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SEROLINA, A NEW GENUS FOR *SEROLIS MINUTA* BEDDARD (CRUSTACEA: ISOPODA: SEROLIDAE) WITH DESCRIPTIONS OF EIGHT NEW SPECIES FROM EASTERN AUSTRALIA

By Gary C. B. Poore

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

Abstract

Poore, G.C.B., 1987. *Serolina*, a new genus for *Serolis minuta* Beddard (Crustacea: Isopoda: Serolidae) with descriptions of eight new species from eastern Australia. *Mem. Mus. Vict.* 48: 141-189.

A new genus *Serolina* is erected for *Serolis minuta* Beddard, 1884, and 12 other species (*Serolis bakeri* Chilton, 1917, *S. eugeniae* Nordenstam, 1933), and *S. yongei* Hale, 1933; *Serolina acaste, S. clarella, S. delaria, S. granularia, S. holia, S. kawina, S. nepea*, and *S. orriella* spp. nov.) from eastern and south-eastern Australian bays, coast and shelf. *Serolina* is contrasted with *Serolis* whose type species *Serolis fabricii* Leach = *S. paradoxa* (Fabricius) is figured. *Serolina* differs from *Serolis* in the absence of pleonal sternal keels, male pereopod 2 with plumose setae on articles 3-5, male pereopod 7 without plumose setae but often with a modified dactylus, uropods attached proximally, maxilla 2 with 1 seta on the medial lobe of third endite, female without an antennal notch and coxal keys absent.

A key to the identification of the eastern Australian species is presented.

Introduction

The isopod family Serolidae is widespread in shallow sandy marine habitats and in the deep sea particularly in the Southern Hemisphere. There are about 65 species which, apart from one, *Basserolis kimblae* Poore, are superficially quite similar.

Sheppard (1933) described in detail the morphology of all species of *Serolis* then known, and Nordenstam (1933) attempted to divide them into subgenera. His subgenera (*Homoserolis, Heteroserolis, Serolis* Leach and *Spiniserolis*) have not stood the test of time and fortunately are unavailable under provisions of ICZN Article 13(b). More recently new names have been introduced for small groups of species from limited geographic areas. The genus *Glabroserolis* Menzies, 1962, was erected for a species from the South Atlantic. Cals (1977) proposed "Ceratoserolis" for seven Antarctic species and in 1982 grouped two deepwater Atlantic species in "Atlantoserolis". No type species was designated for either of Cal's "genera" and the names must therefore also be considered unavailable. Harrison and Poore (1984) discussed the validity of these genera and Poore (1985) compared *Basserolis* with *Serolis* s.l. The subgenus *Serolella*, introduced by Pfeffer (1891) for *Serolis pagenstecheri* Pfeffer, has been overlooked by all subsequent authors. Its value remains to be investigated.

This contribution deals with 13 species of Serolidae of which some were previously recognised as the *Serolis-minuta* group (Monod, 1971; Holdich and Harrison, 1980; Harrison and Poore, 1984). It is my view that these species comprise a distinct genus which is here contrasted with *Serolis paradoxa* (Fabricius), senior objective synonym of the type species of *Serolis* (*Serolis fabricii* Leach), and with other species groups of the *Serolis* complex. Among these groups are: *S. australiensis* and its Australian relatives (Harrison and Poore, 1984); *S. paradoxa* and its South Atlantic relatives; Cal's Antarctic "Ceratoserolis"; Cal's Atlantic "Atlantoserolis"; and *S. bromleyana* and relatives from the South Pacific. It is not the intention of this contribution to diagnose these probable serolid genera.

