Poore + Lew Ton, 1986

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MESANTHURA (CRUSTACEA: ISOPODA: ANTHURIDAE) FROM SOUTH-EASTERN AUSTRALIA

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Abstract

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Mesanthura miersi (Haswell) and seven new species, *M. astelia*, *M. calaena*, *M. dianella*, *M. libertia*, *M. moroea*, *M. romulea* and *M. stypandra* are described and figured. *Mesanthura maculata* and *M. affinis* are removed from the Australian fauna. Pigment pattern is a reliable specific character in *Mesanthura* and is supported by minor morphological differences in pereopod 1 and telson.

Introduction

This contribution continues a series on the Anthuridae and Paranthuridae from south-eastern Australia (see Poore and Lew Ton, 1985a, for recent titles). *Mesanthura* is the last of the major anthurid genera from the region to be studied (the others are *Apanthura* and *Haliophasma*); several others are present but with only a few species.

The new species described herein are, on the whole, each based on few specimens. Many come from algal epifauna collected using SCUBA; each sample taken in this way usually contains only one or two specimens. None of these samples is quantitative but it is noteworthy that of about a hundred samples taken during a survey of Cape Paterson, Vic., only four contained specimens of *Mesanthura*. No species of *Mesanthura* were found in the large-scale soft-bottom benthos surveys which have revealed many species of other anthuridean genera in Port Phillip Bay, Western Port and Moreton Bay and several lagoons and estuaries. But specimens were found in deep calcareous sediments of Bass Strait.

Barnard (1925) noted that morphological features separating the species of *Mesanthura* are "hard to find". This is true of most related genera. Barnard (1925) separated the species known to him largely on the basis of dorsal pigment patterns with little support from anatomical characteristics. This has been the approach of most subsequent authors. The only exception has been Kensley (1980) who described three colour morphs of *M. protei* and Kensley and Poore (1982) who figured a fourth. In the south-eastern Australian fauna we are able to correlate morphological differences with pigment patterns and now assume that these represent separate species. This is also the case for three species described by Barnard (1925) (Wägele, 1984). Burbanck and Burbanck (1961) analysed differences in colour pattern in populations of *Cyathura polita* from estuaries along the east coast of the USA. The variations found were slight compared to those found in Australian *Mesanthura*.

The first new species, *Mesanthura astelia*, is figured and described here in some detail. Its features are typical of all species of the genus which differ only in subtle ways. The holotype of *M. miersi* (Haswell) is also figured because its pigment pattern is unknown. For all other species only diagnostic features are figured and described. These are pigmentation, form of the first pereopod, particularly the sixth article, and the shape of the telson and uropodal exopod. No key to species is presented. Species can easily be identified using figures 2 and 3 and confirmed using the other figures and diagnoses.

Although morphological features seem to support separation of species based on pigmentation, non-coloured specimens are difficult to identify with certainty. Consequently, three old specimens from the New South Wales shelf in the Australian Museum collections (G2186, P24935 and P24940) remain unidentified. One of these is the specimen attributed to *Anthura affinis* Chilton by Whitelegge (1901).

Australian species of *Mesanthura* typically have a dorsal rectangle of pigment which may have a transverse pair of clear patches. In this they differ from most species described from other parts of the world which often have a clear central area mid-dorsally. This apparent division of the genus on the basis of pigment symmetry is not clear cut but may deserve further investigation. It does mean that relationships between the Australian species and previously described forms are difficult to find.

The following abbreviations used in figures 4-13: MD, mandible; MP, maxilliped; P1-P7, pereopods 1-7; PL1-PL5, pleopods 1-5; UN and UX, uropodal endopod and exopod. Except in figures 1-3 a, b, c refer to alternative views or individuals and are explained in the captions. Survey material complements collections in museums: The Museum of Victoria's Bass Strait Survey (BSS stations) and survey at Cape Paterson (CPA stations); the Australian Museum's Shelf Benthic Survey (AMSBS) and local collections (NSW stations).

Material is lodged in the Museum of Victoria, Melbourne (NMV); the Australian Museum, Sydney (AM); the Tasmanian Museum and Art Gallery, Hobart (TM); and the South Australian Museum, Adelaide (SAM).

Specific epithets for new species have been chosen from genera of the Australian flora and are used as nouns in apposition. This follows a pattern established for *Paranthura* (Poore, 1984).

Problems in nomenclature

Five species attributed to *Mesanthura* have been described from Australia: *M. maculata* (Haswell), *M. miersi* (Haswell), *M. albinotata* Thomson, *M. bipunctata* Thomson and *M.*

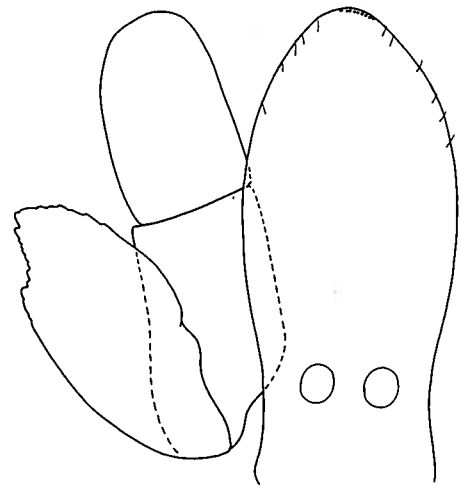

Figure 1. *Mesanthura affinis*, juvenile, Canterbury Museum, tail fan.

protei Kensley. The last three are from Western Australia and all differ from the south-eastern species (Thomson, 1951; Kensley and Poore, 1982). Whitelegge (1901) recorded *Anthura affinis* Chilton, 1882, from New South Wales, a species later placed in *Mesanthura*.

The name *Mesanthura maculata* has been widely used following Barnard's (1925) synonymising of *Paranthura miersi* and *Anthura affinis* Chilton from New Zealand with it. Type material of *Haliophasma maculata* Haswell (Haswell, 1881: 477, pl. 18 fig. 2; 1882: 306; 1884: 103) no longer exists but it is clear from the figures and the description that this name refers to a species of *Accalathura* (Paranthuridae). Haswell's (1881) figures 2, 2a, 2c, 2x (not fig. 3 as cited on p.477) correspond with his description and the antennae, pereopods, uropods and telson could be referable to *A. bassi* Poore which is a pigmented species from Victoria. Alternatively, the undescribed species of *Accalathura* from New South Wales (Poore, 1981) could be conspecific with *Accalathura maculata*. The specific epithet *maculata* is therefore not referable to any species of *Mesanthura*.

Mesanthura maculata has been used for specimens from Sri Lanka (Kirtisinghe, 1931; Pillai, 1966), Madagascar (Kensley, 1980) and

