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## Copepods of the Family Chondracanthidae Parasitic on Australian Marine Fishes

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### Abstract

Three species of chondracanthid copepods are described from Australian marine fishes. They are *Acanthochondria diastema* Kabata, 1965 from *Platycephalus* sp.; *Lagochondria nana* gen. & sp. nov. from *Callionymus* sp.; and *Apodochondria medusae* gen. & sp. nov. from *Neosebastes pandus*. The first and last species were found in the collection of the South Australian Museum and the second species was collected from the Arafura Sea.

### Introduction

Seven species of chondracanthid copepods have been reported from marine fishes of Australia, including three species of *Acanthochondria* (cf. Heegaard 1940, 1962; Kabata 1965; Ho 1973) and one species each of *Neobrachiochondria* (cf. Kabata 1969), *Pseudacanthocanthopsis* (cf. Ho and Dojiri 1976), *Pseudoblias* (cf. Heegaard 1962; Kabata 1969), and *Pterochondria* (cf. Ho 1973; Hooper 1983). The second largest genus of the family, *Chondracanthus*, consisting of 38 species, has not yet been reported from Australia. This meagre record of the Chondracanthidae, particularly in view of the family comprising more than 150 species, indicates that many Australian chondracanthids are yet to be discovered and described.

We describe three chondracanthid species, one of which was collected by the first author from the Arafura Sea (during the *Alpha Helix* East Asian Bioluminescence Expedition) and the other two were sent to us from the South Australian Museum.

### Descriptions

#### *Acanthochondria diastema* Kabata

(Figs 1-29)

#### Material Examined

Six females (4 with attached males) from 'gills' of a flathead, *Platycephalus* sp. In collection of South Australian Museum (SAM C4155).

#### Female

Body (Figs 1, 2) divided into head, elongate neck, and stout trunk. Total length 9·33 mm (8·34-10·18 mm) (including posterior process) based on 3 specimens. Head (Figs 3-5) without processes, but with rounded posterolateral corners, about as long as wide, 0·93 × 0·93 mm, and bearing medial longitudinal sclerotised ridge with transverse sclerite at about midlength on slightly raised dorsal surface. Posteroventral portion of head protuberant and having mouthparts at posterior margin. Neck long and slender, and indistinguishably fused to

trunk, combined  $7.95 \times 1.26$  mm. Leg 1 located  $0.22$  mm ( $0.21$ – $0.23$  mm) posterior to head; legs 1 and 2 separated from each other by  $2.10$  mm ( $1.70$ – $2.63$  mm) and constriction. Trunk relatively stout, narrow at anterior portion, constricted at about midlength and slightly wider posteriorly; posterior process extending beyond distal limit of genito-abdomen. Genito-abdomen (Fig. 6) wider than long,  $0.32 \times 0.36$  mm; genital complex with pair of setae on midventral surface; abdomen small, with rounded posterior margin. Caudal ramus (Fig. 6) longer than wide,  $55 \times 18$   $\mu$ m, bearing 3 setae on swollen basal portion and numerous spinules at tip. Pair of vermiform processes located on posteroventral surface of trunk near junction with genito-abdomen; left process slightly larger than right, with male attached to former. Egg sacs (Fig. 8) cylindrical,  $3.52 \times 0.82$  mm, with multiseriate arrangement of eggs.

First antenna (Fig. 9) cylindrical and divisible into 2 portions; first long and rather stout bearing 4 inflated setae; second much shorter and slightly narrower than first portion and bearing 13 setae (1 anterior, subterminal seta balloon-like with minute papilla at tip). Second antenna (Fig. 10) 2-segmented; first segment heavily sclerotised and unarmed; second segment a strongly curved claw with minute seta (S in Fig. 10) on medial surface of base. Labrum (Fig. 11) with patch of spinules on each posterolateral corner and 2 or 3 rows of spinules on posteromedial margin. Mandible (Fig. 12) with 21–22 teeth on convex side and 29–36 teeth on concave side of terminal falcate process. Paragnath (Fig. 13) trilobed with setules on 1 lobe. First maxilla (Fig. 14) a lobe with 2 setae (larger seta with 1 row of bristles), and 1 medial rounded process. Second maxilla (Fig. 15) 2-segmented; first segment greatly swollen and unarmed; terminal segment with 2 unequal setae near base and minutely spinulated ridge; one specimen with accessory tooth near tip (Fig. 15), others with bluntly rounded tip (Fig. 16). Maxilliped (Figs 17, 18) 3-segmented; first segment largest and bearing bilobed, hyaline process on anteromedial surface; second segment with patch of spinules on segment proper and row of spinules on rounded process; terminal segment ending in curved claw with accessory process. Leg 1 (Fig. 19) slightly larger than leg 2 (Fig. 20); both legs bilobate with exopod stouter than endopod; protopodal setae on lateral margin of both legs.

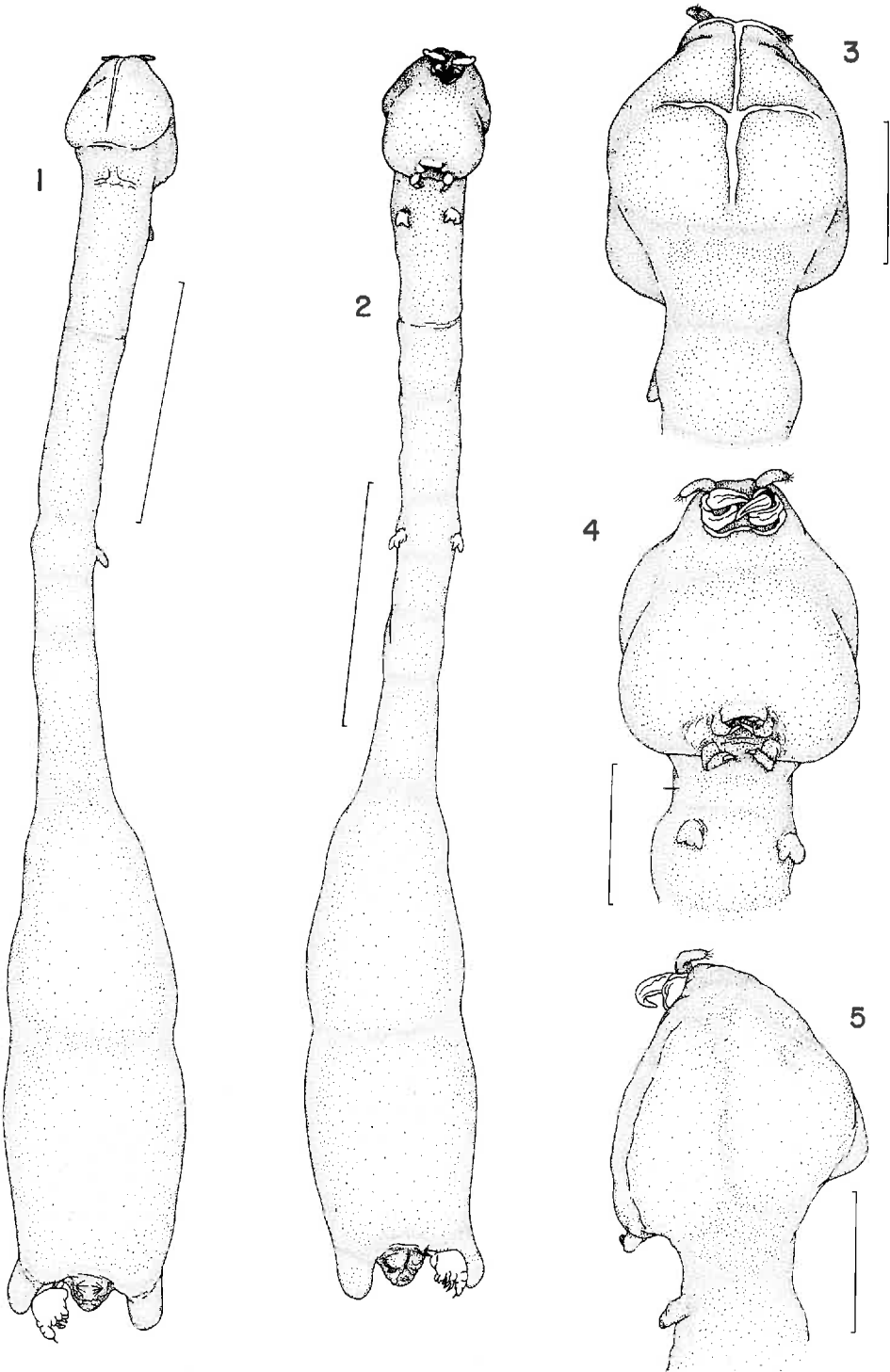
### Male

Body (Fig. 21)  $630$ – $680 \times 202$ – $216$   $\mu$ m (measured from tip of second antenna to distal end of urosome, excluding caudal ramus); metamerism of body indistinct. Genital complex with pair of ventral ridges without setae (Fig. 22). Caudal ramus (Fig. 22) as in female except tip with attenuated accessory process.