That the *S. minuta* group differ consistently from *S. paradoxa* is sufficient argument to describe these species within a separate genus. As

far as is known *Serolina* contains only Australian species. This paper deals with species from extensive collections in eastern and south-eastern Australia, from Queensland, New South Wales, Victoria, Tasmania and South Australia. Collections taken more recently from the North-west shelf of Western Australia contain more species of *Serolina.* The characters distinguishing the new genus *Serolina* are essentially those used by Harrison and Poore (1984) to contrast the *Serolis minuta* group with other Australian shelf species and those used to distinguish *Basserolis* (Poore, 1985). The diagnosis is sufficently detailed to anticipate the diagnoses of suspected serolid "genera".

Morphological variation within the *Serolis minuta* group was first discussed by Monod (1971) and elaborated by Holdich and Harrison (1980). These authors looked at only dorsal sculpture, a sexually dimorphic and otherwise variable character, and were unable to decide on specific morphological limits. By examining more characters, particularly in limbs of adult males, it is shown here that several species co-exist on the eastern Australian coast and that the sculpture of each is specific.

Materials and methods

Much of the material on which this study is based has come from large benthic surveys of the bays and shelf of eastern Australia:

Bass Strait Survey, 1979-1985 (BSS) carried out by the Museum of Victoria, Melbourne;

Crib Point Benthic Survey, 1965-1972 (CPBS) and Westernport Bay Environmental Study, 1973-1974 (WBES), both carried out in Western Port, Victoria, by the Marine Studies Group, Ministry for Conservation, Melbourne;

Port Phillip Bay Environmental Study, 1969-1973 (PPBES), carried out in Port Phillip Bay, Victoria, by the same group;

Shelf Benthic Survey, 1973 (AMSBS) and Hunter District Water Board Survey, 1975-6 (HDWBS) carried out on the New South Wales shelf by the Australian Museum, Sydney. Wilson and Poore (in press) list station localities for the Bass Strait Survey and Poore (1986) did the same for Crib Point, Westernport and Port Phillip Bay studies.

All material is lodged in the collections of the Museum of Victoria, Melbourne (NMV), Australian Museum, Sydney (AM), Queensland Museum, Brisbane (QM), South Australian Museum, Adelaide (SAM), Tasmanian Museum and Art Gallery, Hobart (TM), British Museum (Natural History), London (BMNH), Swedish Museum of Natural History, Stockholm (SMNH), Los Angeles County Museum of Natural History, Los Angeles (LACM), and United States National Museum of Natural History, Washington (USNM).

The scale on all figures refers only to whole animals and is 1 mm. Illustration labels are abbreviated thus: A1, A2, antennae 1 and 2; MD, mandible; MX1, MX2, maxillae 1 and 2; MP and MPp, maxilliped and its palp; P1-P7, pereopods 1 to 7; PL1-PL5, pleopods 1 to 5 with representative setae only; U, uropod; V, pleonal sternites 1 to 3; X and Y are explained in each caption; l, left; r, right. Illustrations marked a are of the male holotype, b of a female paratype, unless otherwise noted.

A new terminology is introduced to describe dorsal sculpture. *Mid-dorsal* crests or tubercles are common on the head, pereonites, pleonites and pleotelson. On pereonites at the base of the coxae and on pleonites are *lateral* ridges or lobes. In females the posterior margin of pereonite 2 is often expanded posteriorly at the base of the coxa as a *lateral marginal* lobe. The *midlateral marginal* crenulations extend along a ridge between the mid-dorsal crest and the lateral lobe.

Leach (1818) and later the name *Serolis trilobitoides* Eights drew attention to the similarity of serolids to trilobites. The specific epithets of the new species described here are genera of trilobites chosen only for their euphony, not to reflect any specific features of either the isopod or the trilobite.

Serolina gen. nov.