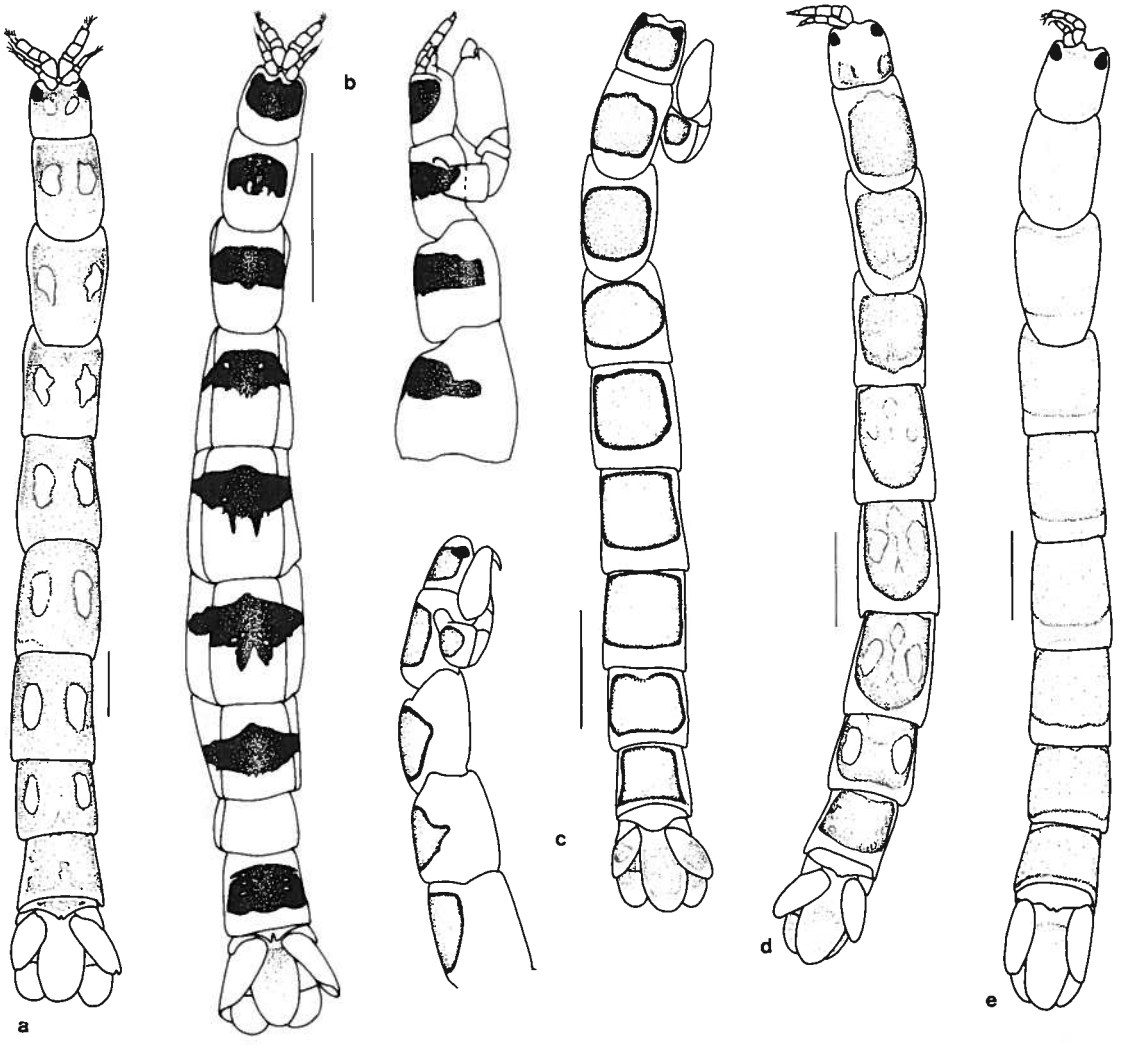

Figure 2. a, *Mesanthura astelia*, holotype juvenile, 14.1 mm; b, *Mesanthura calaena*, holotype juvenile, 6.7 mm; c, *Mesanthura dianella*, holotype juvenile, 7.8 mm; d, *Mesanthura libertia*, holotype juvenile, 12.0 mm; e, *Mesanthura miersi*, holotype juvenile, 11.5 mm.

New Zealand (Hurley, 1961). Their identities remain in doubt. Tubb's (1937) specimen from Lady Julia Percy Island, Victoria, attributed to *M. maculata* is in fact *Apanthura xanthorrhoea* Poore & Lew Ton.

A specimen labelled *Paranthura miersi* in the Australian Museum corresponds moderately well with Haswell's (1884) description and figures. This specimen is here refigured and the name *Mesanthura miersi* becomes the oldest available name for Australian *Mesanthura*.

The identity of New Zealand specimens was confirmed from material in the Canterbury Museum, Christchurch. One female and a smaller juvenile are labelled "*Anthura affinis* Chilton Lyttelton, N.Z. C.C." and "*Haliophasma maculata* Hasw. teste K.H.B." and are associated with two slides prepared by Chilton: "*Anthura affinis* Chilton Lyttelton

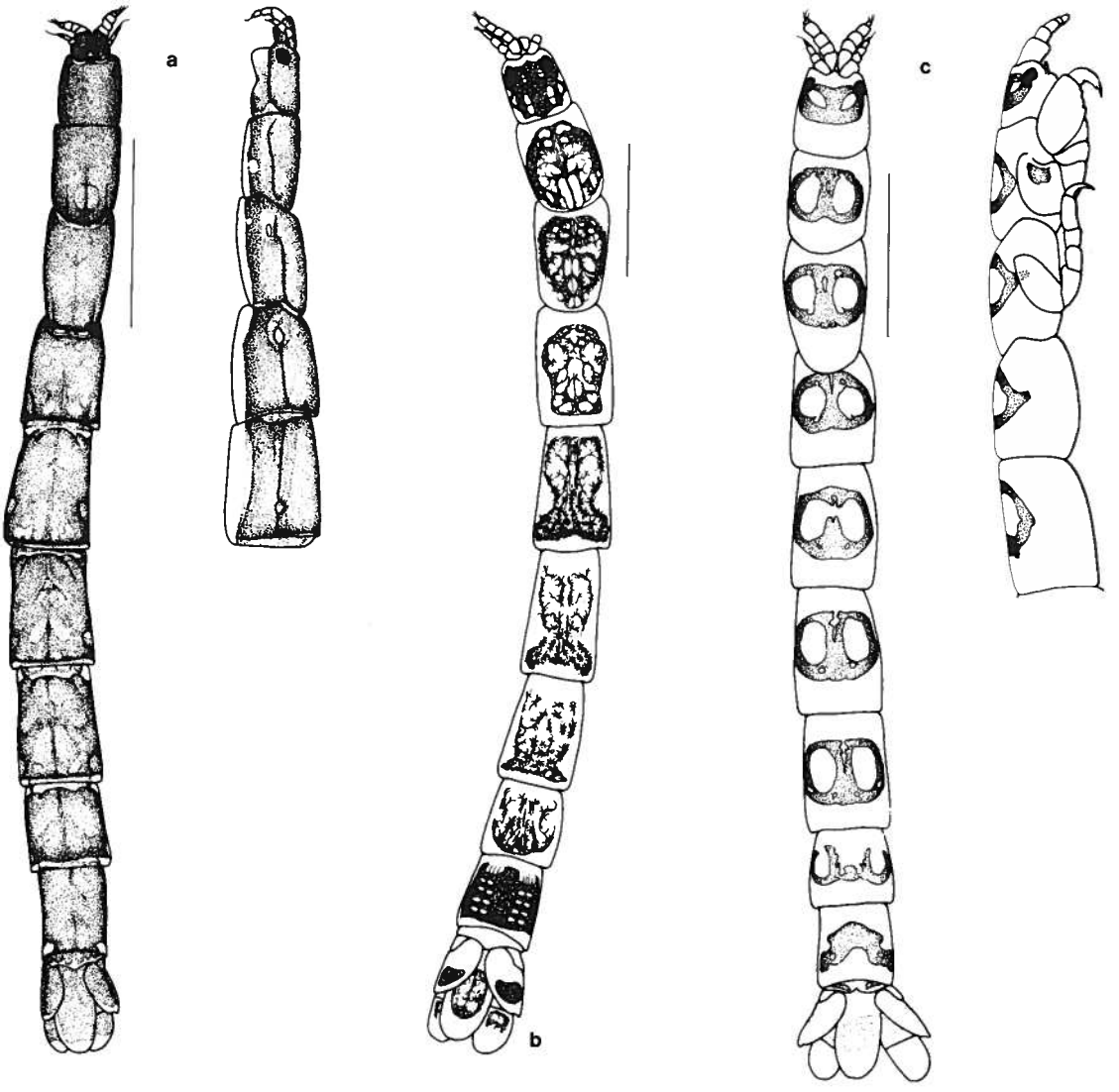

Figure 3. a, *Mesanthura moroea*, holotype juvenile, 5.3 mm; b, *Mesanthura romulea*, holotype juvenile, 7.7 mm; *Mesanthura stypandra*, holotype juvenile, 6.2 mm.

slides A1 and A2". The specimens do belong to *Mesanthura* but the pleon and uropod (Figure 1) do not resemble any Australian species. The specimens may be syntypes of *Anthura affinis*. *Mesanthura affinis* (Chilton, 1883) is a valid name for a New Zealand species but should be deleted from the Australian fauna.

Mesanthura Barnard, 1914

Diagnosis. Integument pigmented (usually in a species-specific pattern). Eyes present. Antenna 1 flagellum of 3 articles, the last 2 with 3 terminal aesthetascs. Antenna 2 flagellum short, of very few short articles. Mandibles symmetrical, sometimes reduced in male; incisor, lamina dentata and blunt molar

present; palp 3-articled, article 3 shorter than 2 with a long row of marginal setae. Maxilliped of 5 articles, endite absent or obsolete; article 5 terminal (suture transverse), about one-half length of article 4, with 3-4 mesial setae.