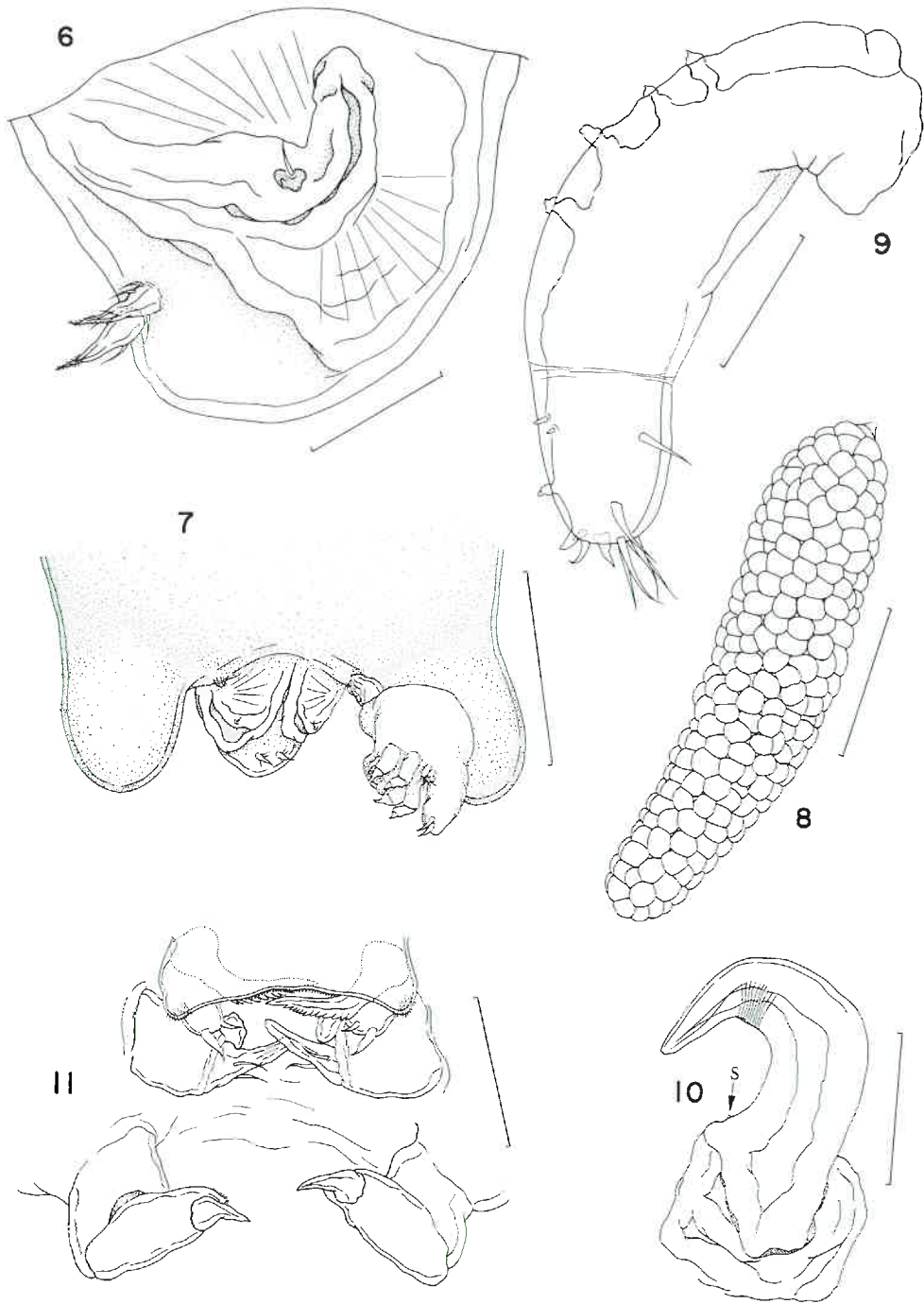
First antenna (Fig. 23) with formula 1,1,2,2, and 7 + 1 aesthete. Second antenna (Fig. 24) with conical hyaline seta on dorsomedial surface of first segment; terminal claw with small hyaline process (H in Figs 24, 25) on lateral margin near base and 2 setae on medial surface; a rounded knob (R in Fig. 25) present on ventral surface of claw. Mandible (Fig. 26) with 16–17 teeth on convex side and 18–19 teeth on concave side. Terminal segment of second maxilla (Fig. 27) without spinulated ridge. Leg 1 (Fig. 28) with lateral protopodal seta; exopod with 3 terminal elements; endopod represented by conical or digitiform process. Leg 2 (Fig. 29) similar to leg 1, except 1–2 elements on exopod.

### Remarks

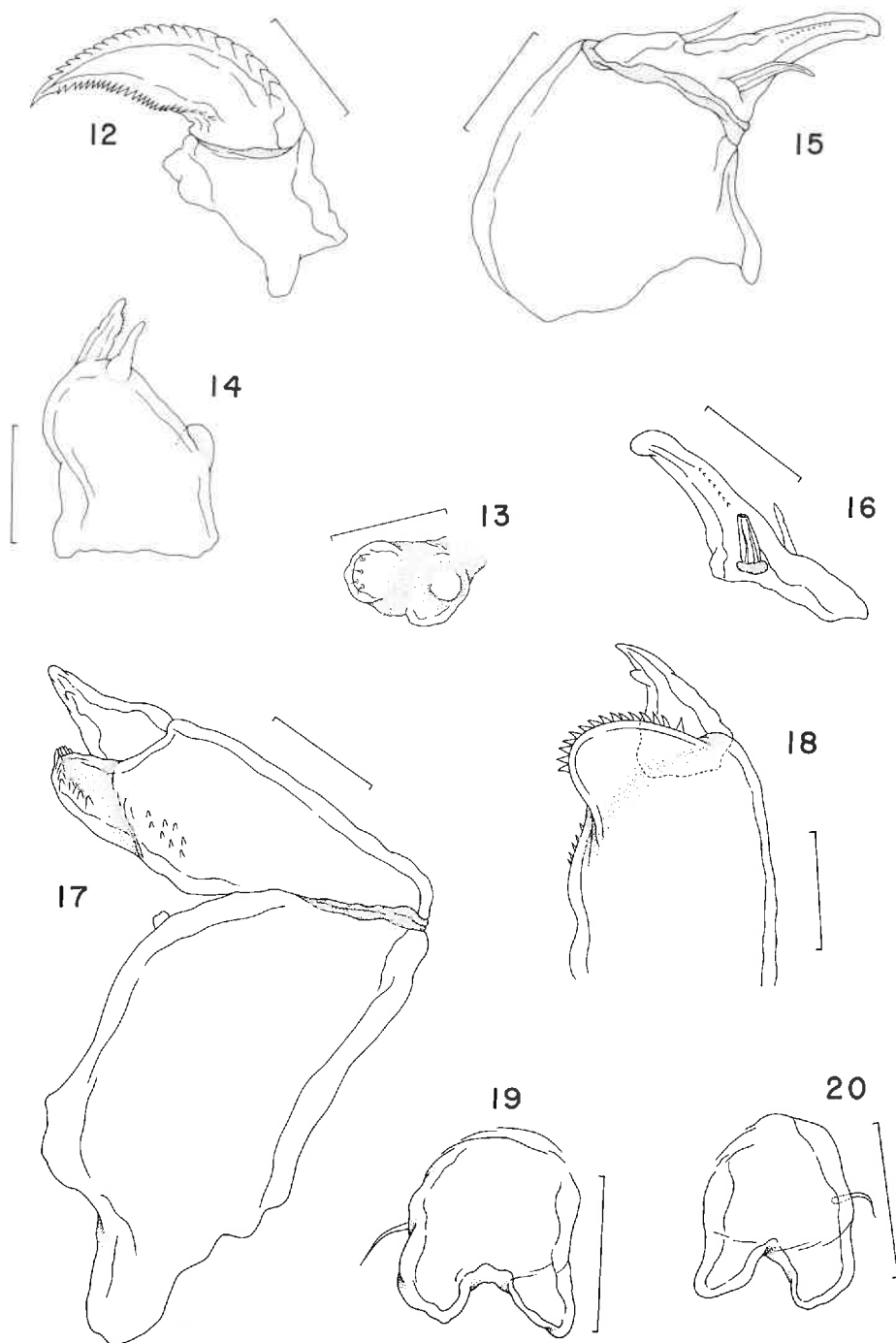
First described by Kabata (1965) based on one non-ovigerous (pre-adult) female from the gills of *Platycephalus bassensis* Cuvier and Valenciennes collected at Hobart, Tasmania, Ho (1973) considered that *Acanthochondria diastema* was a junior synonym of *Pterochondria atatalongicollis* Heegaard, 1940. Since both copepods possessed similar morphology (elongate neck and relatively slender trunks), and were collected from the same host species from the same general locality, Ho (1973) concluded that the two pairs of processes on the head of *P. atatalongicollis* were absent from the single female specimen described as *A. diastema*