Diagnosis. Serolidae markedly flattened, unable to conglobate, coxal plates laterally extended, without interlocking keys; male broader than female. Head with a median posterior tubercle and sometimes with 1 or 2 pairs of smaller tubercles. Pereonite 5, in dorsal midline, longer than half length of pereonite 4. Pleon telson apex rounded

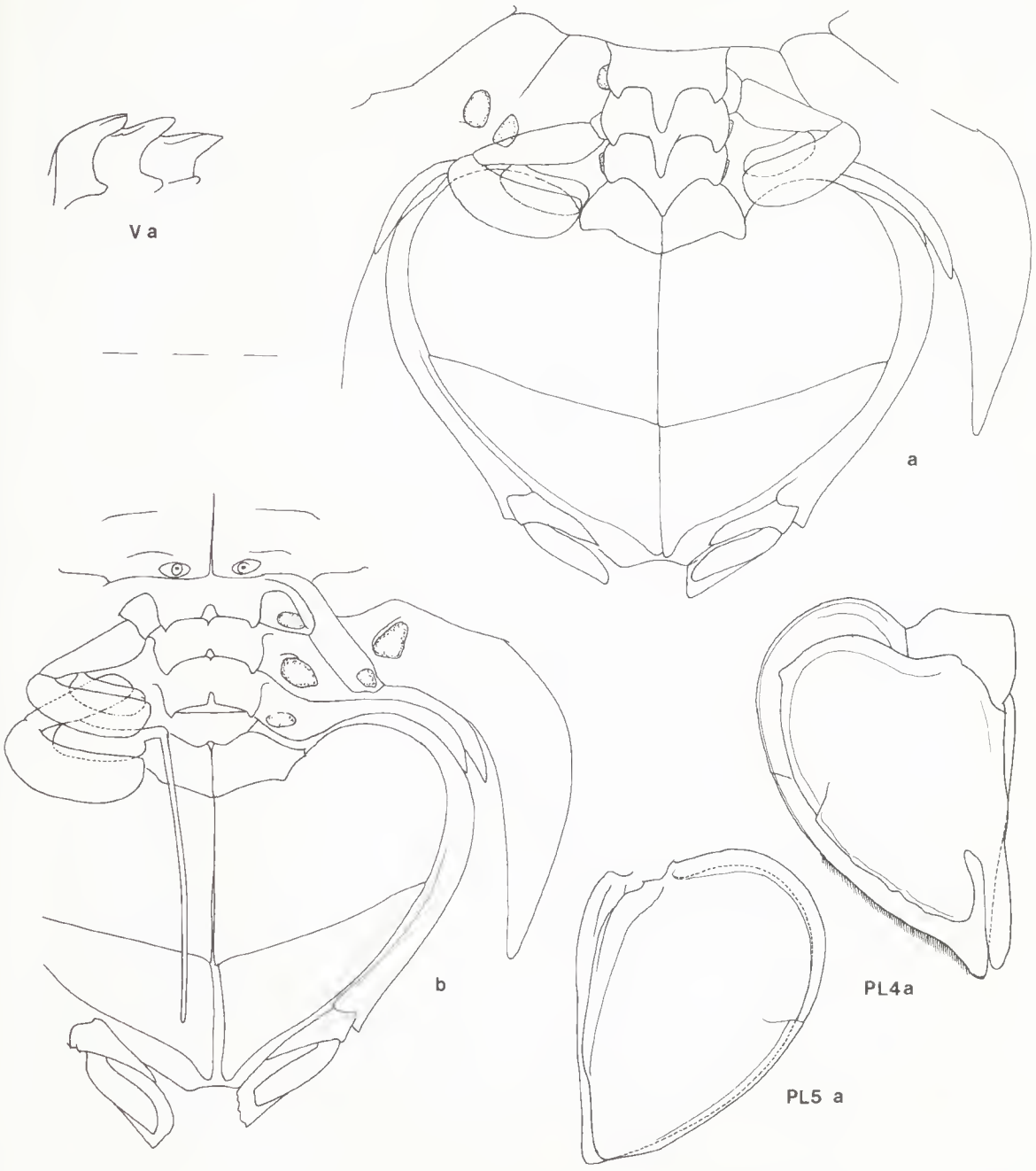

Figure 1. *Serolis paradoxa.* a, female, 36 mm; b, male, 32 mm (BMNH 1868:62). Ventral view of female pleon shows points of attachment of right pereopods 6 and 7, right pleopods 1 and 3, and left pleopods 2 and 3 (right pleopods 2 and 4 and left pleopods 1 and 4 are shown). Ventral view of male pleon shows points of attachment of left pereopods 6 and 7, left pleopods 1- 3 (right pleopods 1, 2 and 4, and left pleopod 4 are shown).