Pereopod 1 subchelate, article 6 swollen, its palm sometimes with a step, rarely toothed (sometimes palm step opposes a complex surface on the dactyl). Pereopods 2 and 3 only slightly more robust than posterior pereopods. Pereopods 4-7 with article 5 triangular-trapeziform, its anterior margin free.

Pleon short (about as long as pereonite 7), pleonites 1-5 fused, pleonite 6 free. Pleopod 1 exopod operculiform, endopod setose. Pleopods 2-5 setose. Uropodal endopod shorter than peduncle, about as long as wide; exopod with sinuous or notched dorsal margin. Telson with two basal statocysts, apex with long setae, no long dorsal setae.

Male antenna 1 flagellum short and tapering, of about 10 very short discoid articles, each bearing numerous aesthetascs.

Type species. *Anthura catenula* Stimpson, 1855.

Remarks. *Mesanthura* shares with *Cyathura* and the *Apanthura*-group of genera (Poore and Lew Ton, 1985a, b) antenna 1 with three terminal aesthetascs, triangular-trapeziform article 5 on pereopods 4-7 and telson with several apical long setae (Wägele, 1981). It is closest to *Cyathura*, sharing a similar terminal article on the maxilliped and squarish uropodal endopod but differs in having five maxillipedal palp articles. It shares a five-articled maxilliped with *Apanthura, Apanthuretta* and *Apanthuropsis* but differs in the uropod, terminal maxillipedal article and mandibular palp. The male antenna 1 flagellum of species of *Mesanthura* differs from those of all these genera by being moderately short, swollen proximally and of about 10 disc-shaped articles. Representatives of all genera (except monotypic *Apanthuropsis*) are pigmented.

Mesanthura astelia sp. nov.

Figures 2a, 4-6

?*Mesanthura maculata*.–Hale, 1929: 245, fig. 238 (not Haswell, 1882).

Material examined. 14 juveniles, 6.9-20.5 mm; 1 ♂, 13.2 mm; 1 ♀, 12.0 mm:

Holotype: juvenile, 14.4 mm, NMV J4169 (with one slide). NSW, Batemans Bay (35°44'S., 150°15'E.), G. Hartmann and G. Hartmann-Schroeder, 4 Jan 1976 (sample 158).

Paratypes: NSW, type locality, NMV J4172(1), AM P35695(1).

Tas., Tinderbox, below LW, J.R. Penprase, 29 May 1974, TM G1713(1 ♂).

Vic., Aireys Inlet, sponges, W.F. Seed, 30 Dec 1963, NMV J4171(1). Shoreham, encrusting calcareous algae, W.F. Seed, 28 Feb 1959, NMV J4173(1).

Bass Strait., BSS stn 152 (39°06.8'S., 144°44.6'E.), 66-68 m, coarse shell, 11 Feb 1981, NMV J4174(1). BSS stn 173 (39°26.3'S., 147°48.7'E.), 49 m, coarse shell, 17 Nov 1981, NMV J4175(1).

Other material. SA, Sellicks Beach, undersides of smooth boulders on reef, H.M. Hale, 27 Jan 1936, SAM(3). Cable Bay, Dr Campbell, 13 Apr 1936, C860(1) [det K.H.B. *M. maculata*]. "The Hotspot," reef 8 km W. of N. end of Flinders Is. (33°40.8'E., 134°22.5'E.), 21 m, large red algae, G.C.B.Poore, 20 Apr 1985 (stn SA-71), NMV J11578(1 ♀). No locality, SAM(2) [det K.H.B. *M. maculata*].

Diagnosis. Head, pereonites and pleon with pigment patches over most of dorsal surface more or less extending laterally as narrow bands. On head and pereonites these patches surround pair of elongate clear areas; on fused pleon the patch posteriorly notched as it is to lesser extent on pereonites 4-7. Male pigmentation similar dorsally but extending laterally as narrow band on pereonites 2-6 and meeting midventrally on pereonite 7.

Pereopod 1 subchelate; article 6 ovoid, its palm with granular projection opposing complexly toothed boss at the base of unguis.

Uropodal exopod notched. Telson moderately acutely tapering to broadly rounded apex.

Description. Integument dorsally pigmented (see *Diagnosis*). Antenna 1 peduncle with 1 lateral seta on each of articles 1 and 3, a single brush-seta on articles 1 and 2; flagellum of 3 articles, together as long as last article of peduncle. Antenna 2 flagellum of very short articles, only half as long as last article of peduncle. Mandible with short molar; lamina dentata with 4 teeth; incisor blunt, palp reaching well beyond incisor, articles 1 and 2 with 1 distal seta, article 3 the shortest, falcate, with long row of 14 spines. Maxilliped with an

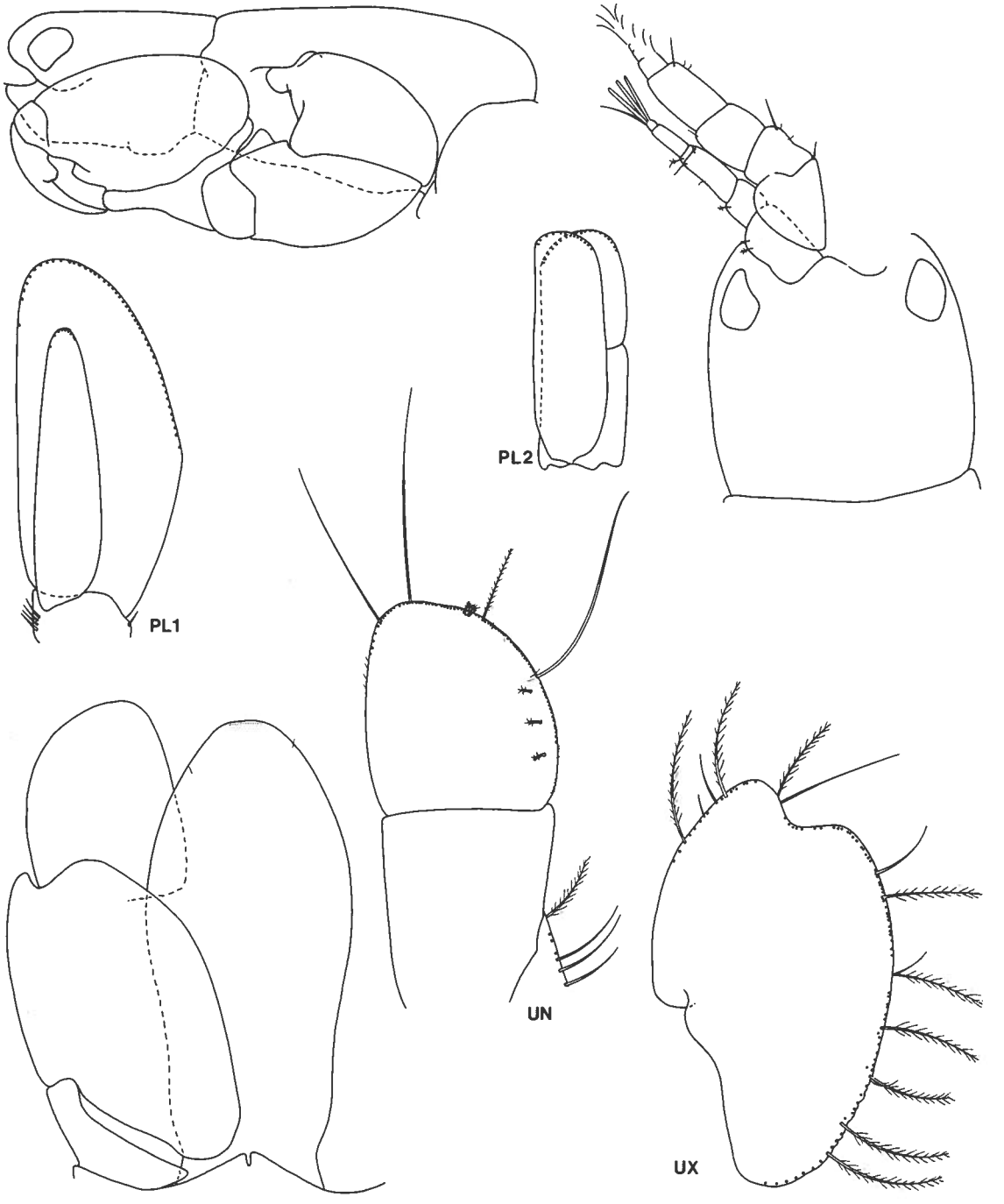

Figure 4. *Mesanthura astelia*. Holotype juvenile, 14.4 mm.

