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CHELANTHURA (CRUSTACEA: ISOPODA: ANTHURIDAE), A NEW GENUS FROM SOUTHERN AUSTRALIA

By Gary C. B. Poore and Tania M. Bardsley

Department of Crustacea, Museum of Victoria, Swanston Street, Melbourne, Victoria 3000, Australia

Abstract

Poore, G.C.B. and Bardsley, T.M., 1990. *Chelanthura* (Crustacea: Isopoda: Anthuridae), a new genus from southern Australia. *Memoirs of the Museum of Victoria* 51: 109–119.

Chelanthura, a new genus of anthurid isopod is erected for *C. ajuga* sp. nov. (type species), *C. salvia* sp. nov., *C. westringia* sp. nov. and *Mesanthura calaena* Poore and Lew Ton. The genus differs from *Mesanthura* in the possession of a chelate first pereopod.

Introduction

Discovery of three new species similar to *Mesanthura calaena* (Poore and Lew Ton, 1986) prompted a reappraisal of their generic placement. The four are sufficiently distinctive to warrant a new genus.

The following abbreviations are used in figures 2-9: A1, A2, antennae 1 and 2; MD, mandible; MP, maxilliped; P1-P7, pereopods 1-7; PL1-PL5, pleopods 1-5; UN and UX, uropodal endopod and exopod; T, telson; l, left; r, right. Material is lodged in the Museum of Victoria, Melbourne (NMV), the Queensland Museum, Brisbane (QM), the Australian Museum, Sydney (AM) and the Western Australian Museum, Perth (WAM).

Chelanthura gen. nov.

Diagnosis. Integument pigmented. Eyes present. Antenna 1 flagellum of 3 articles, the last with 3 terminal aesthetascs. Antenna 2 flagellum short and composed of few short articles. Mandibles symmetrical; incisor, lamina dentata and molar process present; palp of 3 articles, article 3 shorter than 2 with row of few marginal setae. Maxillipedal endite absent; palp articles 1 and 2 fused, 2 and 3 weakly differentiated if at all, 3 and 4 clearly delimited, and 4 and 5 fused and with 4 mesially-directed setae.

Pereopod 1 chelate; carpus and propodus fused, propodus enlarged and elongate, its palm extremely produced and bearing complex grinding surface. Dactylus broad, almost rectangular with a complexly ridged surface on the flattened distal margin opposing the produced palmar surface; unguis subterminal. Pereopods 2 and 3 slightly more robust than posterior pereopods. Pereopods 4–7 with carpus triangular, its anterior margin free.

Pleon about as long as pereonite 6. Telson tapering over posterior third, apex with 3 pairs of setae.

Etymology. From the Latin *chela*, a claw, and *Anthura*, type genus of Anthuridae.

Type species. Chelanthura ajuga sp. nov.

Remarks. Chelanthura differs from *Mesanthura* in the possession of a chelate pereopod 1 formed by a sharply produced fixed finger on the propodus and a broad dactylus with a complexly ridged distal margin. These structures have homologues in *Mesanthura*. The fixed finger is a gross extension of the palmar boss seen in some species of *Mesanthura* (e.g., *M. astelia* Poore and Lew Ton, 1986) but is more complex and forms a grinding surface opposing the end of the dactylus.

The unguis is reduced, subterminal and barely projects beyond the end of the dactylus. In all species of *Mesanthura* the unguis is terminal and projects as in all other anthurids. The denticulate boss at the base of the unguis in some species of *Mesanthura* (e.g., *M. astelia*, *M. romulea* Poore and Lew Ton, 1986) is homologous to the distal surface of the dactylus in *Chelanthura*.

In no species of *Chelanthura* were we able to define the suture between the carpus and propodus. Its most distal point could be seen and was defined by a group of setae on the posterior margin of the enlarged carpus-propodus.

Another minor difference between the two genera was seen in the lamina dentata which is

poorly toothed in *Chelanthura* and regularly toothed in all species of *Mesanthura* examined by us.

We interpret the terminal article of the palp of *Chelanthura* and *Mesanthura* as the fused articles 4 and 5 of the primitive 5-articled palp. The more proximal portion derives from three articles: the first article which is rarely differentiated in anthurideans, and articles 2 and 3 which, in *Chelanthura*, may or may not be separated by a suture. Their boundary is marked by a mesial seta. Such variability is not usual in anthurid genera where the number of articles has often been used as a generic character.

