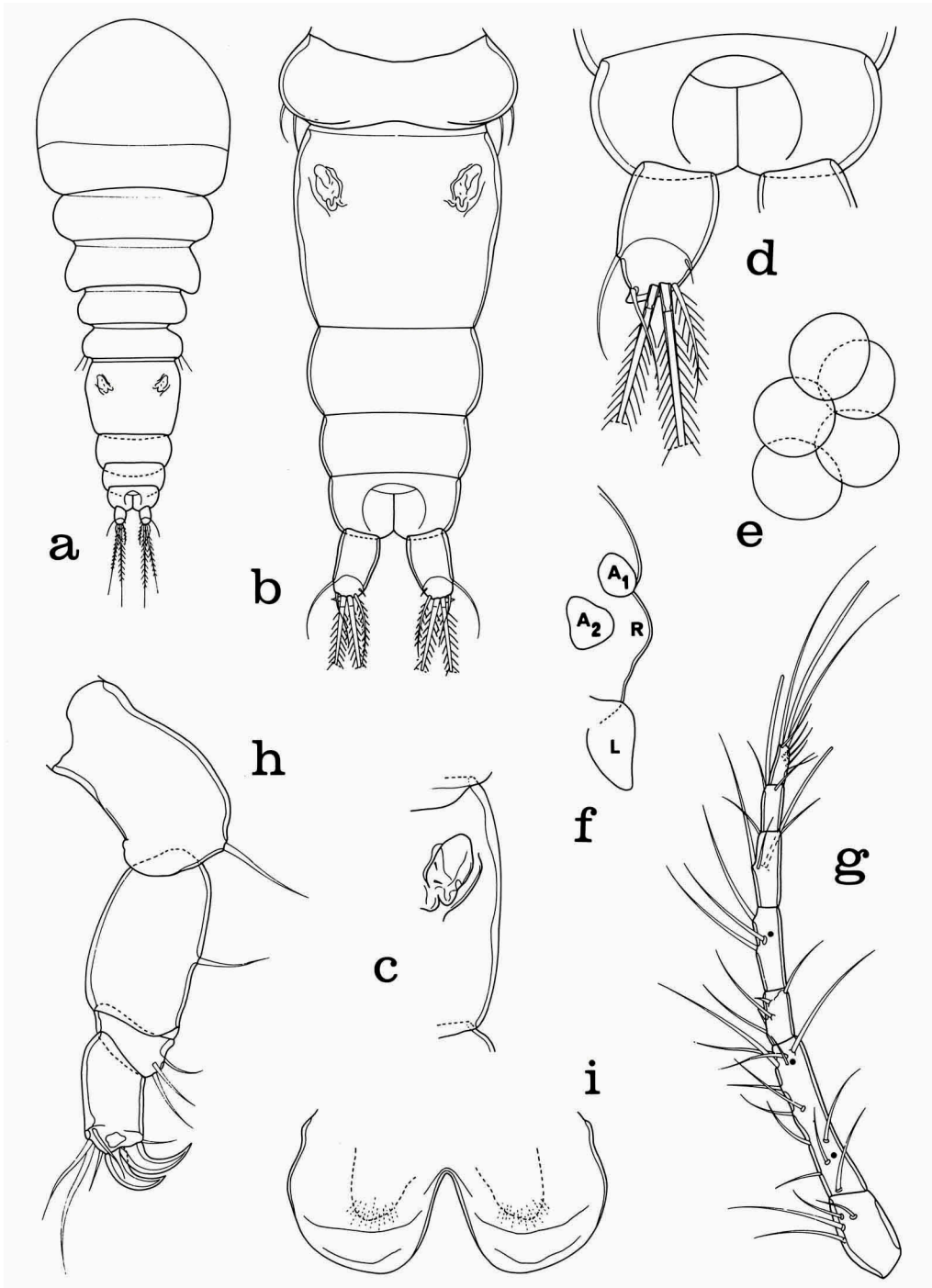

Fig. 38. a-i. *Doridicola senticauda* spec. nov., ♀. a, dorsal (scale G); b, urosome, dorsal (A); c, genital area, dorsal (E); d, caudal ramus and anal segment, dorsal (B); e, egg sac, ventral (F); f, outline of rostrum and labrum, lateral (F); g, first antenna, ventral (E); h, second antenna, posterior (B); i, labrum, with paragnaths indicated by broken lines, ventral (B).

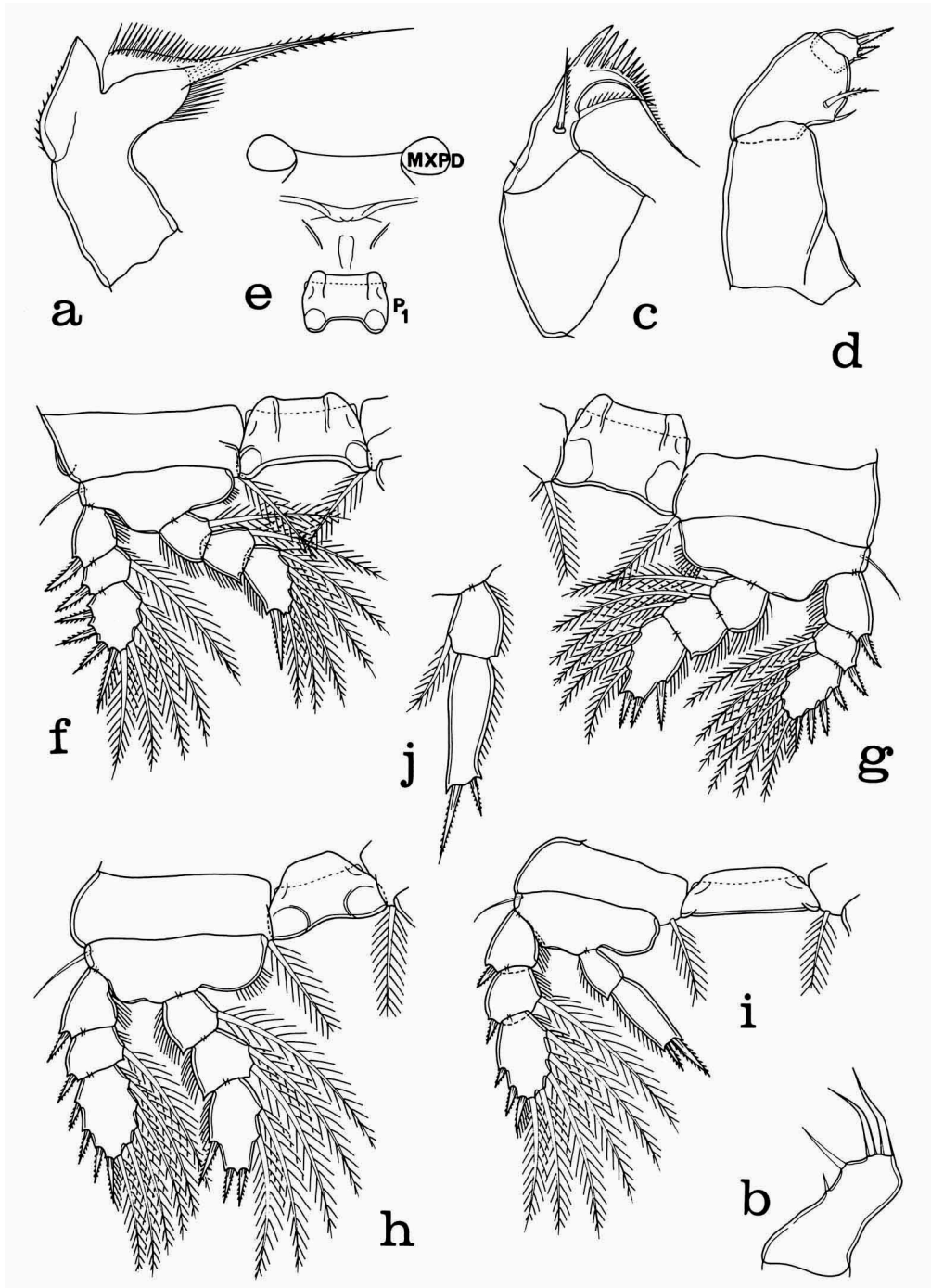

Fig. 39. a-j. *Doridicola senticauda* spec. nov., ♀. a, mandible, anterior (scale C); b, first maxilla, posterior (C); c, second maxilla, posterior (B); d, maxilliped, posterior (B); e, area between maxillipeds and first pair of legs, ventral (A); f, leg 1 and intercoxal plate, anterior (E); g, leg 2 and intercoxal plate, anterior (E); h, leg 3 and intercoxal plate, anterior (E); i, leg 4 and intercoxal plate, anterior (E); j, endopod of leg 4, anterior (B).

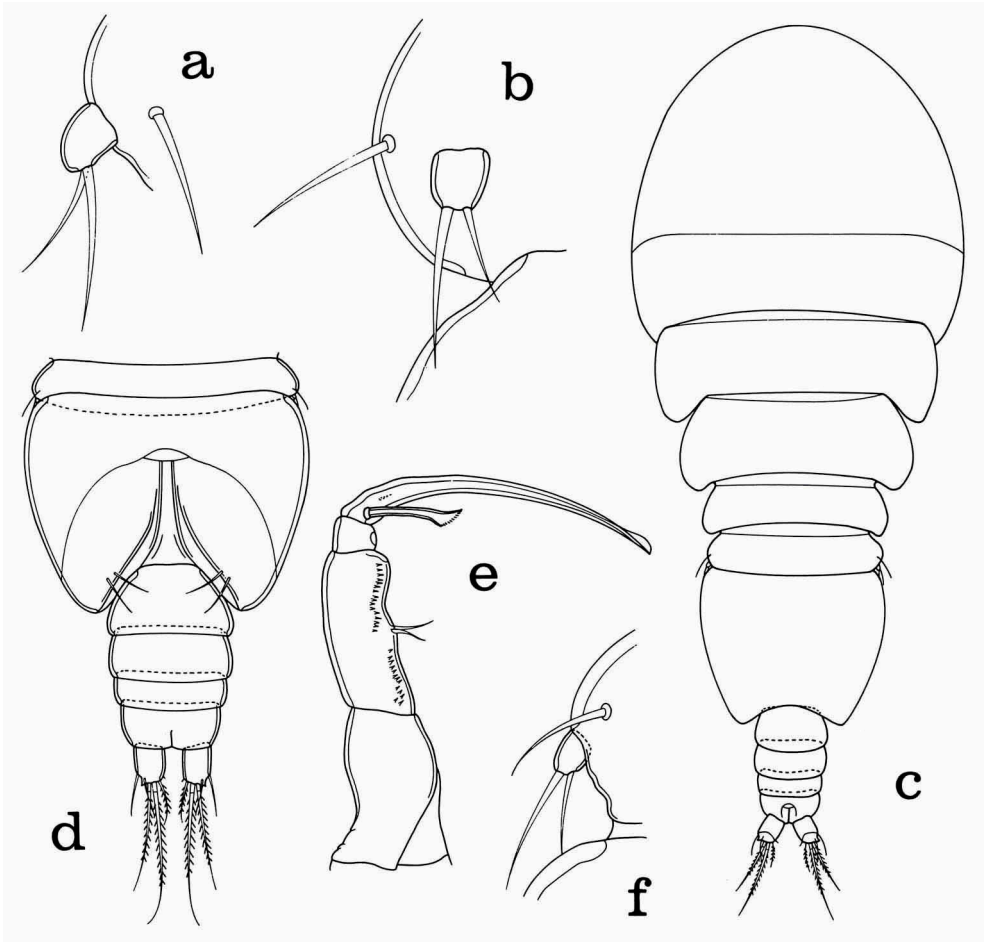

Fig. 40. a-f. *Doridicola senticauda* spec. nov. ♀. a, lateral (scale D); b, leg 5, ventral (D). ♂. c, dorsal (F); d, urosome, ventral (A); e, maxilliped, inner (E); f, leg 5, dorsal (D).

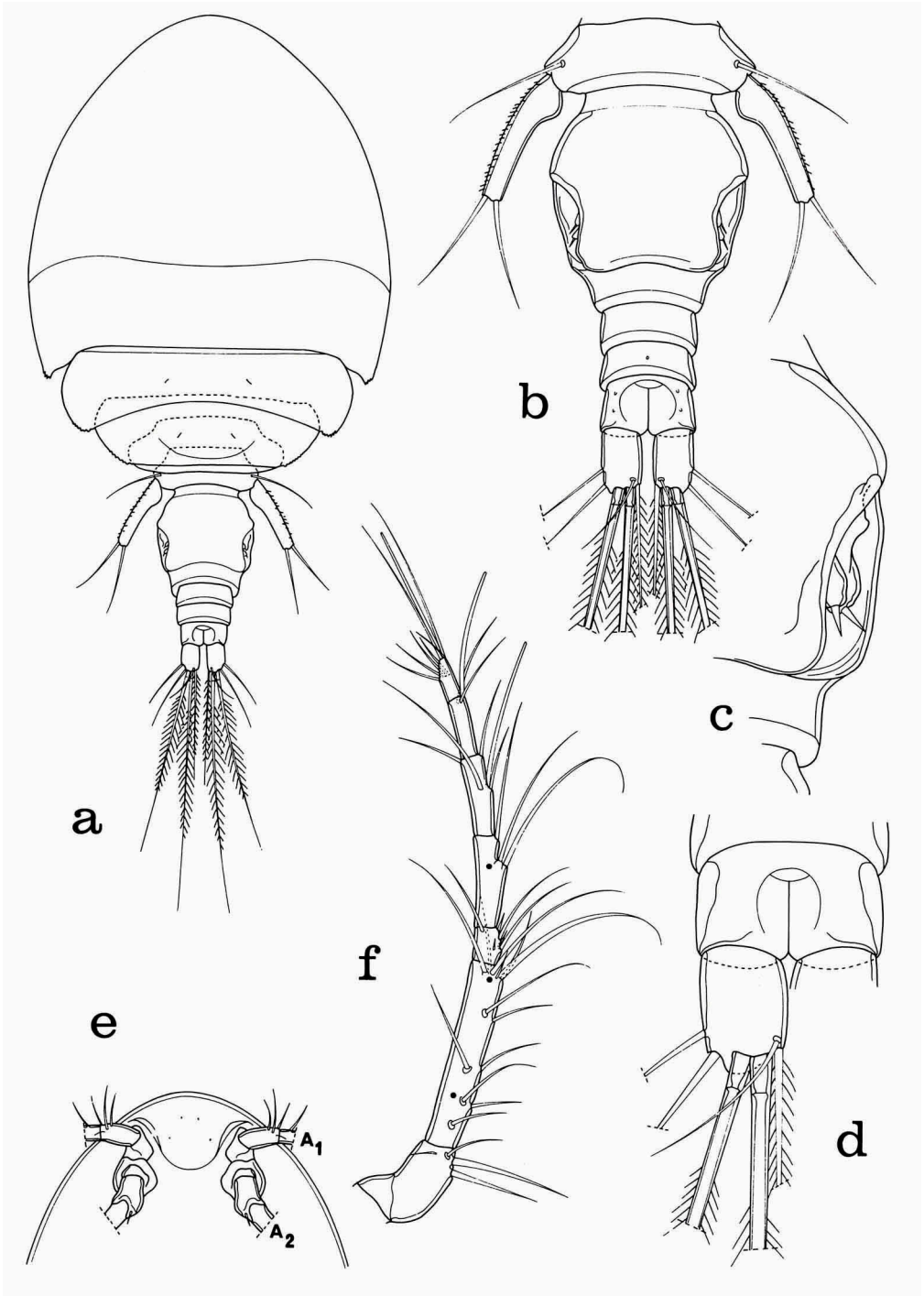

Fig. 41. a-f. *Doridicola vulcanius* spec. nov., ♀. a, dorsal (scale F); b, urosome, dorsal (E); c, genital area, dorsal (C); d, caudal ramus and anal segment, dorsal (C); e, rostrum, ventral (F); f, first antenna, ventral (E).

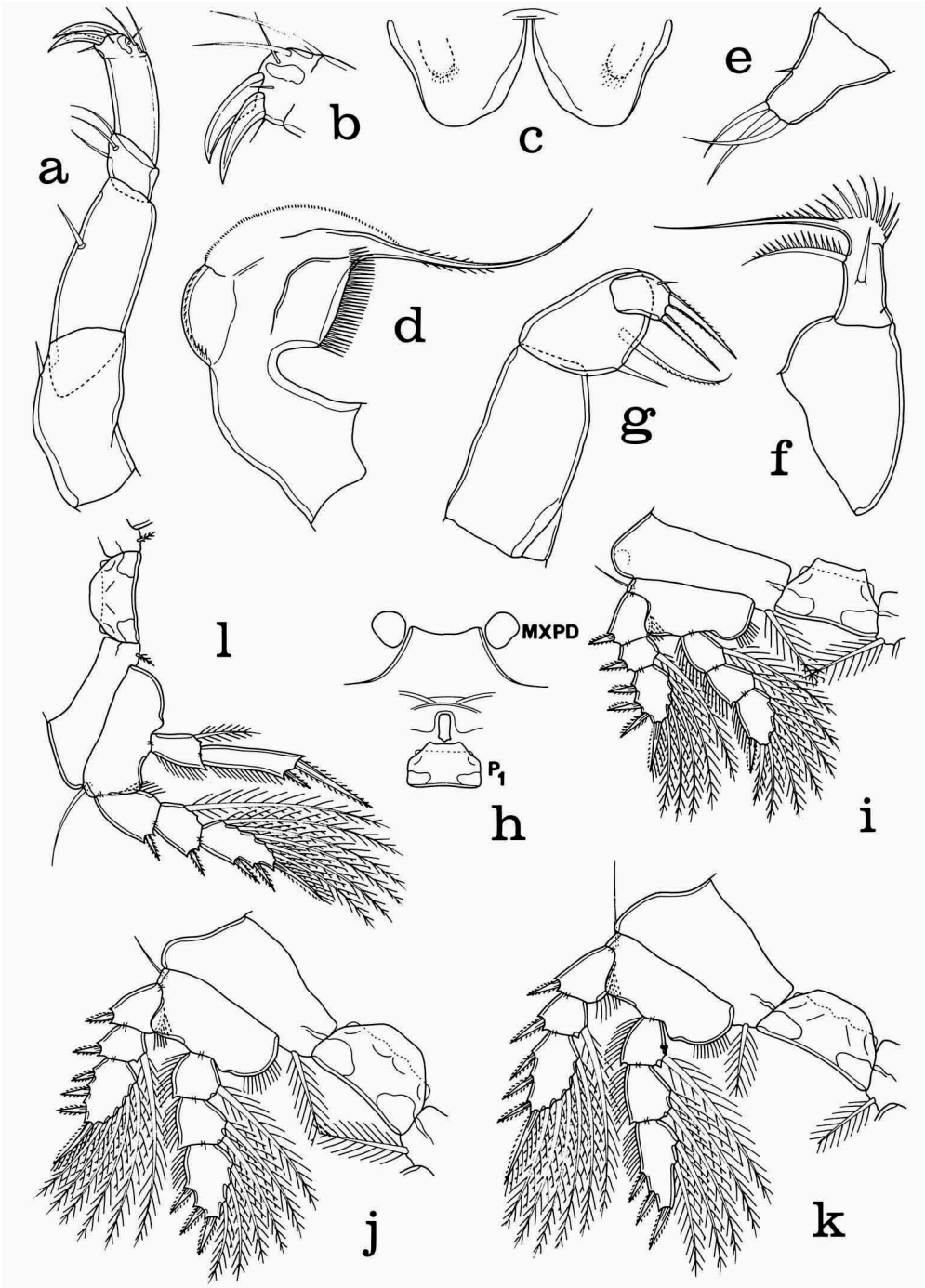

Fig. 42. a-l. *Doridicola vulcanius*, ♀. a, second antenna, posterior (scale B); b, tip of second antenna, posterior (D); c, labrum, ventral (B); d, mandible, posterior (D); e, first maxilla, posterior (D); f, second maxilla, posterior (C); g, maxilliped, anterior (C); h, area between maxillipeds and first pair of legs, ventral (A); i, leg 1 and intercoxal plate, anterior (E); j, leg 2 and intercoxal plate, anterior (E); k, leg 3 and intercoxal plate, anterior (E); l. leg 4 and intercoxal plate, anterior (E).

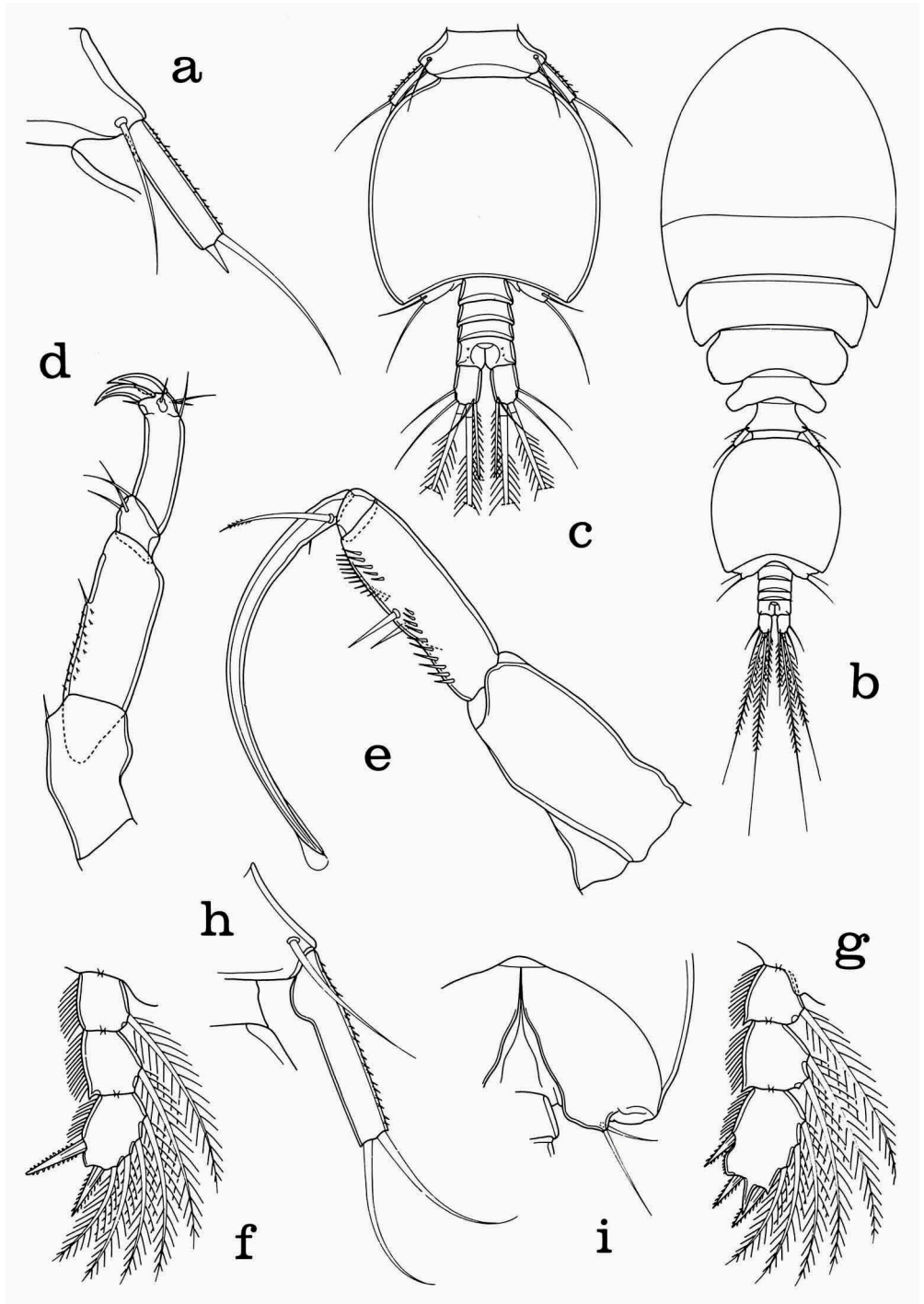

Fig. 43. a-i. *Doridicola vulcanius* spec. nov. ♀. a, dorsal (scale B). ♂. b, dorsal (F); c, urosome, dorsal (A); d, second antenna, posterior (B); e, maxilliped, inner (B); f, endopod of leg 1, anterior (B); g, endopod of leg 2, anterior (B); h, leg 5, dorsal (C); i, leg 6, ventral (E).

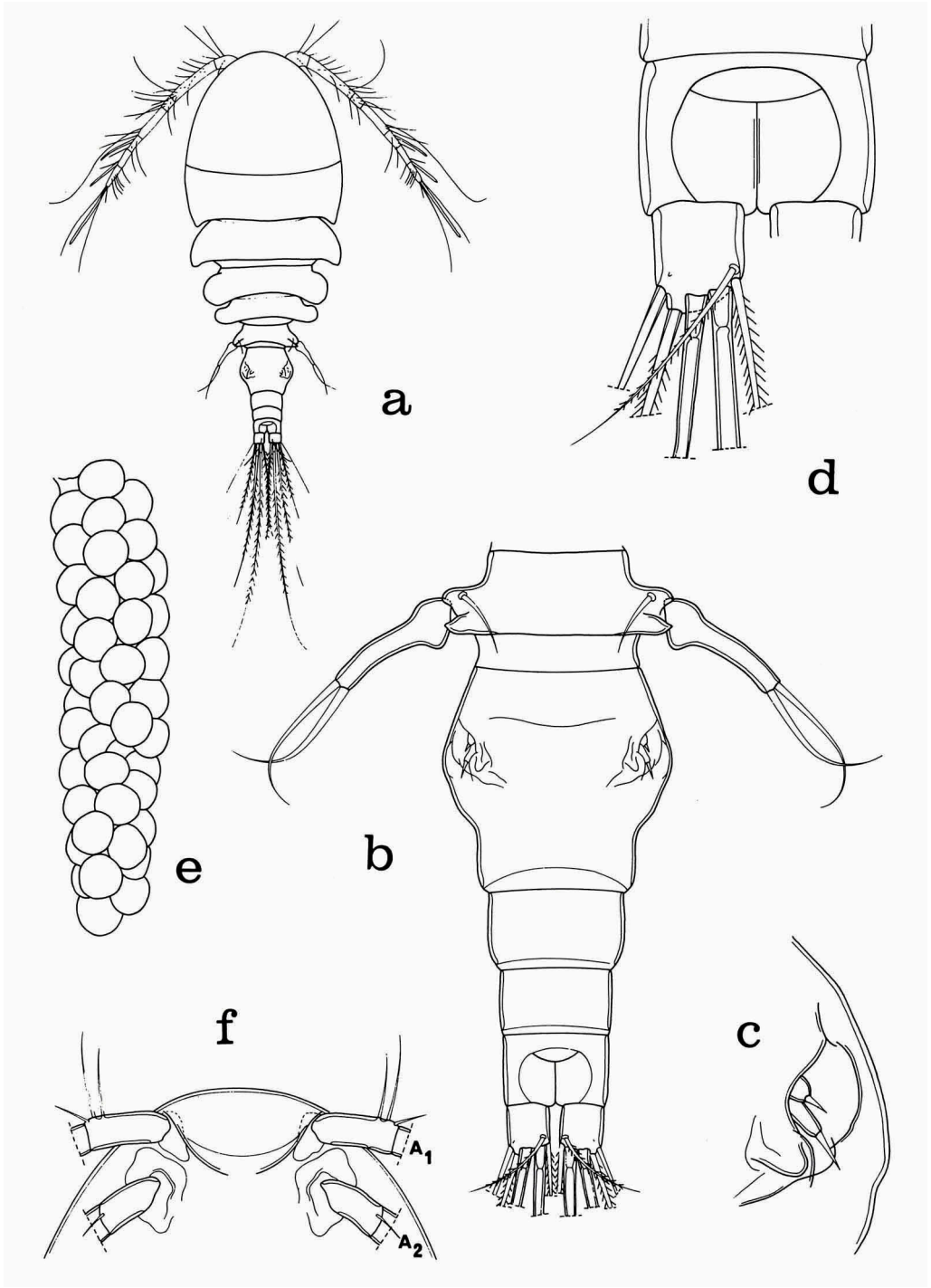

Fig. 44. a-f. *Paradoridicola angularis* spec. nov., ♀. a, dorsal (scale H); b, urosome, dorsal (E); c, genital area, dorsal (D); d, caudal ramus and anal segment, dorsal (C); e, egg sac, ventral (A); f, rostrum, ventral (A).

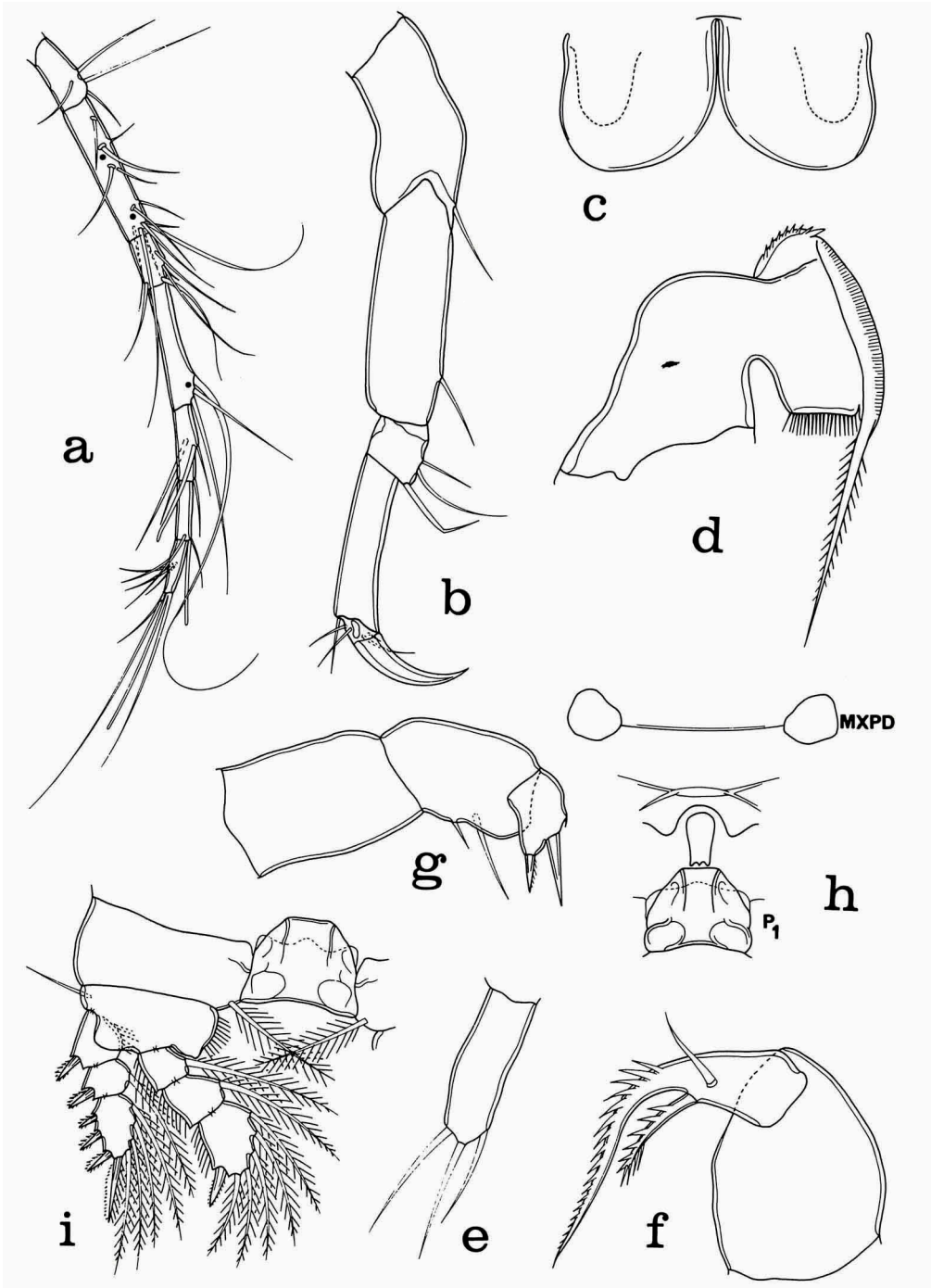

Fig. 45. a-i. *Paradoridicola angularis* spec. nov., ♀. a, first antenna, ventral (scale A); b, second antenna, anterior (B); c, labrum, with paragnaths indicated by broken lines, ventral (C); d, mandible, posterior (D); e, first maxilla, anterior (D); f, second maxilla, posterior (C); g, maxilliped, anterior (C); h, area between maxillipeds anda first pair of legs, ventral (E); i, leg 1 and intercoxal plate, anterior (E).