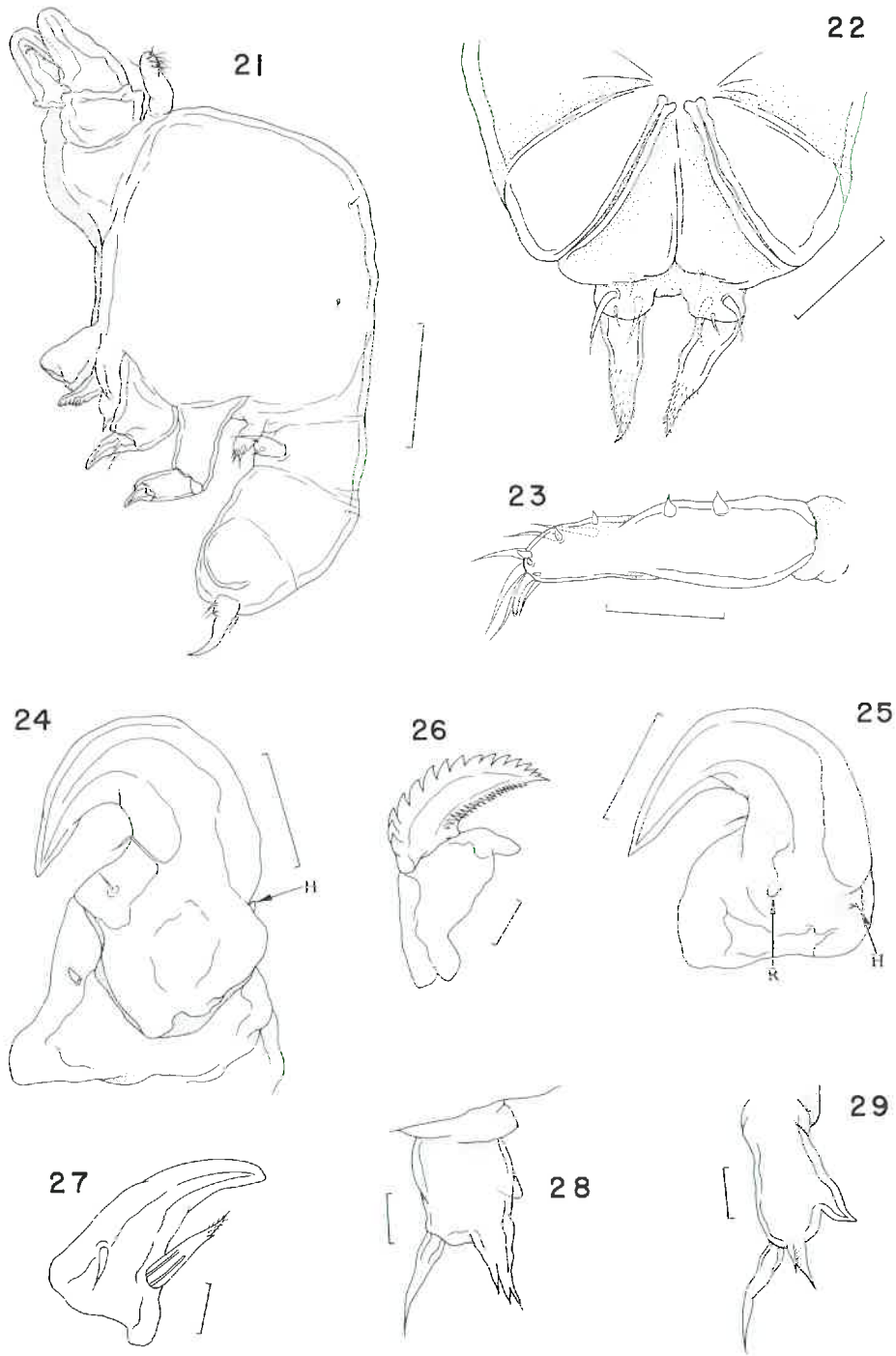
Figs 1-5. *Acanthochondria diastema* Kabata, female: 1, body, dorsal; 2, body, ventral; 3, head, dorsal; 4, head, ventral; 5, head, lateral. Scales: 2 mm in 1, 2; 0.5 mm in 3-5.



Figs 6-11. *Acanthochondria diastema* Kabata, female: 6, genito-abdomen, lateral; 7, posterior end of trunk with attached male, ventral; 8, egg sac, ventral; 9, first antenna, ventral; 10, second antenna, anterodorsal (S=minute seta); 11, mouth parts, ventral. Scales: 0.1 mm in 6, 10, 11; 0.5 mm in 7; 1 mm in 8; 0.05 mm in 9.



**Figs 12-20.** *Acanthochondria diastema* Kabata, female: 12, mandible, dorsal; 13, paragnath, medial; 14, first maxilla, anteromedial; 15, second maxilla, dorsal; 16, terminal process of second maxilla, ventral; 17, maxilliped, medial; 18, distal portion of maxilliped, anterior; 19, leg 1, ventral; leg 2, ventral. Scales: 0.03 mm in 12-18; 0.1 mm in 19, 20.



Figs 21-9. *Acanthochondria diastema* Kabata, male: 21, body, lateral; 22, posterior end of urosome, ventral; 23, first antenna, dorsal; 24, second antenna, dorsal; 25, second antenna, ventral (H=hyaline process; R=rounded knob); 26, mandible, dorsal; 27, terminal process of second maxilla, dorsal; 28, leg 1, anterior; 29, leg 2, anterior. Scaies: 0.1 mm in 21; 0.03 mm in 22-5; 0.01 mm in 26-9.

simply because it was immature. With the discovery of ovigerous specimens of *A. diastema*, this species can no longer be considered synonymous with *P. alatalongicollis*.

This is the only species of *Acanthochondria* with a neck longer than half of its body length.

Genus **Lagochondria**, gen. nov.

*Type species: Lagochondria nana*, sp. nov.

*Female*

Head consisting of cephalosome only, with a pair of dorsally directed anterior processes. Neck short, consisting of first pediger. Trunk inflated, with a pair of divergent posterior processes. Abdomen imperceptibly fused with genital complex. Caudal ramus bearing 3 basal setae. Egg sac cylindrical, eggs multiserially arranged. First antenna modified, claviform. Second antenna uncinata, with atrophied tip of antenna (=accessory antennule). Oral appendages of typical chondracanthid form. Legs 1 and 2 unmodified, biramous; rami with indistinct segmentation.

*Male*

Body less modified than most chondracanthids. Pedigers 1 and 2 not fused with cephalosome. Abdomen distinguishable from genital complex. Caudal ramus bearing 4 basal setae. First antenna with sharply divided thick basal and slender distal portions. Second antenna uncinata, with atrophied tip of antenna. Oral appendages basically as in female. Legs 1 and 2 large, unmodified, and biramous.

*Etymology*

The generic name is a combination of the Greek words *lago* (=hare) and *chondria* (=cartilage, used as suffix in many genera of Chondracanthidae). It alludes to the dorsally directed cephalic processes resembling rabbit's ears.

*Lagochondria nana*, sp. nov.

(Figs 30–52)

*Material Examined*

One female holotype (SAM C4160), 1 female paratype (SAM C4161) and 2 females (dissected) (all with attached males) from *Callionymus* sp. collected at 10°43'S., 139°44'E. (depth 55 m) on 16 March 1975 in the Arafura Sea by J. S. Ho.

*Female*

Body (Figs 30–32) divided into head, short neck, and relatively stout trunk. Total length 1.57 mm (1.51–1.61 mm) (including cephalic processes) based on 4 specimens. Head (Figs 30, 32) with pair of anterolateral processes, measuring 0.90 mm (0.86–0.93 mm) × 0.97 mm (0.93–1.00 mm) (excluding cephalic processes); oral area protuberant. Neck indistinguishably fused to trunk. Leg 1 on anteroventral region of neck near junction with head. Leg 2 on ventral surface near junction of neck and trunk. Trunk inflated, bearing pair of posterolateral processes; trunk and neck combined 1.11 mm (1.05–1.14 mm) × 0.71 mm (0.69–0.72 mm) (width including posterolateral processes); width of trunk excluding processes 0.48 mm (0.45–0.52 mm). Genito-abdomen (Fig. 33) situated on peduncle originating from posterior margin of trunk, and measuring 0.14 mm (0.13–0.15 mm) × 0.14 mm (0.13–0.16 mm). Genital complex (Fig. 33) with pair of midventral elements and pair of dorsal setules; abdomen small, with rounded posterior margin. Caudal ramus (Fig. 33) with 3 setae at base, a bulbous midsection, and a setiform distal portion. Egg sacs (Figs 30–32) with multiseriate arrangement of eggs.