Key to species of *Chelanthura*

1. Pigment in well-defined transverse bands on head, pereonites 1–7 and pleon; mandibular palp article 3 with 7 setae ..... *C. calaena*
— Pigment in irregular patches or more or less continuous longitudinally; mandibular palp article 3 with 4 or 5 setae 2
2. Antenna 2 peduncle broad (article 5 broader than long); pereopod 1 unguis well produced beyond distal grinding surface; pigment in 2 dorsal longitudinal stripes ..... *C. westringia*
— Antenna 2 peduncle narrow (article 5 longer than broad); pereopod 1 unguis not or slightly produced beyond distal grinding surface; pigment variable 3
3. Pereopod 1 propodus robust (1.2 times as long as wide); unguis slightly overlapping distal grinding surface of dactylus; telson widest two-thirds way along; pigment diffuse patches ..... *C. salvia*
— Pereopod 1 propodus elongate-ovoid) (1.7 times as long as wide); unguis not overlapping distal grinding surface of dactylus; telson widest halfway along; pigment even dorsally ..... *C. ajuga*

Chelanthura ajuga sp. nov.

Figures 1a, b, 2–4

Material examined. Holotype. Western Australia. 7 Mile Beach (29°12.0'S, 144°53.0'E), 1 m, G. Edgar, 1985, NMV J17112 (1 preparatory female, 2 slides).

Paratypes. Western Australia. 7 Mile Beach (29°12.0'S, 144°53.0'E), 1 m, *Amphibolus*, G. Edgar, 1985, NMV J16936 (1 preparatory female, 2 slides); WAM 78-90 (8 juveniles, 1 submale); NMV J16939 (2 juveniles); NMV J16940 (4 ovigerous females, 7 juveniles, 1 submale); NMV J16937 (1 juvenile).

Other material. Queensland. Heron Island, Canyons (23°27.0'S, 151°55.0'E), 3 m, N.L. Bruce, Dec 1979, QM W16564 (1 female, 2 slides); Heron Island, N.L. Bruce, 15 Jan 1979, QM W16565 (1 female).

Diagnosis. Head, pereonites and pleotelson with pigment patches over most of the dorsal surface; small lateral patches may be present on more posterior segments. Pereonites 1–3 with heart-shaped patches, pigment most dense on anterior part of segment; pereonites 4–7 and pleon with dense pigment on posterior part of segments; pereonites 6 and 7 and pleon with mid-dorsal elongate nonpigmented patches; dense pigment on uropodal exopod; pigment patches on endopod and telson.

Antenna 1 peduncle, article 3 twice as long as wide. Antenna 2 peduncle, article 4 1.5 times as wide as long. Mandible with ridged lamina dentata; palp article 3 with 4 marginal seta. Maxillipedal palp with articles 2 and 3 fused.

Pereopod 1 propodus elongate-ovoid, about 1.7 times as long as wide. Pereopod 1 fixed finger about one-seventh as long as posterior length of fused carpus and propodus, its grinding surface axial; dactylus inner margin without distal teeth; unguis narrow, about two-thirds as long as distal margin of dactylus and reaching apex of dactylus.

Pleonite 6 with triangular medial notch on posterior margin. Uropodal endopod almost as wide as long. Telson moderately acutely tapered, widest halfway along its length.

Description. Integument dorsally pigmented (see *Diagnosis*).

Antenna 1 peduncle article 1 square, with brush setae; article 2 wider than long with 1 simple seta and 2 brush setae; article 3 twice as long as wide with tooth on the mesial margin and 3 simple setae; flagellum article 1 short with brush setae, article 2 twice as long as wide, article

3 short with 3 terminal aesthetascs and setae. Antenna 2 peduncle articles 2–4 at least as long as wide with setae; article 5 with simple setae and 2 brush setae; flagellum of 4 very short articles with many mesial setae.

Mandible of molar process with triangular tooth, ridged lamina dentata and blunt incisor. Mandibular palp of 3 articles, much longer than incisor; article 1 with 1 distal seta, article 3 short with row of 4 setae. Maxillipedal palp with articles 1, 2 and 3 fused, together longer than wide and with a blunt mesiodistal process, with 1 mesial and 2 mesiodistal setae plus fine hairs; terminal article with 1 mesial plumose seta and 4 strong terminal setae.

Pereopod 1 chelate; carpus and propodus fused, propodus elongate-ovoid, its palm much produced to form an axial elongate fixed finger with a ridged surface and marginal setae. Dactylus broad and bearing a regular row of teeth on