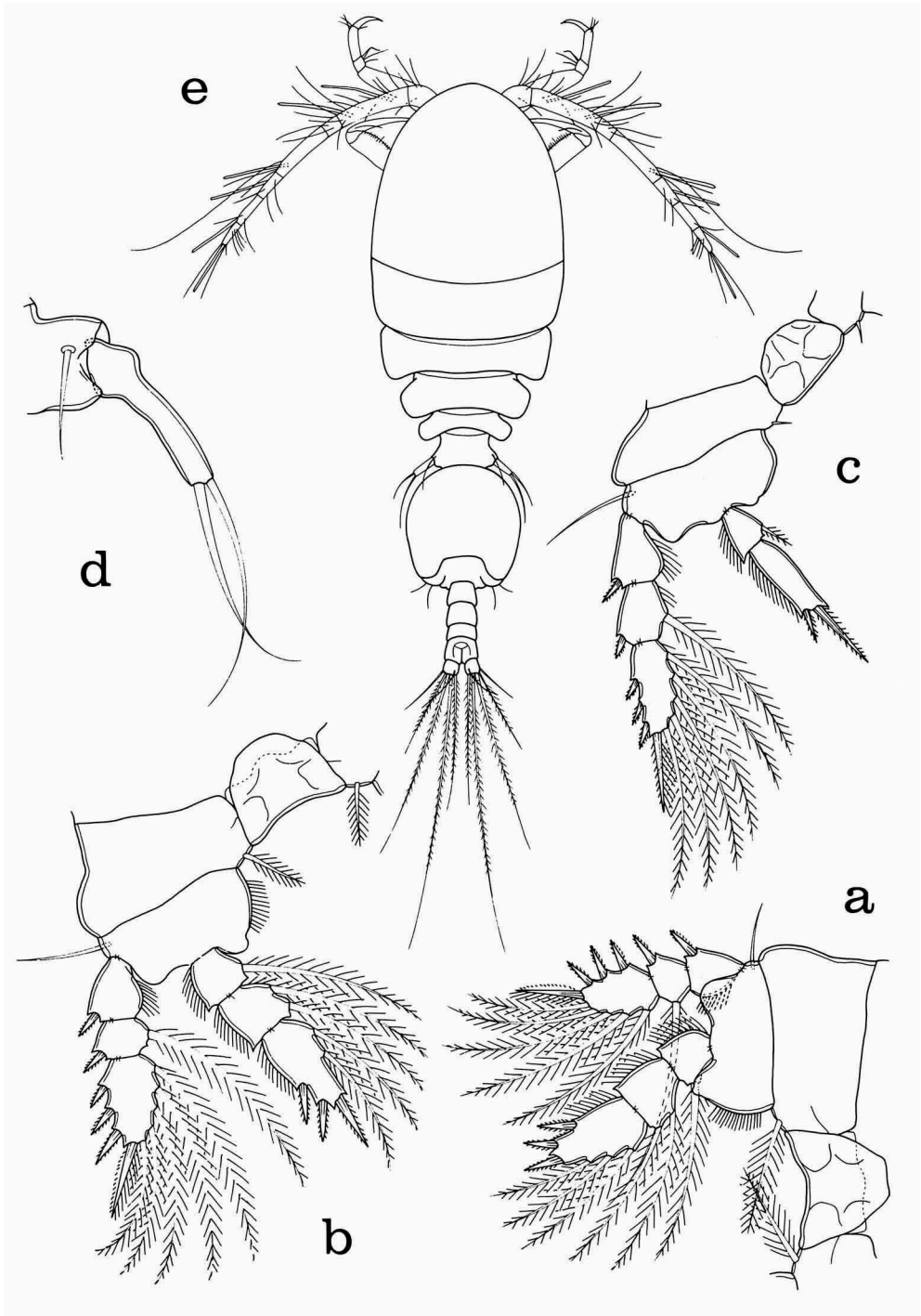

Fig. 46. a-e. *Paradoridicola angularis* spec. nov. ♀. a, leg 2 and intercoxal plate, anterior (scale E); b, leg 3 and intercoxal plate, anterior (E); c, leg 4 and intercoxal plate, anterior (E); d, leg 5, dorsal (B). ♂. e, dorsal (F).

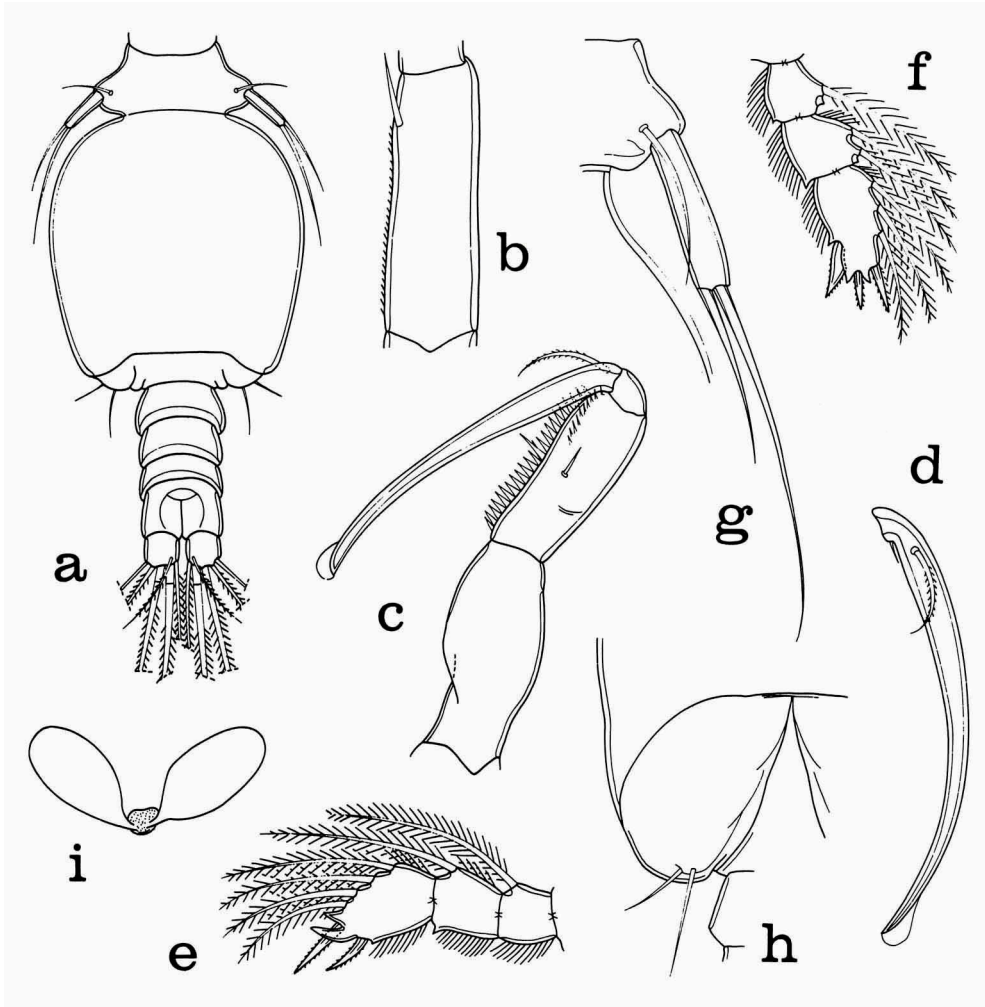

Fig. 47. a-i. *Paradoridicola angularis* spec. nov., ♂. a, urosome, dorsal (scale E); b, second segment of second antenna, anterior (C); c, maxilliped, outer (B); d, claw of maxilliped, inner (B); e, endopod of leg 1, anterior (B); f, endopod of leg 2, anterior (B); g, leg 5, dorsal (D); h, leg 6, ventral (B); i, spermatophores, empty, attached to ♀, dorsal (F).

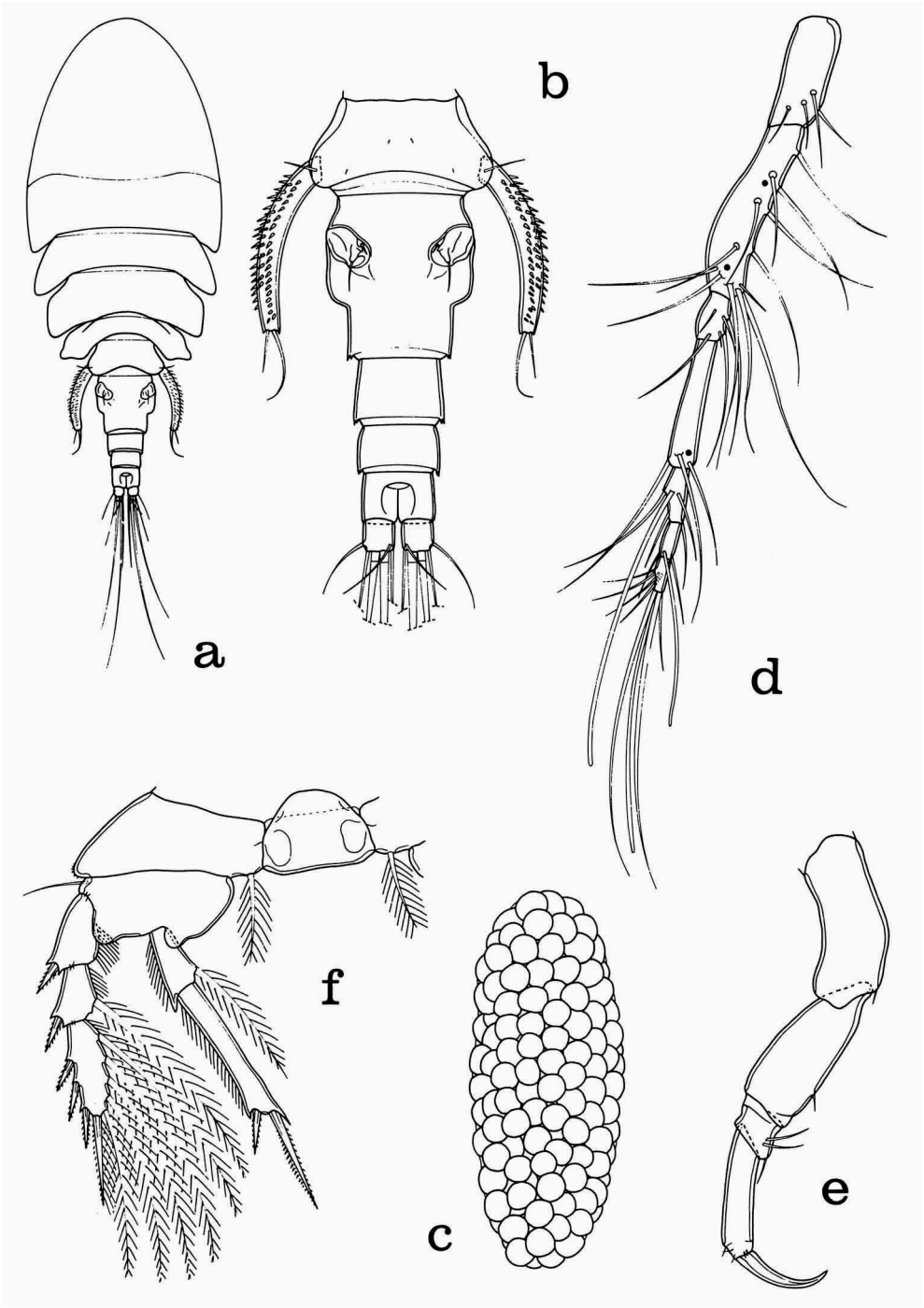

Fig. 48. a-f. *Paradoridicola contiguus* spec. nov., ♀. a, dorsal (scale G); b, urosome, dorsal (A); c, egg sac, ventral (F); d, first antenna, ventral (E); e, second antenna, postero-inner (E); f, leg 4 and intercoxal plate, anterior (E).

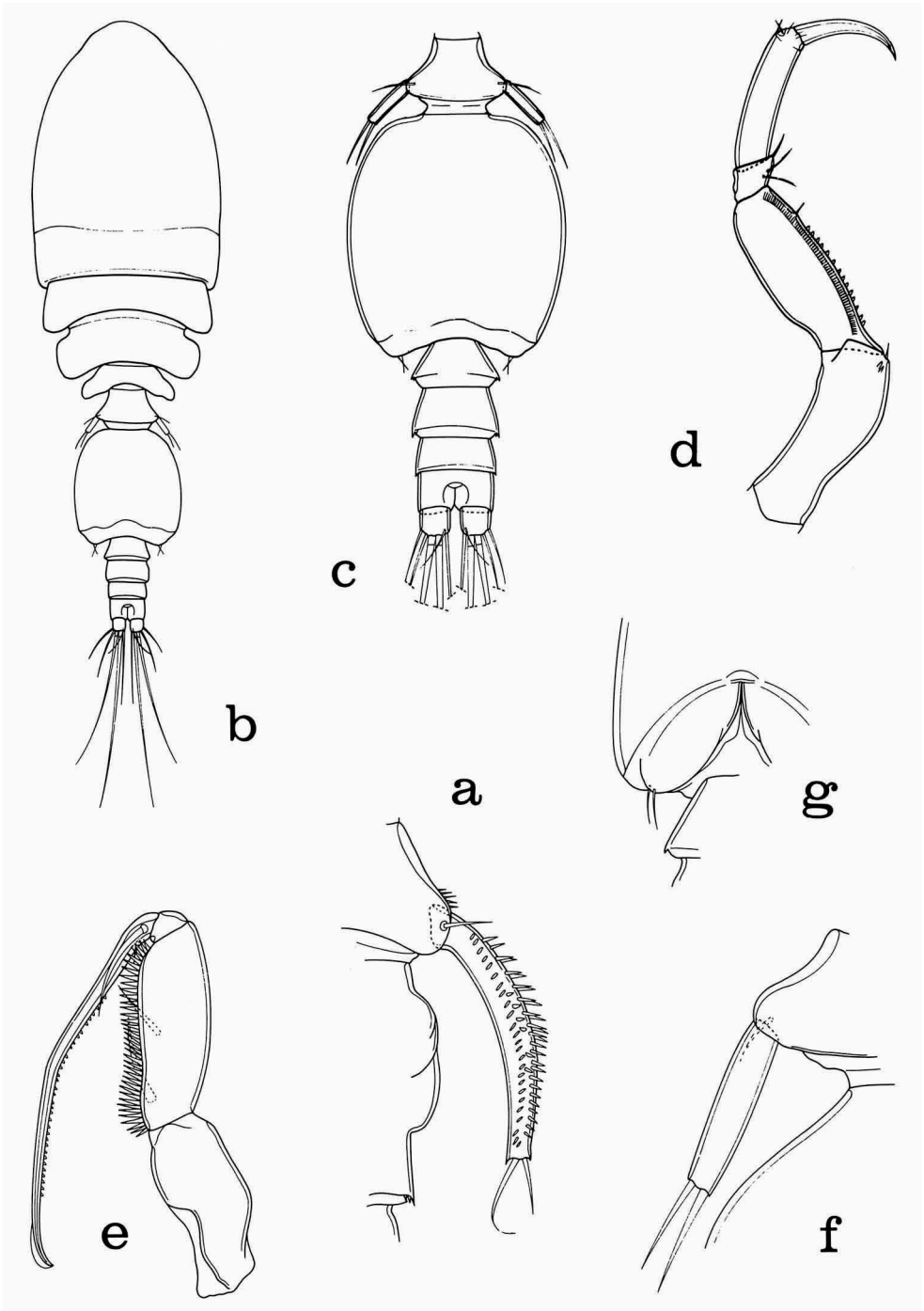

Fig. 49. a-g. *Paradoridicola contiguus* spec. nov. ♀. a, leg 5, dorsal (scale E). ♂. b, dorsal (F); c, urosome, dorsal (E); d, second antenna, postero-inner (B); e, maxilliped, inner (E); f, leg 5, ventral (D); g, leg 6, ventral (E).

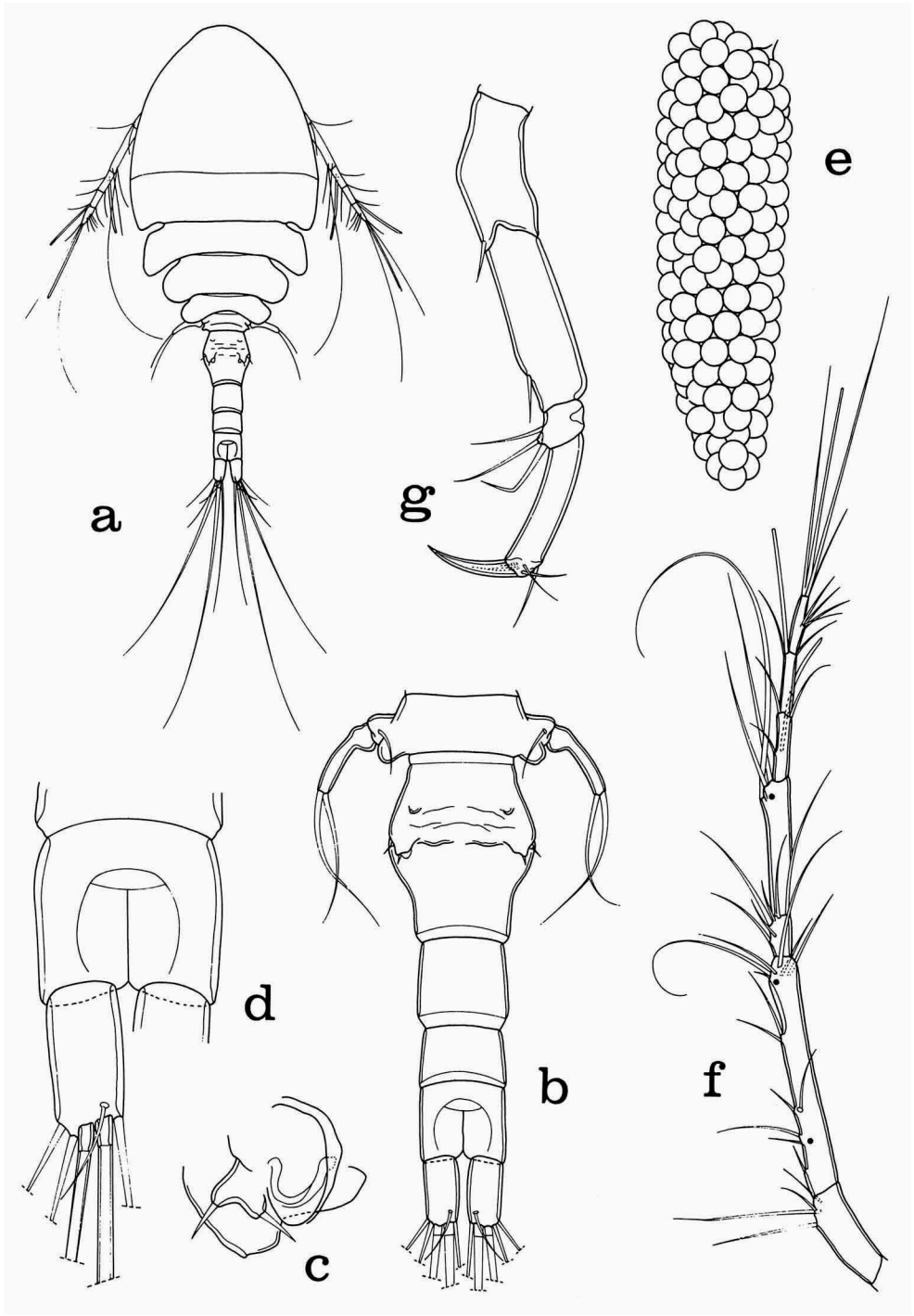

Fig. 50. a-g.*Paradoridicola drepanophorus* spec. nov., ♀. a, dorsal (scale H); b, urosome, dorsal (A); c, genital area, lateral (C); d, caudal ramus, dorsal (B); e, egg sac, ventral (F); f, first antenna, ventral (A); g, second antenna, anterior (E).

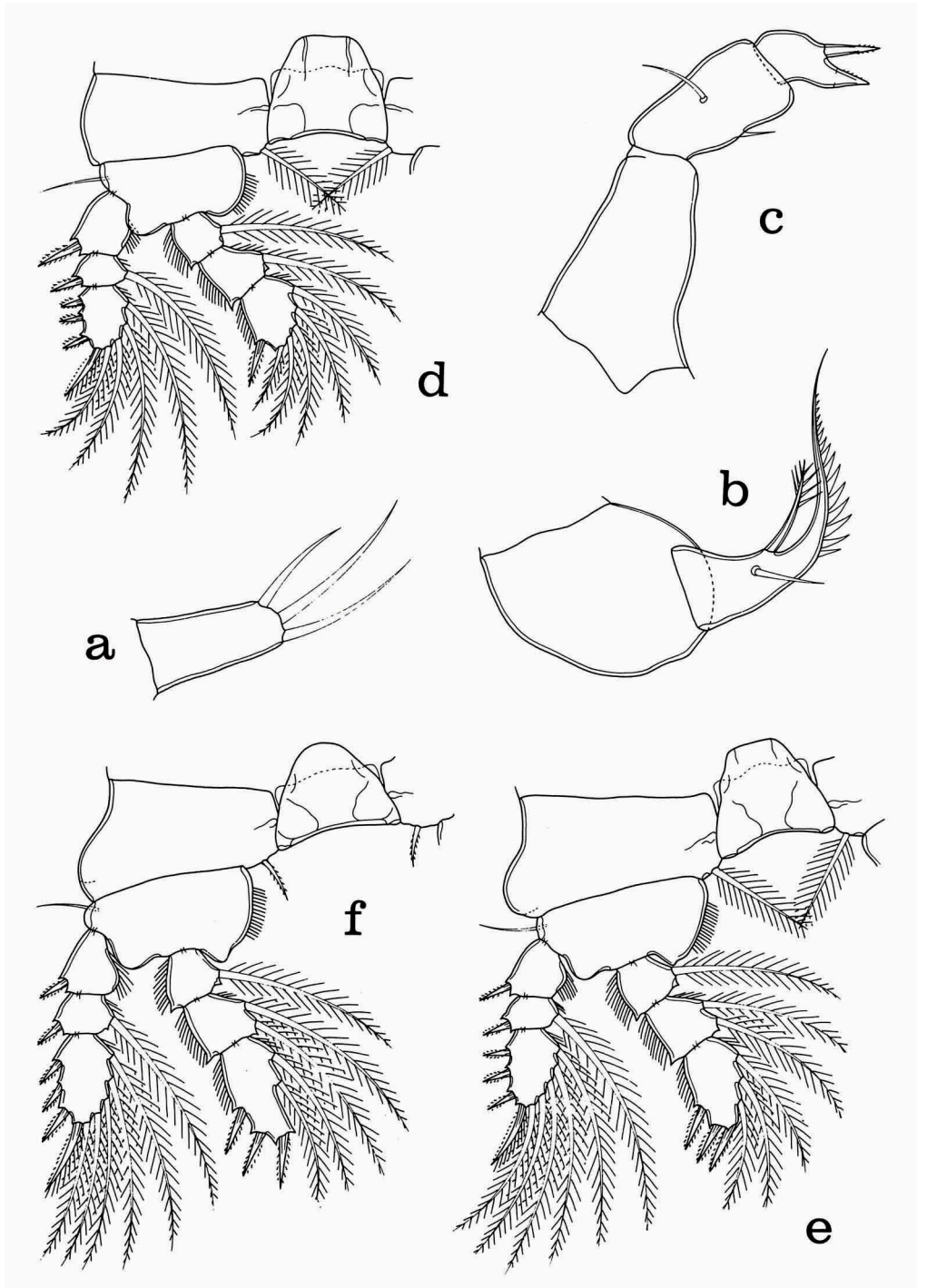

Fig. 51. a-f. *Paradoridicola drepanophorus* spec. nov., ♀. a, first maxilla, posterior (scale D); b, second maxilla, posterior (C); c, maxilliped, postero-outer (C); d, leg 1 and intercoxal plate, anterior (E); e, leg 2 and intercoxal plate, anterior (E); f, leg 3 and intercoxal plate, anterior (E).

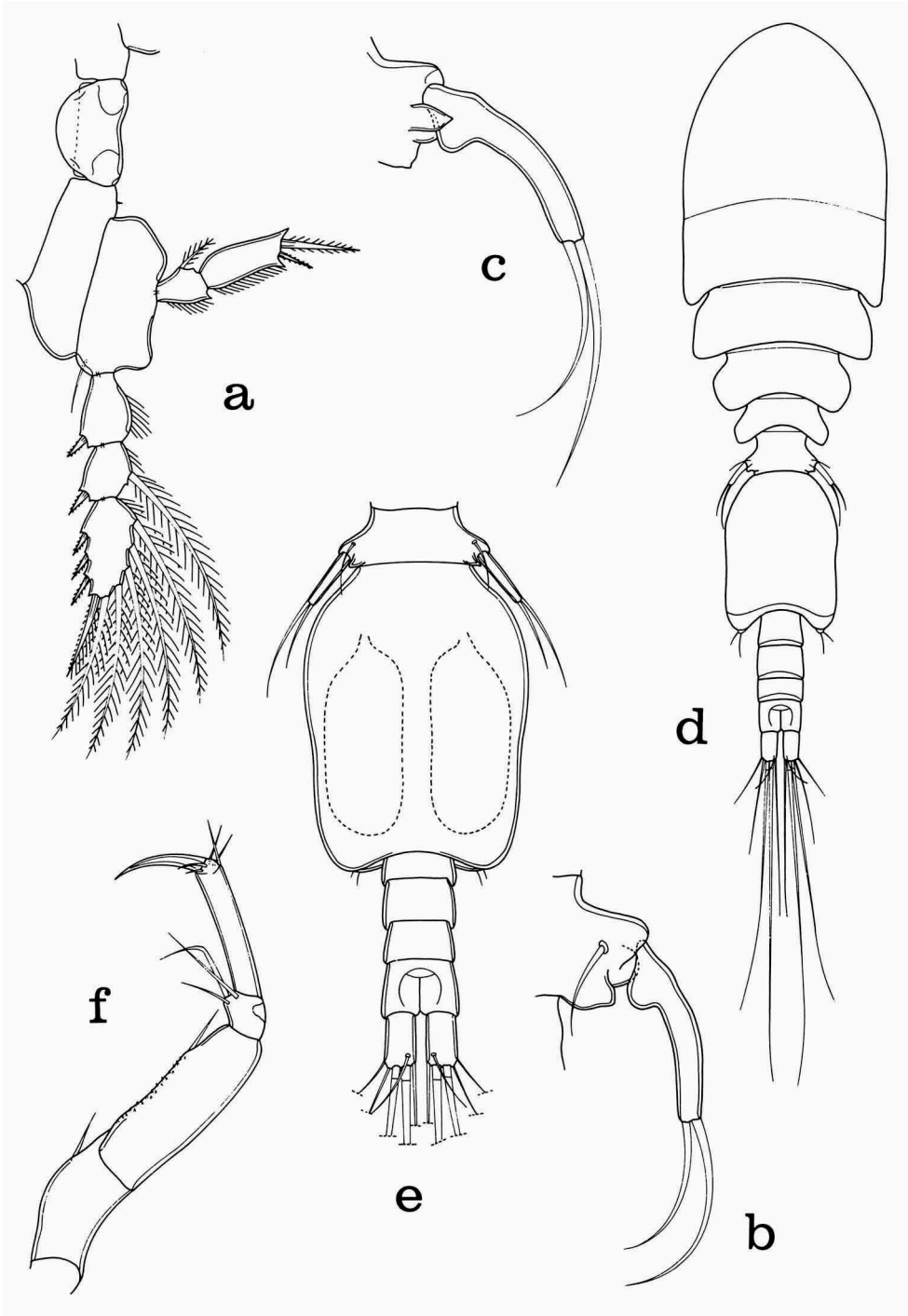

Fig. 52. a-f. *Paradoridicola drepanophorus* spec. nov. ♀. a, leg 4 and intercoxal plate, anterior (scale E); b, leg 5, dorsal; ((B); c, leg 5, ventral (B). ♂. d, dorsal (F); e, urosome, dorsal (E); f, second antenna, posterior (B).

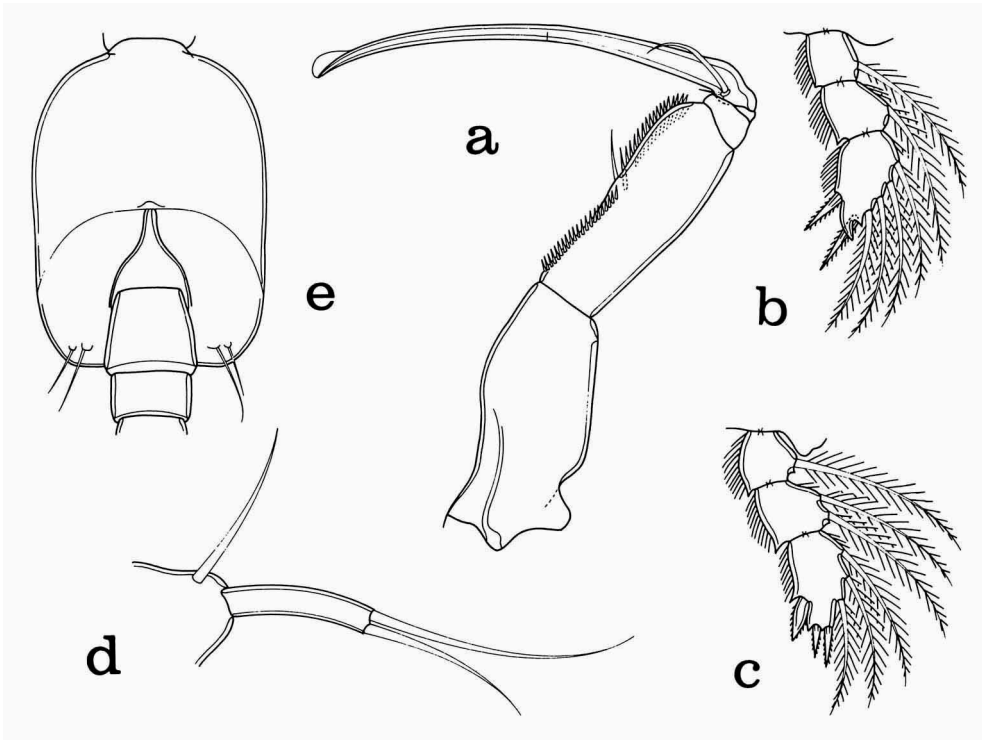

Fig. 53. a-e. *Paradoridicola drepanophorus* spec. nov., ♂. a, maxilliped, inner (scale B); b, endopod of leg 1, anterior (B); c, endopod of leg 2, anterior (B); d, leg 5, dorsal (C); e, genital segment and leg 5, ventral (E).