First antenna (Figs 34, 35) claviform (slender base and widest near midsection; see Kabata 1984); armature formula of 2, 1 (or 1 + knob), 3, 1, 1, 4, 3, and 7. Second antenna (Fig. 36) 2-segmented; first segment heavily sclerotised, bearing 1 dorsomedial seta; second segment a claw with relatively long atrophied tip of antenna bearing 4 or 5 setae. Labrum (Fig. 37) with reentrant posterior margin; medial area incised at midline forming 2 broadly rounded flaps; dorsolateral area of each flap with small rounded process. Mandible (Fig. 38) with 13 teeth on convex side and 9–10 teeth on concave side of terminal falcate process. First maxilla (Fig. 39) with patch of spinules, 1 small and 2 large setae. Second maxilla (Fig. 40) 2-segmented; first segment robust and unarmed; second segment a pointed, naked process with 2 setae near base. Maxilliped (Fig. 41) 3-segmented; first segment unarmed; second segment with distal patch of spinules; terminal segment a curved claw bearing sharp accessory process. Leg 1 (Fig. 42) biramous; protopod with lateral seta; exopod with 6 setae; endopod bearing 2 setae. Leg 2 (Fig. 43) similar in shape to leg 1, but exopod with 5 setae and endopod with 4 (2 in other specimens).

#### Male

Body (Fig. 44) relatively slender, 283–409 × 76–110  $\mu\text{m}$  (measured from tip of second antenna to distal end of urosome, excluding caudal ramus); metamerism of body indistinct. Genital complex (Fig. 45) with pair of ventral ridges (protuberances). Caudal ramus (Fig. 45) an attenuate process bearing 4 setae (2 lateral, 2 medial).

First antenna (Fig. 46) with thick basal portion bearing anteroventral process (AVP) and 10 setae; slender distal portion with armature formula of 3, 2, and 7 + 1 aesthete. Second antenna (Figs 46, 47) 2-segmented; first segment with dorsomedial hyaline seta; second segment a claw equipped with a medial hyaline, subspherical element and a relatively large atrophied tip of antenna carrying 4 setae and few spinules. Mandible (Fig. 48) with 13 teeth on convex side and 9 teeth on concave side of falcate process. First maxilla (Fig. 48) a small lobe with 3 naked setae. Second maxilla (Fig. 49) with 3 teeth at distal end of terminal process. Maxilliped (Fig. 50) brachiform and 3-segmented; terminal segment ending in curved claw with accessory process. Legs 1 (Fig. 51) and 2 (Fig. 52) biramous. Armature formula as follows (Roman numerals indicating spines and Arabic numerals setae):

Leg 1:	Protopod 1–0	Exopod	III, I, 4
		Endopod	3
Leg 2:	Protopod 1–0	Exopod	II, I, 4
		Endopod	3

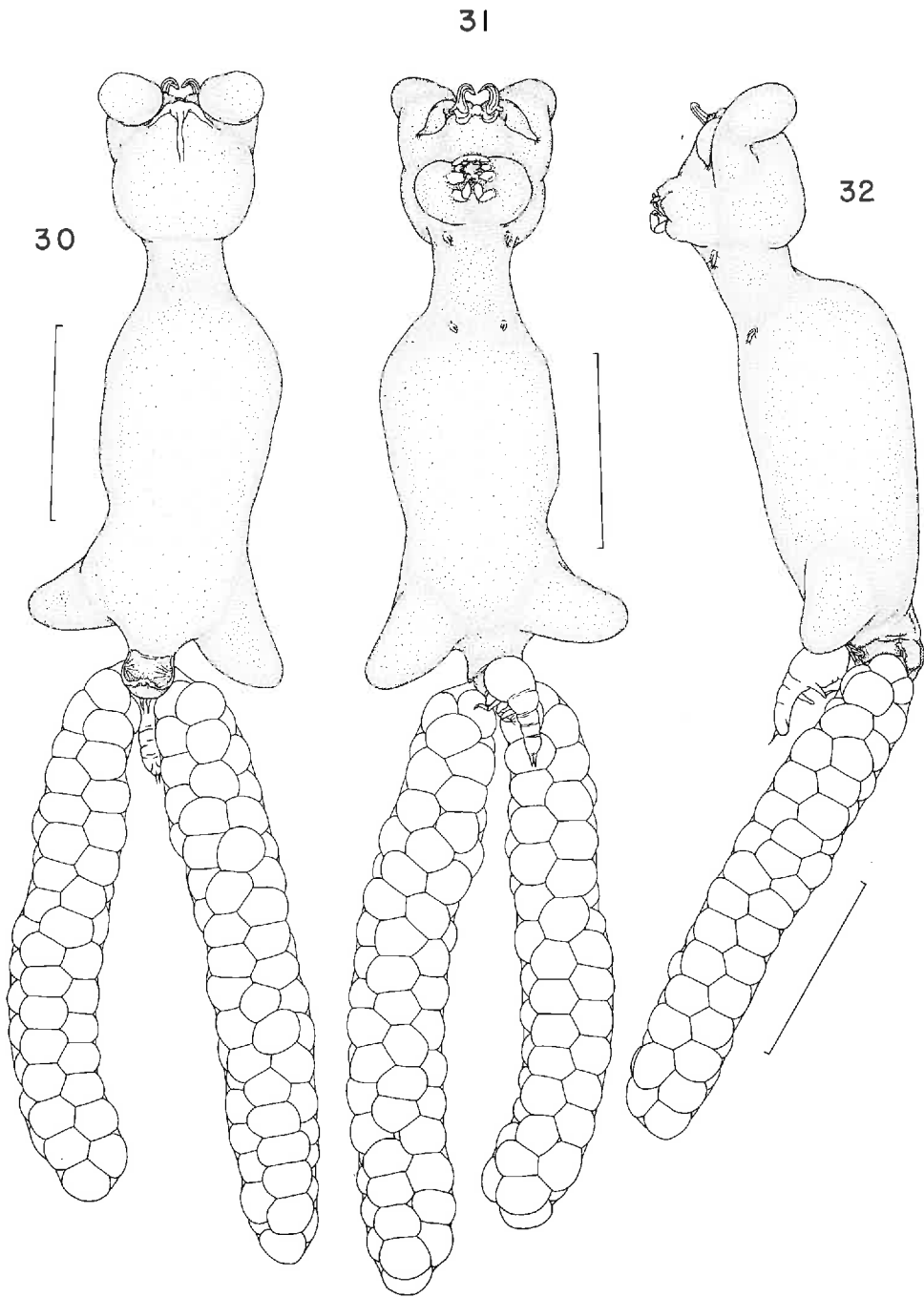
Interpodal plate of both legs a sclerotised bar. Exopodal spines with terminal setiform element (flagellum).

#### Etymology

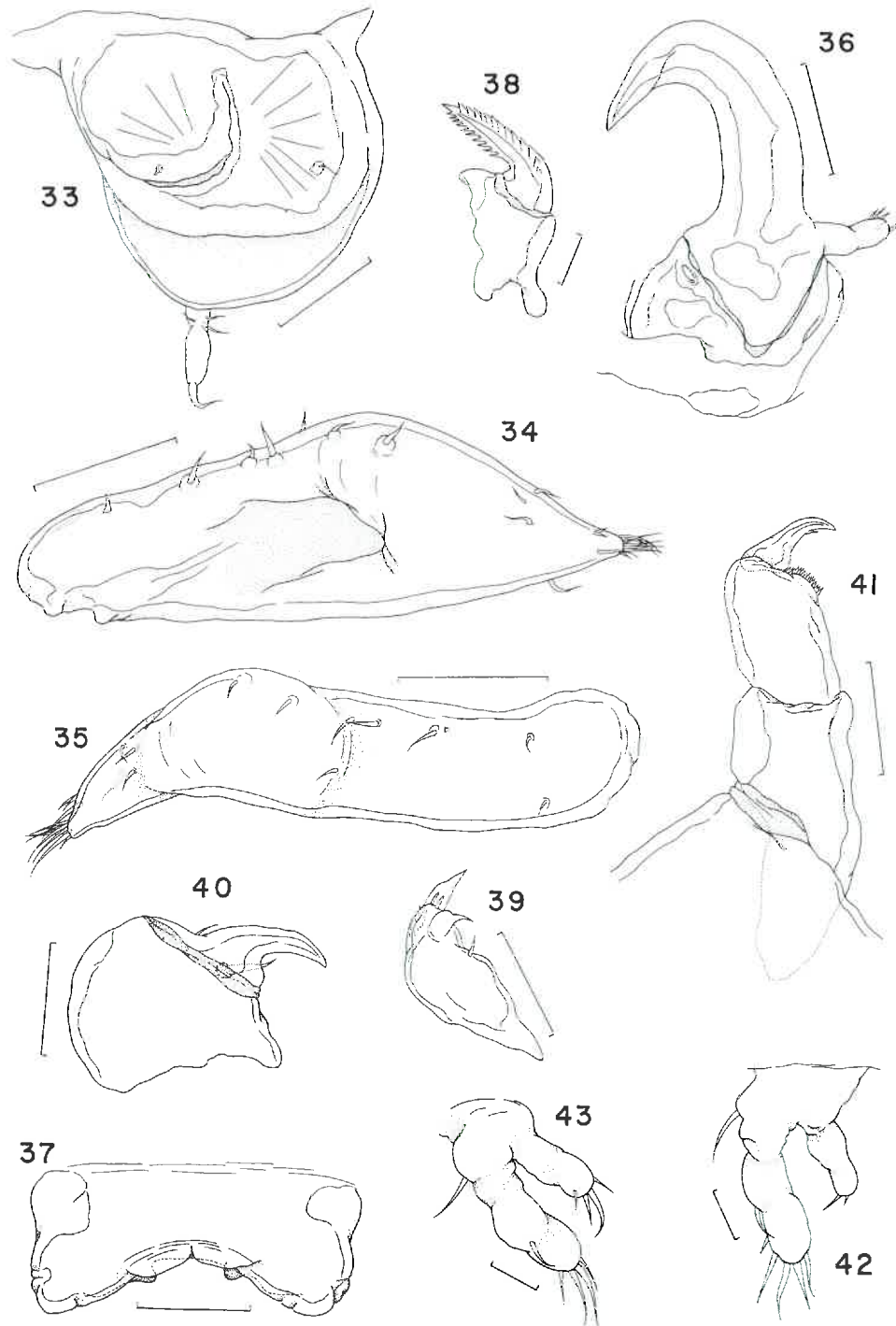
The specific name *nana* is a Latin word for 'dwarf', alluding to the size of this chondracanthid. *Lagochondria nana* is the smallest chondracanthid ever reported.