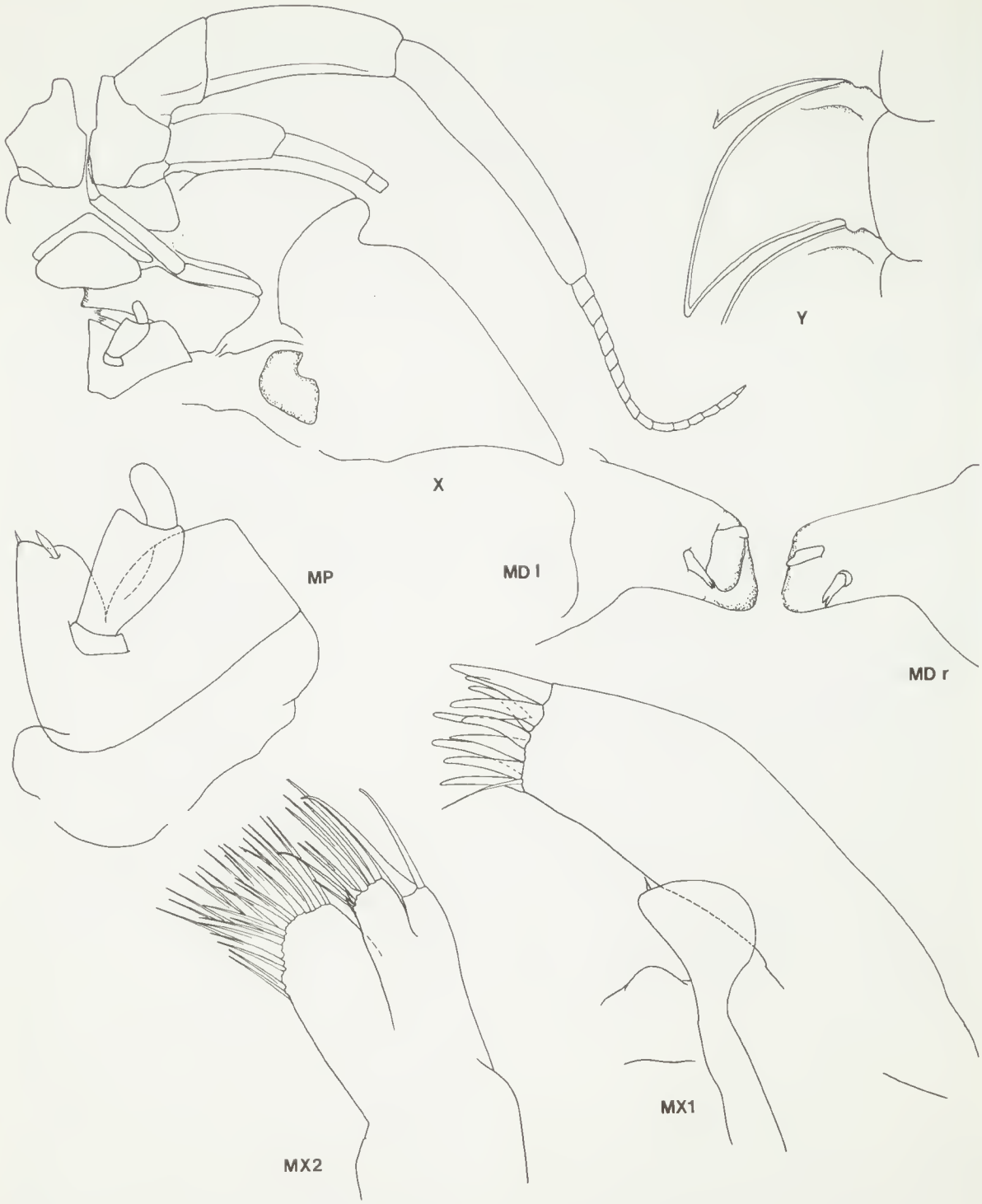

Figure 2. *Serolis paradoxa.* a, female, 36 mm; b, male, 32 mm (BMNH 1868:62). X, ventral view of left side of head and pereonite 1. Y, ventral view of coxa 3.