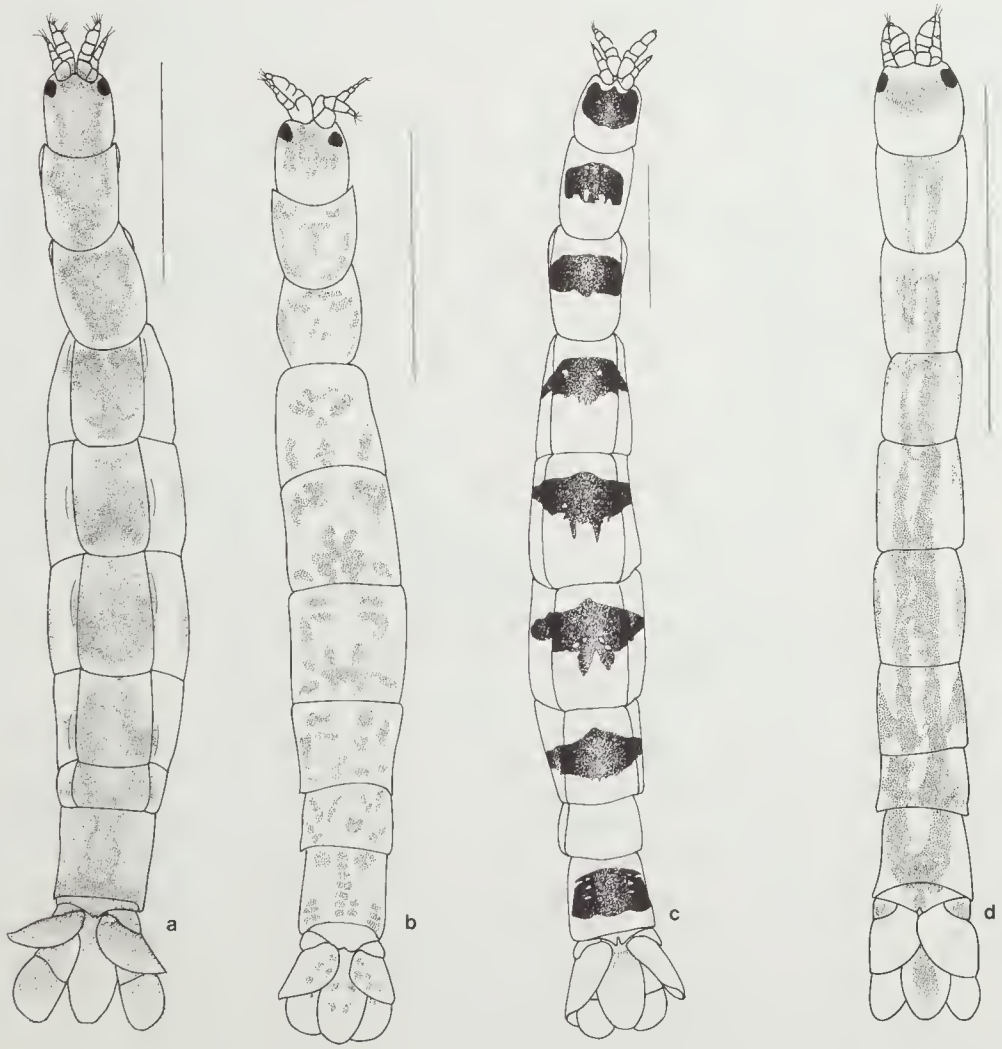

Figure 1. a, *Chelanthura ajuga*, holotype female, 4.5 mm, J17112; b, *Chelanthura salvia*, holotype female, 3.7 mm, J16795; c, *Chelanthura calaena*, holotype juvenile, 6.7 mm, J4452 (from Poore and Lew Ton, 1986); d, *Chelanthura westringia*, holotype juvenile, 2.7 mm, J16941. (scale bars = 1 mm)

Figure 2. *Chelanthura ajuga*, holotype. Pereopod 1 with mesial and lateral detail of palm and dactylus; pereopods 2, 4 and 7.