#### Remarks

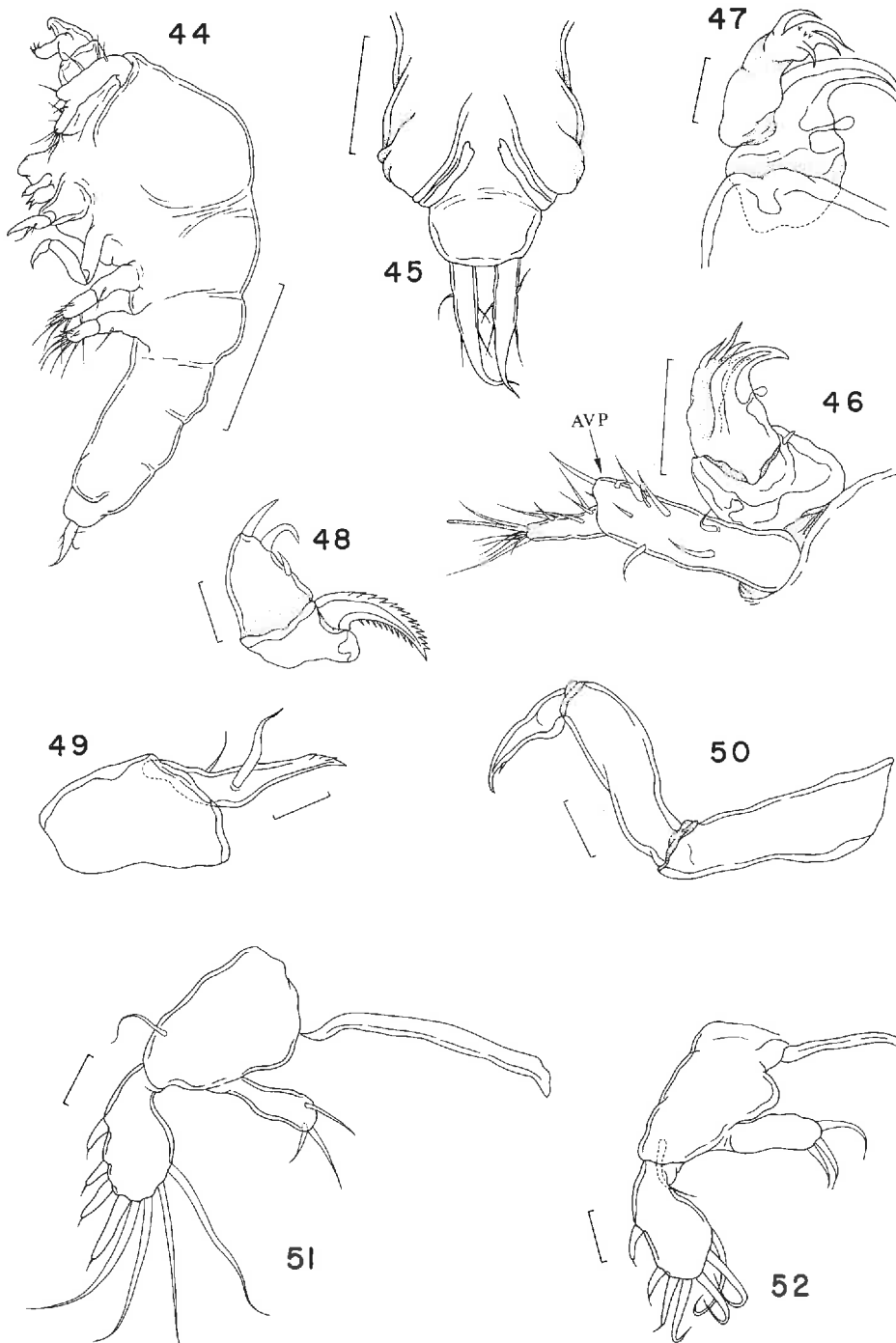
Ho (1984) pointed out that the presence of the atrophied tip of antenna (= accessory antennule) on the second antenna indicated primitiveness in the Chondracanthidae. Six chondracanthid genera have this primitive trait and at the same time bear two pairs of legs in the male as in *Lagochondria*. They are *Humphreysia* Leigh-Sharpe, 1934; *Immanthe* Leigh-Sharpe, 1934; *Neobrachiochondria* Kabata, 1969; *Praecidochondria* Kabata, 1968; *Protochondria* Ho, 1970; and *Pseudacanthocanthopsis* Yamaguti & Yamasu, 1959. However, the new genus can be easily distinguished from these six genera by one or more of the following character states in the females: (1) only one pair of cephalic processes, which are anterolaterally located; (2) neck consisting of first pediger; (3) trunk bearing only a pair



Figs 30-2. *Lagochondria nana*, gen. & sp. nov., female: 30, body, dorsal; 31, body, ventral; 32, body, lateral. Scales: 0.5 mm in 30-2.



Figs 33–43. *Lagochondria nana*, gen. & sp. nov., female: 33, genito-abdomen, lateral; 34, first antenna, anteroventral; 35, first antenna, dorsal; 36, second antenna, dorsal; 37, labrum, ventral; 38, mandible, dorsal; 39, first maxilla, medial; 40, second maxilla, ventral; 41, maxilliped, posterior; 42, leg 1, ventral; 43, leg 2, ventral. Scales: 0.05 mm in 33–5; 0.03 mm in 36, 37, 39–41; 0.01 mm in 38, 42, 43.



**Figs 44-52.** *Lagochondria nana*, gen. & sp. nov., male: 44, body, lateral; 45, posterior end of urosome, ventral; 46, first and second antenna, dorsal (AVP=anteroventral process); 47, second antenna, ventral; 48, mandible and first maxilla, dorsal; 49, second maxilla, dorsal; 50, maxilliped, lateral; 51, leg 1, dorsal; 52, leg 2, ventral. Scales: 0.1 mm in 44; 0.03 mm in 45, 46; 0.01 mm in 47-52.

of posterior processes; (4) legs 1 and 2 present, both reduced but not transformed. Interestingly, all these genera, except *Protochondria*, are so far known only from the western Pacific teleosts.

Genus *Apodochondria*, gen. nov.

*Type species: Apodochondria medusae*, sp. nov.

*Female*

Head large, with many processes. Trunk inflated, with lateral and posterior processes. Genital complex with a pair of ventral globular lobes. Abdomen 2-segmented. Caudal ramus with 5 basal setae. Egg sac cylindrical; eggs multiserially arranged. First antenna filiform, 4-segmented. Second antenna uncinata, bearing an accessory claw. Oral appendages of typical chondracanthid form. Legs absent, except for rudimentary leg 5 located anterior to genito-abdomen.

*Male*

Body only slightly modified. First pediger incompletely incorporated with cephalosome. Metasomal somites large and distinct. Fifth pediger imperceptibly fused with genital complex. Abdomen 1-segmented. Caudal ramus armed with 6 various elements. First antenna 6-segmented. Second antenna uncinata, with atrophied tip of antenna. Oral appendages of typical chondracanthid form, except for reduced maxilliped. Legs 1 and 2 reduced, biramous. Leg 3 a small tubercle tipped with 2 setae.