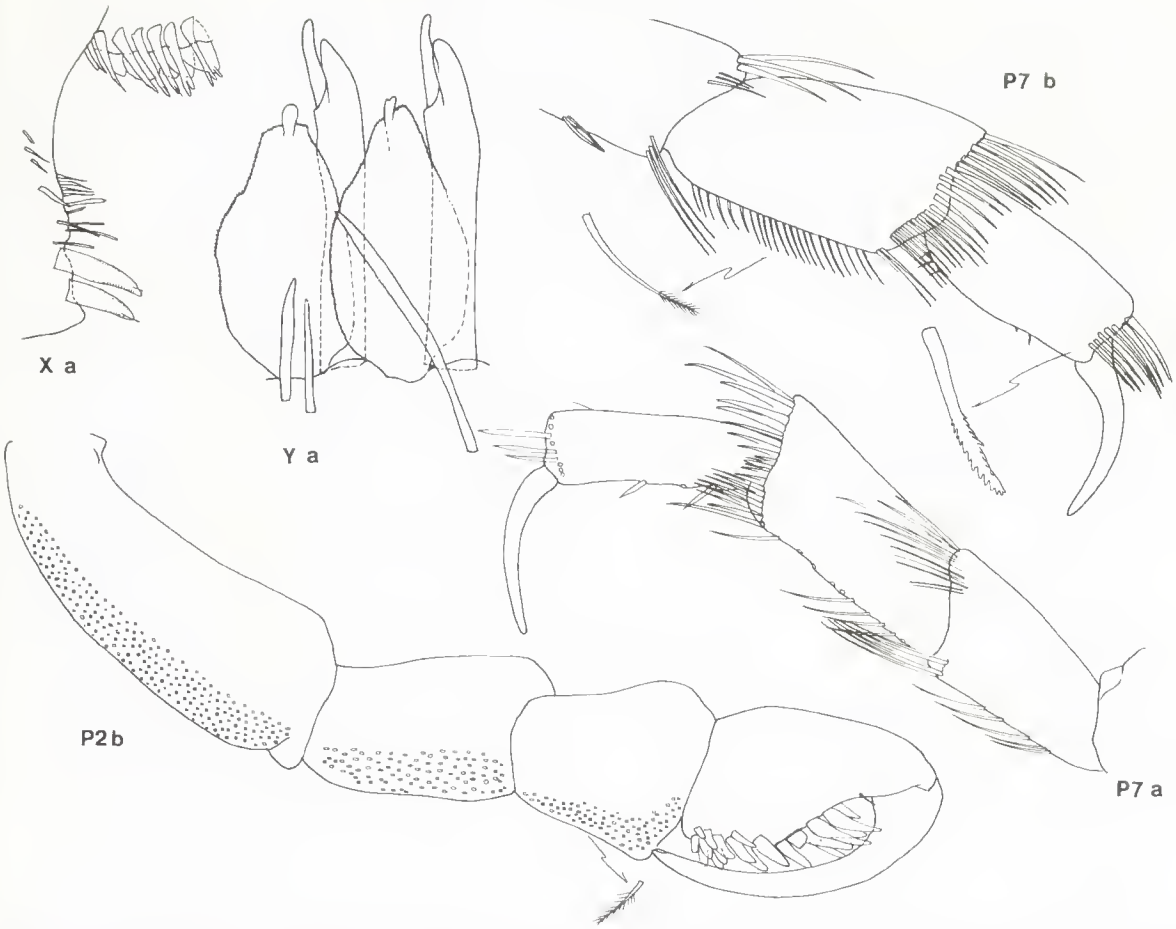

Figure 3. *Serolis paradoxa.* a, female, 36 mm; b, male, 32 mm (BMNH 1868:62). X, medial view of carpal thumb of left pereopod 1. Y, lateral view of propodal palm of left pereopod 1.

or truncate. Pleonal sternites 1-3 not markedly keeled in either sex; sternite 1 lacking median posterior projection.

Antenna 1 not sexually dimorphic.

Mandible: left lacinia mobilis a broad serrate blade, at least two-thirds width of incisor, much wider than right lacinia mobilis. Maxilla 1 with 11 spines on outer ramus. Maxilla 2 with simple setose second endite, and bilobed third endite with 1+2 setae. Maxillipedal palp of 3 articles; article 2 with lateral margin slightly concave proximally, broadening distally.

Pereopod 1 article 6 with lateral row of setae plus row of flattened spines and row of bifid spines along cutting edge. Pereopod 2 sexually dimorphic; in male articles 3-5 without strong spines; articles 4 and 5 with long plumose setae along posterior margin; article 6 with series of curved spines; dactylus with prominent unguis. Some or all of pereopods 5-7 variously sexually dimorphic; pereopod 7 article 6 of male broader than in female, dactylus hooked or reflexed or sometimes otherwise modified.

Pleopods 1-3 each with elongate laterally-directed peduncle and subelliptical single-articled rami. Pleopod 4 with simple endopod. Uropod with 2 rami, outer shorter, with few setae, attached near base of pleotelson.

Type species. Serolis minuta Beddard, 1884.

Etymology. A diminutive of *Serolis* (feminine). (*Serolis* is a made-up name which has always been treated as feminine.)

Remarks. Male and female specimens of *Serolis paradoxa* (Fabricius) from the Straits of Magel-