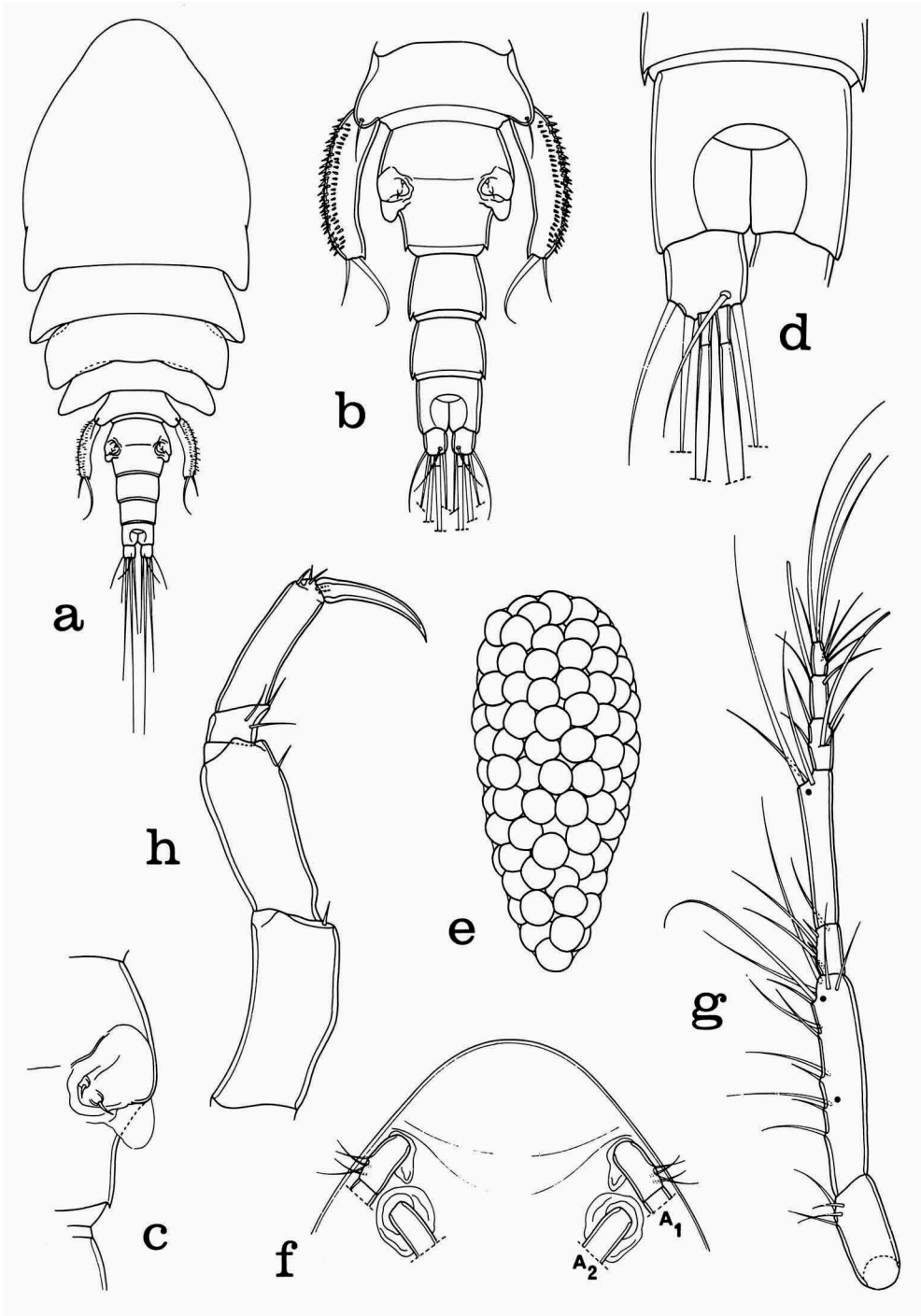

Fig. 54. a-h. *Paradoridicola hystricosus* spec. nov., ♀. a, dorsal (scale G); b, urosome, dorsal (A); c, genital area, dorsal (B); d, caudal ramus and anal segment, dorsal (C); e, egg sac, dorsal (F); f, rostrum, ventral (A); g, first antenna, dorsal (E); h, second antenna, anterior (B).

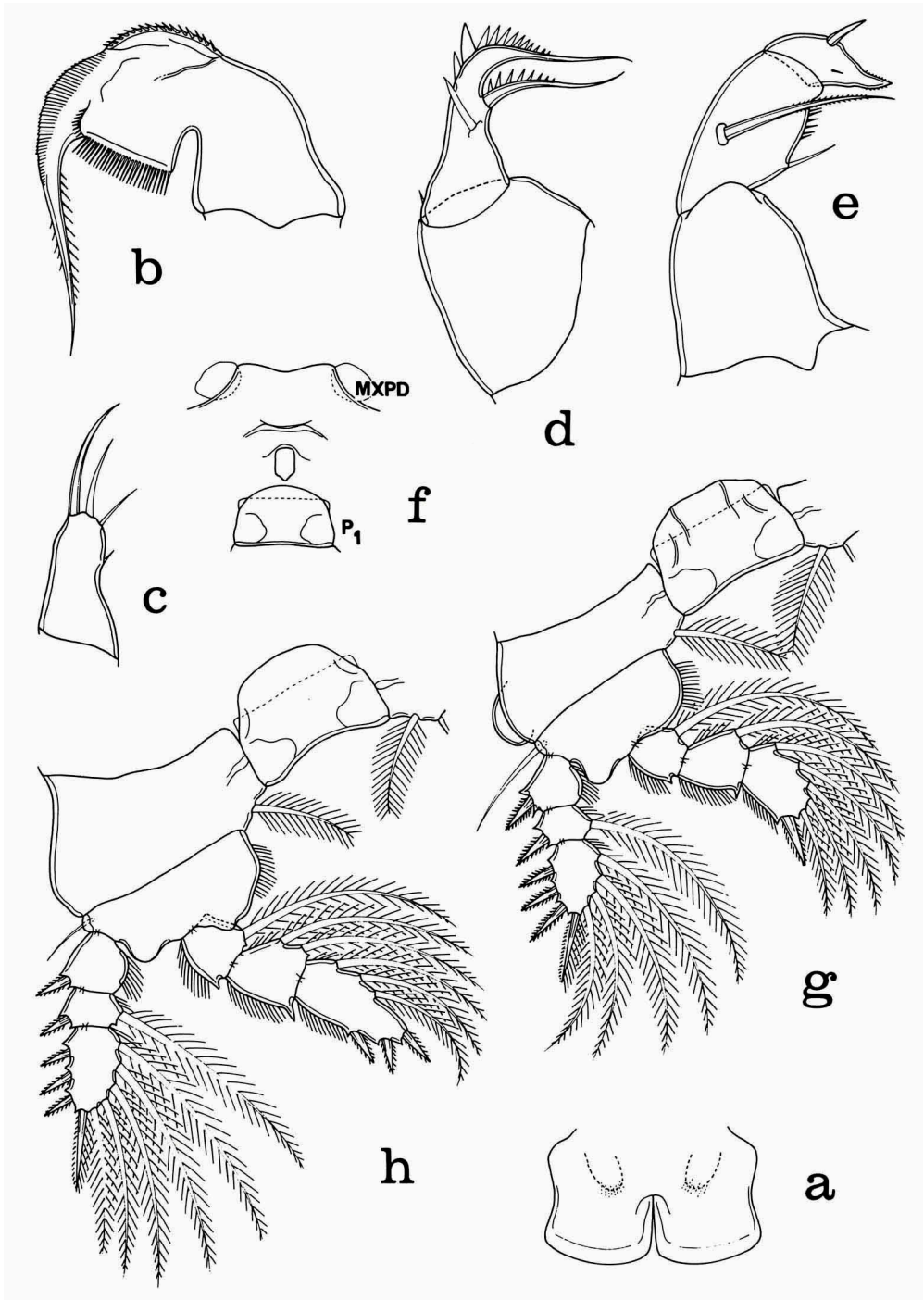

Fig. 55. a-h. *Paradoridicola hystricosus* spec. nov., ♀. a, labrum, with paragnaths indicated by broken lines, ventral (scale B); b, mandible, posterior (D); c, first maxilla, posterior (C); d, second maxilla, posterior (C); e, maxilliped, posterior (C); f, area between maxillipeds and first pair of legs, ventral (A); g, leg 1 and intercoxal plate, anterior (E); h, leg 2 and intercoxal plate, anterior (E).

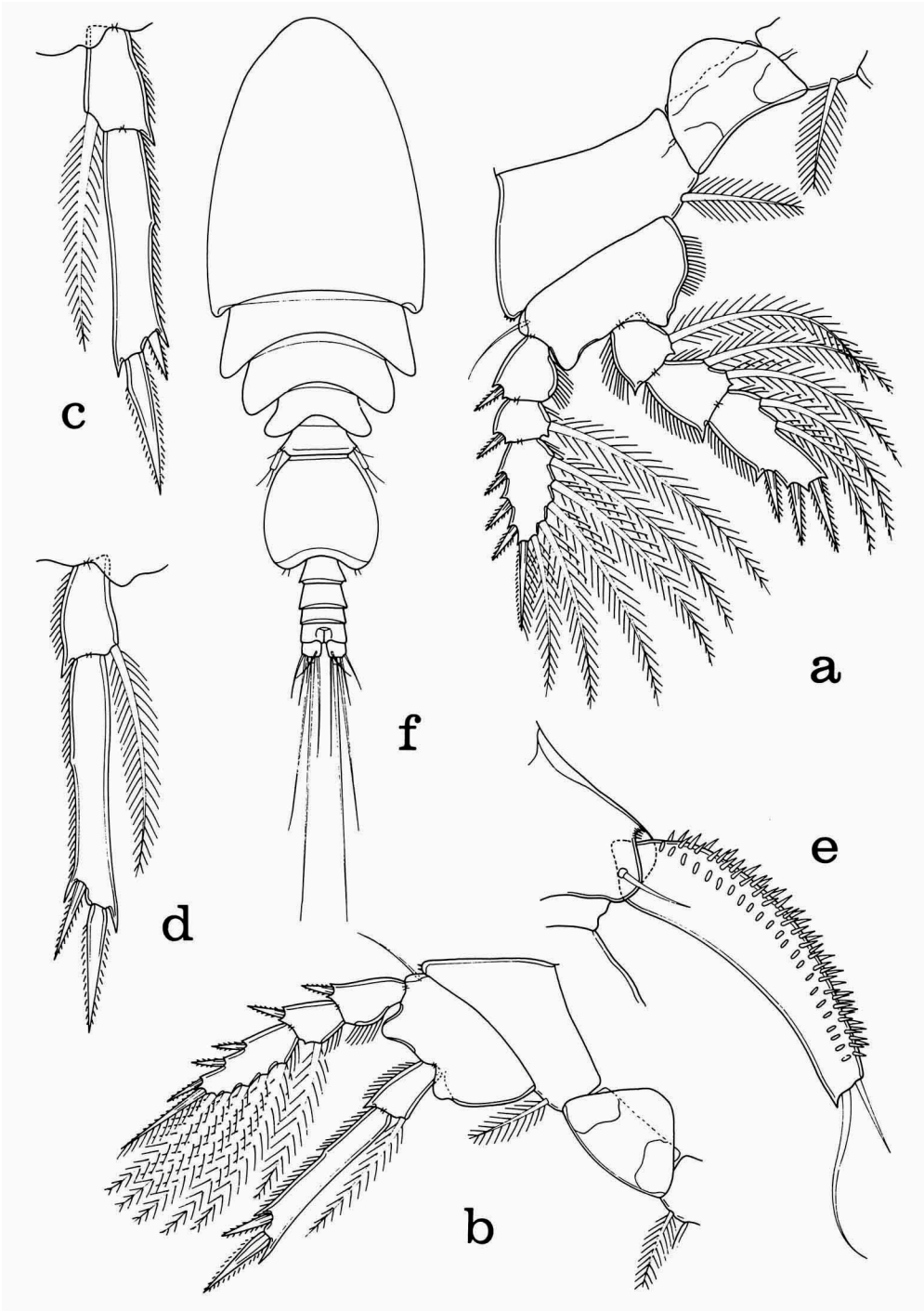

Fig. 56. a-f. *Paradoridicola hystricosus* spec. nov. ♀. a, leg 3 and intercoxal plate, anterior (scale E); b, leg 4 and intercoxal plate, anterior (E); c, endopod of leg 4, abnormal, anterior (B); d, endopod of leg 4, anterior (B); e, leg 5, dorsal (B). ♂. f, dorsal (F).

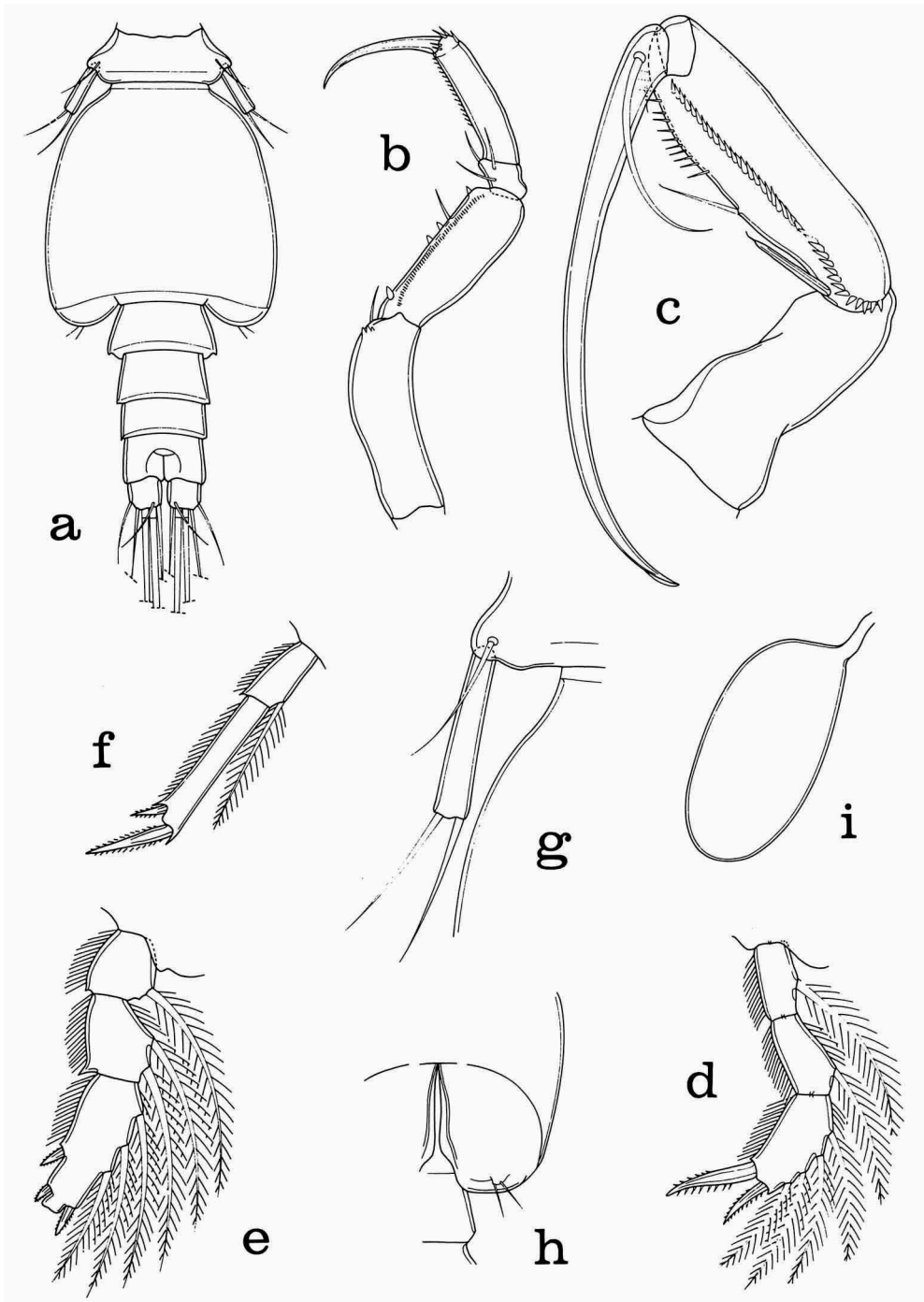

Fig. 57. a-i. *Paradoridicola hystricosus* spec. nov., ♂. a, urosome, dorsal (scale E); b, second antenna, posterior (B); c, maxilliped, inner (B); d, endopod of leg 1, anterior (B); e, endopod of leg 2, anterior (B); f, endopod of leg 4, anterior (B); g, leg 5, dorsal (D); h, leg 6, ventral (E); i, spermatophore, attached to ♀, dorsal (E).

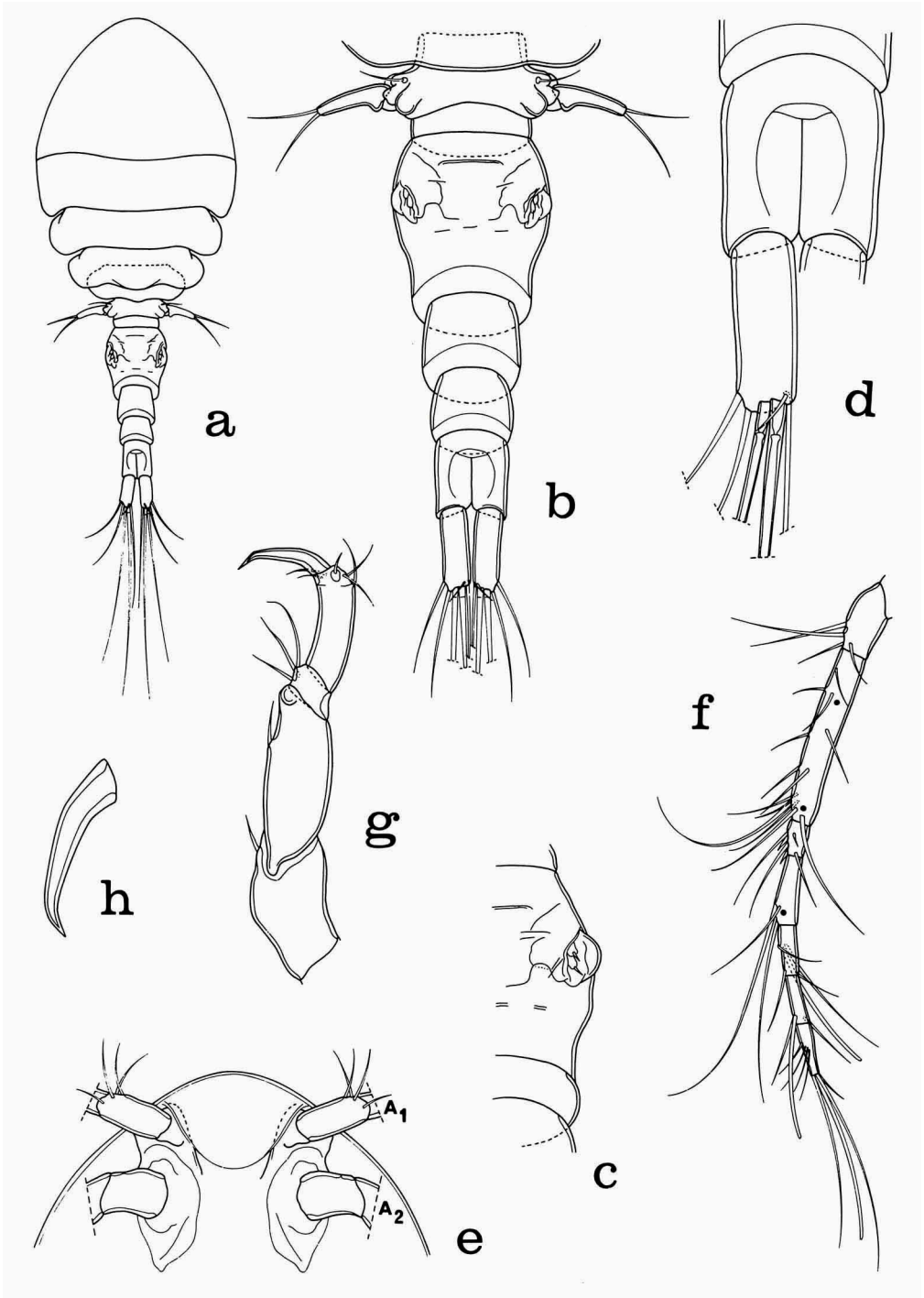

Fig. 58. a-h. *Paradoridicola simulator* spec. nov., ♀. a, dorsal (scale G); b, urosome, dorsal (A); c, genital area, dorsal (E); d, caudal ramus and anal segment, dorsal (B); e, rostrum, ventral (A); f, first antenna, ventral (A); g, second antenna, anterior (E); h, claw of second antenna, anterior (C).

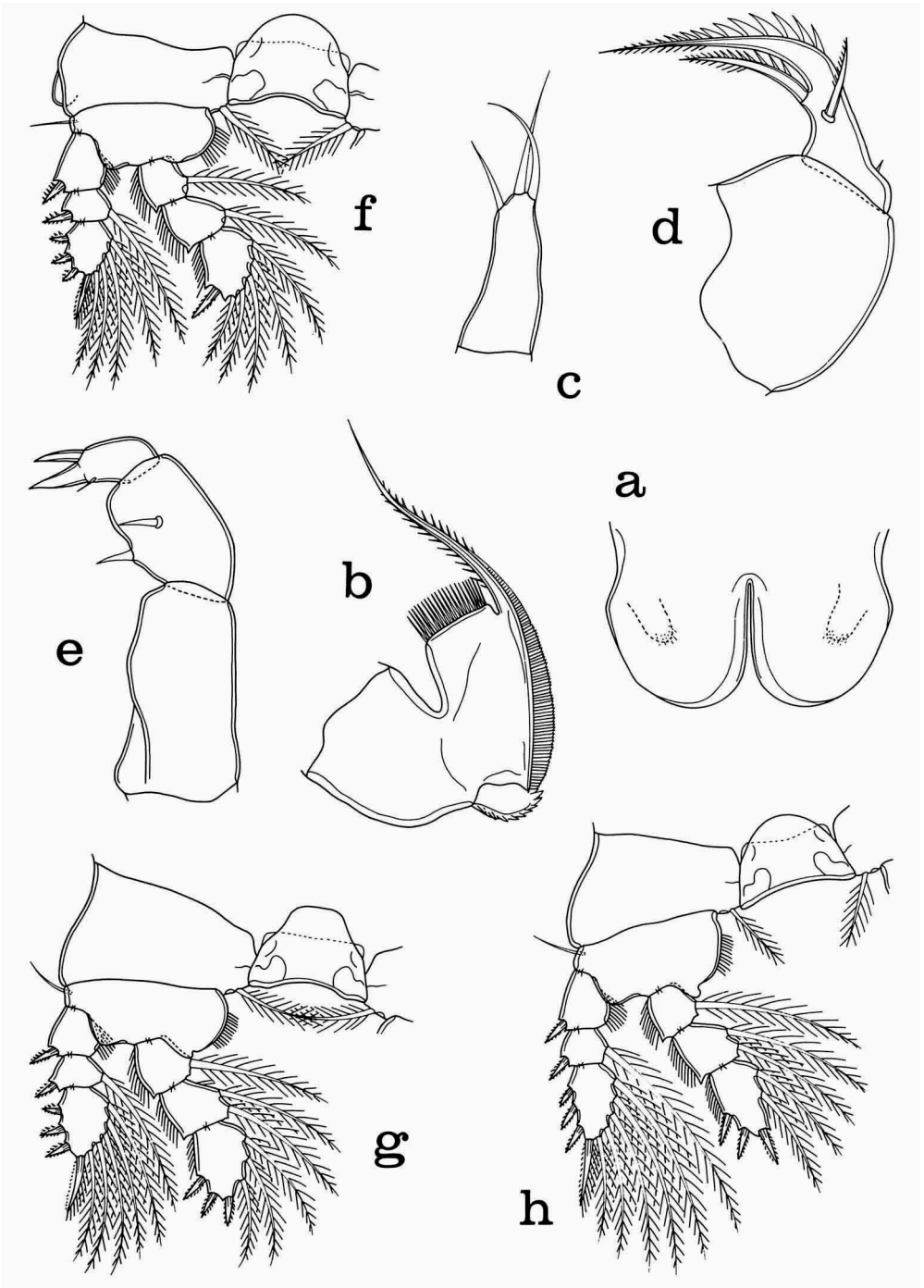

Fig. 59. a-h. *Paradoridicola simulator* spec. nov., ♀. a, labrum, with paragnaths indicated by broken lines, ventral (scale C); b, mandible, anterior (D); c, first maxilla, anterior (D); d, second maxilla, posterior (C); e, maxilliped, posterior (C); f, leg 1 and intercoxal plate, anterior (E); g, leg 2 and intercoxal plate, anterior (E); h, leg 3 and intercoxal plate, anterior.

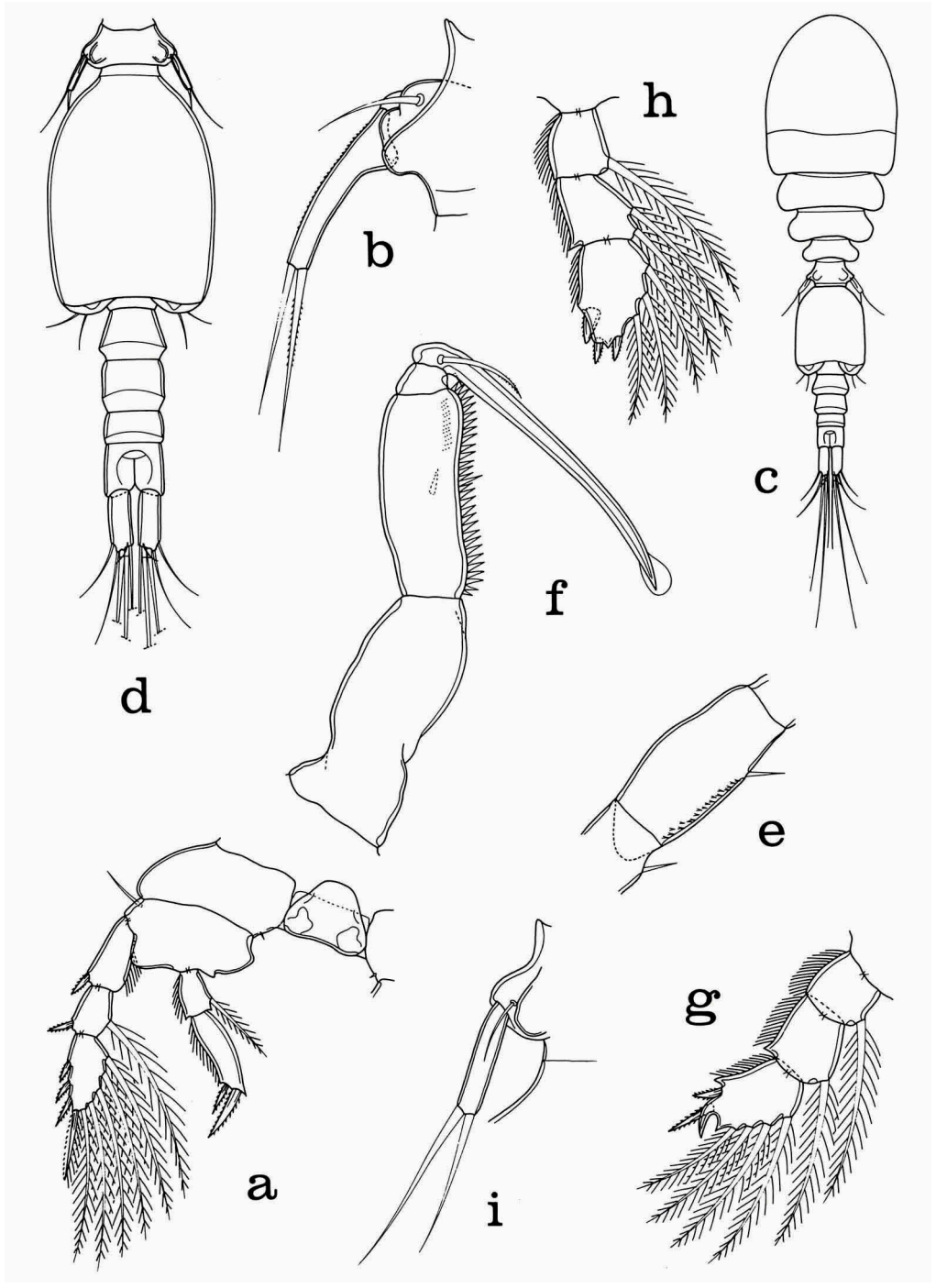

Fig. 60. a-i. *Paradoridicola simulator* spec. nov. ♀. a, leg 4 and intercoxal plate, anterior (scale E); b, dorsal (B). ♂. c, dorsal (G); d, urosome, dorsal (A); e, second segment of second antenna, posterior (B); f, maxilliped, inner (B); g, endopod of leg 2, anterior (B); h, endopod of leg 2, anterior (B); i, leg 5, dorsal (C).