*Etymology*

The generic name is a combination of the Greek words *a* (= without), *pod* (= leg), and *chondria* (= cartilage, used as suffix in many genera of Chondracanthidae), alluding to the absence of legs 1 and 2 in the female. Gender feminine.

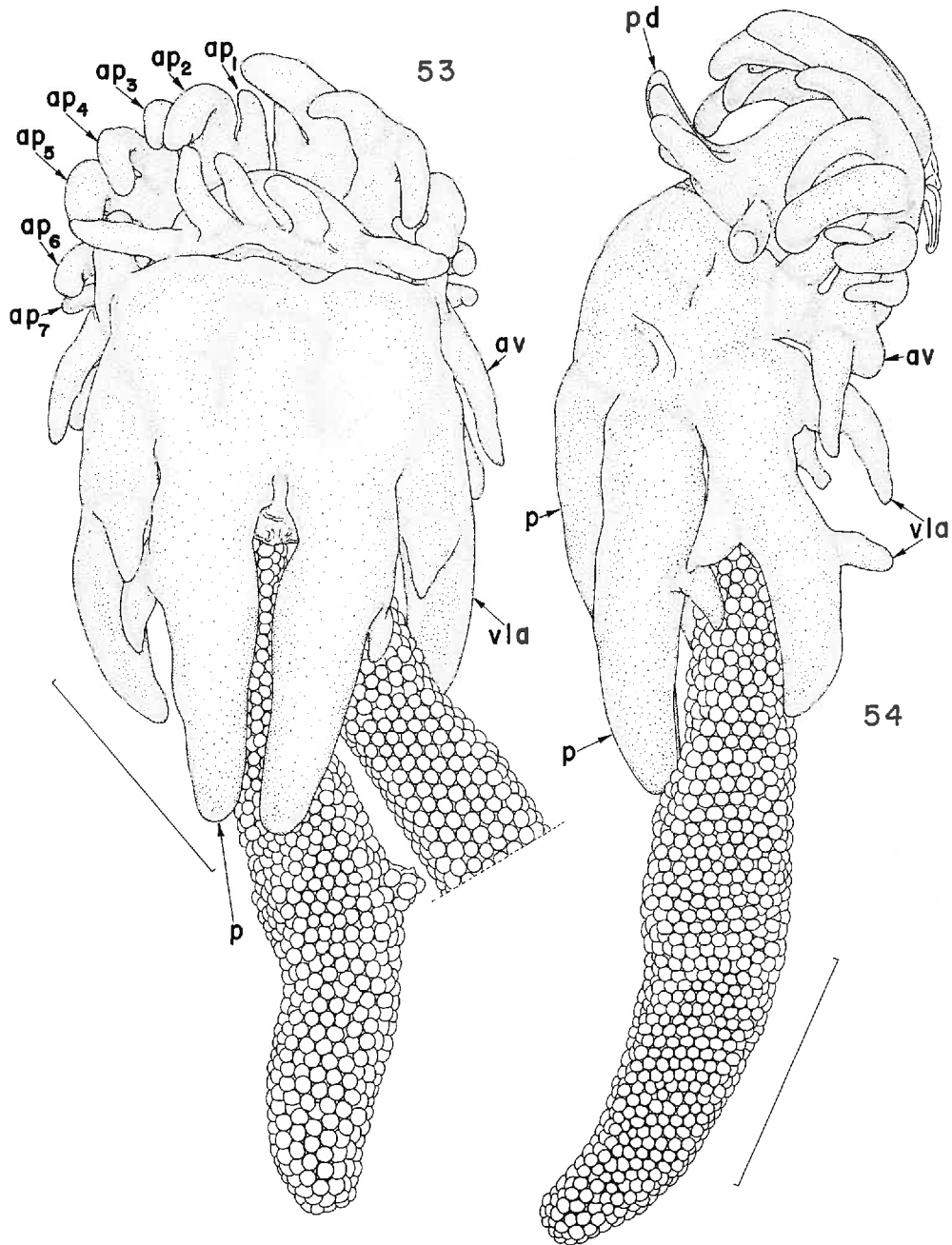
*Apodochondria medusae*, sp. nov.

*Material Examined*

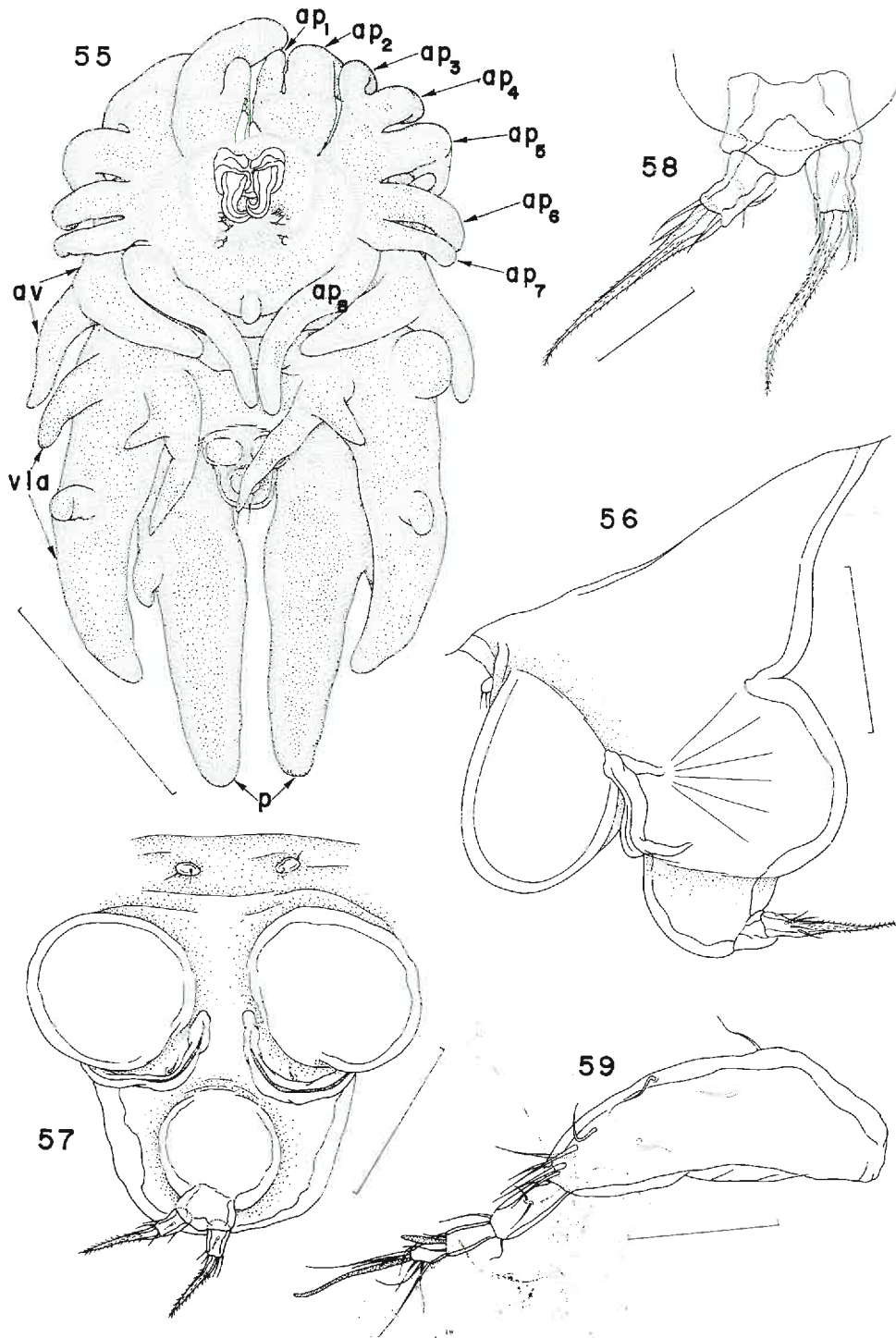
One female holotype (SAM C4158) and 1 female paratype (SAM C4159; dissected) (1 with attached male) from pectoral fin of *Neosebastes pandus*. In collection of South Australian Museum.