lan, (BMNH 1868:62) were examined and figures necessary for contrasting *Serolina* are presented here (Figs. 1- 3). Sheppard (1933) has also figured parts of this species. The figures of *Serolina minuta* (Figs. 28-30) are the most complete of all the species described here and may be taken as typical of *Serolina*.

The most obvious differences between *Serolis* and *Serolina* are in the pleonal sternites, male pereopods 2 and 7, maxilla 2, pleopod 4, uropods, female pereonite notch and coxal keys. In *Serolis paradoxa* sternal keels are present on pleonal sternites 1-3 of females only; in males the sternites are quite flat in profile (absent in both sexes in *Serolina*). The male pereopod 2 of *Serolis* bears a felt of plumose setae on articles 3-5 (articles 4 and 5 only in *Serolina*). The male pereopod 7 of *Serolis* has a felt of plumose setae on article 5 (absent in *Serolina*); other pereopods are not modified as in *Serolina*. The proximal (medial) lobe of the third endite of maxilla 2 bears 8 long setae in *Serolis paradoxa* (only one in *Serolina*). Pleopod 4 of *S. paradoxa* has a digitate endopodal lobe (not found in *Serolina*). The uropods of *Serolis* are attached distally (proximally in *Serolina*). Females of *S. paradoxa* possess a notch on pereonite 1 (absent in *Serolina*). There are small coxal keys in *Serolis*, smaller than found in "Ceratoserolis" (absent in *Serolina*).

Serolina shares with *Serolis*, and differs from other species groups: male broader than female; head with median posterior projection; antenna 1 not sexually dimorphic; similar mandibles; and modified male pereopod 7.

Species of *Serolina* can be distinguished on dorsal sculpture and the key relies largely on this feature. Because of strong sexual dimorphism males are more readily identified than females especially using the shape of terminal articles of pereopods 2 and 7.