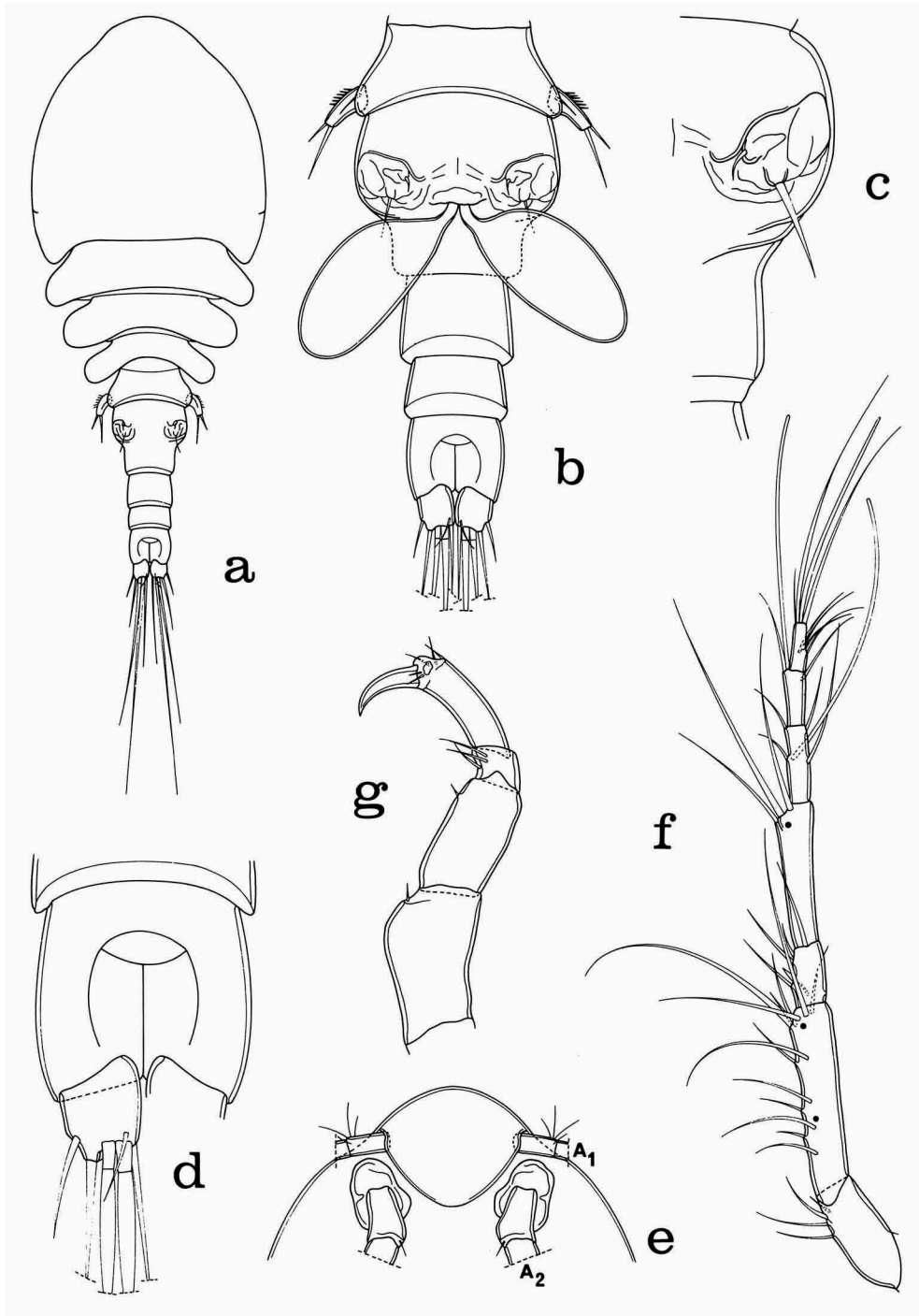

Fig. 61. a-g. *Paradoridicola sinularianus* spec. nov., ♀. a, dorsal (scale G); b, urosome, dorsal (A); c, genital area, dorsal (B); d, caudal ramus and anal segment, dorsal (B); e, rostrum, ventral (F); f, first antenna, dorsal (E); g, second antenna, posterior (E).

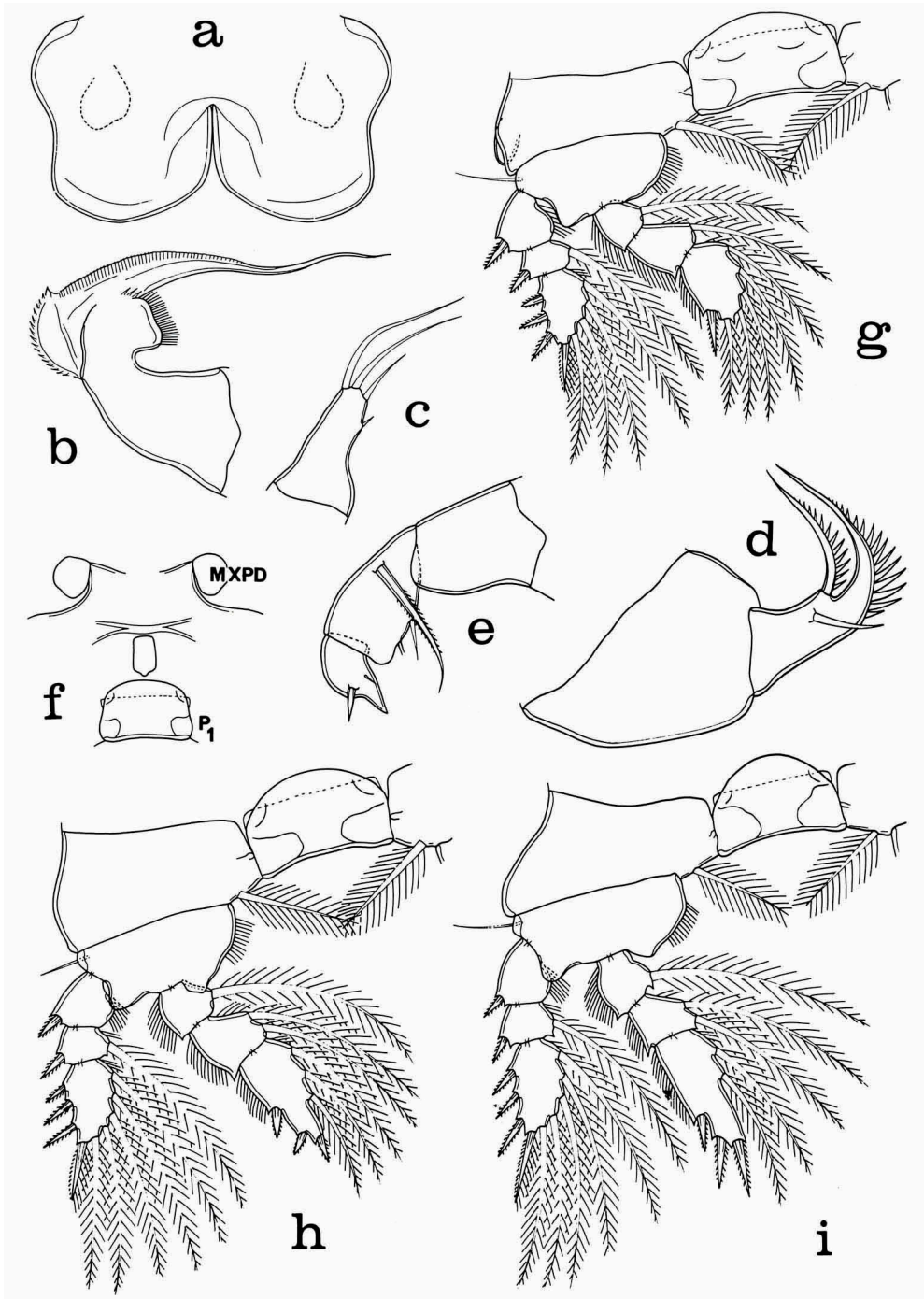

Fig. 62. a-i. *Paradoridicola sinularianus* spec. nov., ♀. a, labrum, with paragnaths indicated by broken lines, ventral (scale C); b, mandible, posterior (C); c, first maxilla, posterior (C); d, second maxilla, posterior (C); e, maxilliped, posterior (B); f, area between maxillipeds and first pair of legs, ventral (A); g, leg 1 and intercoxal plate, anterior (E); h, leg 2 and intercoxal plate, anterior (E); i, leg 3 and intercoxal plate, anterior (E).

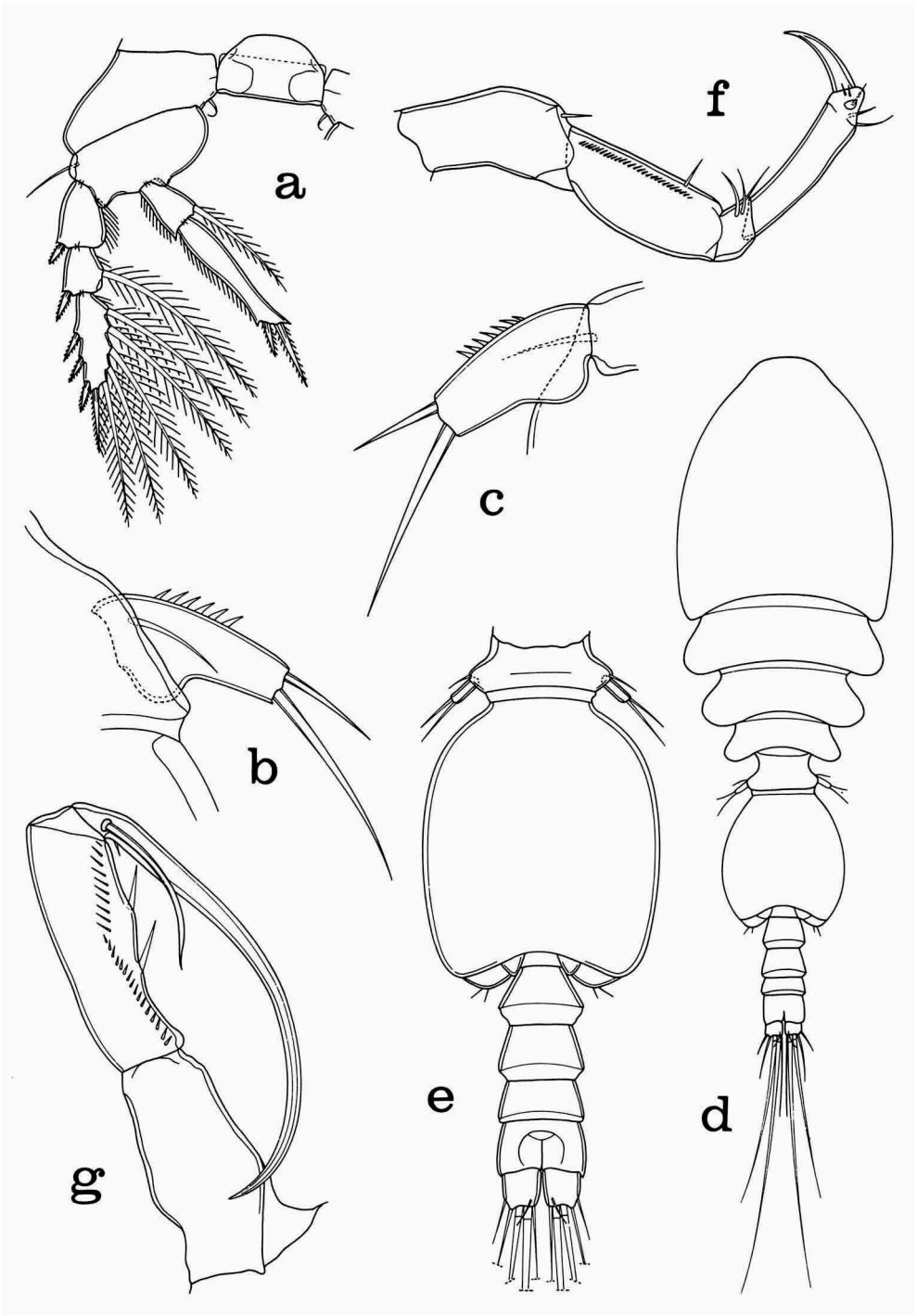

Fig. 63. a-g. *Paradoridicola sinularianus* spec. nov. ♀. a, leg 4 and intercoxal plate, anterior (scale E); b, leg 5, dorsal (D); c, leg 5, ventral (D). ♂. d, dorsal (F); e, urosome, dorsal (E); f, second antenna, posterior (B); g, maxilliped, inner (B).

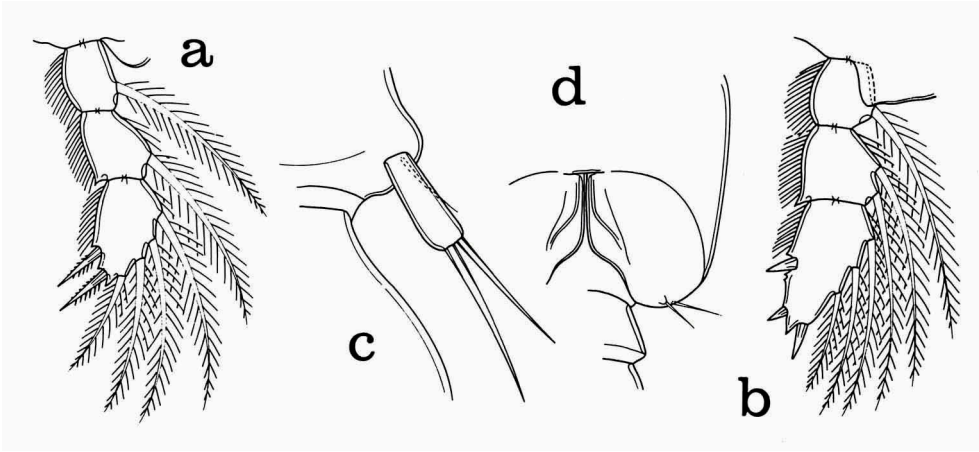

Fig. 64. a-d. *Paradoridicola sinularianus* spec. nov., ♂. a, endopod of leg 2, posterior (scale B); b, endopod of leg 2, anterior (B); c, leg 5, ventral (D); d, leg 6, ventral (E).

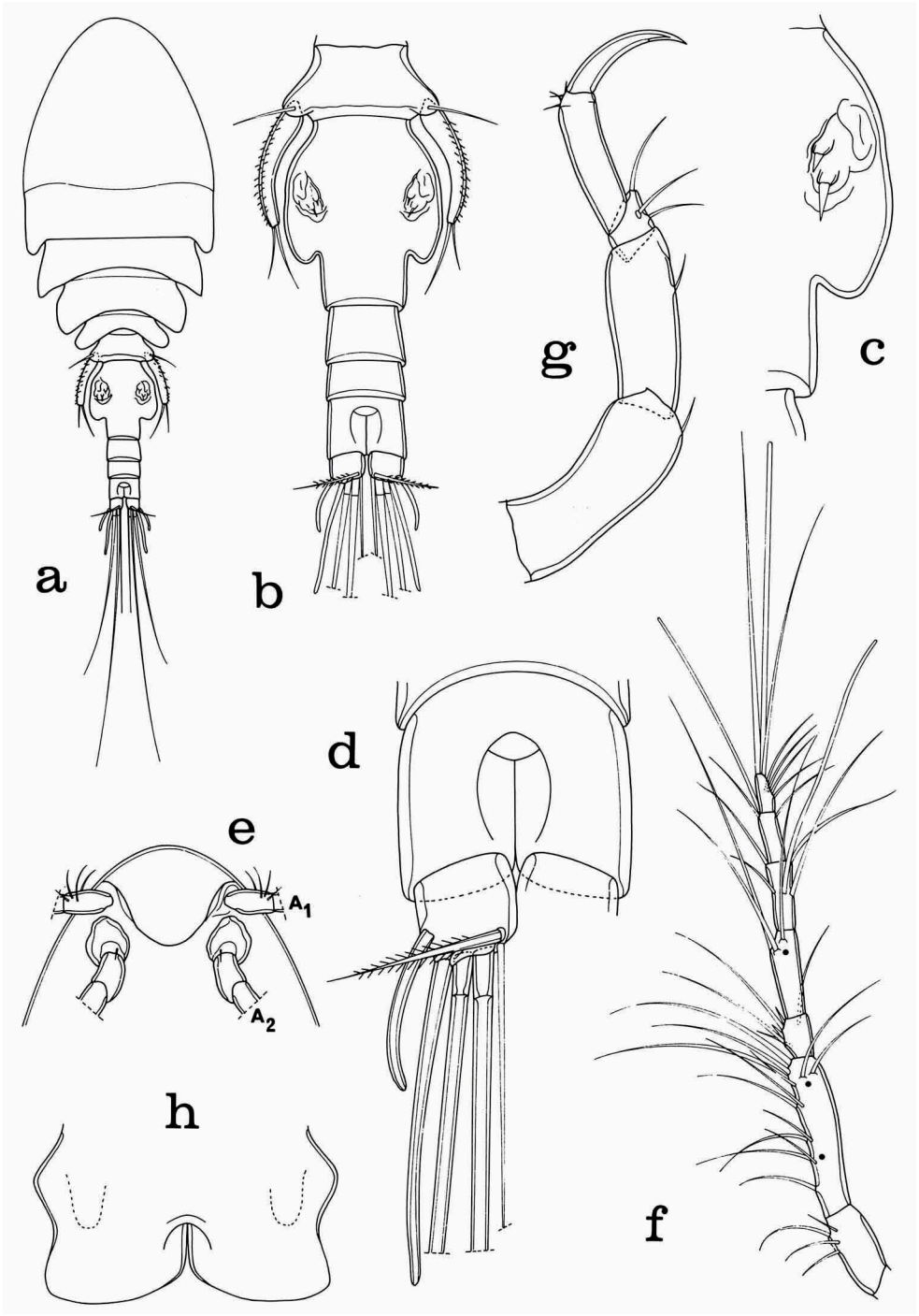

Fig. 65. a-h. *Paradoridicola virgulifer* spec. nov., ♀. a, dorsal (scale G); b, urosome, dorsal (A); c, genital area, dorsal (B); d, caudal ramus and anal segment, dorsal (C); e, rostrum, ventral (F); f, first antenna, dorsal (E); g, second antenna, posterior (B); h, labrum, with paragnaths indicated by broken lines, ventral (C).

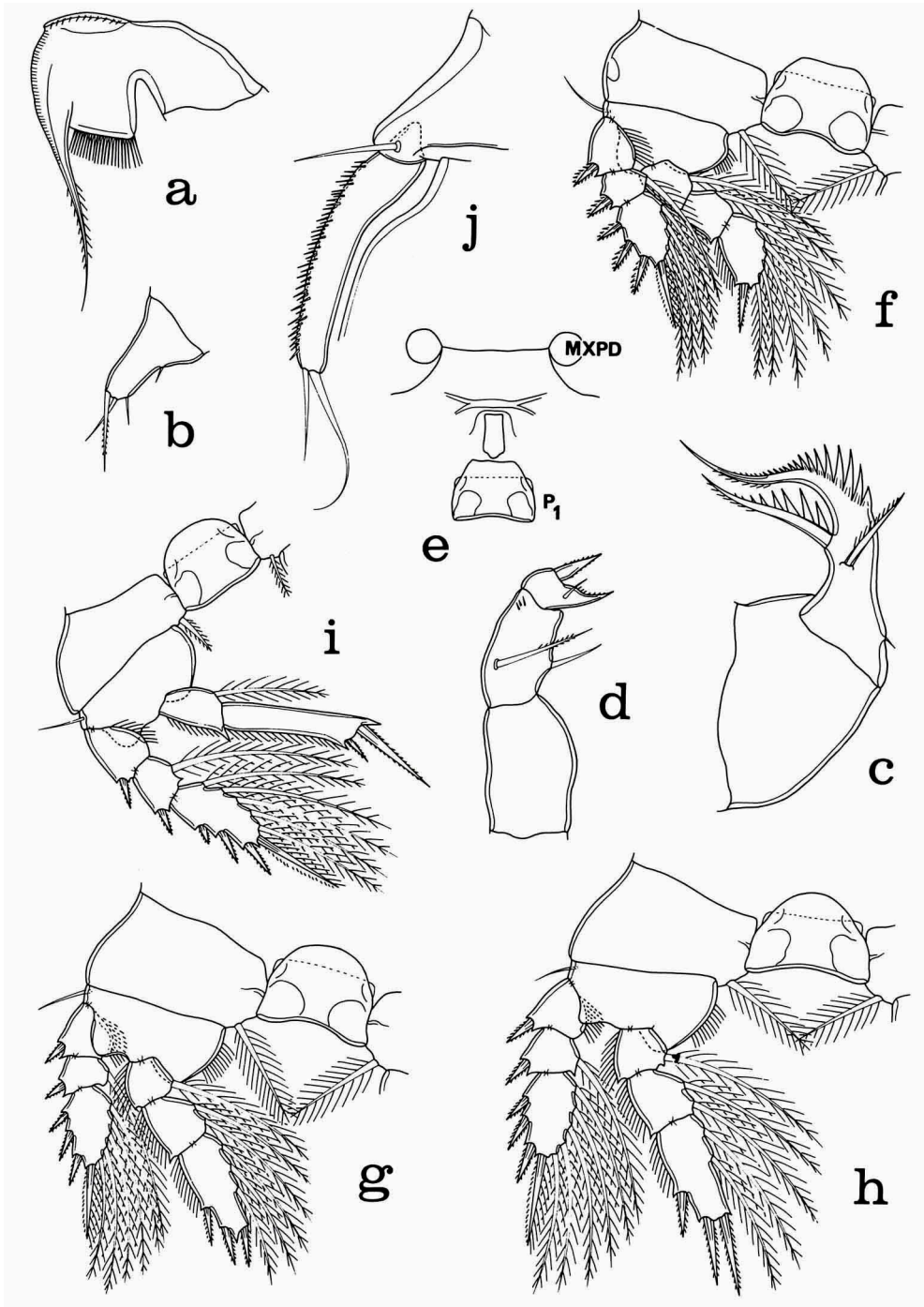

Fig. 66. a-j. *Paradoridicola virgulifer* spec. nov.. ♀. a. mandible, posterior (scale C); b, first maxilla, posterior (C); c, second maxilla, posterior (C); d, maxilliped, posterior (B); e, area between maxillipeds and first pair of legs, ventral (A); f, leg 1 and intercoxal plate, posterior (E); g, leg 2 and intercoxal plate, anterior (E); h, leg 3 and intercoxal plate, anterior (E); i, leg 4 and intercoxal plate, posterior (E); j, leg 5, dorsal (B).

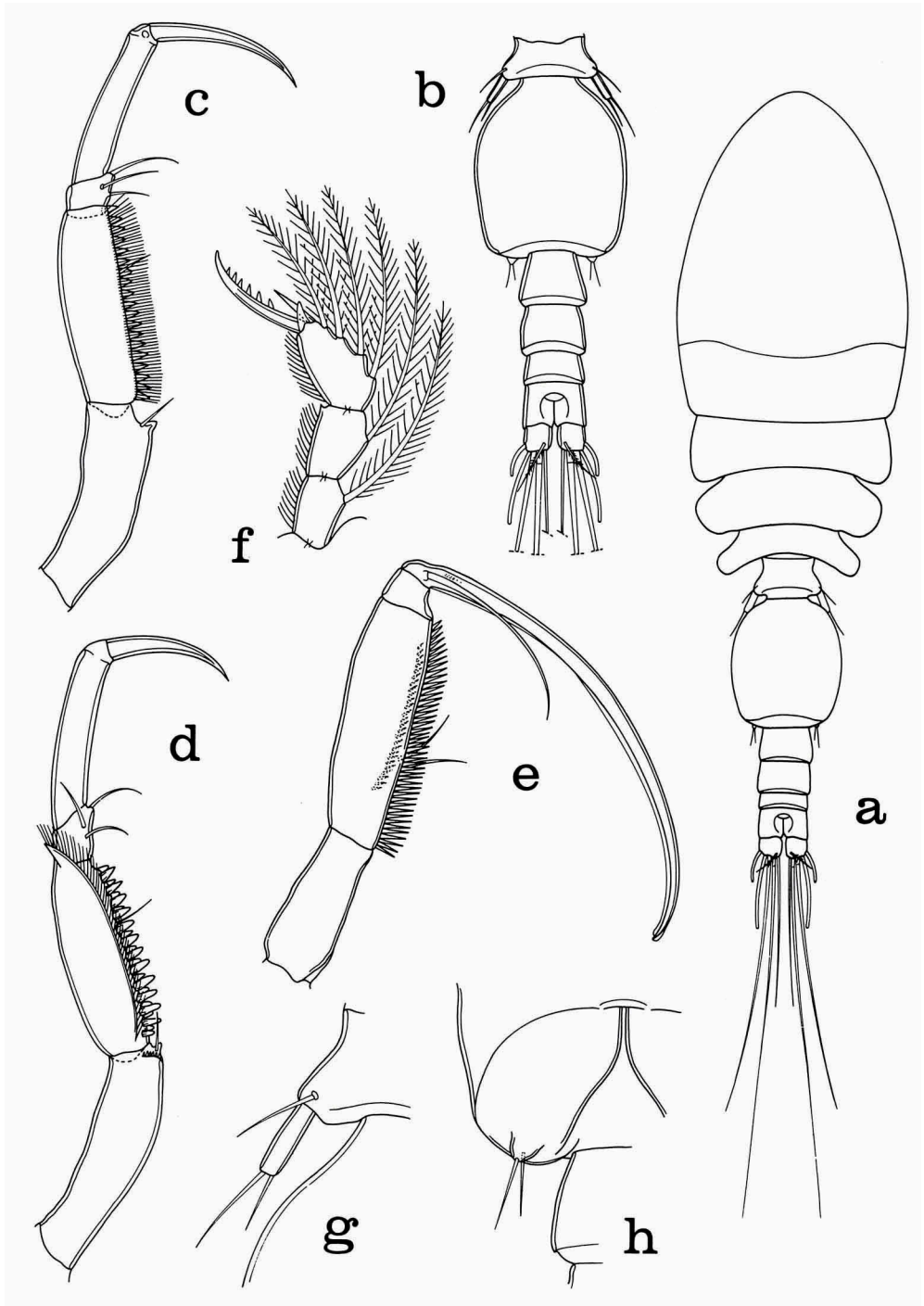

Fig. 67. a-h. *Paradoridicola virgulifer* spec. nov., ♂. a, dorsal (scale F); b, urosome, dorsal (A); c, second antenna, posterior (B); d, second antenna, postero-inner (B); e, maxilliped, inner (E); f, endopod of leg 1, posterior (B); g, leg 5, dorsal (C); h, leg 6, ventral (B).

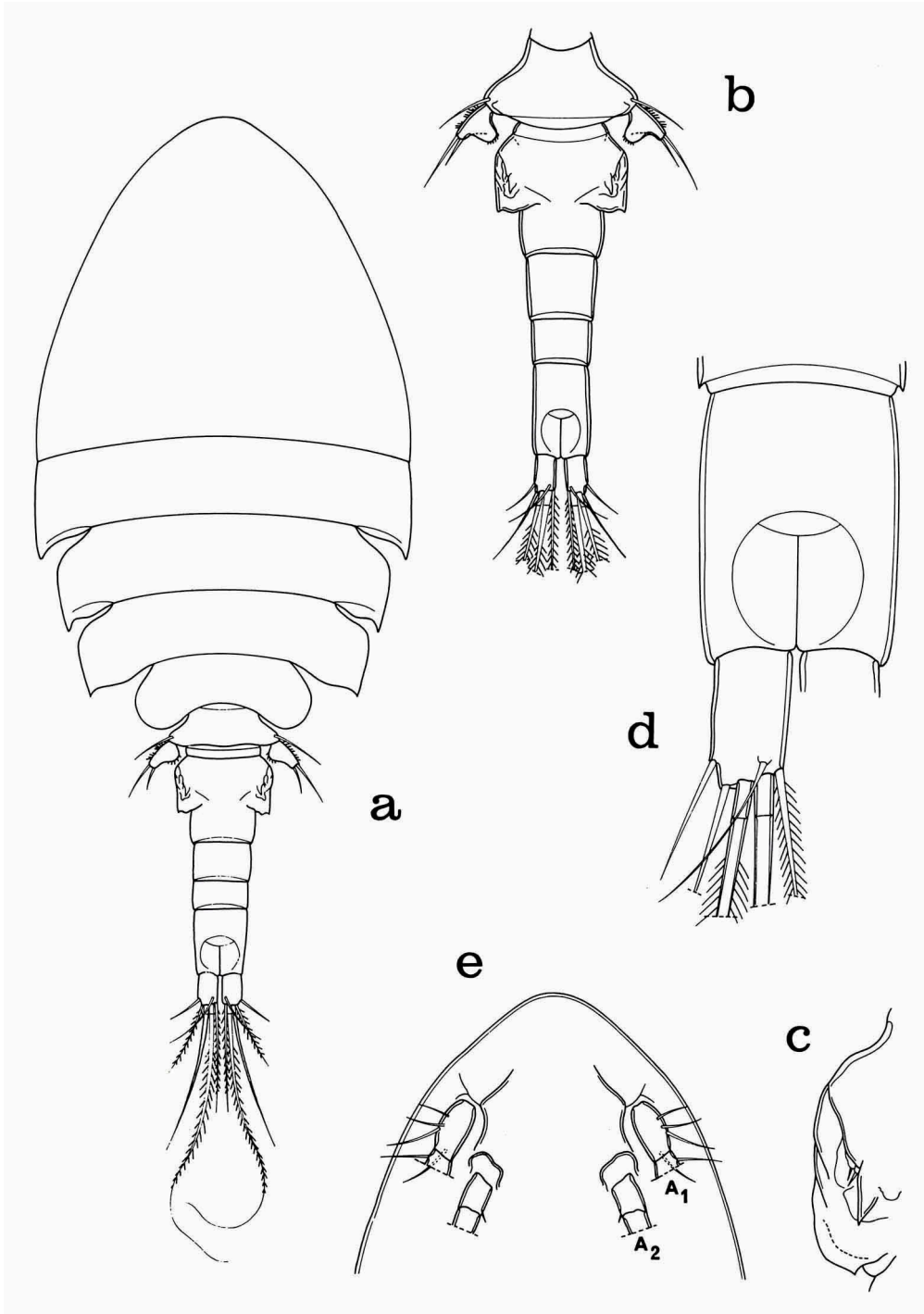

Fig. 68. a-e. *Paramolgus abruptus* spec. nov., ♀. a, dorsal (scale F); b, urosome, dorsal (A); c, genital area, dorsal (C); d, caudal ramus and anal segment, dorsal (C); e, rostral area, ventral (F).