*Female*

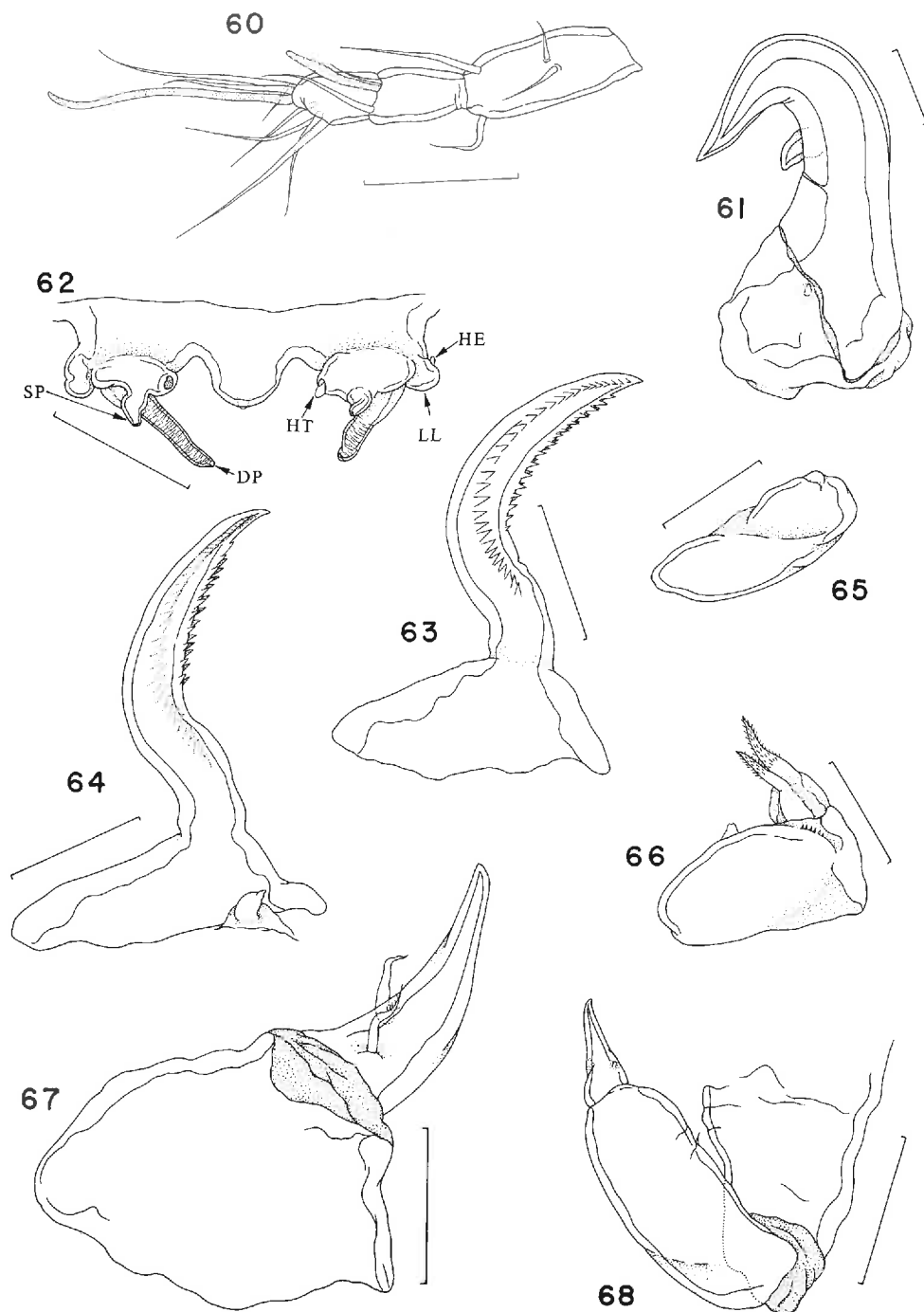
Body (Figs 53–55) divided into head and trunk. Total length 7.24 mm (6.69–7.80 mm) (including posterior processes) based on 2 specimens. Head, 2.02 mm (1.98–2.70 mm) × 1.83 mm (1.75–1.91 mm) (excluding cephalic processes), bearing an anterior ring of processes and a posterodorsal group of processes. Anterior ring consisting of 8 digitiform processes on each side of longitudinal axis: dorsomedial process (ap1) smallest of group, sharing common base with nearest lateral neighbour (ap2); third and fourth anterior processes (ap3, ap4) sharing common base which in turn shares base with fifth process (ap5) (Fig. 55); ap6 and ap7 each a single process; posteroventral process (ap8) with tip directed posteriorly, and small medial process on posteroventral surface. Posterodorsal group (pd in Fig. 54) comprising 5 processes near junction of trunk. Trunk, 5.22 mm (4.71–5.73 mm) × 3.03 mm (2.98–3.08 mm) (including processes), with anteroventral, ventrolateral, and posterior groups of processes. Anteroventral group (av in Figs 53–55) with 2 anteriorly directed, 1 posteriorly directed and 1 ventromedially directed processes; all processes with common stem. Ventrolateral group (vla in Figs 54, 55) with 1 large posteroventrally directed process bearing 1 conical dorsal process, 2 ventral processes (1 of which is bifid) near base, and 1 ventral process at about midlength. Posterior group (p in Figs 53–55) comprising large process with 1 small ventrolateral process at midlength. Genital complex (Figs 56, 57), 376 × 677 μm,



**Figs 53, 54.** *Apodochondria medusae*, gen. & sp. nov., female: 53, body, dorsal; 54, body, lateral. Scales: 2 mm in 53, 54. Symbols: ap = anterior processes; av = anteroventral processes; vla = ventrolateral processes; p = posterior processes; pd = posterodorsal processes.

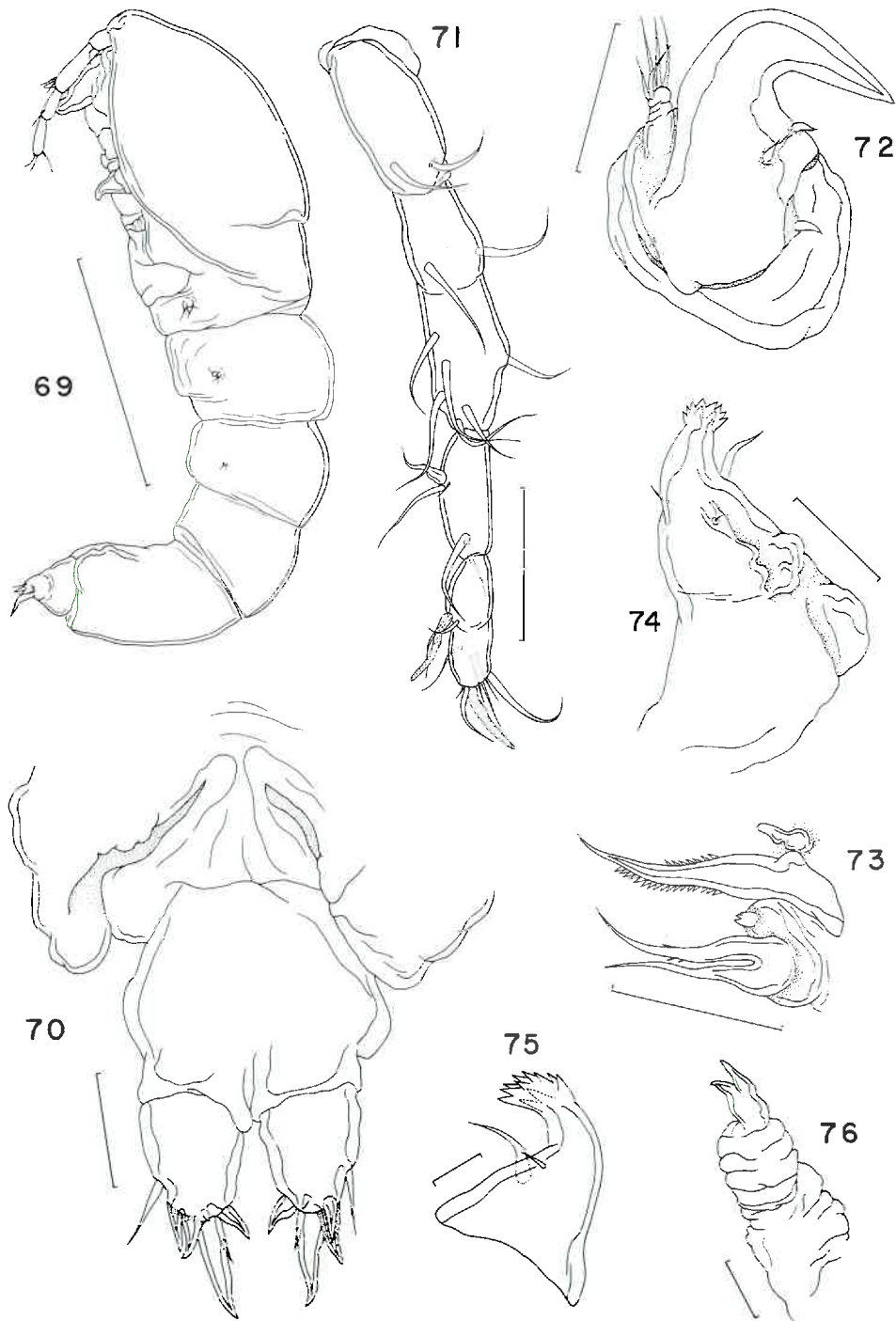


**Figs 55-9.** *Apodochondria medusae*, gen. & sp. nov., female: **55**, body, ventral; **56**, genito-abdomen, lateral; **57**, genito-abdomen, ventral; **58**, anal segment and caudal rami, ventral; **59**, first antenna, anterodorsal. Scales: 2 mm in 55; 0.3 mm in 56, 57; 0.1 mm in 58, 59. Symbols: as in preceding plate.