Serolina acaste sp. nov.

Figures 4-6

Serolis minuta.–Poore et al., 1975: 33, 64. (not *Serolis minuta* Beddard, 1884)

Material examined. Holotype. Vic. Bass Strait, S of Cape Otway (39°06.0′S, 143°35.8′E), 95 m, fine sand, epibenthic sled, G. Poore et al. on FRV "Hai Kung", 31 Jan 1981 (BSS stn 118), NMV J6172 (♂, 5.6 mm, with 1 slide).

Paratypes. Type locality, NMV J6171 (♀, 6.1 mm), NMV J6501 (2 ♂♂, 4.9-5.1 mm), NMV J6502 (9 ♀♀, 5.4-6.1 mm), NMV J6503 (18 juveniles, 2.7-5.0 mm). Bass Strait, S of Cape Otway (39°06.7′S, 143°28.7′E), 92 m, fine sand, epibenthic sled, G. Poore et al. on FRV "Hai Kung", 31 Jan 1981 (BSS stn 119), NMV J6504 (2 ♂♂, 1 ♀), NMV J6505 (37 juveniles), USNM 221526 (1 ♂, 1 juvenile), LACM 3003 (1 ♂, 1 juvenile); SW. of Cape Otway (39°01.0′S, 143°22.1′E), 84 m, sand, epibenthic sled, G. Poore et al. on FRV "Hai Kung", 31 Jan 1981 (BSS stn 120), AM P34790 (4 ♂♂), AM P34789 (7 ♀♀), AM P34788 (30 juveniles).

Other material. SA. Corny Point (34°55′S, 137°05′E), 1 m, sand and *Posidonia*, G.C.B. Poore and H.M. Lew Ton, 17 Mar 1985 (stn SA23), NMV J11923(23). Flinders Is., NW coast beach (33°41.7′S, 134°28.5′E), 3 m, sand and *Posidonia*, G.C.B. Poore, 19 Apr 1985, (stns SA59 and SA60), NMV J11924(1), J11925(11). Venus Bay, off township (33°13.8′S, 134°40.1′E), 2-3 m, sand in channel and flat, G.C.B. Poore, 23 Apr 1985, (stns SA86 and SA87), NMV J11926(4), J11927 (♂, 5.4 mm; ♀, 6.9 mm).

Bass Strait, eastern and western regions, 16-101 m: 3 ♂♂, 4 ♀♀, 23 juveniles from BSS stations 107, 108, 110, 111, 121, 165, 172, 184 and 190, NMV J6506-J6510, J6554, J6760, J6761, J6774, J6795, J7414.

Vic. Port Phillip Bay, 4 ♂♂, 1 ♀, 4 juveniles from PPBES stations 945, 974 and 984, NMV J6511-J6513.

Tas. Forestier Peninsula, Lagoon Bay, 16 m, TM G2537 (1 ♂, 1 ♀). Off Little Swanport, 10 m, TM G2538 (1 ♀, 3 juveniles). Wineglass Bay, 20 m, TM G2539 (1 manca). Orford, off Spring Beach, 20 m, TM G2540 (1 ♂, 1 juvenile). 15 km E of South Bruny Is. (43°24.6′S, 147°32.5′E), 82 m, epibenthic sled, R. Wilson on RV "Soela", 22 Oct 1984 (BSS stn 232), NMV J11955(2).

Description. Male. Body as long as wide. Coxae 1-3 only just overlapping anterior margins of following coxae; coxae 4-6 evenly spaced, with triangular fissure between each; coxa 6 extending as far posteriorly as pleonal epimeron 3, separated from pleonite 2 by broad triangular fissure.