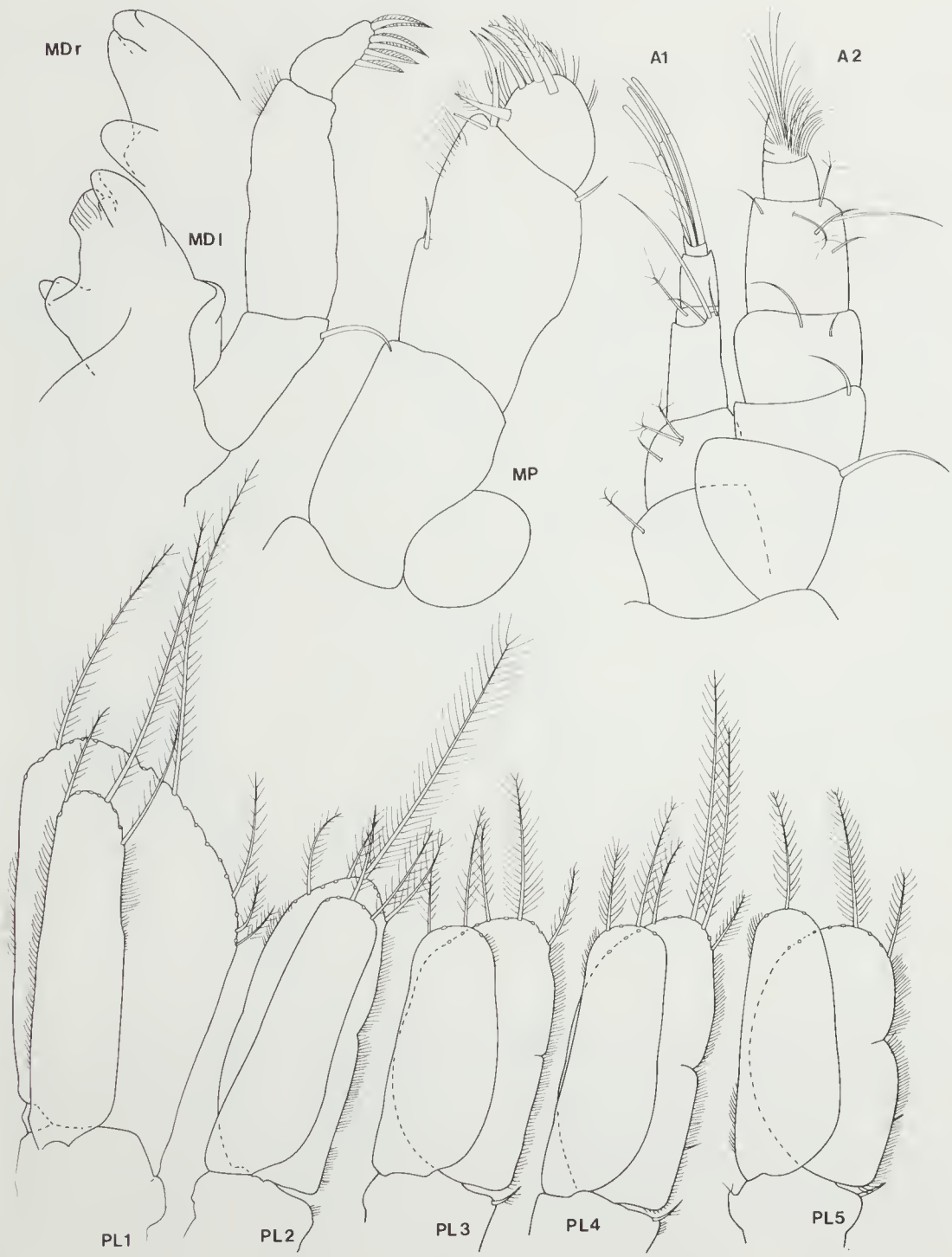

Figure 3. *Chelanthura ajuga*, holotype. Antennae, left mandible, maxilliped, pleopods 1–5.

Figure 4. *Chelanthura ajuga*, holotype. Pleotelson, uropodal endopod and exopod.

the distal margin with unguis arising mid-laterally; unguis about two-thirds length of distal margin (see *Diagnosis*).

Pereopods 2 and 3 propodus 2.2 times as long as wide, palm bearing strong posterodistal seta; dactylus about half as long as propodus; terminal primary and small secondary unguis present. Pereopod 4 carpus with short anterior margin, its distal margin with strong seta; propodus 2.4 times as long as wide with distal strong seta; dactylus curved. Pereopods 5–7 similar to pereopod 4, becoming more elongate posteriorly.

Pleon about as long as pereonite 6. Pleonite 6 with triangular notch on posterior margin. Pleopod 1 exopod operculiform, distal margin setose; endopod subequal in length and about one-third as wide as exopod, distally setose. Pleopod 2 elongate, rami subequal, setose. Pleopods 3–5 rami shorter than 2, subequal setose.

Uropodal endopod almost as wide as long, bearing dense marginal row of long simple setae with few plumose setae; 5 brush setae submarginally on dorsal surface. Exopod almost twice as long as wide with a dense marginal row of mostly plumose setae with few long simple setae. Telson about 2.5 times as long as wide, greatest width about one-third along, tapering moderately acutely to a rounded apex with concave tip bearing 3

pairs of setae: short plumose near midpoint, long simple setae next, and short simple setae laterally.

Etymology. Ajuga is a genus of Australian native flowering plant.

Distribution. Western Australia and Queensland; intertidal to 3 m.

Remarks. Chelanthura ajuga is very similar to *C. salvia*, especially in proportions of the antennae, pereopods, uropods and telson. It differs in pigmentation and in the shape of pereopod 1. *Chelanthura ajuga* shares with *C. westringia* a maxillipedal palp with articles 2 and 3 fused. These two articles are separate in *C. calaena* and all species of *Mesanthura*) and are partially separate in *C. salvia.*

We were able to discern the remnant of the lacinia mobilis on the left mandible of this species and *C. salvia.* This has been noted before for Anthuridea only in Hyssuridae (Poore and Lew Ton, 1988: fig. 7).