**Figs 60-8.** *Apodocondria medusae*, gen. & sp. nov., female: **60**, terminal portion of first antenna, anterodorsal; **61**, second antenna, dorsal; **62**, labrum, ventral (SP = siphonlike process; DP = digitiform process; HT = hyaline tubercles; LL = lateral lobe; HE = hyaline element); **63**, mandible, dorsal; **64**, mandible, ventral; **65**, paragnath, ventromedial; **66**, first maxilla, medial; **67**, second maxilla, dorso-medial; **68**, maxilliped, medial. Scales: 0.05 mm in 60, 63, 64, 67, 68; 0.1 mm in 61, 62; 0.03 mm in 65, 66.

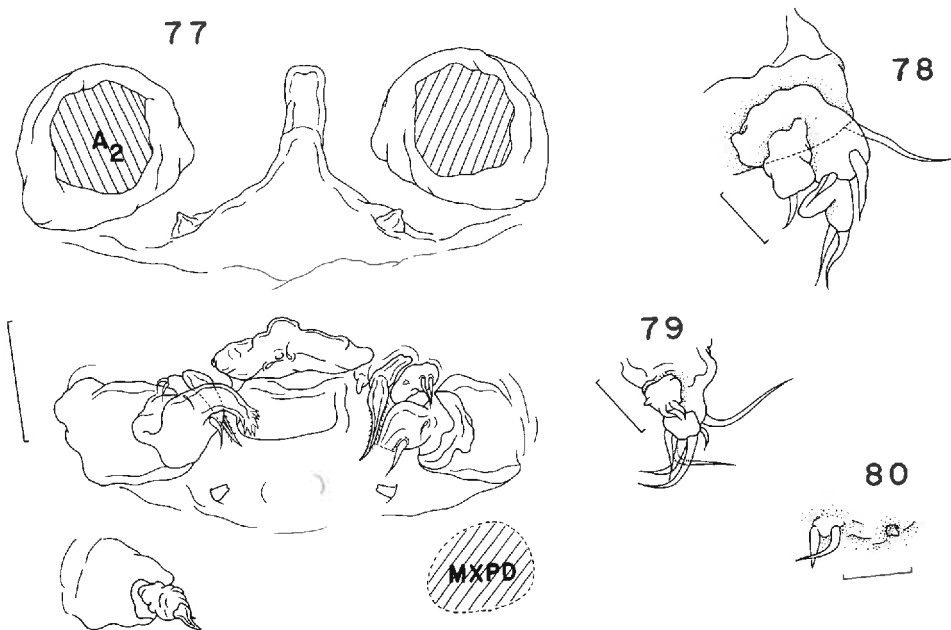




**Figs 69-76.** *Apodochondria medusae*, gen. & sp. nov., *maie*: 69, body, lateral; 70, anal segment and caudal rami, ventral; 71, first antenna, dorsal; 72, second antenna, dorsal; 73, mandible and first maxilla, ventrolateral; 74, second maxilla, dorsal; 75, terminal process of second maxilla, ventral; 76, maxilliped, anterior. Scales: 0.3 mm in 69; 0.03 mm in 70, 73, 74; 0.05 mm in 71, 72; 0.01 mm in 75, 76.

with a pair of large globular lobes and 1 pair of midventral setae. Abdomen (Figs 56, 57) indistinctly 2-segmented; first segment subspherical,  $169 \times 193 \mu\text{m}$ ; second segment (Fig. 58),  $92 \times 110 \mu\text{m}$ . Caudal ramus (Fig. 58) with 5 naked setae and 1 large spinulated terminal seta.

First antenna (Figs 59, 60) 4-segmented; first segment almost twice as long as other 3 segments combined; armature formula of 10, 4, 2+1 aesthete, and 7+1 aesthete. Second antenna (Fig. 61) 2-segmented; first segment heavily sclerotised with 1 dorsal hyaline element (seta); second segment a curved claw equipped with accessory claw on concave margin. Labrum (Fig. 62) with small lateral lobe (LL) carrying a hyaline element (HE); posterolateral area ventrally with lobiform structure bearing 2 medial hyaline tubercles (HT) and a siphon-like process (SP), and dorsally with long digitiform process (DP) showing cuticular wrinkles; median protuberant area with single rounded tubercle. Mandible (Figs 63, 64) with base fused to terminal segment; terminal falcate process with 31–36 teeth on convex side and 23–26 teeth arranged in 2 rows on concave side; small lobe tipped with papilla next to base of mandible. Paragnath (Fig. 65) bilobed with 1 lobe bearing small papilla. First maxilla (Fig. 66) with small medial process, 1 short row of spinules, and 2 spinulated setae (outermost seta originating from bulbous base). Second maxilla (Fig. 67) 2-segmented; first segment stout and unarmed; terminal segment a curved naked process with 1 bristled and 1 naked setae. Maxilliped (Fig. 68) 3-segmented; first segment about as long as second and unarmed; second segment with 1 small seta (setule ?) on medial margin; terminal segment a curved claw bearing small tubercle on medial surface. Legs 1–4 absent. Leg 5 (Fig. 57) represented by small process with 2 setae anterior to genito-abdomen.



Figs 77–80. *Apodochondria medusae*, gen. & sp. nov., male: 77, cephalothoracic area, ventral ( $A_2$ =second antenna; MXPD=maxilliped); 78, leg 1, ventral; 79, leg 2, ventromedial; 80, leg 3, ventromedial. Scales: 0.05 mm in 77, 0.01 mm in 78–80.

#### Male

Body (Fig. 69) 1.07 mm long, somewhat vermiform, body metamerism relatively distinct. Cephalothorax comprising only about  $\frac{1}{3}$  total length. Genital complex with a pair of ventral ridges without setae. Abdomen (Fig. 70) slightly wider than long. Caudal ramus (Fig. 70)

bearing 1 lateral seta, 2 outer spiniform processes, 1 medial spine, 1 small ventromedial element, and 1 large terminal spine bearing medial accessory process.

First antenna (Fig. 71) indistinctly 6-segmented; armature 2, 2, 6, 4, 2 + 1 aesthete, and 7 + 1 aesthete. Second antenna (Fig. 72) 2-segmented; first segment a sclerotised structure with 1 dorsomedial seta; second segment a strongly curved claw with 1 dorsomedial seta, 1 medial seta, and an atrophied tip of antenna bearing 5 setae. Mandible (Fig. 73) with 17 teeth on convex side and 7 teeth on concave side of terminal falcate process. First maxilla (Fig. 73) with bilobed medial process and 2 long setae (1 sparsely spinulated). Second maxilla (Figs 74, 75) 2-segmented; second segment a curved claw bearing 11 teeth and 2 naked setae. Maxilliped (Fig. 76) small, 3-segmented, and not well sclerotised; first and second segments naked and with heavily wrinkled cuticle (perhaps due to preservative); terminal segment a bifid claw. Three pairs of small processes (Fig. 77) located near mouthparts; 1 pair postero-medial to bases of second antenna; 1 pair slightly anteromedial to mandibles (Fig. 73); and 1 pair posteromedial to bases of second maxilla (Fig. 77). Leg 1 (Fig. 78) biramous with protopod carrying 1 lateral seta; exopod with formula 1-1,2 and terminal exopodal segment with large rounded medial lobe and 2 setae; endopod with single terminal seta. Leg 2 (Fig. 79) with large protopodal seta; exopod with 5 setae; endopod with 2 terminal setae and 1 medial tubercle (seta ?). Leg 3 (Fig. 80) with tubercle about 0.01 mm lateral to 2 setae.

#### Etymology

The specific name *medusae* refers to a Latin mythological beast, Medusa, alluding to the head of the female with numerous processes resembling Medusa's locks of snakes (see Fig. 53).

#### Remarks

The absence of legs 1 and 2 in the female is rare for the Chondracanthidae (Ho 1970). Of the 39 known chondracanthid genera, only *Immanthe* Leigh-Sharpe, 1934 and *Strabax* von Nordman, 1864 do not bear legs 1 and 2 as in *Apodochondria*. The complexity of the labral structure in *A. medusae* is also rare. It is shared only with *Diocus gobinus* (Müller) (see Ho 1970; Fig. 132).

The head of the female *A. medusae* is unique in the family. It is the most profusely armed head in the Chondracanthidae. Another diagnostic character of this species is the male caudal ramus. It bears several large spiniform elements and lacks the usual, single, large, spinulose, terminal, styliform process. Also, the male maxilliped is unusual in having a bifid terminal claw.

*Apodochondria medusae* was collected from the pectoral fins of its host. This is an unusual site of attachment for the chondracanthids, which are largely parasites of the branchial and oral cavities.

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