Figure 5. *Mesanthura astelia*. Holotype juvenile, 14.4 mm; a, mesial view of palm and dactyl.

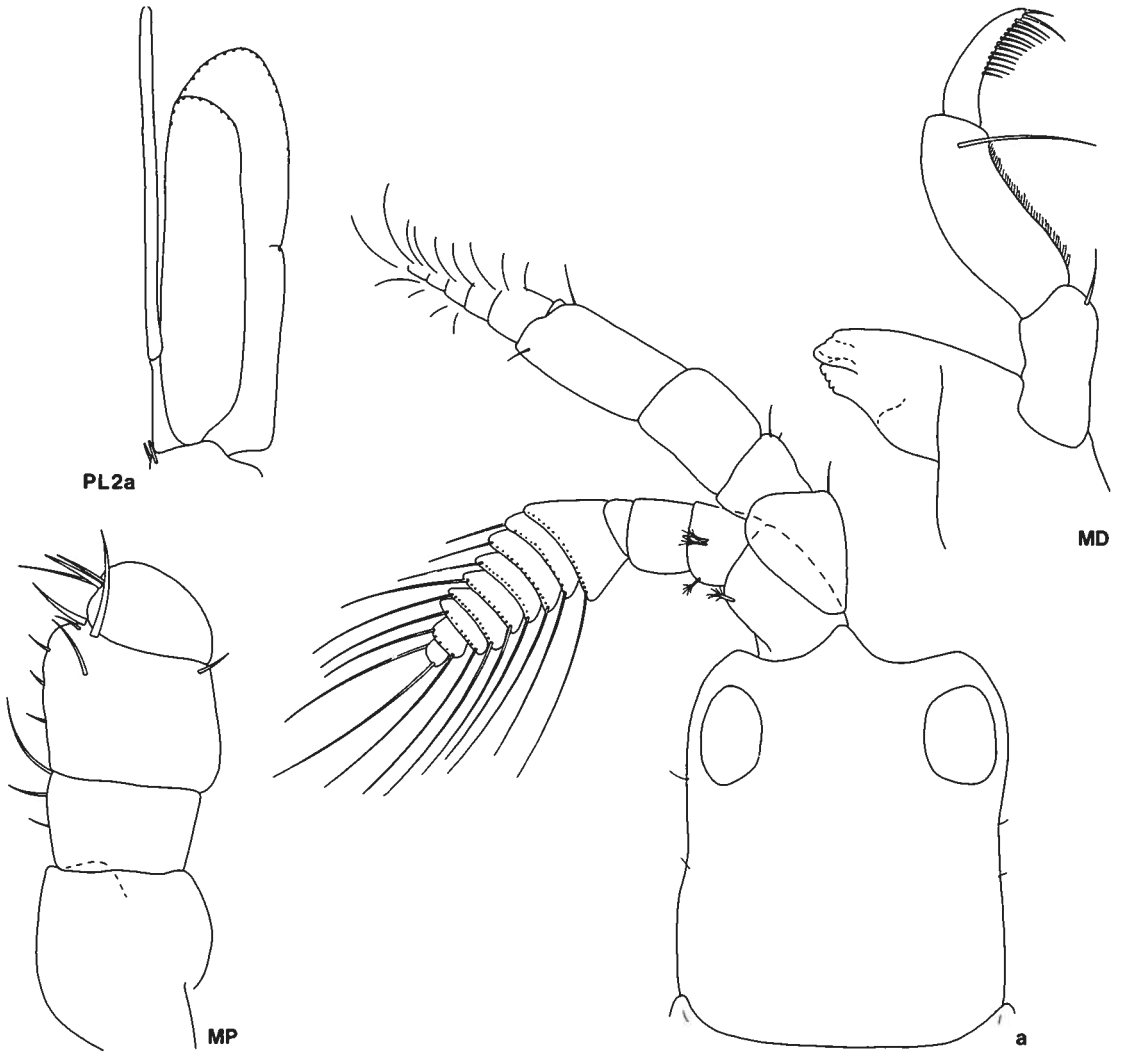

Figure 6. *Mesanthura astelia*. Holotype juvenile, 14.4 mm; a, paratype male.

obsolete endite; articles 3 and 4 wider than long, bearing mesial setae; article 4 with, among others, a strong distal seta at the mesial end of the suture with article 5; article 5 with 4 mesial setae.

Pereopod 1 article 5 distally produced as a granular tooth; article 6 swollen, its palm oblique and bearing a granular projection midway along, submarginal setae mesially and laterally; dactyl with complexly toothed boss at base of long unguis. Pereopod 2 with broad proximal articles; article 5 without free anterior margin, its posterior margin straight; article 6 about 3 times as long as wide, its palm concave and bearing few long setae and tooth at distal margin; dactyl about half as long as article 6. Pereopod 4 article 5 with short anterior margin, its posterior margin expanded and bearing a spine on the free distal margin; article 6 little less than 3 times as long as wide,

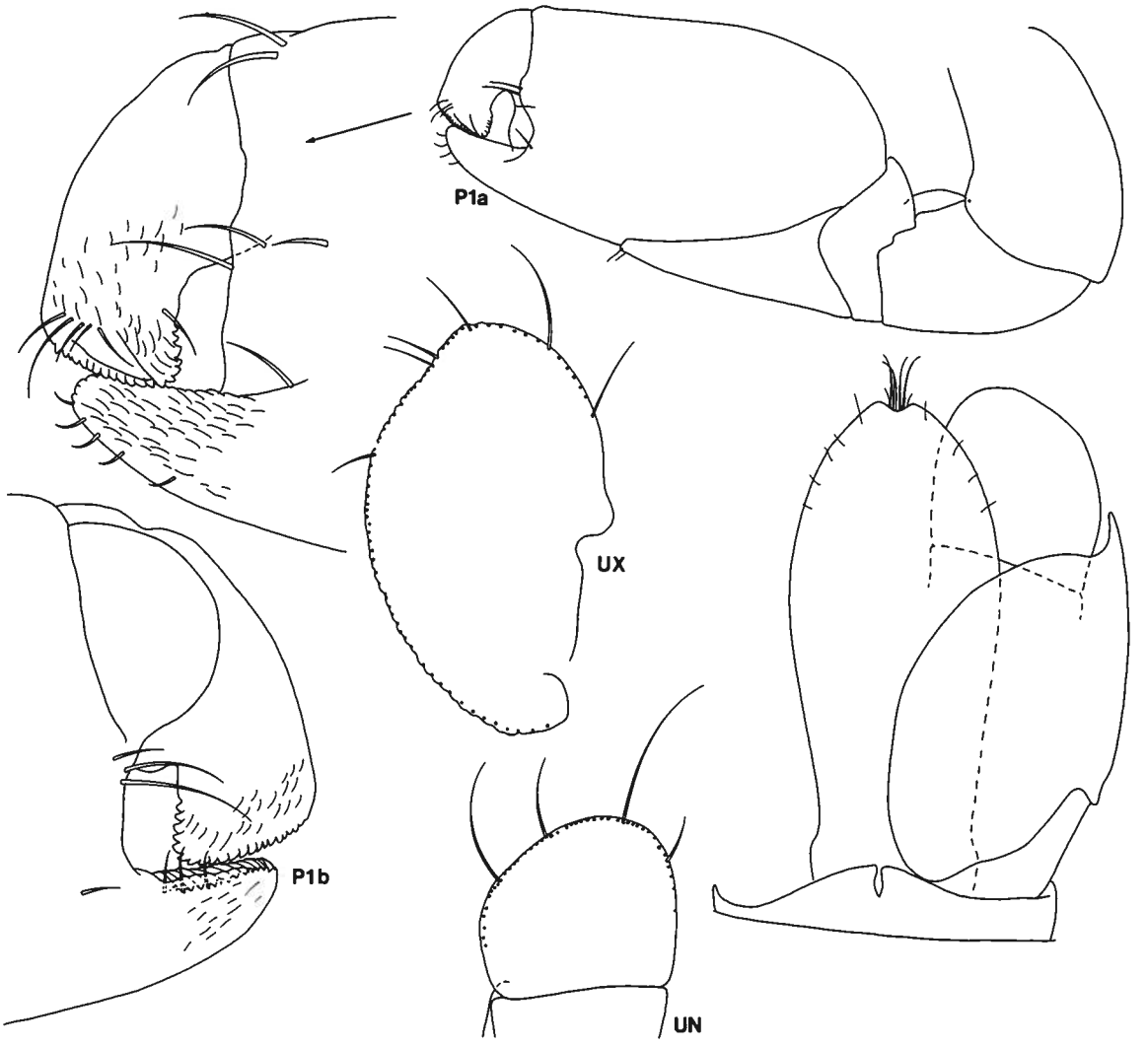

Figure 7. *Mesanthura caleana*. Holotype juvenile, 6.7 mm; a, lateral view; b, mesial view.

its palm concave and with a distal seta; dactyl curved. Pereopods 5-7 similar to pereopod 4, becoming more elongate posteriorly.