Chelanthura calaena (Poore and Lew Ton)

Figures 1c, 5

Mesanthura calaena Poore and Lew Ton, 1986: 96, 97, figs 2b, 7.

Material examined. Type material, see Poore and Lew Ton (1986).

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.

Antenna 1 peduncle, article 3 twice as long as wide. Antenna 2 peduncle with fine mesial setae, article 4 1.3 times as long as wide. Mandible with lamina dentata of 4 teeth; palp article 3 with 7 setae. Maxillipedal palp with articles 2 and 3 weakly defined.

Pereopod 1 fixed finger about one-fifth as long as the posterior length of the fused carpus and

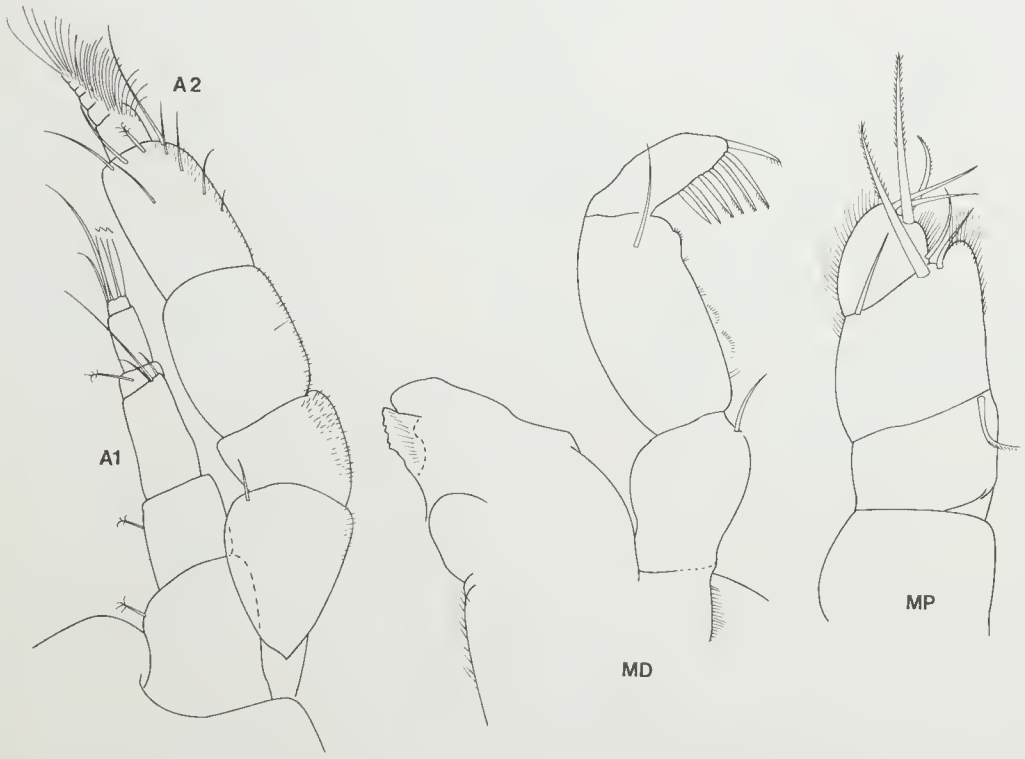

Figure 5. *Chelanthura calaena*, holotype. Antennae, left mandible and maxilliped.

propodus; its grinding surface axial. Dactylus inner margin with teeth; unguis attached laterally, about half as long as distal surface of dactylus but not overlapping it.

Pleonite 6 with narrow, elongate medial notch on posterior margin. Uropodal endopod wider than long. Telson moderately tapered.

Distribution. Victoria and South Australia, intertidal and subtidal.

Remarks. In the original description a suture between the carpus and propodus of pereopod 1 was illustrated. Re-examination failed to find it. The species is easily recognisable from its well-defined colour pattern. We illustrate antennae, mandible and maxilliped for comparison with other species.

Chelanthura salvia sp. nov.

Figures 1b, 6, 7

Material examined. Holotype. New South Wales. Coffs Harbour (30°18.0′S, 153°09.0′E), 5 m, S. Smith, 11 Jul 1989, NMV J16795 (1 preparatory female, 2 slides).