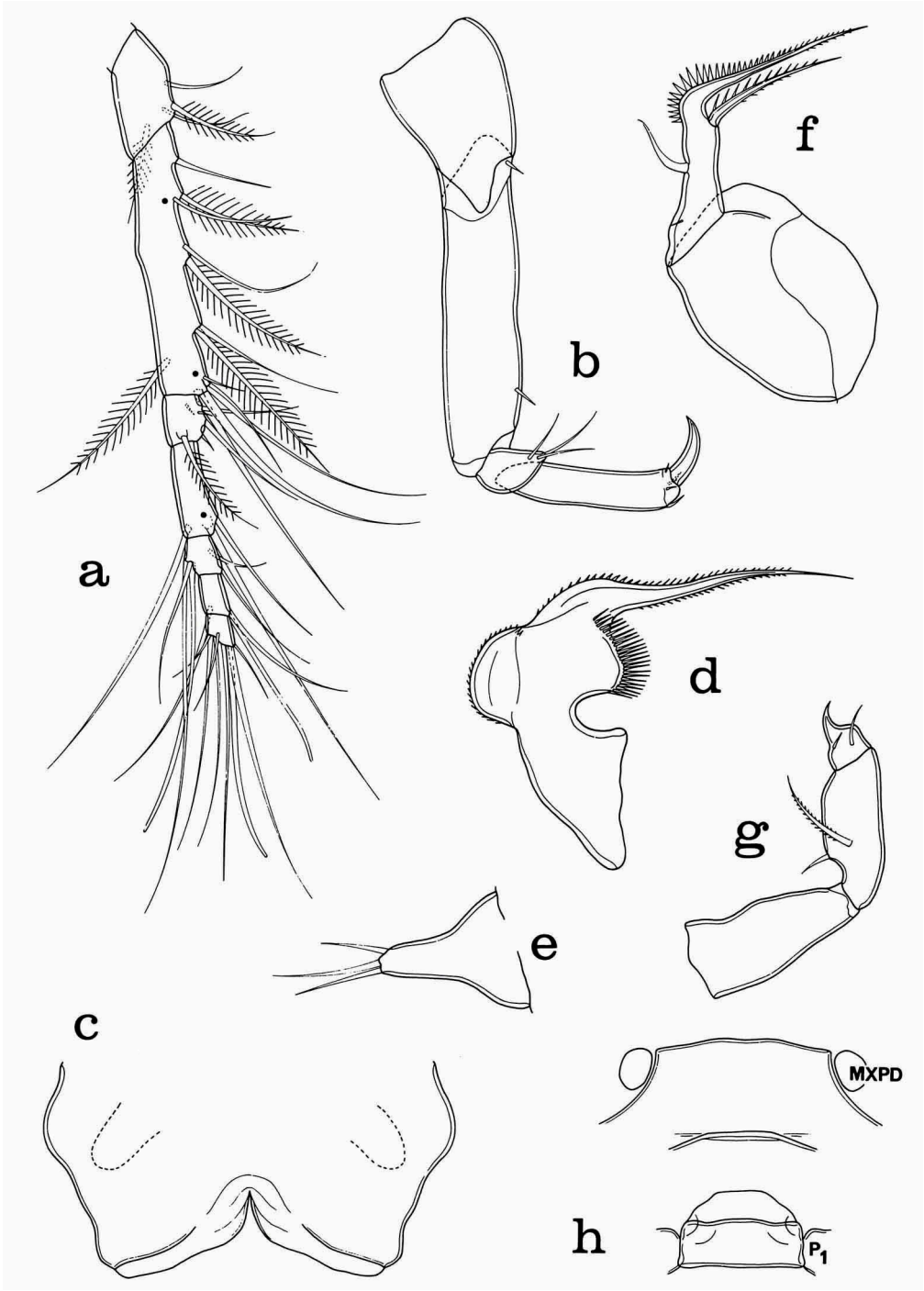

Fig. 69. a-h. *Paramolgus abruptus* spec. nov., ♀. a, first antenna, ventral (scale E); b, second antenna, postero-inner (B); c, labrum, with paragnaths indicated by broken lines, ventral (D); d, mandible, anterior (D); e, first maxilla, anterior (D); f, second maxilla, antero-outer (C); g, maxilliped, posterior (C); h, area between maxillipeds and first pair of legs, ventral (E).

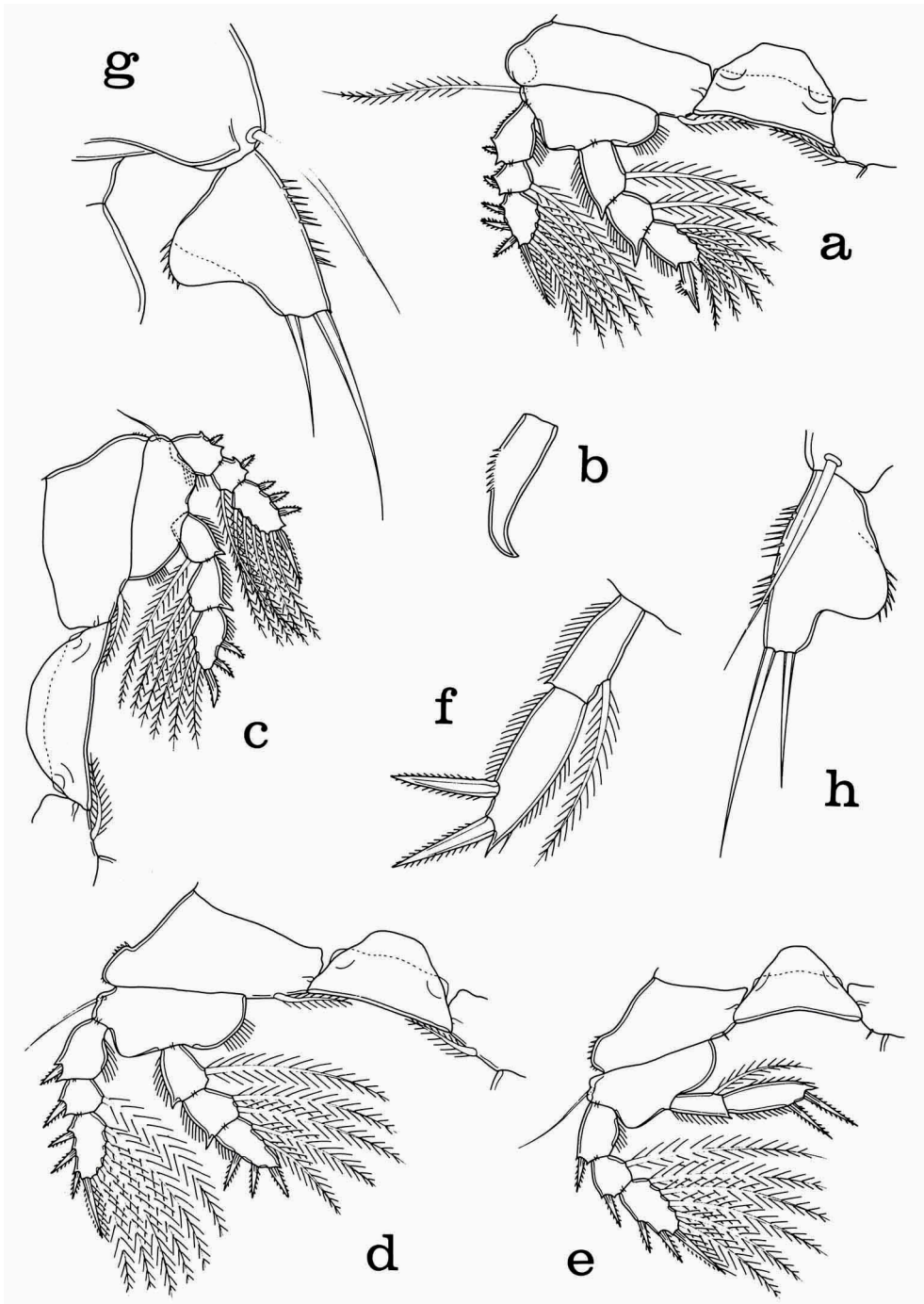

Fig. 70. a-h. *Paramolgus abruptus* spec. nov., ♀. a, leg 1 and intercoxal plate, anterior (scale E); b, terminal spine on endopod of leg 1, anterior (D); c, leg 2 and intercoxal plate, anterior (E); d, leg 3 and intercoxal plate, anterior (E); e, leg 4 and intercoxal plate, anterior (E); f, endopod of leg 4, anterior (C); g, leg 5, dorsal (D); h. leg 5, dorsal (D).

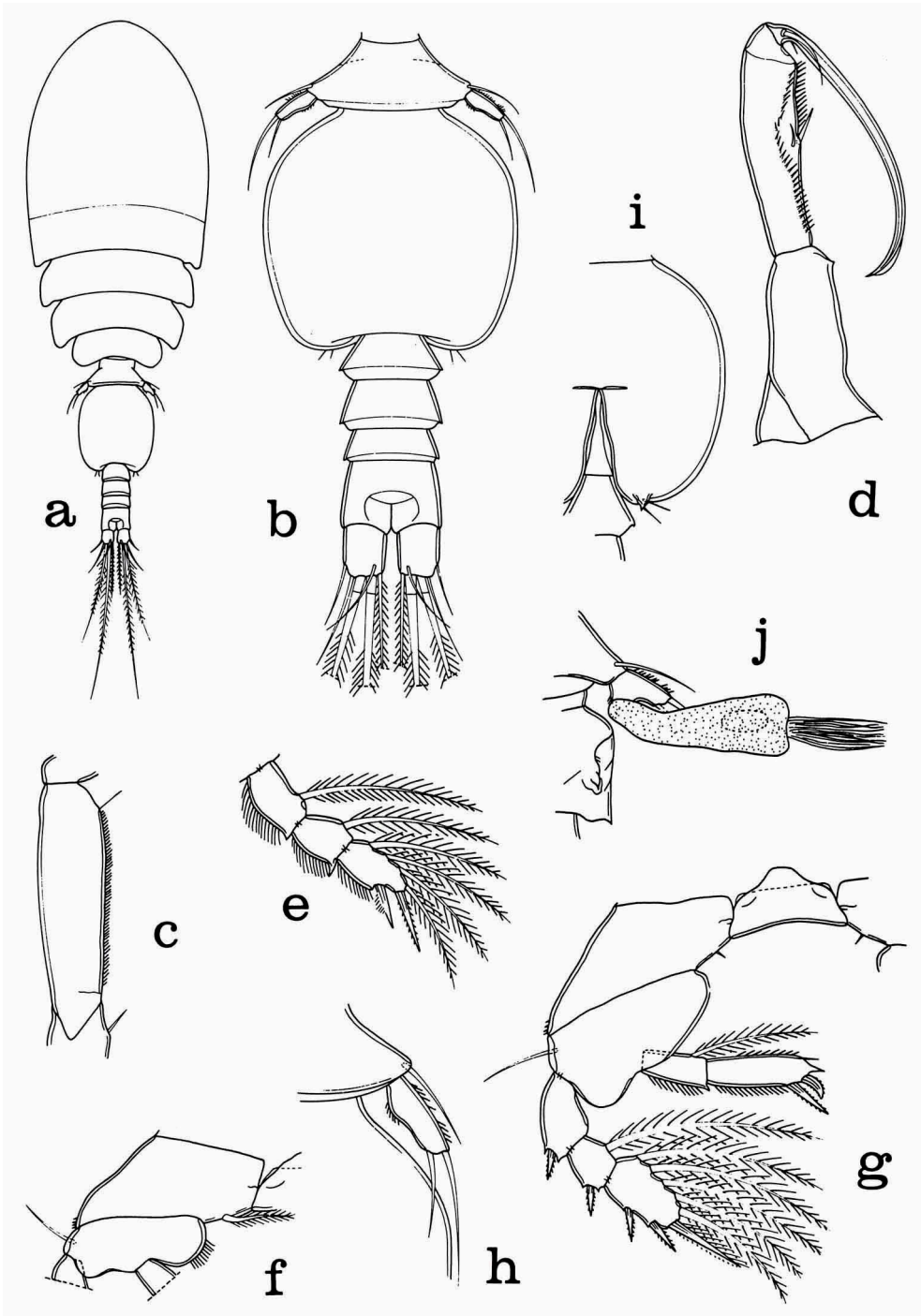

Fig. 71. a-j. *Paramolgus abruptus* spec. nov., ♂. a, dorsal (scale F); b, urosome, dorsal (B); c, second segment of second antenna, antero-outer (C); d, maxilliped, inner (B); e, endopod of leg 1, anterior (C); f, coxa and basis of leg 3, anterior (E); g, leg 4 and intercoxal plate, anterior (C); h, leg 5, ventral (D); i, leg 6, ventral (B); j, suctorian (probably *Ophryodendron* spec.) attached to leg 5 of ♀, dorsal (E).

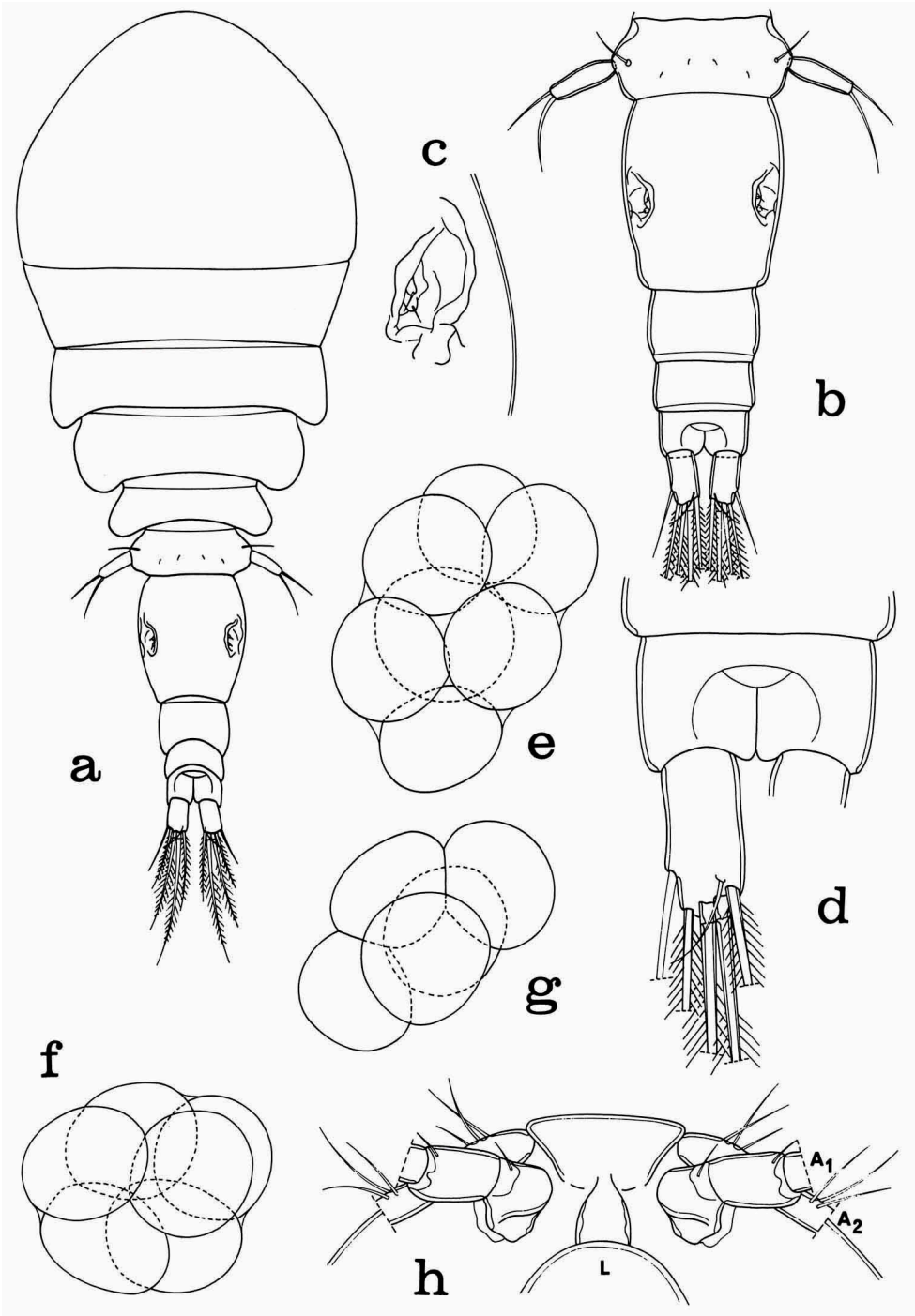

Fig. 72. a-h. *Paramolgus alcyoniicus* spec. nov., ♀. a, dorsal (scale F); b, urosome, dorsal (A); c, genital area, dorsal (C); d, caudal ramus and anal segment, dorsal (C); e, egg sac, dorsal (A); f, egg sac, dorsal (A); g, egg sac, dorsal (A); h, rostrum, ventral (E).

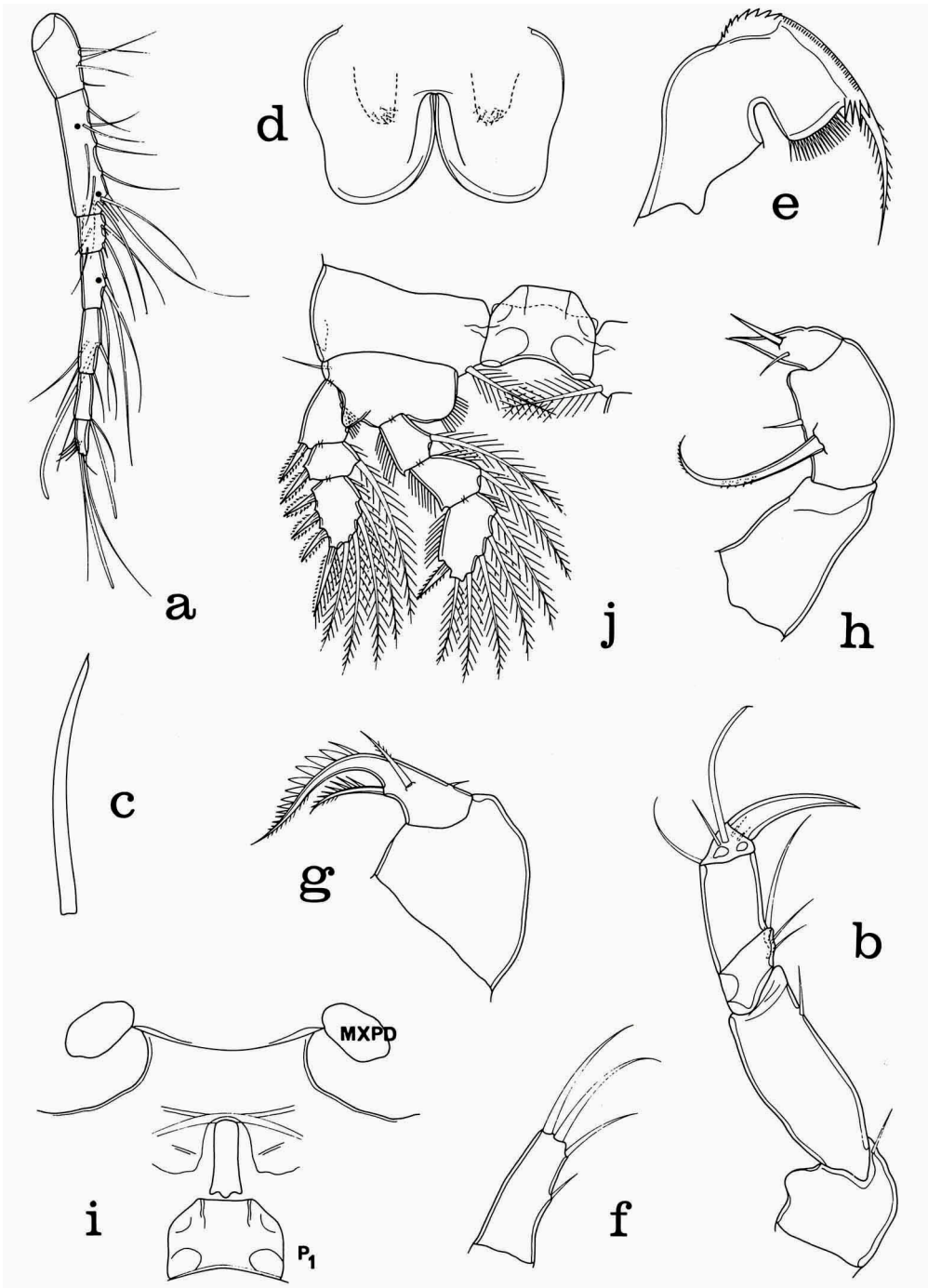

Fig. 73. a-j. *Paramolgus alcyoniicus* spec. nov., ♀. a, first antenna, dorsal (scale E); b, second antenna, anterior (B); c, long seta near claw of second antenna, anterior (D); d, labrum, with paragnaths indicated by broken lines, ventral (VB); e, mandible, posterior (C); f, first maxilla, posterior (C); g, second maxilla, posterior (B), h, maxilliped, posterior (B); i, area between maxillipeds and first pair of legs, ventral (E); j, leg 1 and intercoxal plate, anterior (E).

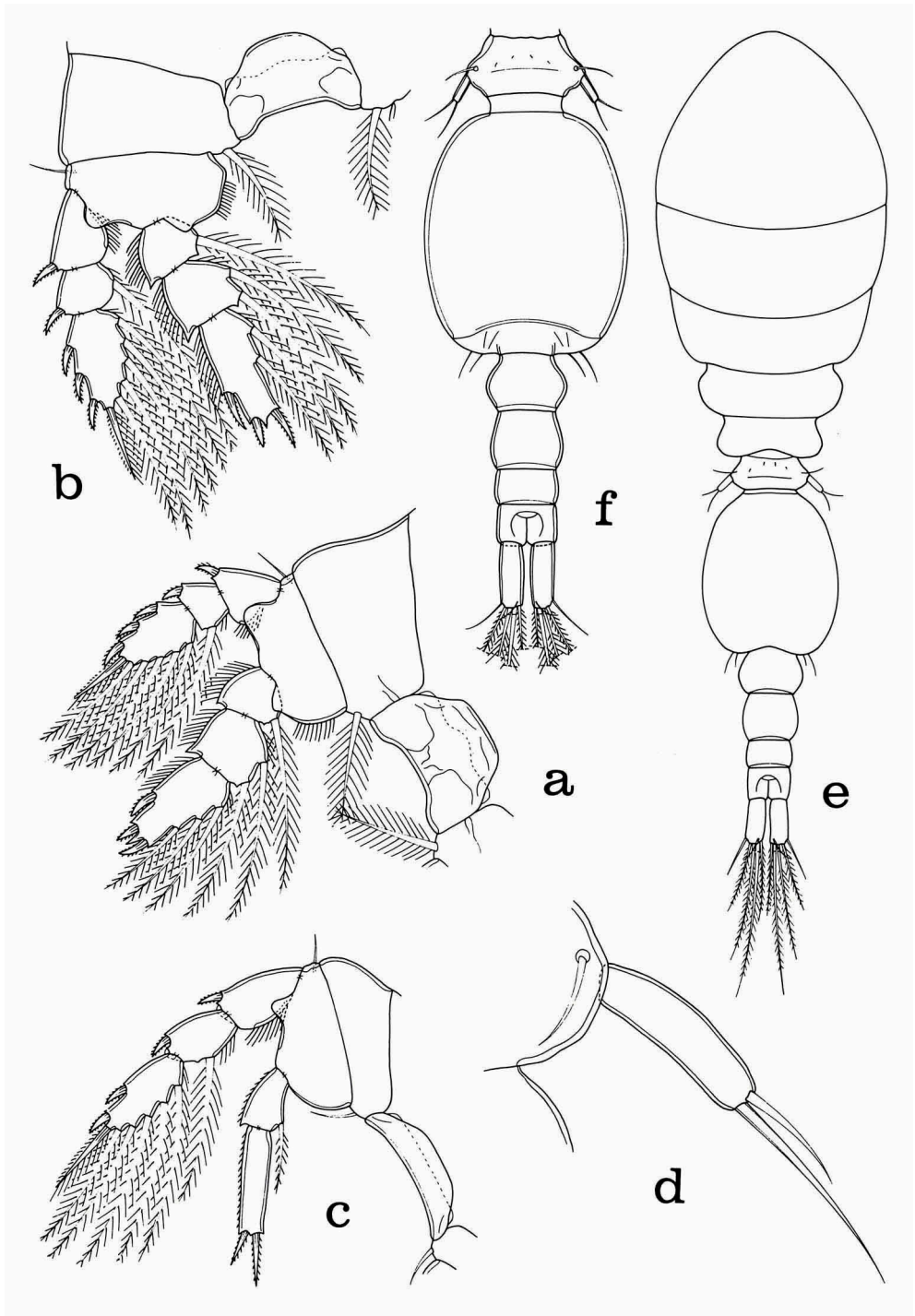

Fig. 74. a-f. *Paramolgus alcyoniicus* spec. nov. ♀. a, leg 2 and intercoxal plate, anterior (scale E); b, leg 3 and intercoxal plate, anterior (E); c, leg 4 and intercoxal plate, anterior (E); d, leg 5, dorsal (C). ♂. e, dorsal (F); f, urosome, dorsal (A).

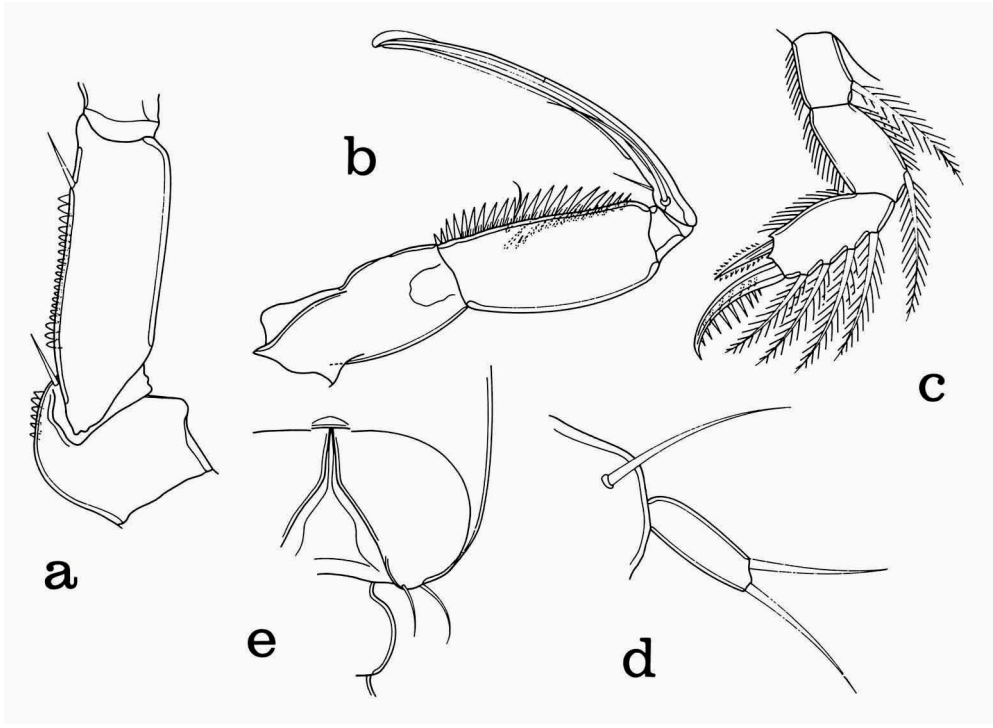

Fig. 75. a-e. *Paramolgus alcyoniicus* spec. nov., ♂. a, first and second segments of second antenna, anterior (scale C); b, maxilliped, inner (E); c, endopod of leg 1, anterior (B); d, leg 5, dorsal (D); e, leg 6, ventral (E).

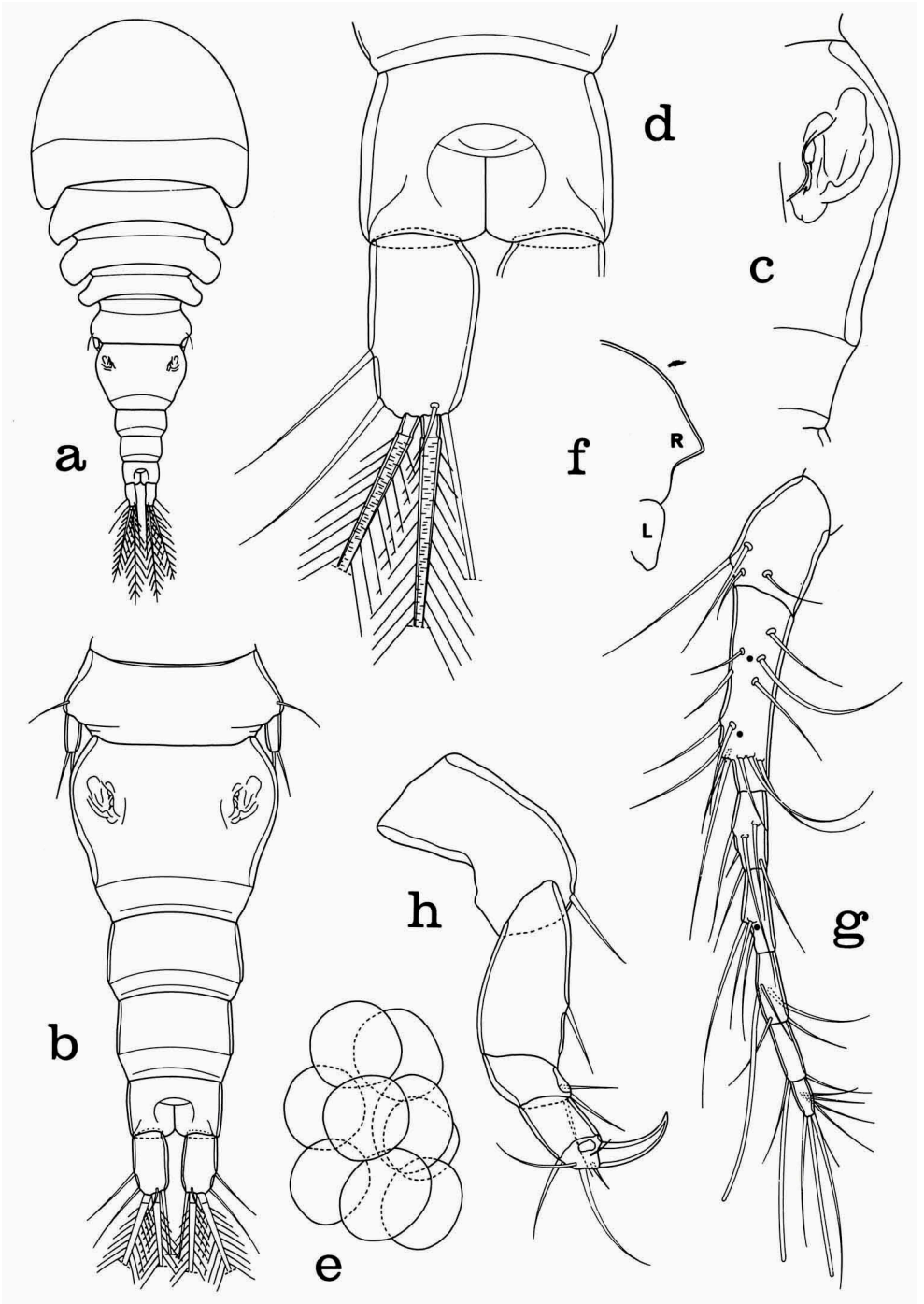

Fig. 76. a-h. *Paramolgus centor* spec. nov., ♀. a, dorsal (scale G); b, urosome, dorsal (A); c, genital area, dorsal (B); d, caudal ramus and anal segment, dorsal (C); e, egg sac, ventral (F); f, outline of rostrum, lateral (F); g, first antenna, dorsal (B); h, second antenna, anterior (B).