Uropodal endopod slightly longer than wide, a dense marginal row of mostly simple setae, and brush-setae submarginally on dorsal surface. Exopod 1.7 times as long as greatest width, ventral distal lobe acutely rounded and separated from the curved dorsal margin by right-angled notch; dense marginal row of mostly plumose setae. Telson about as long as pleon, 2.3 times as long as wide, greatest width about two-thirds way along; distal third moderately acutely tapering to broadly rounded apex; about 16 apical long setae.

Male. Antenna 1 with flagellum of 9 short aesthetasc-bearing articles, not reaching to posterior margin of head. Head with mid ventral projection at base of maxillipeds. Eyes enlarged. Pereopod 1 with dense mesial setae. Appendix masculina a simple rod barely exceeding the exopod of pleopod 2.

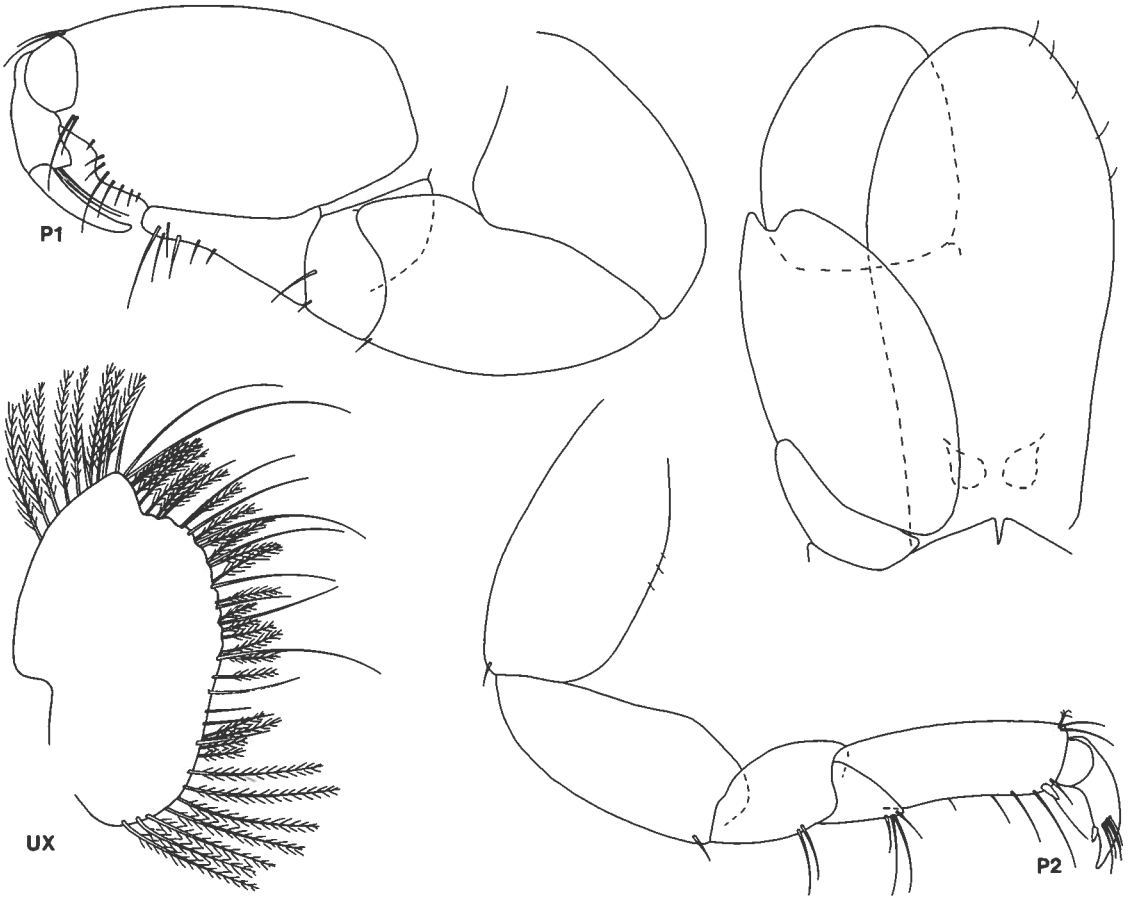

Figure 8. *Mesanthura dianella*. Holotype juvenile, 7.8 mm.

Distribution. Tasmania, South Australia, Victoria, Bass Strait, and New South Wales; subtidal-68 m.

Remarks. *Mesanthura astelia* can be confused only with *M. libertia* and *M. stypandra* which both have large clear patches in the dorsal pigment patch.

Mesanthura calaena sp. nov.

Figures 2b, 7

Material examined. 2 juveniles, 1 post-manca.

Holotype: juvenile, 6.7 mm, NMV J4452 (with one slide). Vic., Shoreham, Honeysuckle Point, (38°26'S., 145°03'E.), T. Crawford, 29 Dec 1962.

Paratypes: SA, "The Hotspot", reef 8 km W. of N. end of Flinders Is. (33°40.5'S., 134°22.0'E.), 17 m, bryozoa, G.C.B.Poore, 19 Apr 1985 (stn SA-62), NMV J11573(1 juvenile). Topgallant Is. (33°43.0'S., 134°36.6'E.), 25 m, *Cystophora*, G.C.B.Poore, 21 Apr 1985 (stn SA-80), NMV J11575(1 post-manca).

Diagnosis. Head, pereonites 1-6 and pleon with transverse bands of pigment occupying about middle third of each segment. Pigment patches with few clear areas, their anterior margins fairly even but posterior margins bilobed on pereonites 4 and 5. Pigment extending laterally especially on pereonites 1-3.

Pereopod 1 chelate; article 6 grossly elongated, its palm produced as a prominent tooth

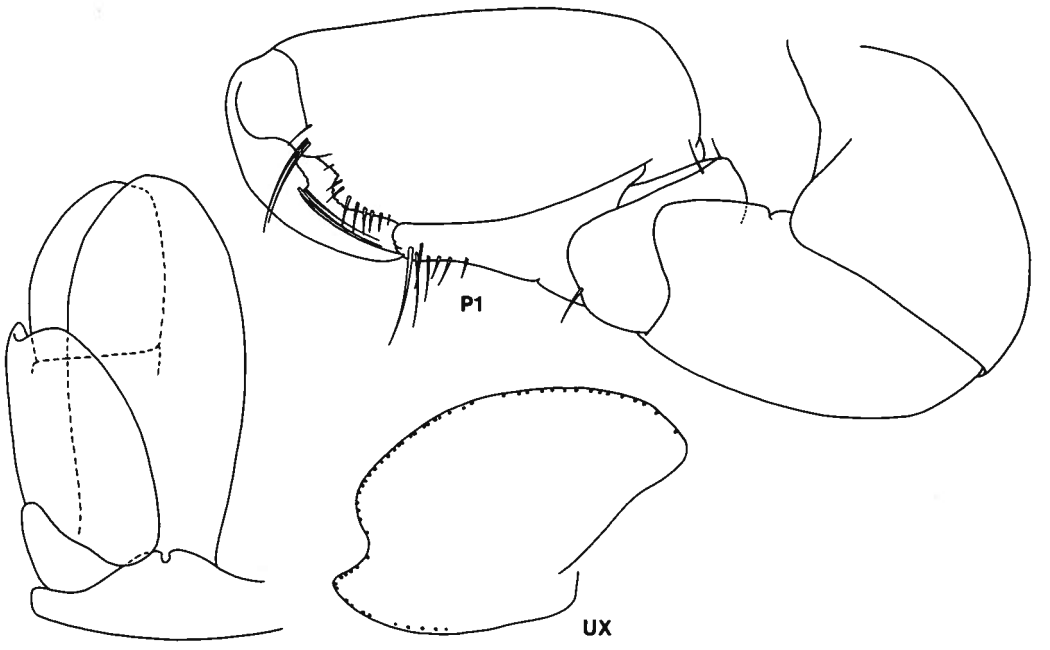

Figure 9. *Mesanthura libertia*. Holotype juvenile, 12.0 mm.

which bears complex grinding surface; dactyl broad, its complexly toothed tip extending beyond unguis and fitting a groove on the fixed finger.