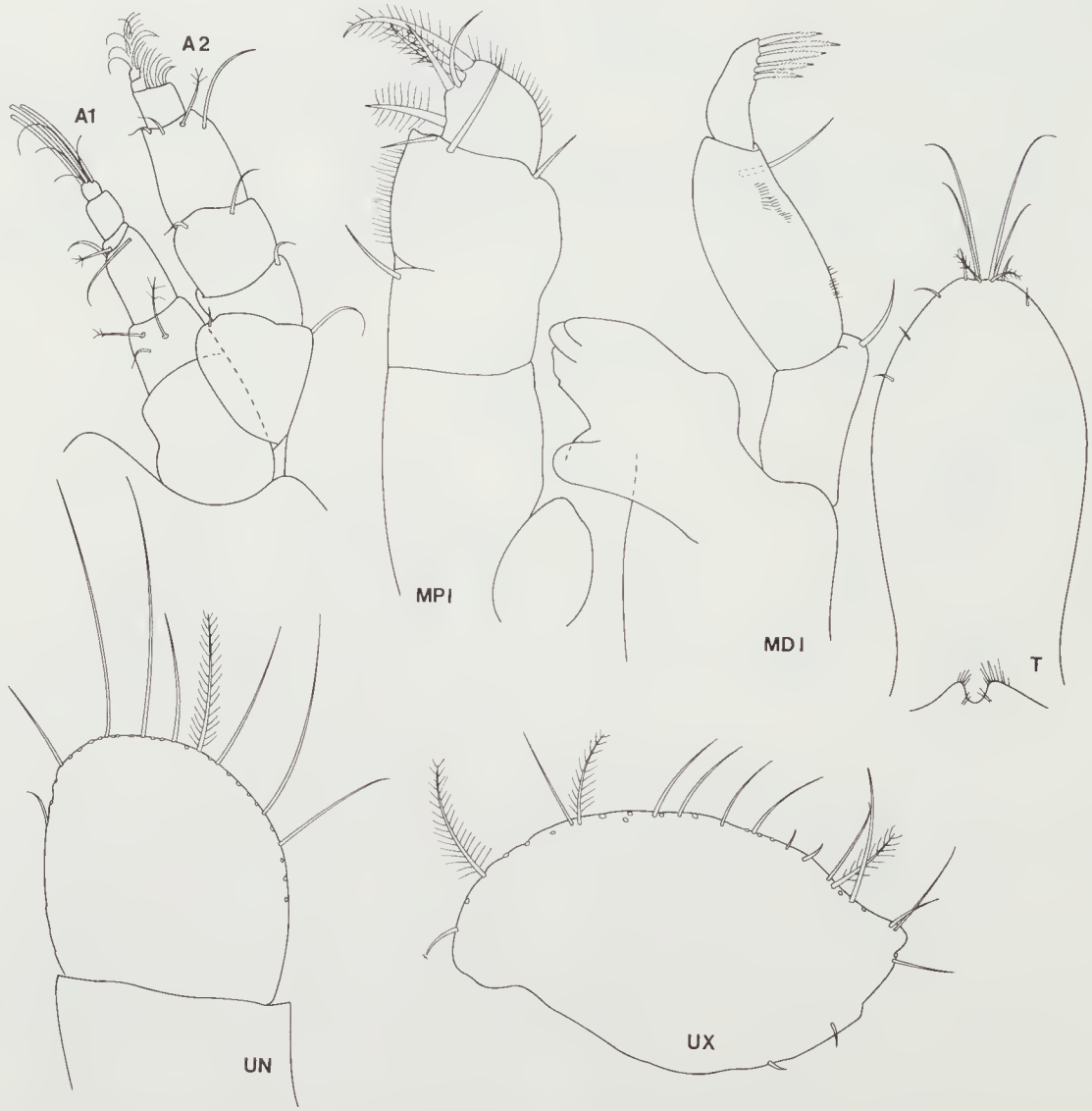

Figure 6. *Chelanthura salvia*, holotype. Antennae, left mandible, maxilliped, telson, uropodal endopod and exopod.

Paratypes. New South Wales. Coffs Harbour (30°18.0′S, 153°09.0′E), 5 m, S. Smith, 11 Jul 1989, NMV J16796 (1 ovigerous female; NMV J17110 (1 preparatory female); AM P40095 (1 preparatory female, 1 ovigerous female).

Diagnosis. Head, pereonites and pleotelson with ill-defined pigment pattern, confined to spots and patches usually symmetrically arranged. Pigment on head moderately extensive and perforated by small nonpigmented areas. Uropods and telson with small spots of pigment.

Antenna 1 peduncle, article 3 twice as long as wide. Antenna 2 peduncle article 4 as wide as long. Mandible with ridged lamina dentata; palp article 3 with 5 marginal setae. Maxillipedal palp with articles 2 and 3 partially fused.

Pereopod 1 propodus robustly ovoid, about 1.2 times as long as wide. Pereopod 1 fixed finger about one-seventh as long as posterior length of fused carpus and propodus, its grinding surface axial-oblique; dactylus inner margin toothed; unguis broad, almost as long as distal margin of dactylus and overlapping apical grinding surface of dactylus.