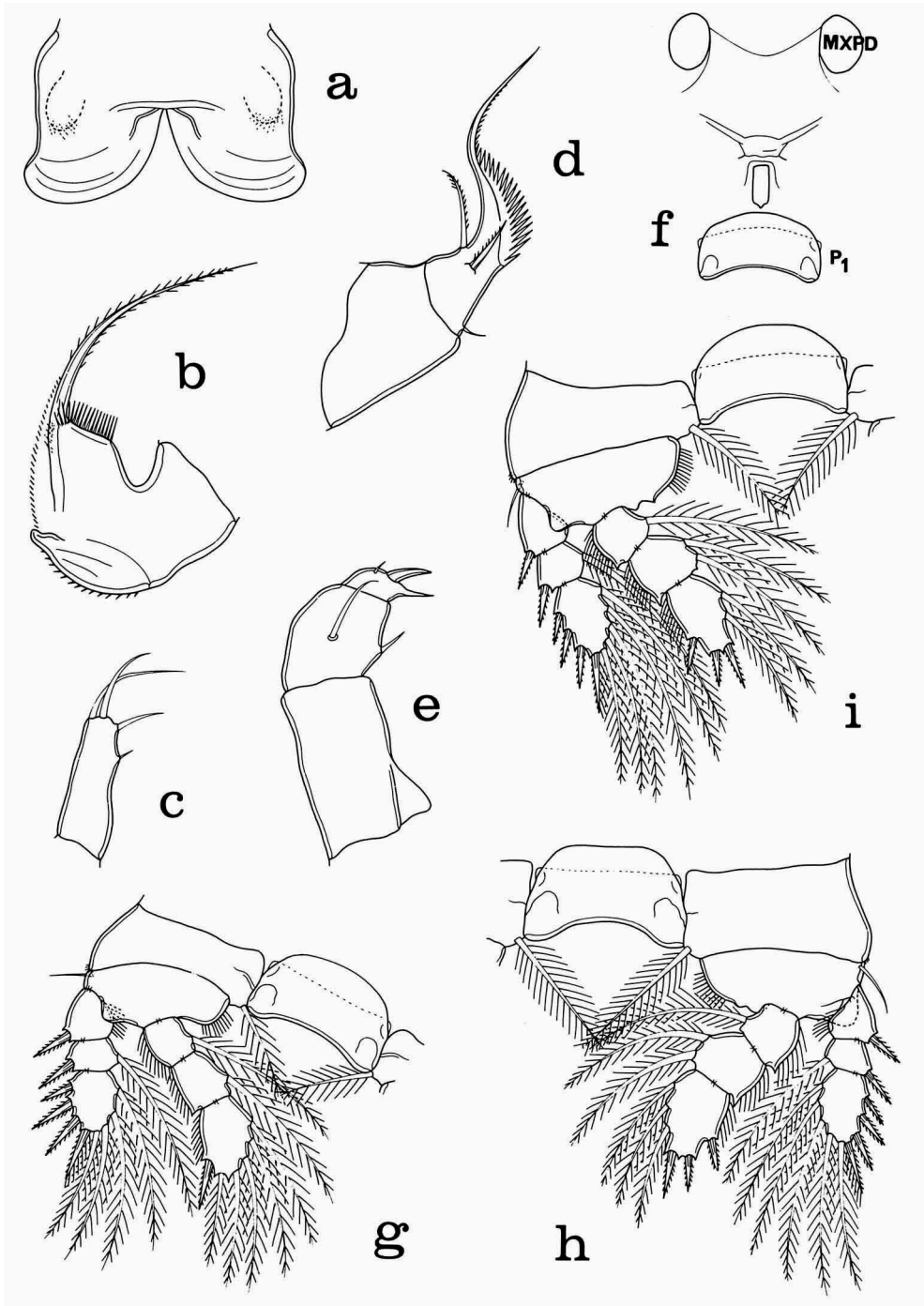

Fig. 77. a-i. *Paramolgus centor* spec. nov., ♀. a, labrum, with paragnaths indicated by broken lines, ventral (scale B); b, mandible, posterior (C); c, first maxilla, anterior (C); second maxilla, posterior (B); e, maxilliped, posterior (B); f, area between maxillipeds and first pair of legs, ventral (E); g, leg 1 and intercoxal plate, anterior (E); h, leg 2 and intercoxal plate, posterior (E); i, leg 3 and intercoxal plate, anterior (E).

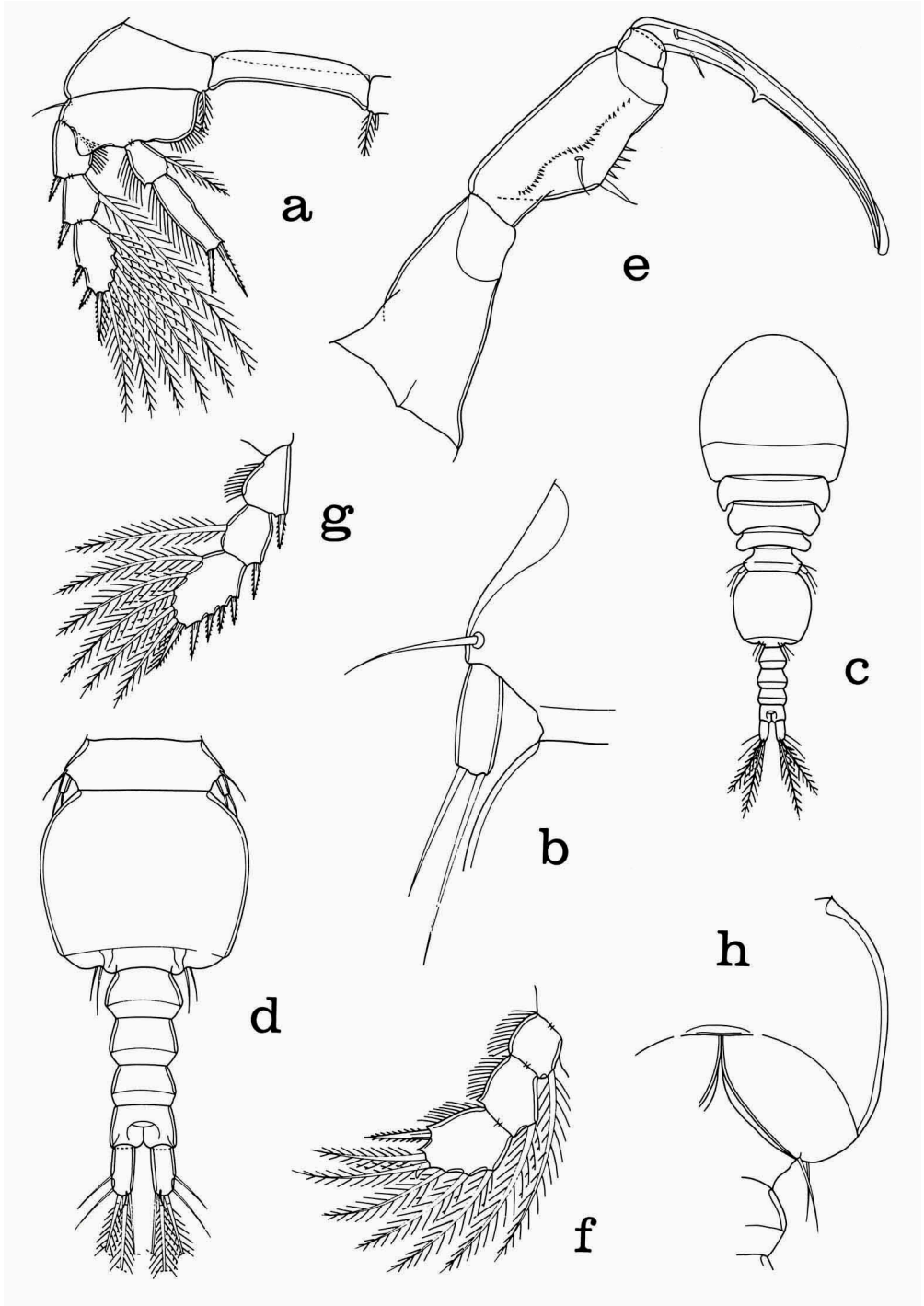

Fig. 78. a-h. *Paramolgus centor* spec. nov. ♀. a, leg 4 and intercoxal plate, anterior (scale E); b, leg 5, dorsal (C). ♂. c, dorsal (G); d, urosome, dorsal (A); e, maxilliped, inner (B); f, endopod of leg 1, posterior (B); g, abnormal exopod of leg 4, anterior (B); h, leg 6, ventral (E).

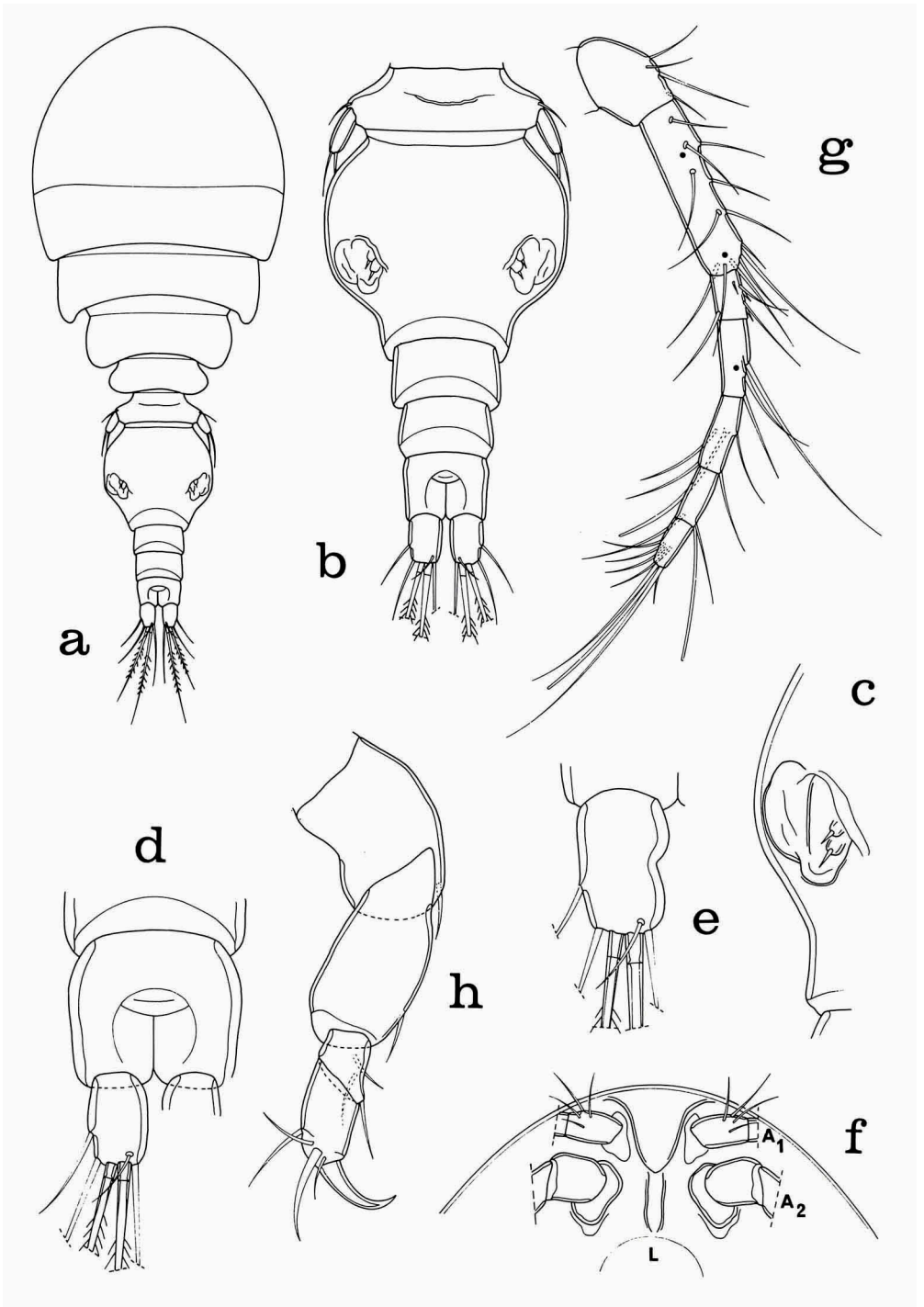

Fig. 79. a-h. *Paramolgus congruus* spec. nov., ♀. a, dorsal (scale F); b, urosome, dorsal (E); c, genital area, dorsal (C); d, caudal ramus and anal segment, dorsal (C); e, abnormal caudal ramus, dorsal (D); f, rostrum, ventral (E); g, first antenna, dorsal (C); h, second antenna, anterior (C).

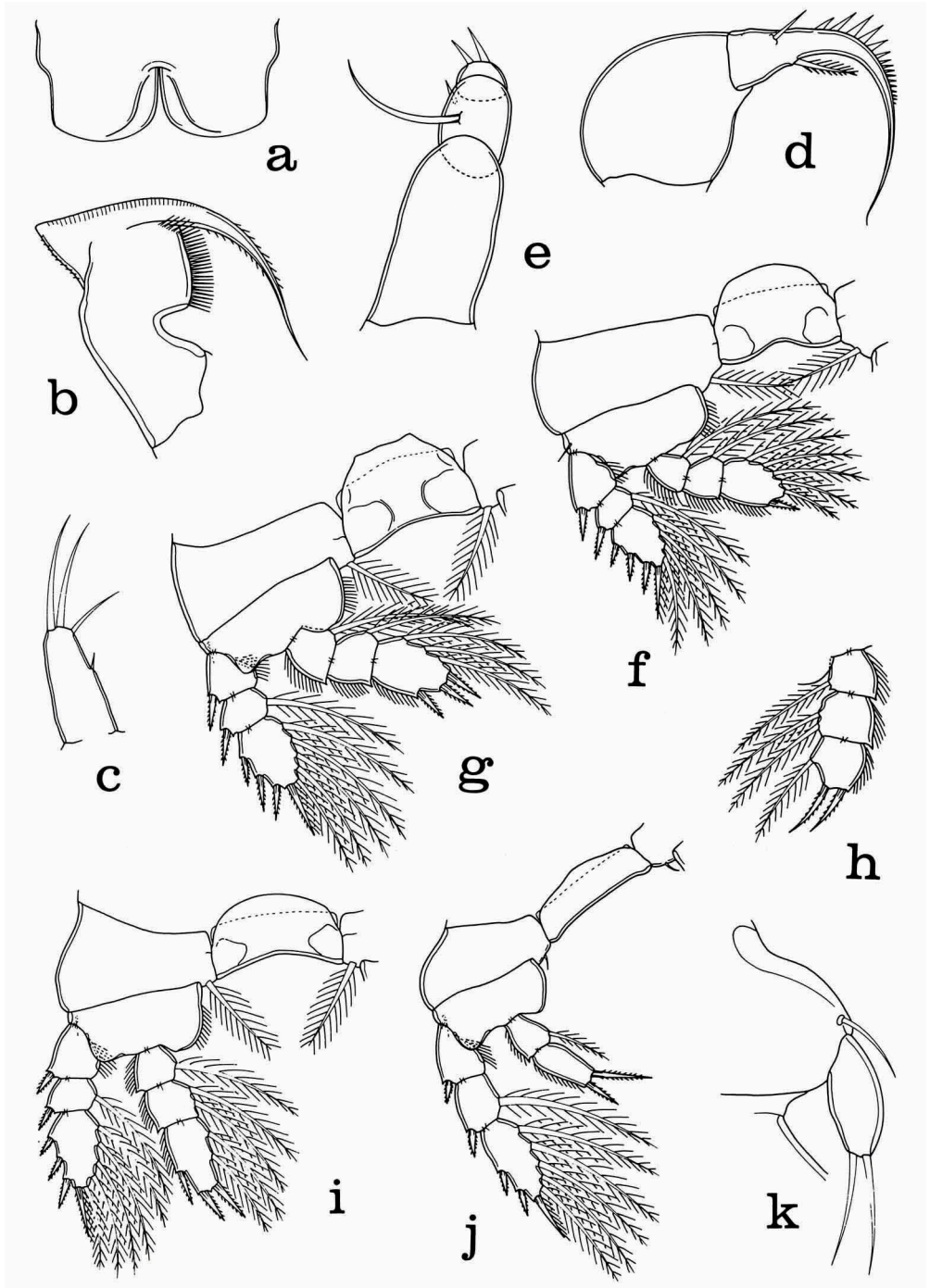

Fig. 80. a-k. *Paramolgus congruus* spec. nov., ♀. a, labrum, ventral (scale C); b, mandible, anterior (D); c, first maxilla, anterior (D); d, second maxilla, posterior (D); e, maxilliped, posterior (D); f, leg 1 and intercoxal plate, posterior (E); g, leg 2 and intercoxal plate, anterior (E); h, abnormal endopod of leg 2, anterior (E); i, leg 3 and intercoxal plate, anterior (E); j, leg 4 and intercoxal plate, anterior (E); k, leg 5, dorsal (D).

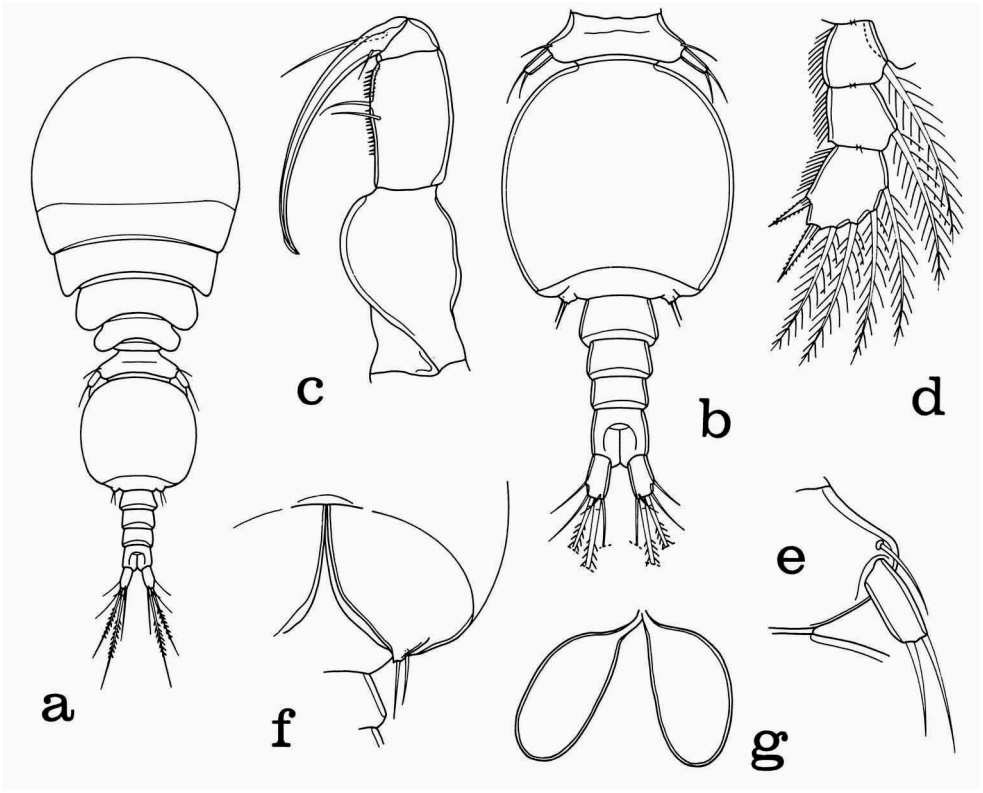

Fig. 81. a-g. *Paramolgus congruus* spec. nov., ♂. a, dorsal (scale F); b, urosome, dorsal (E); c, maxilliped, outer (C); d, endopod of leg 1, posterior (C); e, leg 5, dorsal (D); f, leg 6, ventral (B); g, spermatophores, attached to ♀, ventral (A).

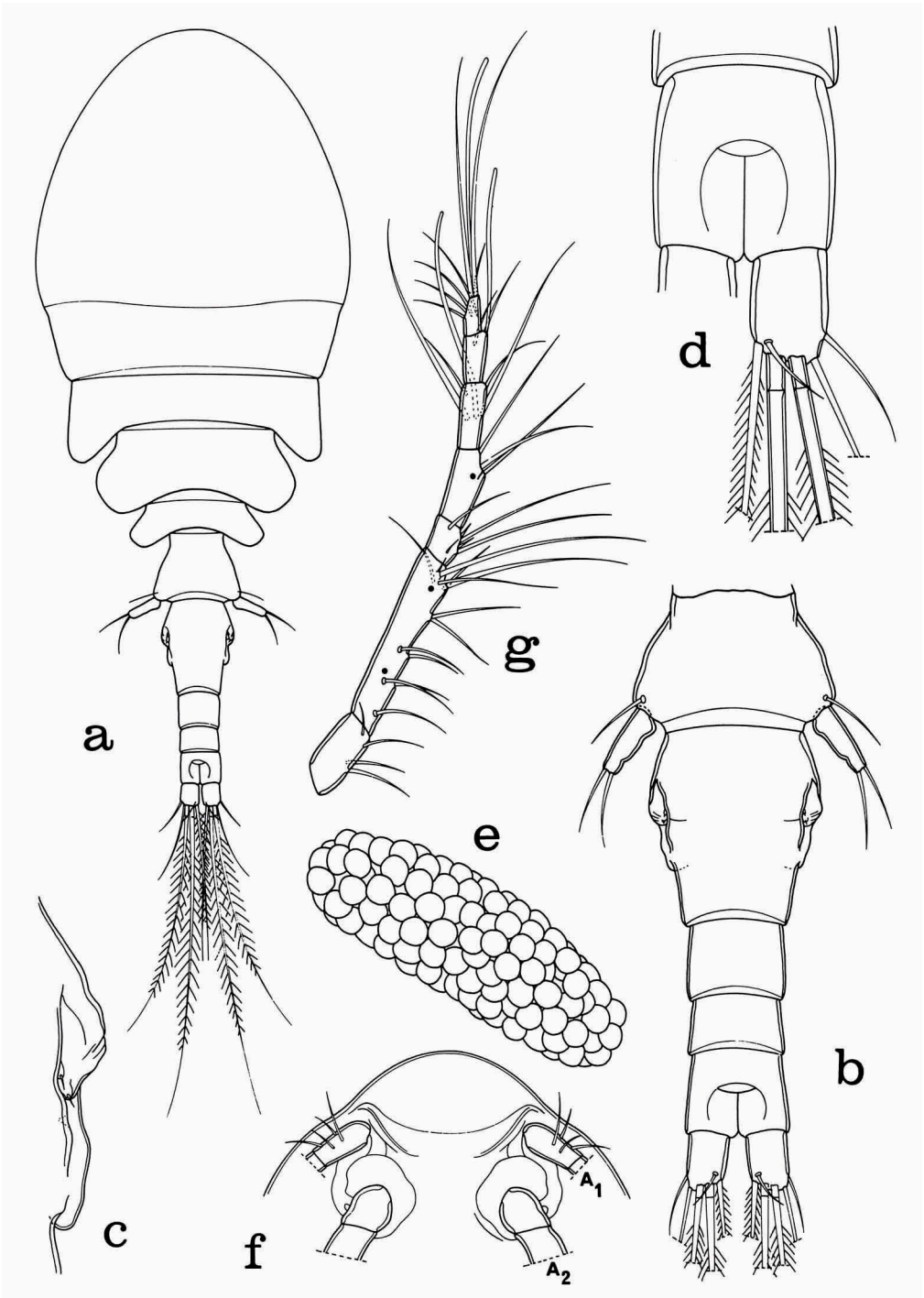

Fig. 82. a-g. *Paramolgus modicus* spec. nov., ♀. a, dorsal (scale F); b, urosome, dorsal (E); c, genital area, dorsal (D); d, caudal ramus and anal segment, dorsal (C); e, egg sac, ventral (F); f, rostrum, ventral (A); g, first antenna, dorsal (E).

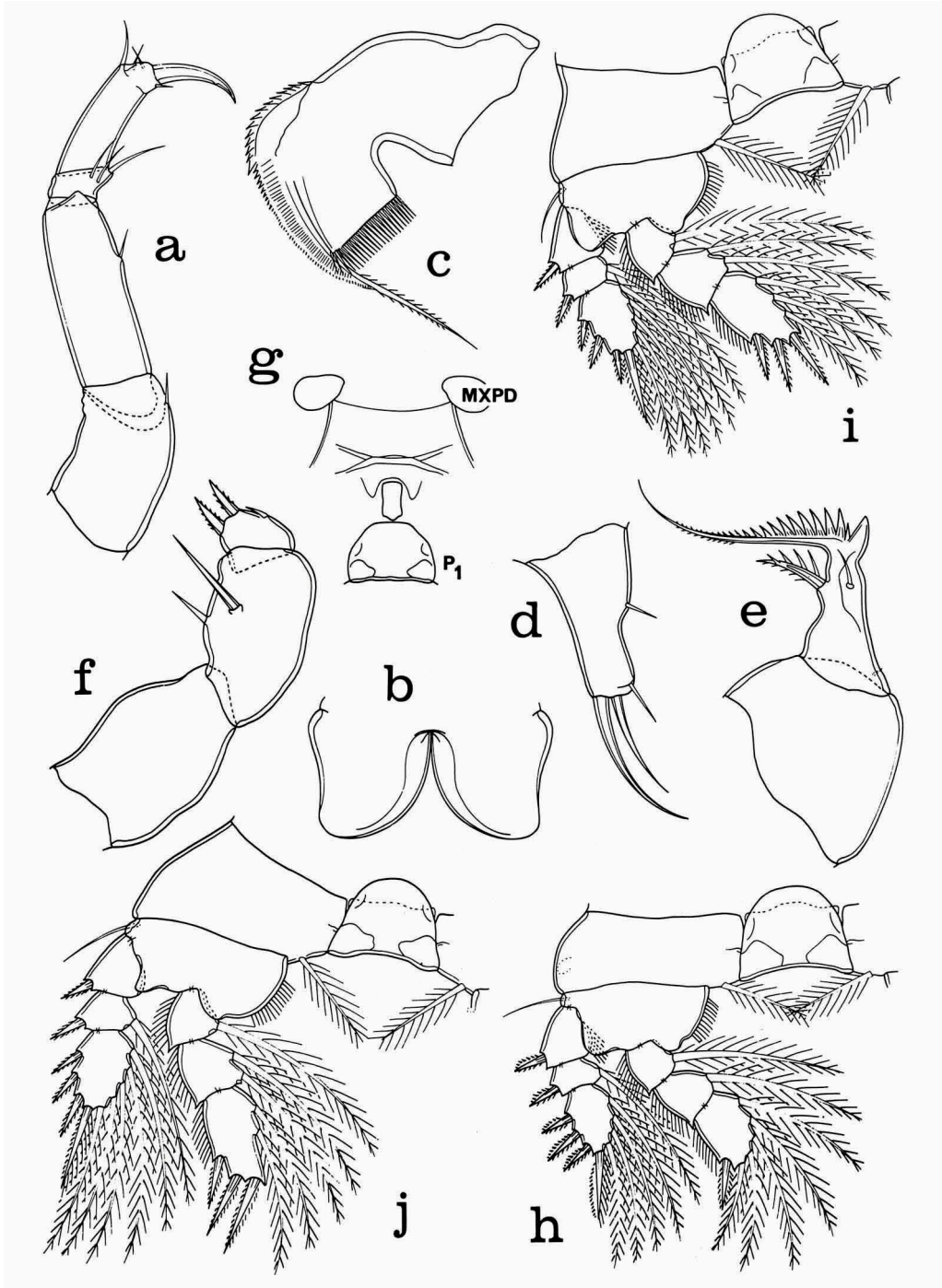

Fig. 83. a-j. *Paramolgus modicus* spec. nov., ♀. a, second antenna, posterior (scale B); b, labrum, ventral (C); c, mandible posterior (D); d, first maxilla, posterior (D); e, second maxilla, posterior (C); f, maxilliped, psoterior (C); g, area between maxillipeds and first pair of legs, ventral (A); h, leg 1 and intercoxal plate, anterior (E); i, leg 2 and intercoxal plate, anterior (E); j, leg 3 and intercoxal plate, anterior (E).

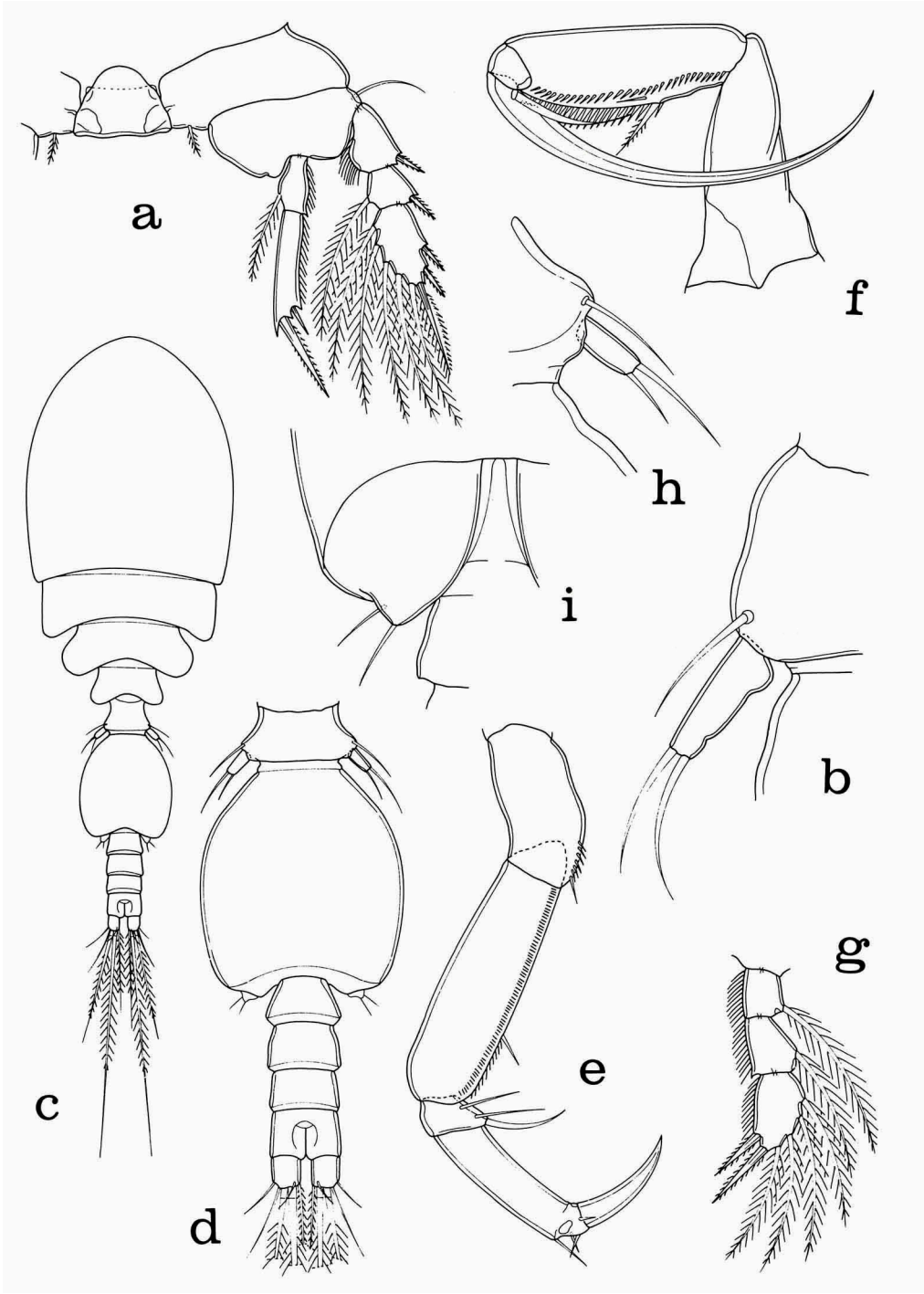

Fig. 84. a-i. *Paramolgus modicus* spec. nov. ♀. a, leg 4 and intercoxal plate, anterior (scale E); b, leg 5, dorsal (C). ♂. c, dorsal (F); d, urosome, dorsal (E); e, second antenna, posterior (C); f, maxilliped, inner (B); g, endopod of leg 1, anterior (B); h, leg 5, dorsal (D); i, leg 6, ventral (C).