Uropodal exopod not notched. Telson tapering over distal third, with an apical concavity.

Distribution. Victoria and South Australia, subtidal and intertidal.

Remarks. *Mesanthura calaena* is unique among species of the Anthuridae in possession of a chelate first pereopod. There are however no other differences between this specimen and typical *Mesanthura* and separate generic status seems unwarranted.

Mesanthura dianella sp. nov.

Figures 2c, 8

Material examined. 8 juveniles, 4.5-7.8 mm; 2 ♂♂, 7.5-7.8 mm:

Holotype: juvenile, 7.8 mm, AM P32690 (with one slide). NSW, Jervis Bay, off Moona Moona Creek (35°03'S., 150°44'E.), 8 m, on mussel *Trichomya hirsuta* with epizoic algae and sponges on sand covered rocks, J.K. Lowry, 19 Jun 1982 (stn NSW-113).

Paratypes: NSW, type locality, NMV J4167(4). Type locality, 3 m, sponge encrusted bivalves, AM P32688(1). E. of Malabar, Sydney (33°57'S., 151°19'E.), 66 m, gravel-sand, 19 May 1972 (AMSBS stn 4E), AM P22807(2). Same locality, 31 m, gravel-sand, 12 May 1972 (AMSBS stn A1), AM P24349(1). E. of North Head, Sydney (33°49'S., 151°18'E.), 20 m, with sponge *Polymastea craticia*, 19 Feb 1973 (AMSBS stn), AM P22809 (1 ♂).

Diagnosis. Head, pereonites, pleon, telson, uropods and basis of pereopod 1 each with a more or less rectangular dorsal pigment patch occupying greater part of each segment. Patches are without clear areas, their margins well defined. Pigment extends laterally on pereonites 2 and 3 as narrow bands (further in males).

Pereopod 1 subchelate; article 6 elongate-ovoid, its palm oblique, with broadly based proximal projection opposing a boss at base of unguis.

Uropodal exopod obtusely notched. Telson twice as long as wide, widest about two-thirds way along and with broadly rounded apex bearing about 20 setae.

Distribution. New South Wales, 3-66 m.

Remarks. The rectangular dorsal pigment patches characterise *Mesanthura dianella.* The telson has an especially broad apex, its pigment distally truncate.

Mesanthura libertia sp. nov.

Figures 2d, 9

Material examined. 4 juveniles, 4.6-12.0 mm; 2 ♂♂, 10.3 mm:

Holotype: juvenile, 12.0 mm, NMV J4165. Bass Strait, BSS stn 170 (38°52'S., 148°26'E.), 130 m, muddy sand, 15 Nov 1981.

Paratypes: Bass Strait, type locality, 140 m, NMV J4166 (2 ♂♂, 3 juveniles).

Diagnosis. Head with diffuse pigment pattern, concentrated posterolaterally. Pereonites and pleon with an elongate pigment patch; 2 clear areas on pereonite 3, 3 clear areas on pereonites 4-7 (central one contiguous with anterior margin on pereonite 7). Telson and uropods with pigment patches, that on telson paralleling the distal margin.

Pereopod 1 subchelate; article 5 produced; article 6 elongate-rectangular, palm oblique with serrated step; dactyl with slight boss at the base of the unguis.

Uropodal exopod notched. Telson more than twice as long as wide, widest just beyond midpoint, lateral margins evenly convex and tapering to rounded apex.

Distribution. Eastern Bass Strait, 130-140 m.

Remarks. The triplet of clear areas on the posterior pereonite pigment patches separate *Mesanthura libertia* from all others in the region. But *M. miersi* is morphologically similar and of a similar size.

Mesanthura miersi (Haswell)

Figures 2e, 10, 11

Anthura Miersii Haswell, 1884: 1003 (listing only).

Paranthura Miersi Haswell, 1884: 1012, pl. 53 figs. 2-5.

Paranthura miersi.–Barnard, 1925: 145 ("undoubtedly a *Mesanthura*").

Mesanthura maculata.–Barnard, 1925: 144, fig. 9b.

Material examined. Unique.

Holotype: Juvenile, 11.5 mm, AM P3318 (with 2 slides). NSW, labelled "*Paranthura miersii*, Port Jackson".

Diagnosis. "Each of the segments is marked with a large patch of blackish purple" (Haswell, 1884).

Pereopod 1 subchelate; article 5 produced; article 6 elongate-ovoid, palm axial, convex but not stepped; dactyl with a boss at base of unguis.

Uropodal exopod notched. Telson little more than twice as long as wide, widest at about midpoint, lateral margins evenly convex and tapering to a narrow apex.

Distribution. New South Wales, Port Jackson.

Remarks. The presumed type specimen, illustrated here in some detail, has lost most of its dorsal pigmentation. However, the margins of the pigment patches can be seen and distinguish it from the morphologically very similar *M. libertia* from Bass Strait.

Barnard's (1925) figure of a topotypic specimen of *Mesanthura maculata* is consistent with the specimen figured here. This specimen cannot now be found. Whitelegge's (1901) use of *Anthura affinis* Chilton for a specimen from the 'Thetis' collection is possibly synonymous with *M. miersi* (Barnard attributed it to *M. maculata*). Haswell (1884) used both the names *Paranthura Miersi* and *Anthura Miersii* in his paper. The latter appears only in an introductory list of species and is disregarded in favour of the former.

Mesanthura moroea sp. nov.

Figures 3a, 12a

Material examined. 3 mancas; 12 juveniles, 4.5-12.0 mm; 2 ♂♂, 8.8-9.1 mm:

Holotype: juvenile, 5.3 mm, NMV J4449. Vic., 1 km E. of Harmers Haven, 300 m offshore (38°40.0'S., 145°34.5'E.) 5-6 m, sponge epifauna, R. Wilson and C. Larsen, 6 Mar 1982 (CPA stn 15).

Paratypes: Vic., type locality, NMV J4450(1). Harmers Haven, intertidal, algal epifauna, G. Poore, 6 Mar 1982 (CPA Stn 23), NMV J4451(1).

NSW, off Snapper Point, Kailoa (35°34'S., 150°23'E.), 20 m, algae, J.K. Lowry and R. Springthorpe, 24 Apr 1981 (stn NSW-15), AM P32682(1). Morna Point (32°47'S., 152°07'E.), tide pool open to sea, 4 m, dictyotalean alga,