Pleonite 6 with shallow rounded medial notch on posterior margin. Uropodal endopod slightly wider than long. Telson moderately tapered, widest two-thirds along its length.

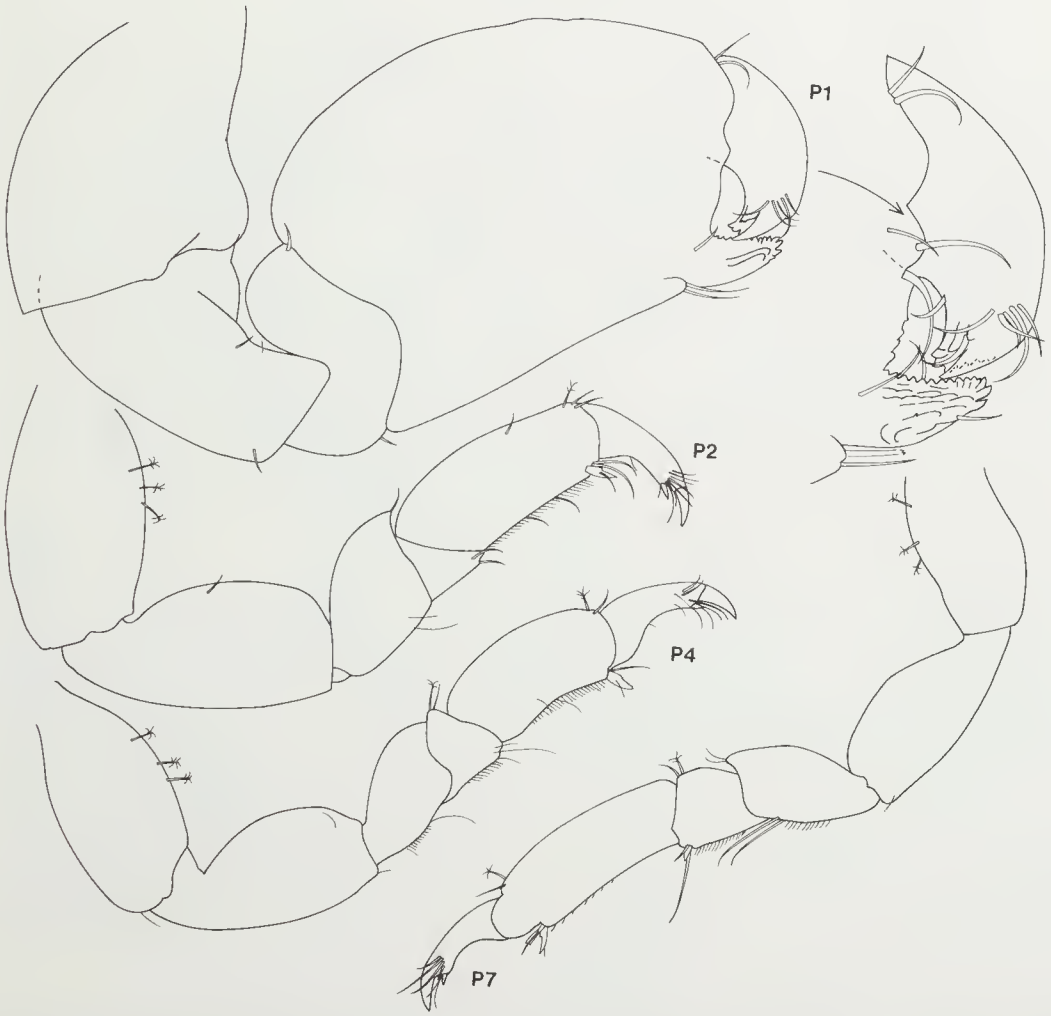

Figure 7. *Chelanthura salvia*, holotype. Pereopod 1 with lateral detail of palm and dactylus, pereopods 2, 4 and 7.

Etymology. Salvia is a genus of flowering plant found in Australia.

Distribution. New South Wales, Coffs Harbour, subtidal.

Chelanthura westringia sp. nov.

Figures 1d, 8, 9

Material examined. Holotype. South Australia. Flinders Island, "The Hotspot" reef, 5 n. miles W of Flinders Island (33°40.80′S, 134°22.50′E), 21 m, large red algae, SCUBA, G.C.B. Poore, on FV Limnos, 20 Apr 1985 (stn SA-69), NMV J16941 (juvenile, 1 slide).

Diagnosis. Head, pereonites and pleotelson with pigment over most of the dorsal surface. Head with a transverse band of pigment between eyes. On pereonites and pleon a pair of longitudinal stripes of pigment run each side of the middorsal line. Lateral patches of pigment on pereonites 5 and 6.