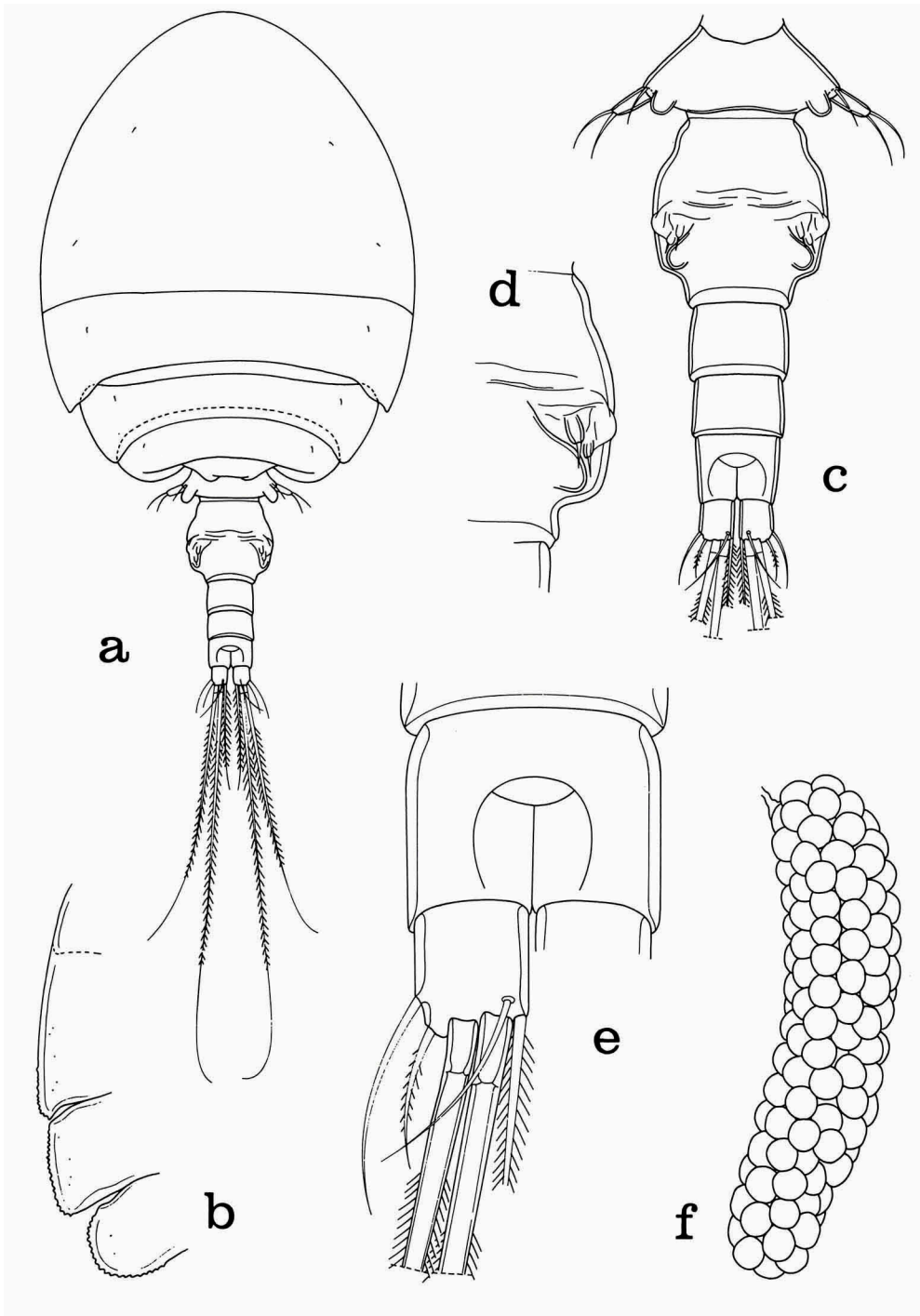

Fig. 85. a-f. *Paramolgus quadrangulus* spec. nov., ♀. a, dorsal (scale F); b, lateral edges of prosomal segments, ventral (A); c, urosome, dorsal (E); d, genital area, dorsal (B); e, caudal ramus and anal segment, dorsal (D); f, egg sac, ventral (F).

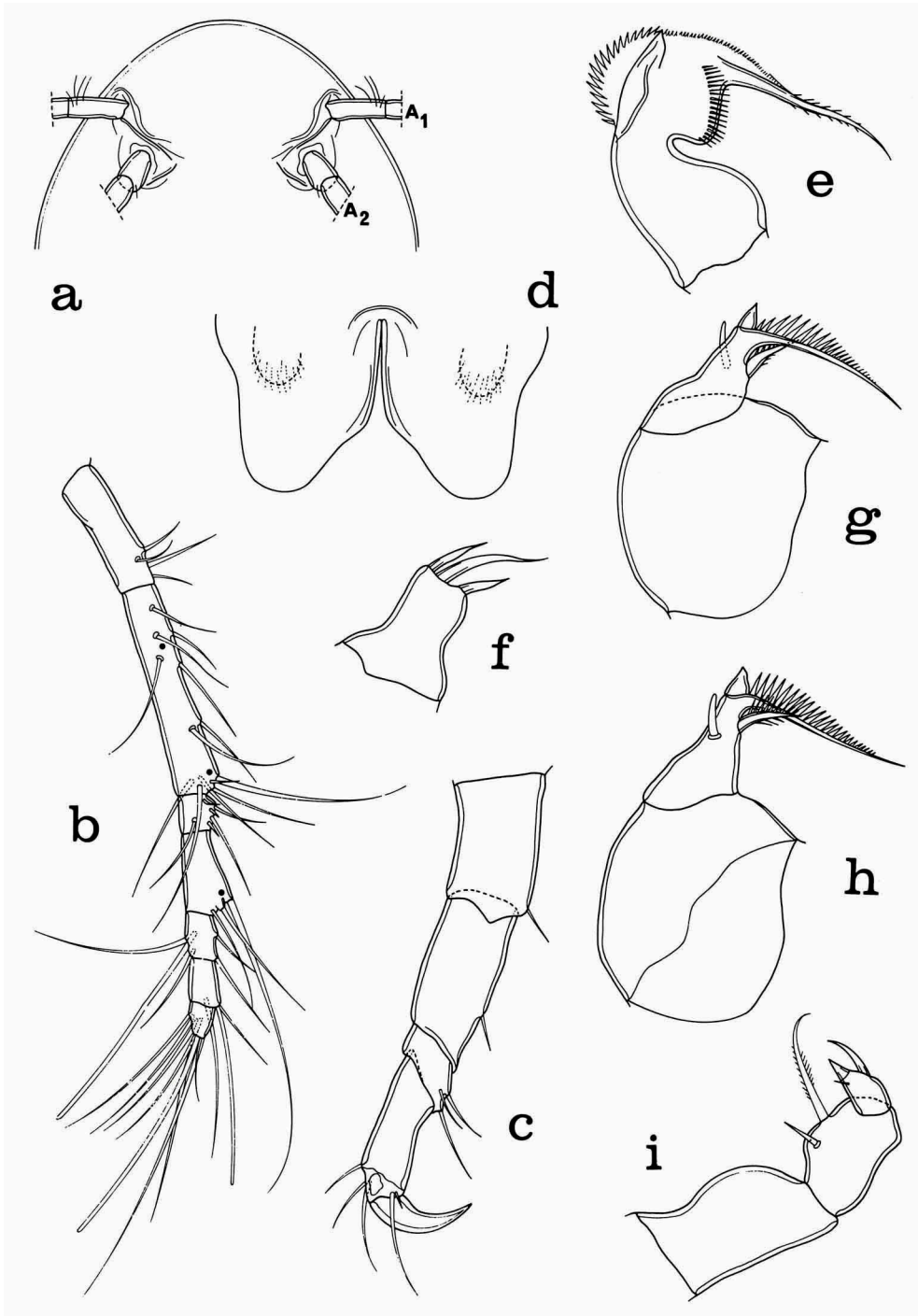

Fig. 86. a-i. *Paramolgus quadrangulus* spec. nov., ♀. a, rostral area, ventral (scale F); b, first antenna, dorsal (E); c, second antenna, posterior (B); d, labrum, with paragnaths indicated by broken lines, ventral (D); e, mandible, posterior (D); f, first maxilla, posterior (C); g, second maxilla, anterior (C); h, second maxilla, posterior (C); i, maxilliped, posterior (C).

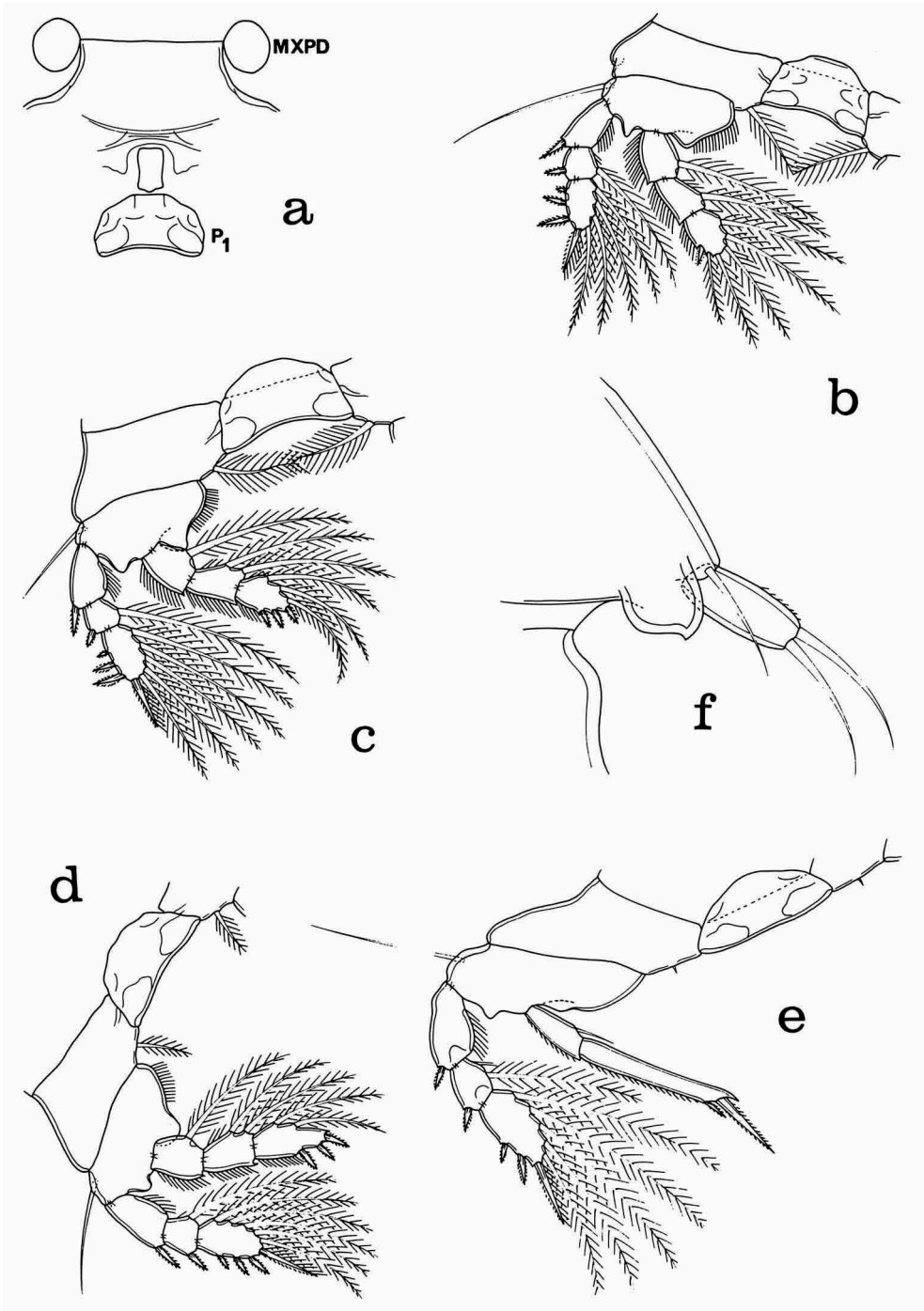

Fig. 87. a-f. *Paramolgus quadrangulus* spec. nov., ♀. a, area between maxillipeds and first pair of legs, ventral (scale E); b, leg 1 and intercoxal plate, anterior (E); c, leg 2 and intercoxal plate, anterior (E); d, leg 3 and intercoxal plate, anterior (E); e, leg 4 and intercoxal plate, anterior (E); f, leg 5, dorsal (D).

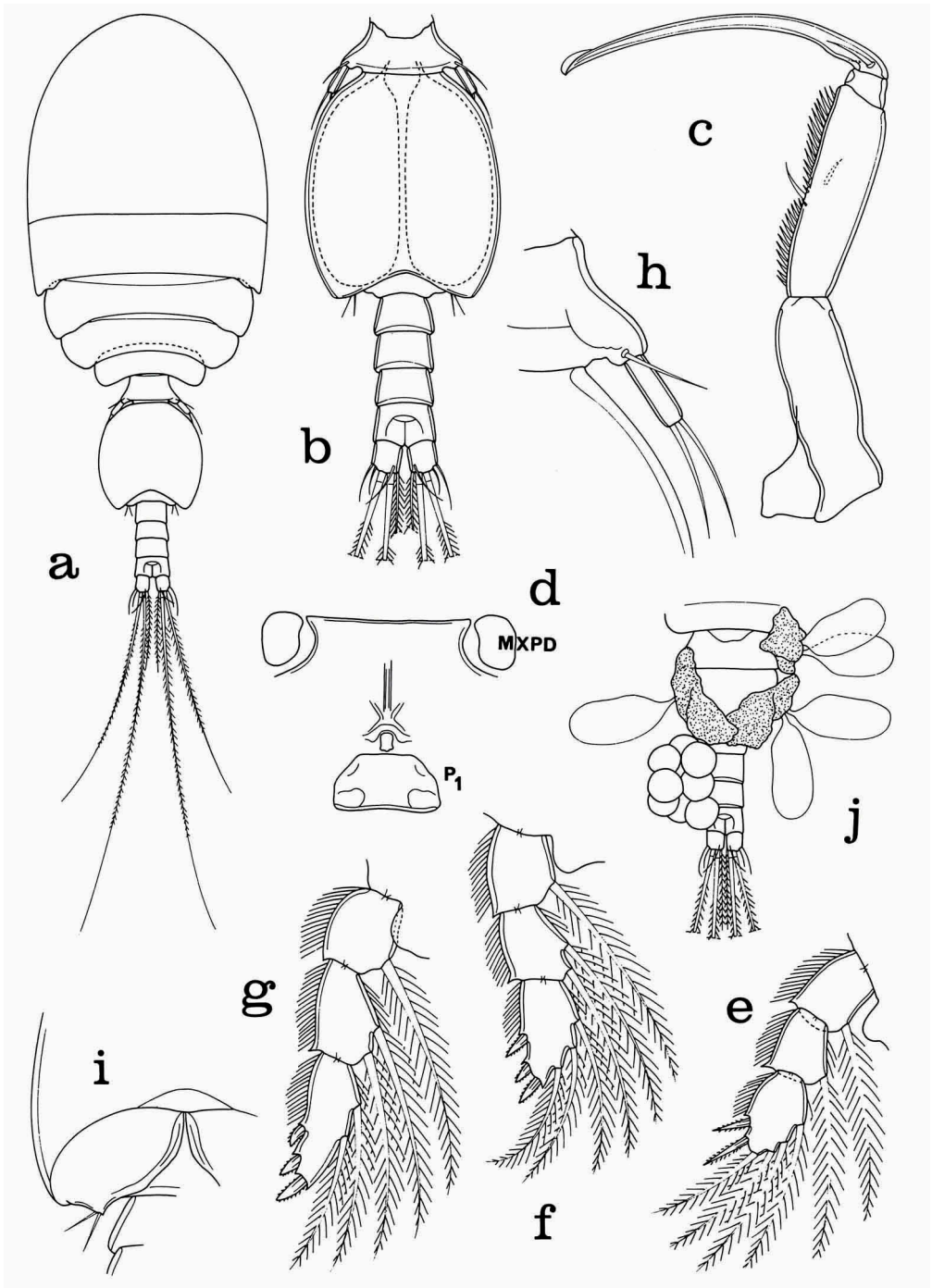

Fig. 88. a-j. *Paramolgus quadrangulus* spec. nov., ♂. a, dorsal (scale F); b, urosome, dorsal (E); c, maxilliped, inner (B); d, area between maxillipeds and first pair of legs, ventral (B); e, endopod of leg 1, anterior (C); f, endopod of leg 2, anterior (C); g, endopod of leg 3, anterior (C); h, leg 5, dorsal (D); i, leg 6, ventral (B); j, spermatophores attached to ♀, dorsal (F).

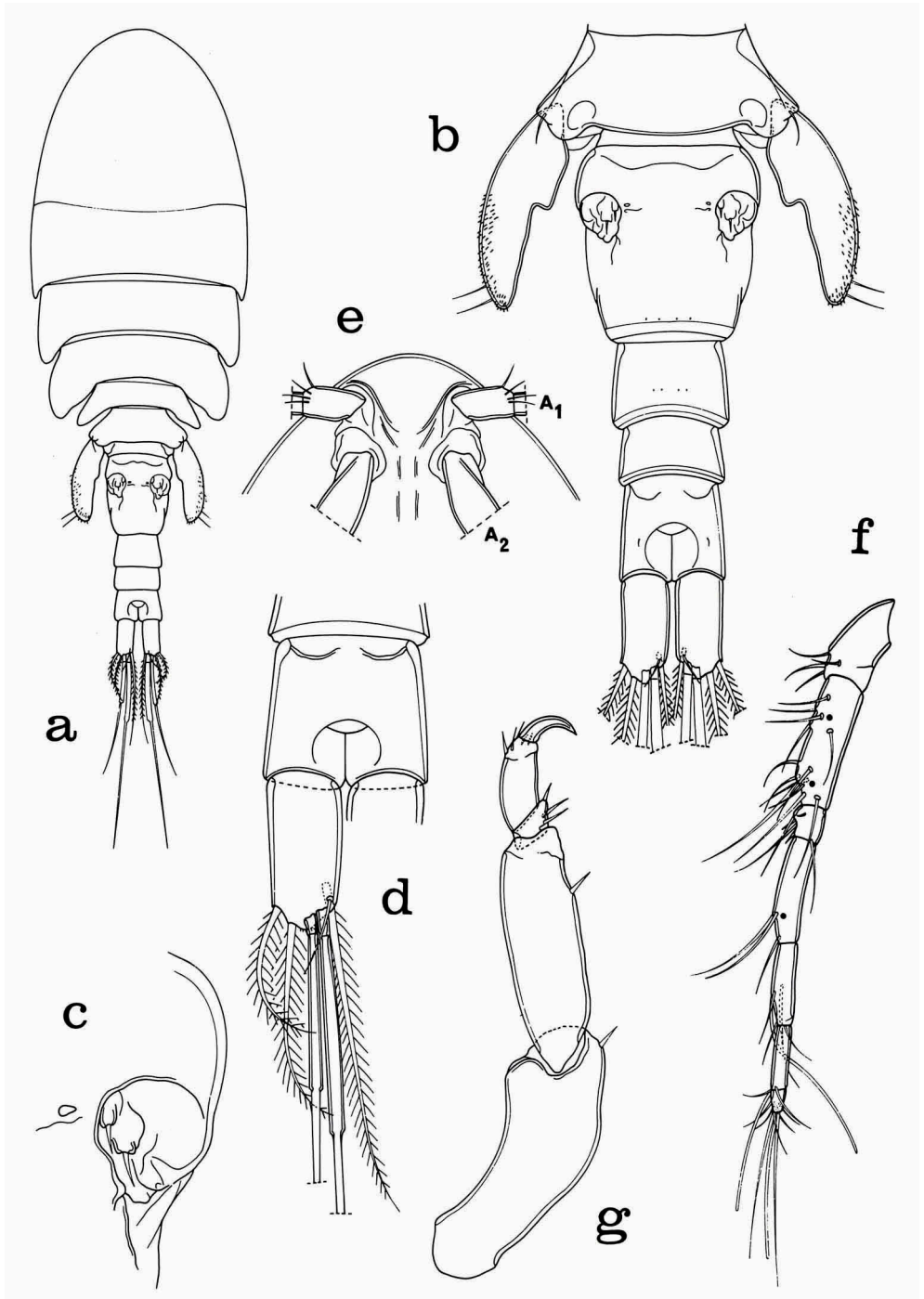

Fig. 89. a-g. *Paramolgus subincisus* spec. nov., ♀. a, dorsal (scale G); b, urosome, dorsal (A); c, genital area, dorsal (C); d, caudal ramus and anal segment, dorsal (E); e, rostrum, ventral (F); f, first antenna, dorsal (A); g, second antenna, anterior (E).

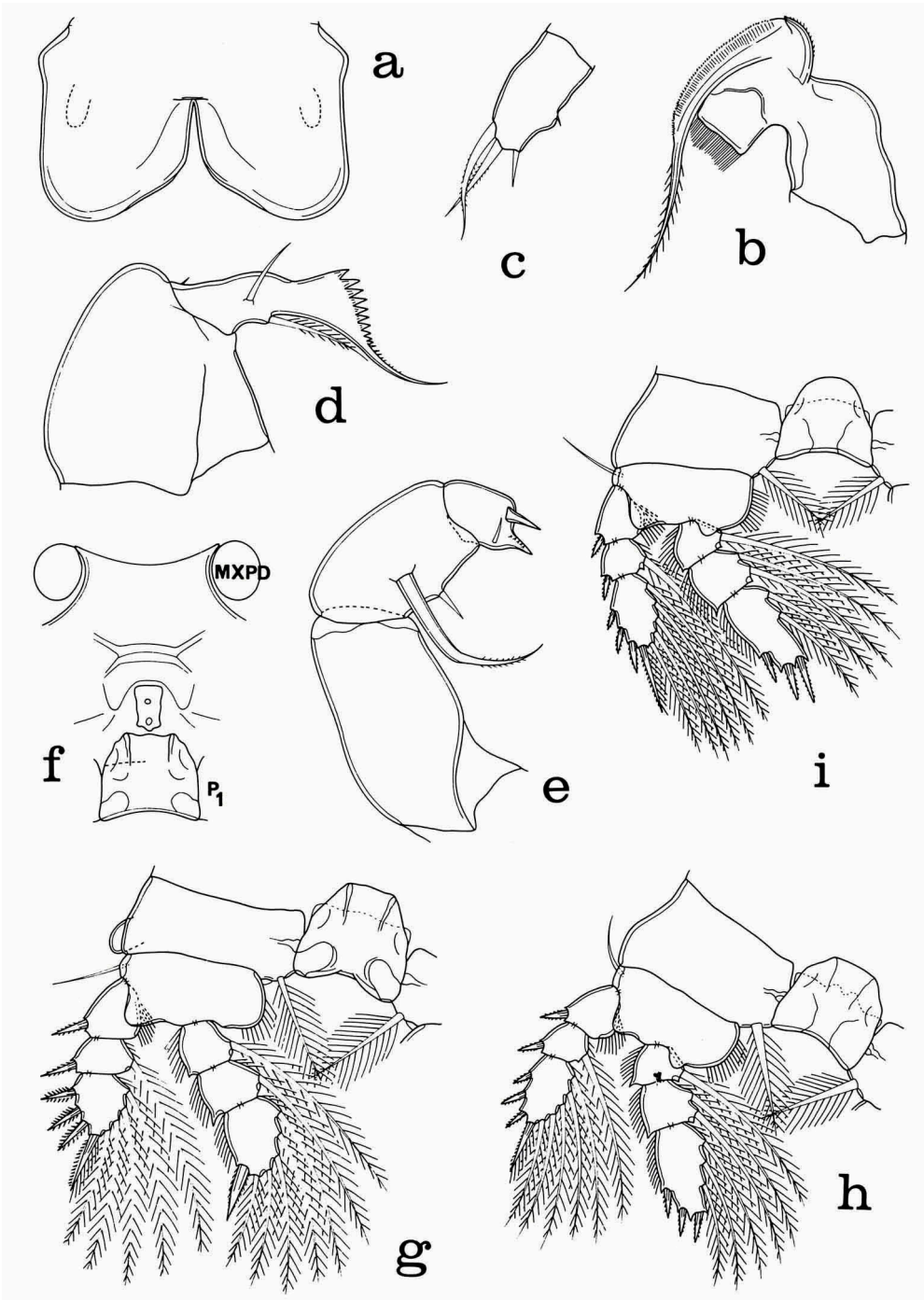

Fig. 90. a-i. *Paramolgus subincisus* spec. nov., ♀. a, labrum, with paragnaths indicated by broken lines, ventral (scale B); b, mandible, anterior (B); c, first maxilla, posterior (B); d, second maxilla, posterior (B); e, maxilliped, posterior (B); f, area between maxillipeds and first pair of legs, ventral (A); g, leg 1 and intercoxal plate, anterior (A); h, leg 2 and intercoxal plate, anterior (A); i, leg 3 and intercoxal plate, anterior (A).

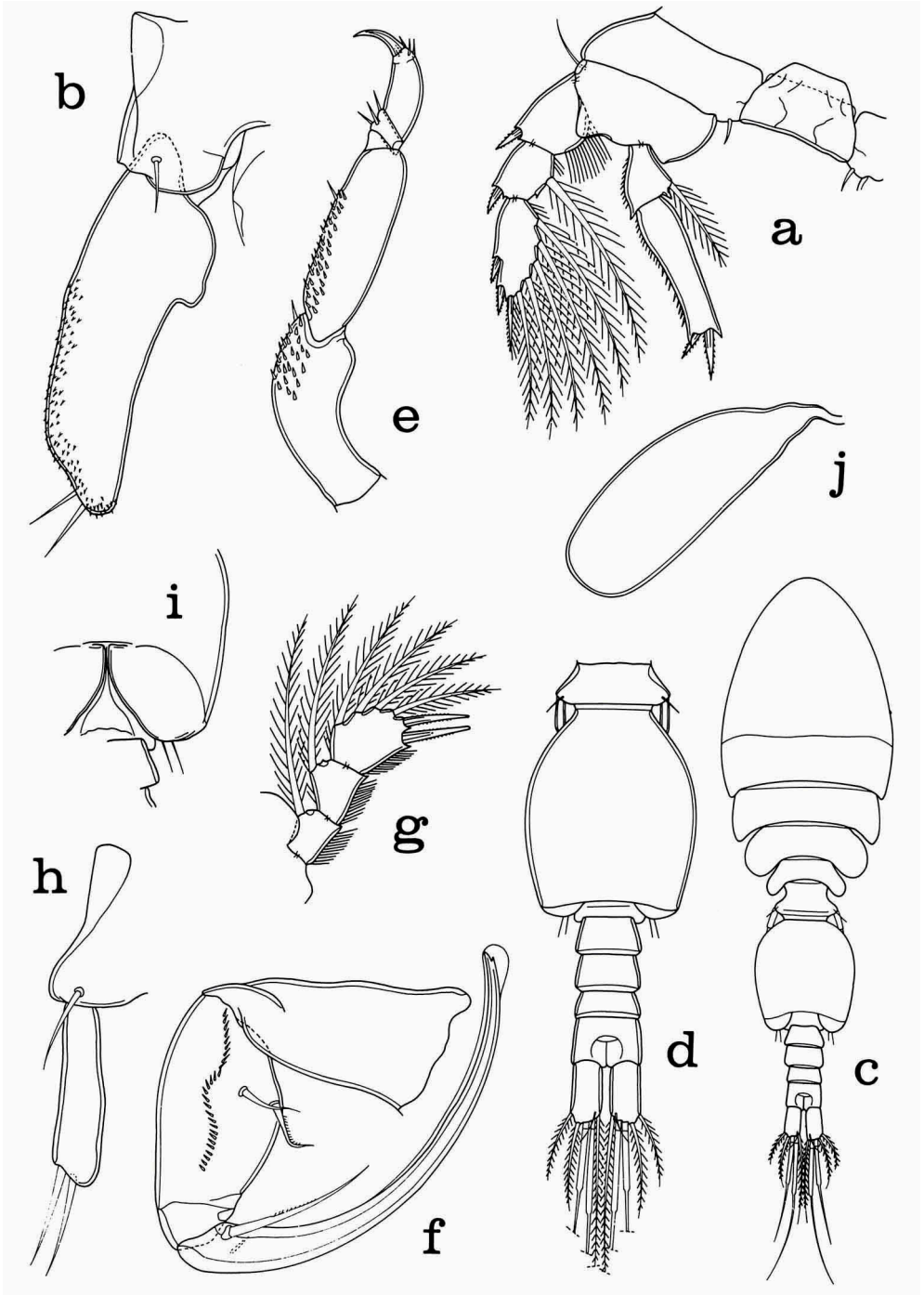

Fig. 91. a-j. *Paramolgus subincisus* spec. nov., ♀. a, leg 4 and intercoxal plate, anterior (scale A); b, leg 5, dorsal (E). ♂. c, dorsal (G); d, urosome, dorsal (F); e, second antenna, anterior (E); f, maxilliped, inner (E); g, endopod of leg 1, anterior (E); h, leg 5, dorsal (D); i, leg 6, ventral (A); j, spermatophore, attached to ♀, ventral (A).