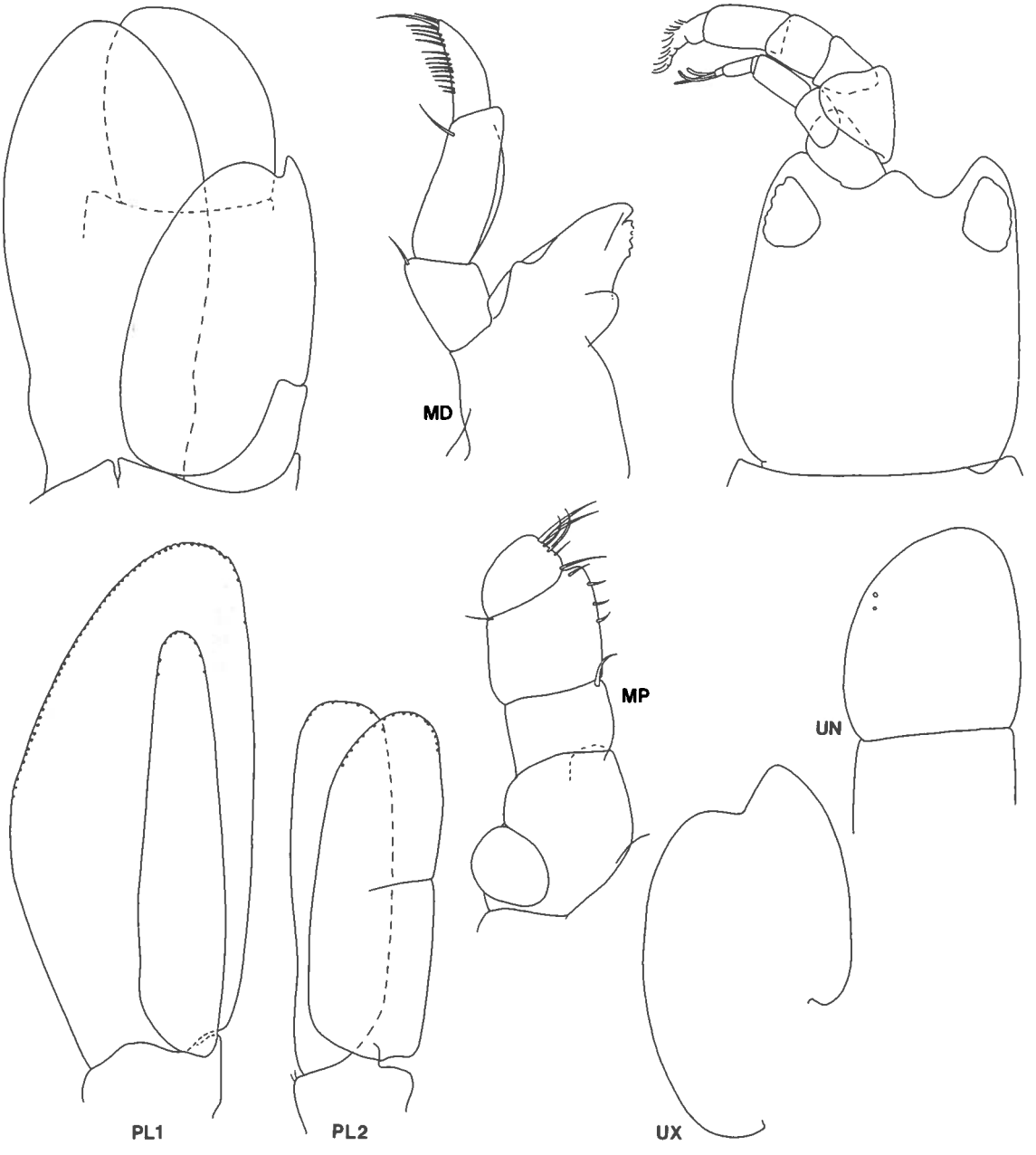

Figure 10. *Mesanthura miersi*. Holotype juvenile, 11.5 mm.

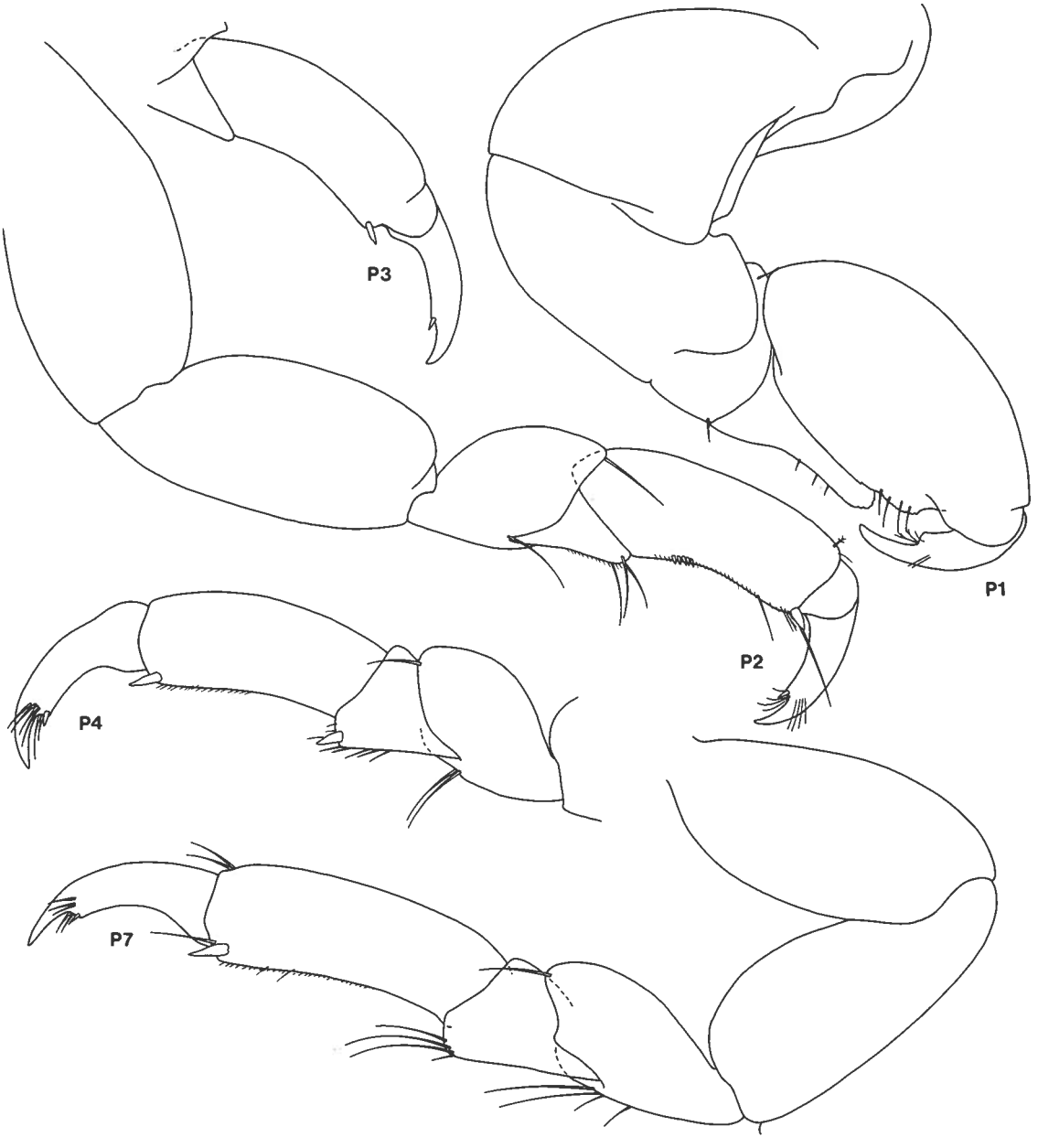

Figure 11. *Mesanthura miersi*. Holotype juvenile, 11.5 mm.

Figure 12. a, *Mesanthura moroea*. Holotype juvenile, 5.3 mm (pereopod 1 detail from paratype juvenile, 10.3 mm NMV J4677). b, *Mesanthura romulea*. Holotype juvenile, 7.7 mm; c, mesial view of palm and dactyl.

J.K. Lowry and G. Poore, 16 Jan 1981, (Stn NSW-142), AM P33833(4). Morna Point, 1 m, *Sargassum*, (stn NSW-141), AM P33885(2). Morna Point, 1-2 m, filamentous red algae (stn NSW-144), NMV J4697(4). Morna Point, 1 m, *Ecklonia* holdfasts (stn NSW-143), AM P33886(2). Morna Point, low tide, *Colpomenia* (stn NSW-138), AM P33884(1).

Other material. Tas. Dover Jetty, 2 m, R.S. Wilson, 27 Apr 1985, NMV J11979(1).

Diagnosis. Pigmentation uniformly dark brown over entire dorsal and lateral surface. Ventrally with longitudinal unpigmented stripe, narrowest on pereonite 1; exopods of pleopod 1 pigmented. First 2 articles of both pairs of antennae and basis of pereopod 1 pigmented; uropods and telson pigmented except apically.

Pereopod 1 subchelate; article 5 barely produced; article 6 elongate, widest distally, palm oblique, with square step (less pronounced on smaller specimens); dactyl simple.