Antennae squat. Antenna 1 article 3 as wide as long, antenna 2 pedunele article 4 2.5 times wide as long. Mandible with lamina dentata of 3 or 4 ill-defined teeth; palp article 3 with 4 setae. Maxillipedal palp with article 2 and 3 fused.

Pereopod 1 fixed finger about one-eighth as long as posterior margin of fused carpus and propodus; its grinding surface oblique. Dactylus inner margin without teeth; unguis attached anterolaterally, at least as long as grinding surface of dactylus, and well produced beyond it.

Pleonite 6 with rounded medial notch on pos-

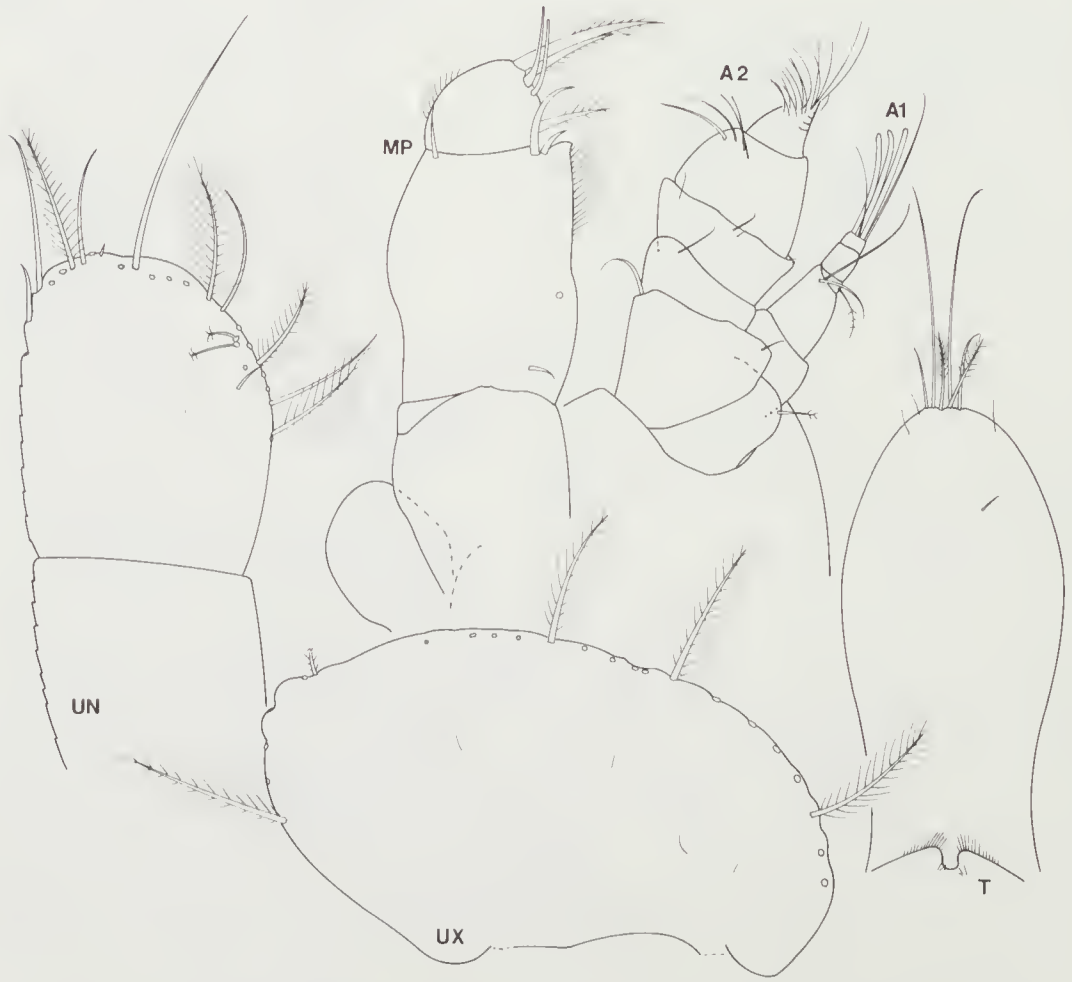

Figure 8. *Chelanthura westringia*, holotype. Antennae, maxilliped, uropodal endopod and exopod, telson.

Figure 9. *Chelanthura westringia*, holotype. Pereopod 1 with mesial and lateral detail of palm and dactylus, pereopods 2 and 7.

terior margin. Uropodal endopod 1.2 times long as wide. Telson moderately tapered.

Etymology. Westringia is a genus of native Australian flowering plant.

Distribution. South Australia; subtidal.

Remarks. Although the unique specimen is incomplete it clearly differs from the other two species. The pigmentation pattern is different, antennae are much broader and the pereopod 1 unguis is well produced.

Acknowledgements

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