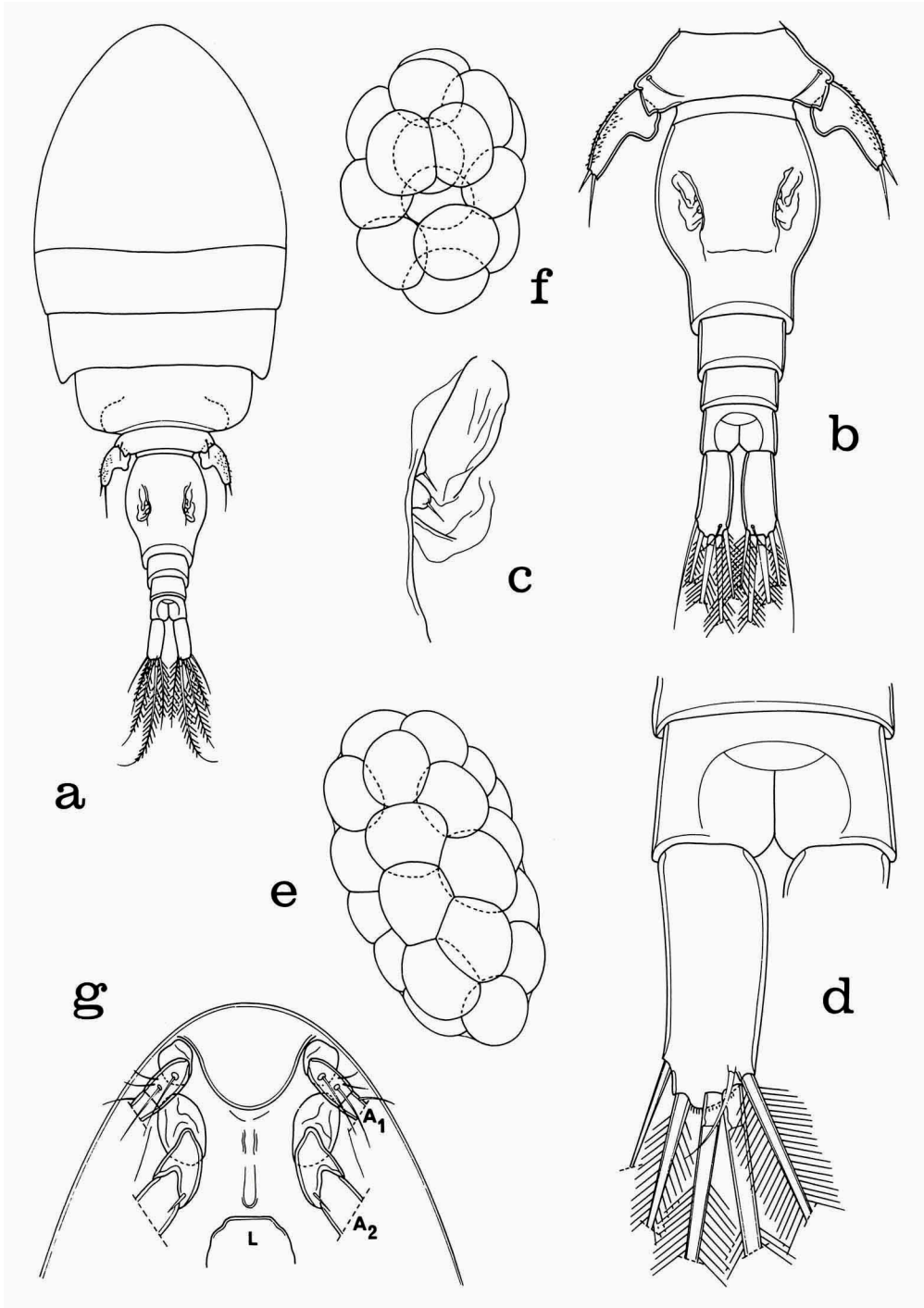

Fig. 92. a-g. *Paramolgus timendus* spec. nov., ♀. a, dorsal (scale H); b, urosome, dorsal (F); c, genital area, dorsal (C); d, caudal ramus and anal segment, dorsal (B); e, egg sac, dorsal (F); f, egg sac, dorsal (F); g, rostrum, ventral (F).

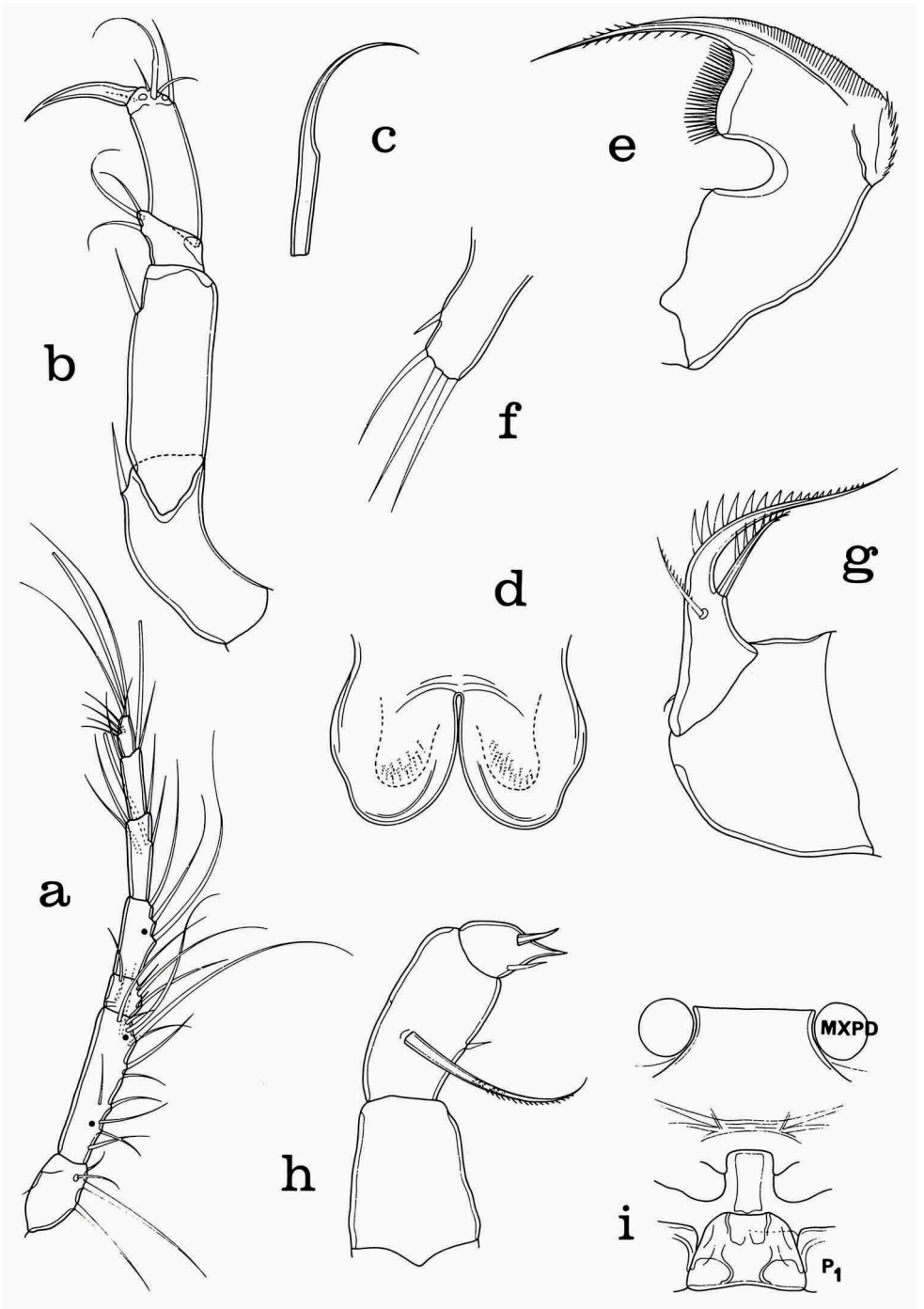

Fig. 93. a-i. *Paramolgus timendus* spec. nov., ♀. a, first antenna, dorsal (scale A); b, second antenna, anterior (E); c, long seta near claw on second antenna, anterior (E); d, labrum, with paragnaths indicated by broken lines, ventral (B); e, mandible, posterior (C); f, first maxilla, ventral (C); g, second maxilla, posterior (B); h, maxilliped, posterior (B); i, area between maxillipeds and first pair of legs, ventral (A).

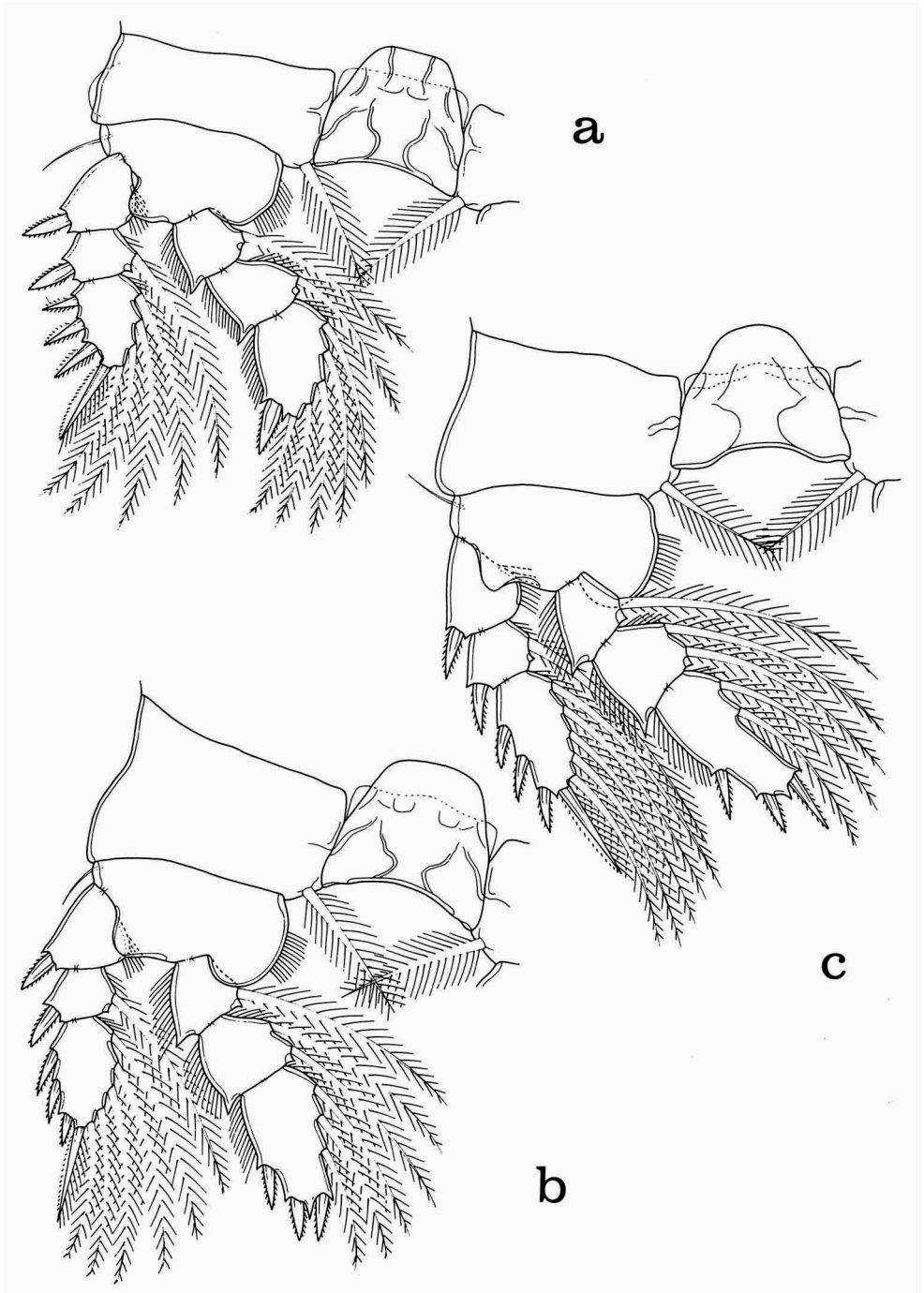

Fig. 94. a-c. *Paramolgus timendus* spec. nov., ♀. a, leg 2 and intercoxal plate, anterior (scale E); b, leg 2 and intercoxal plate, anterior (E); c, leg 3 and intercoxal plate, anterior (E).

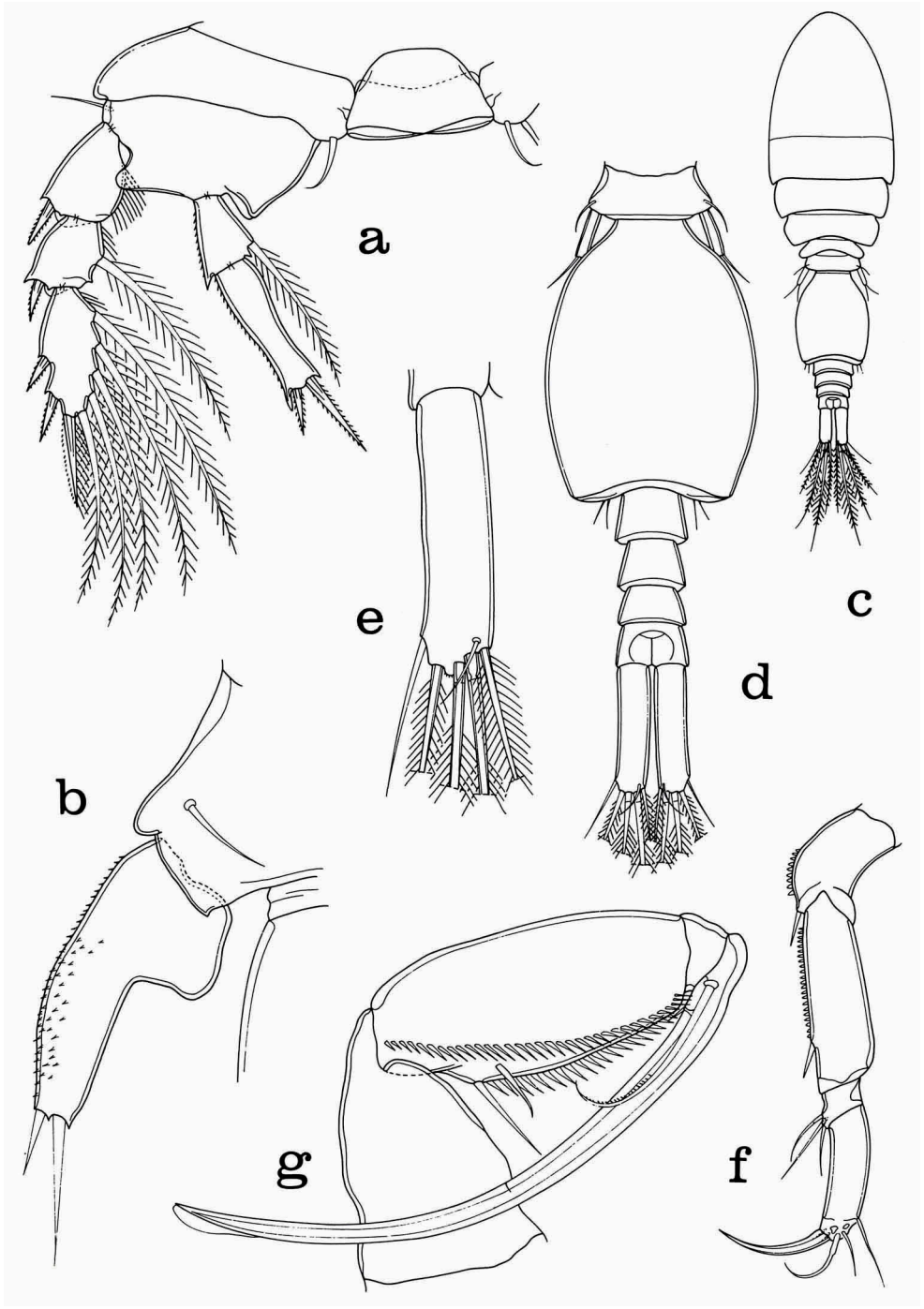

Fig. 95. a-g. *Paramolgus timendus* spec. nov,. ♀. a, leg 4 and intercoxal plate, anterior (scale E); b, leg 5, dorsal (B). ♂. c, dorsal (H); d, urosome, dorsal (A); e, caudal ramus, dorsal (B); f, second antenna, anterior (E); g, maxilliped, inner (B).

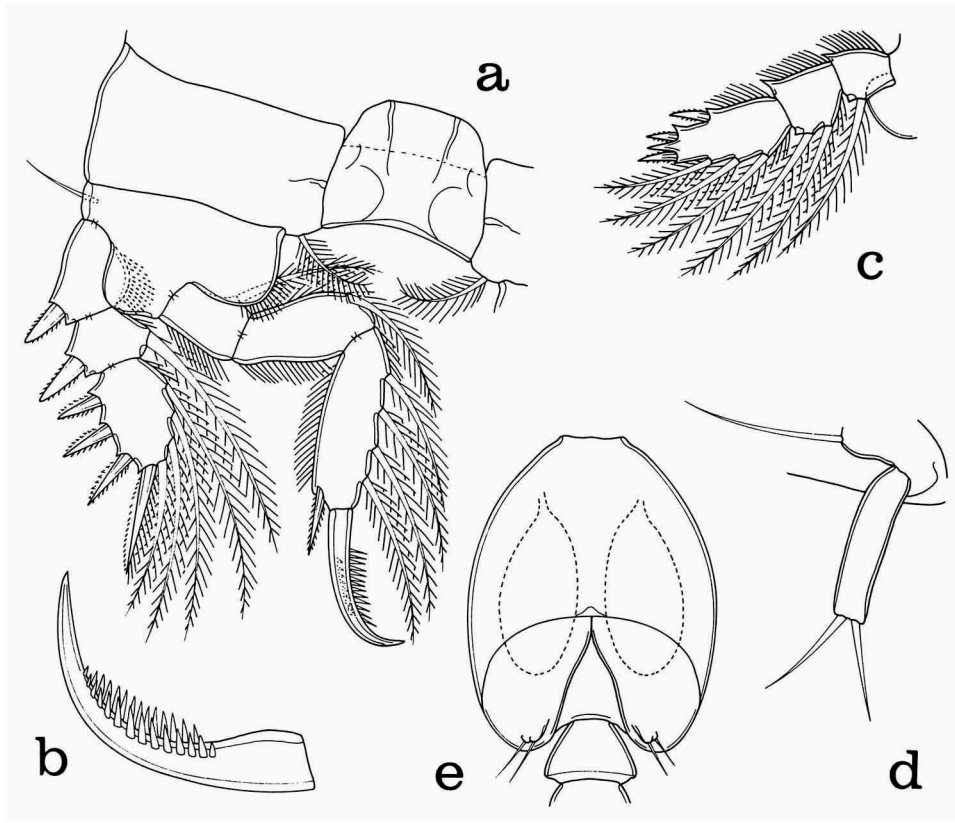

Fig. 96. a-e. *Paramolgus timendus* spec. nov., ♂. a. leg 1 and intercoxal plate, anterior (scale B); b, claw on third segment of endopod of leg 1, posterior (D); c, endopod of leg 2, anterior (E); d, leg 5, lateral (C); e, genital segment and leg 6, ventral (A).

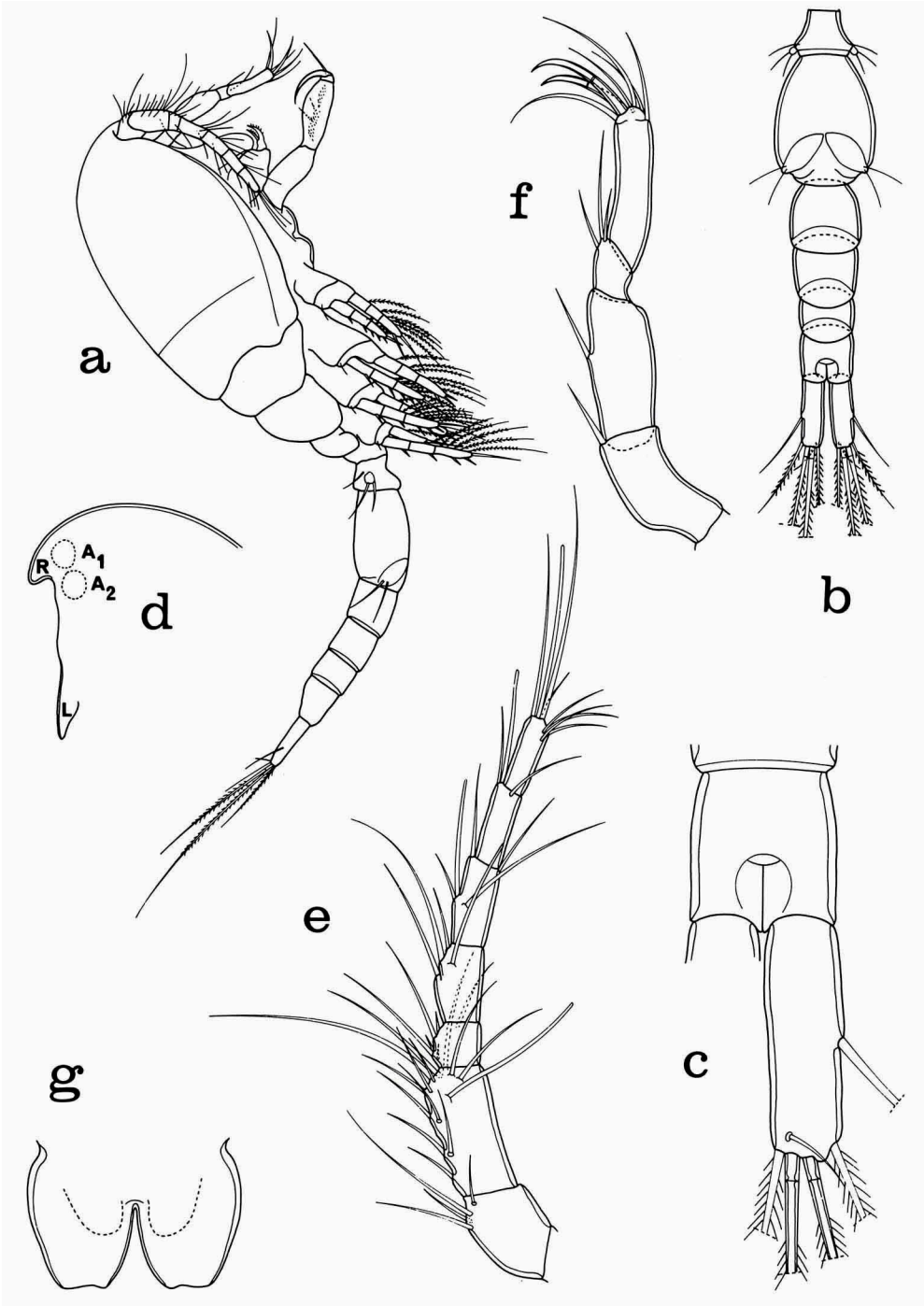

Fig. 97. a-g. *Telestacicola lobophyti* spec. nov., ♂. a, lateral (scale A); b, urosome, ventral (E); c, caudal ramus and anal segment, dorsal (D); d, outline of rostrum and labrum, lateral (A); e, first antenna, ventral (C); f, second antenna, posterior (C); g, labrum, with paragnaths indicated by broken lines, ventral (C).

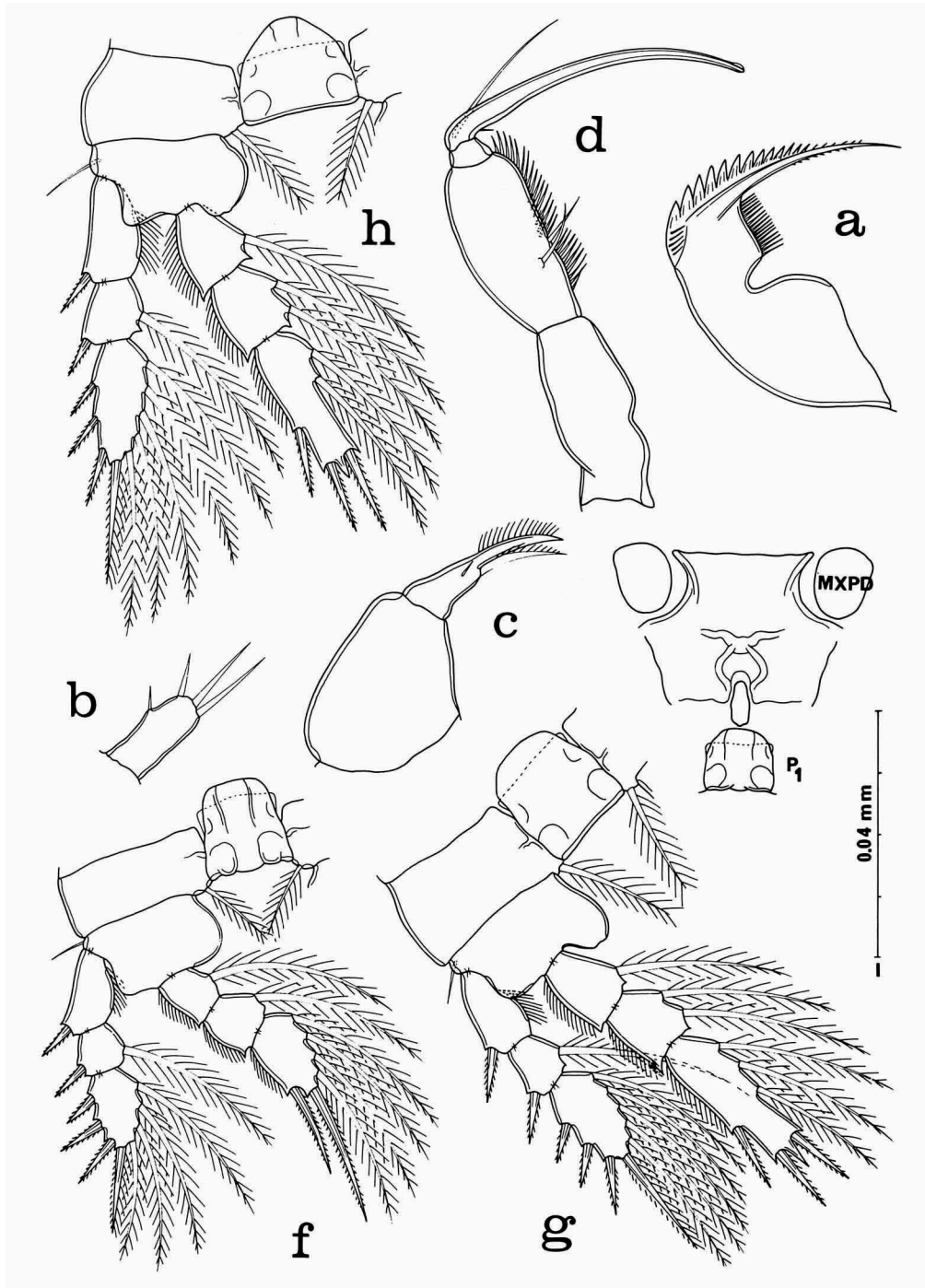

Fig. 98. a-h. *Telestacicola lobophyti* spec. nov., ♂. a, mandible, posterior (scale I); b, first maxilla, anterior (D); c, second maxilla, posterior (D); d, maxilliped, outer (C); e, area between maxillipeds and first pair of legs, ventral (B); f, leg 1 and intercoxal plate, anterior (C); g, leg 2 and intercoxal plate, anterior (C); h, leg 3 and intercoxal plate, anterior (C).

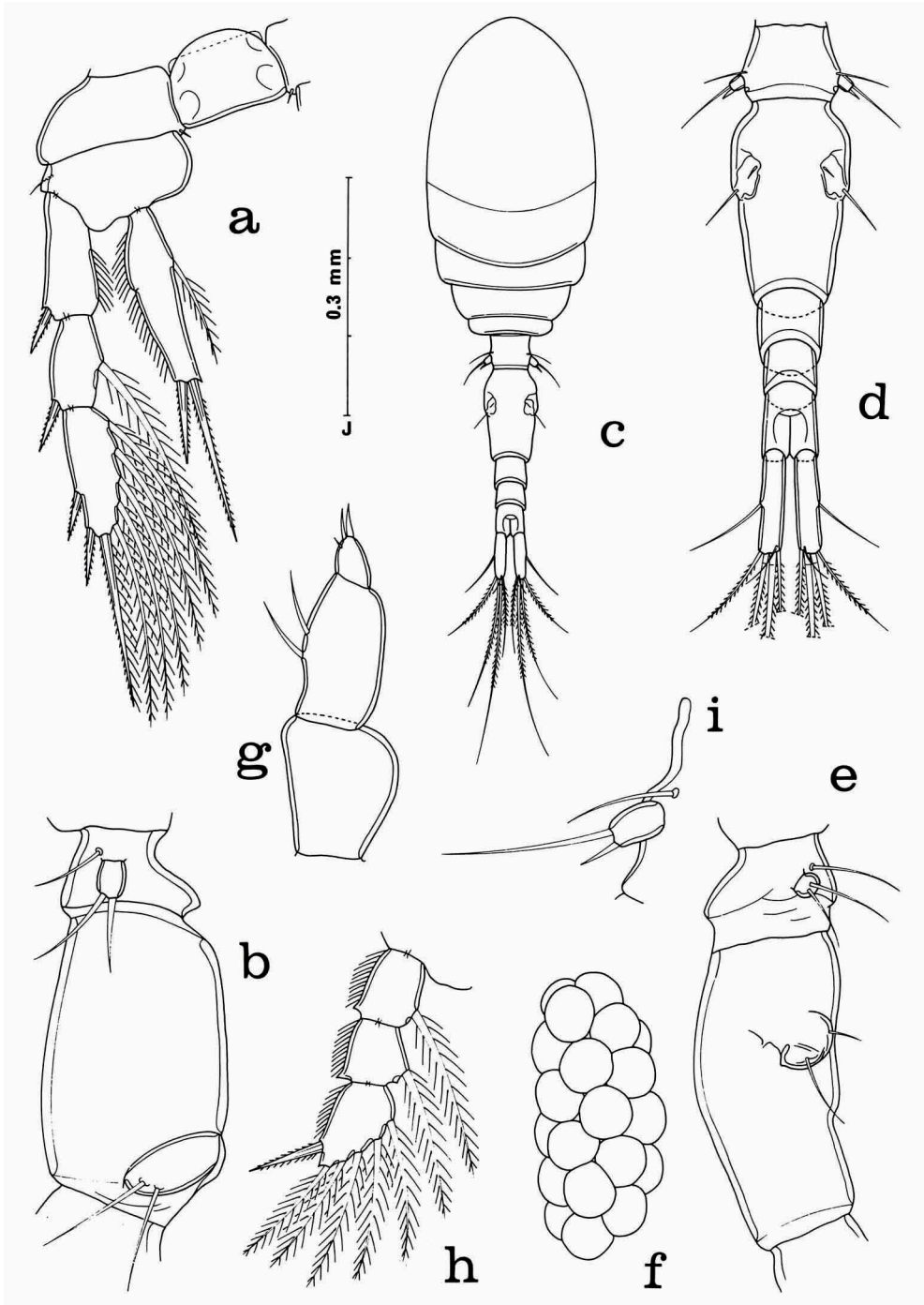

Fig. 99. a-i. *Telestacicola lobophyti* spec. nov., ♂. a, leg 4 and intercoxal plate, anterior (scale C); b, segment bearing leg 5 and genital segment with leg 6, lateral (J). ♀. c, dorsal (F), d, urosome, dorsal (E); e, segment bearing leg 5 and genital segment, lateral (B); f, egg sac, ventral (A); g, maxilliped, posterior (D); h, endopod of leg 1, anterior (C); i, leg 5, dorsal (D).

Index to species included in this work
(* = new taxon, H = new host, and R = new record)