Uropodal exopod notched. Telson more than twice as long as wide, widest at midpoint, lateral margins strongly convex and tapering to broadly rounded apex bearing 8 terminal simple setae.

Distribution. Tasmania, Victoria and New South Wales, shallow subtidal.

Remarks. Mesanthura moroea is distinguished from all other south-eastern Australian species by its dense all-over pigmentation. It is the only species which is difficult to distinguish from one previously described. *Mesanthura nigrodorsalis* Nunomura from Japan is similarly densely coloured and has a similar broad telson and oblique palm on pereopod 1. Nunomura (1977) described much larger specimens than any found locally.

Mesanthura romulea sp. nov.

Figures 3b, 12b

Material examined. 1 juvenile, 7.5 mm; 1 ♂, 7.7 mm:

Holotype: juvenile, 7.7 mm, AM P33881 (with one slide) NSW, Port Jackson, Bottle and Glass Rocks (33°51'S., 151°16'E.), 4 m, soft sediment, R. Springthorpe, 21 Mar 1982 (stn NSW-102).

Paratype: NSW, off Shoal Bay, Port Stephens (32°41'S., 152°09'E.), 2.5 m, *Posidonia australis* on coarse sand, P. Gibbs, 1 Sep 1976, AM P33883(1 ♂).

Diagnosis. Head, pereonites and pleon with extensive dorsal pigment patches, each irregularly perforated with clear areas. Pigment patches on uropod and proximally on telson.

Pereopod 1 subchelate; article 5 with toothed distal lobe; article 6 elongate, its palm oblique and concave with proximal toothed mesial projection; dactyl proximally broad, its posterior margin concave, with proximal toothed area and prominent, complexly toothed boss at base of unguis.

Uropodal exopod with only a shallow notch. Telson 2.5 times as long as wide, lateral margins barely dilating proximally; apex broadly rounded, with 6 apical setae.

Distribution. Central New South Wales coast; bays, subtidal.

Remarks. Mesanthura romulea is the only Australian species with a rather diffuse pigment pattern. Its first pereopod is diagnostic, particularly in having such a complex palm and dactyl.

Mesanthura stypandra sp. nov.

Figures 3c, 13

Material examined. 5 juveniles, 1 ♂, 3.8-6.2 mm:

Holotype: juvenile, 6.2 mm, NMV J4445 (with one slide). Vic., Twin Reefs, near Inverloch (38°41'S., 145°39'E.), gutters near LWM, algae and holdfasts, G. Poore and R. Wilson, 2 Mar 1982 (CPA stn 20).

Paratypes: Vic., type locality, NMV J4446(1). "Harry's Hole" W. of type locality, 9 m, R. Wilson et al., 6 Mar 1982 (CPA stn 8), NMV J4447(1). Aireys Inlet (38°28'S., 144°06'E.), W.F. Seed, Jan 1963, NMV J4448(1).

SA, Giles Point, near boat ramp (35°03'S., 137°46'W.), 0.5 m, tufted algae on limestone reef, G.C.B.Poore, 19 Mar 1985 (stn SA-38), NMV J11576(1 juvenile). "The Hotspot", reef 8 km W. of N. end of Flinders Is. (33°40.5'S., 134°22.0'E.), 17 m, assorted larger algae, S.A.Shepherd, 19 Apr 1985 (stn SA-65), NMV J11577(1 ♂).

Diagnosis. Head and pereonites with transverse dorsal rectangle-oval of pigment perforated essentially by pair of large oval clear areas; this becomes increasingly more diffuse posteriorly. Pleon and pleonite 6 with transverse band of pigment. Uropods, telson and basis of pereopod 1 with small pigmented areas. Dorsal pigment patches on pereonites 1-6 may extend laterally as short bands.

Pereopod 1 subchelate; article 5 with short toothed distal lobe; article 6 ovate, palm

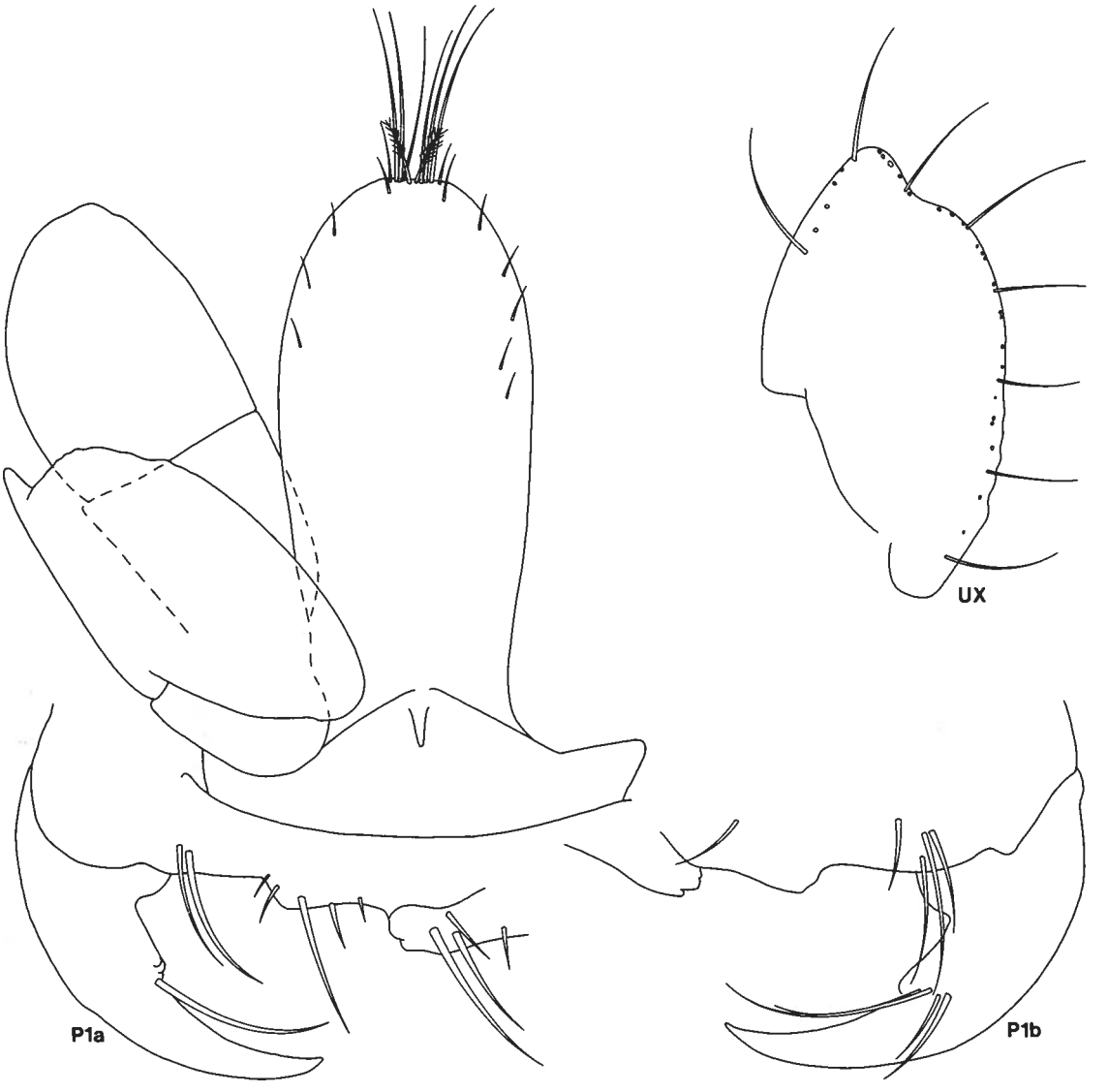

Figure 13. *Mesanthura stypandra*. Holotype juvenile, 6.2 mm; a, lateral view of palm and dactyl; b, mesial view of palm and dactyl.

oblique, with simple convexity; dactyl with simple boss at base of unguis.

Uropodal exopod only slightly excavate distally. Telson little more than twice as long as wide, widest just beyond midpoint, proximally broad, apex broadly rounded, almost truncate.

Distribution. Victoria and South Australia, subtidal.

Remarks. Mesanthura stypandra and *M. astelia* share paired clear areas on the head and pereonites. The latter is much larger and with more extensive pigment areas.

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