Head with medial triangular projection and obscure blunt rounded lobes laterally on posterior margin; eye prominent, reniform, with slight medioposterior eave. Pereonites 1-5 and pleonites 1-3 with narrow elongate mid-dorsal crests ending acutely posteriorly, longest and most obvious on pleonite 1. No lateral sculpture on pereon and pleon. Pleotelson lateral margins slightly concave posteriorly, apex subacute; with of long sharp mid-dorsal crest, highest anteriorly.

Antenna 1 article 2 2.8 times as long as wide, distal margin oblique; article 3 0.7 times length of article 2, slightly tapering; article 4 0.5 times length of article 3; flagellum of 9 articles, last 2 minute. Antenna 2 article 4 evenly tapering; article 5 1.6 times length of article 4, 4.8 times as

Key to eastern Australian species of *Serolina*

Serolina holia appears twice because of sexual differences in dorsal sculpture. The key relies almost entirely on dorsal sculpture because this will accommodate identification of both sexes. Males are best confirmed by comparing pereopods 2, 5, 6, and 7 with figures.

1. Mid-dorsal crests visible in lateral view; usually with lateral sculpture and telsonic keel 2
– No mid-dorsal crests visible in lateral view; no lateral sculpture (or mid-dorsal crests suggested only posteriorly); no telsonic keel 8
2. Lateral sculpture (ridges or lobes) on pereonites near coxal sutures 3
– No lateral sculpture on pereonites (except a lateral marginal lobe on pereonite 2 of some females) 6
3. Pleotelson with dorsolateral ridges; male with a prominent mid-dorsal head tubercle 4
– Pleotelson without dorsolateral ridges; mid-dorsal head and pereonite crests of both sexes of even height 5
4. Lateral lobes on pereonites 5 and 6; no midlateral denticles ..... *S. eugeniae* (Figs. 15-17)
– No lateral lobes on pereonites 5 and 6; with few midlateral denticles ..... *S. nepea* (Figs. 29-31)
5. Head with 3 posterior lobes separated by narrow notches; with midlateral denticles ..... *S. delaria* (Figs. 12-14)
– Head with insignificant lateral lobes on posterior margin; without midlateral marginal denticles ..... *S. minuta* (Figs. 26-28)
6. Pleotelson with dorsolateral ridges; head with 5 posterior lobes ..... *S. clarella* (Figs. 9-11)
– Pleotelson without dorsolateral ridges; head with 3 at most posterior lobes 7
7. Coxa 6 acute, reaching pleonal epimeron 2; without lobes on anterior surface of head ..... *S. acaste* (Figs. 4-6)
– Coxa 6 obtuse, not reaching pleonal epimeron 2; with 2 flat lobes on anterior surface of head ..... *S. holia* (Figs. 20-22)
8. Antenna 1 article 3 shorter than article 4 ..... *S. yongei* (Figs. 35-37)
– Antenna 1 article 3 longer than article 4 9
9. Coxa 6 narrow and acute, overlapping at least pleonal epimeron 2, disrupting continuity of lateral margin 10
– Coxa 6 broad and obtuse, not reaching pleonal epimeron 2, scarcely disrupting continuity of lateral margin 12
10. Coxal margins continuous; uropodal exopod much shorter than endopod 11
– Posterior coxal margins diverge; uropodal exopod little shorter than endopod ..... *S. bakeri* (Figs. 7, 8)
11. Coxa 6 overlapping pleonal epimeron 3 ..... *S. kawina* (Figs. 23-25)
– Coxa 6 not overlapping pleonal epimeron 2 ..... *Serolina* sp.
12. Antenna 1 article 4 two-thirds length of article 3; uropodal exopod rounded ..... *S. holia* (Figs. 20-22)
– Antenna 1 article 4 one-third length of article 3; uropodal exopod truncate 13
13. Pleotelson with dorsolateral ridges; uropodal exopod half as long as endopod ..... *S. granularia* (Figs. 18, 19)
– Pleotelson without dorsolateral ridges; uropodal exopod longer than half length of endopod ..... *S. orriella* (Figs. 32-34)

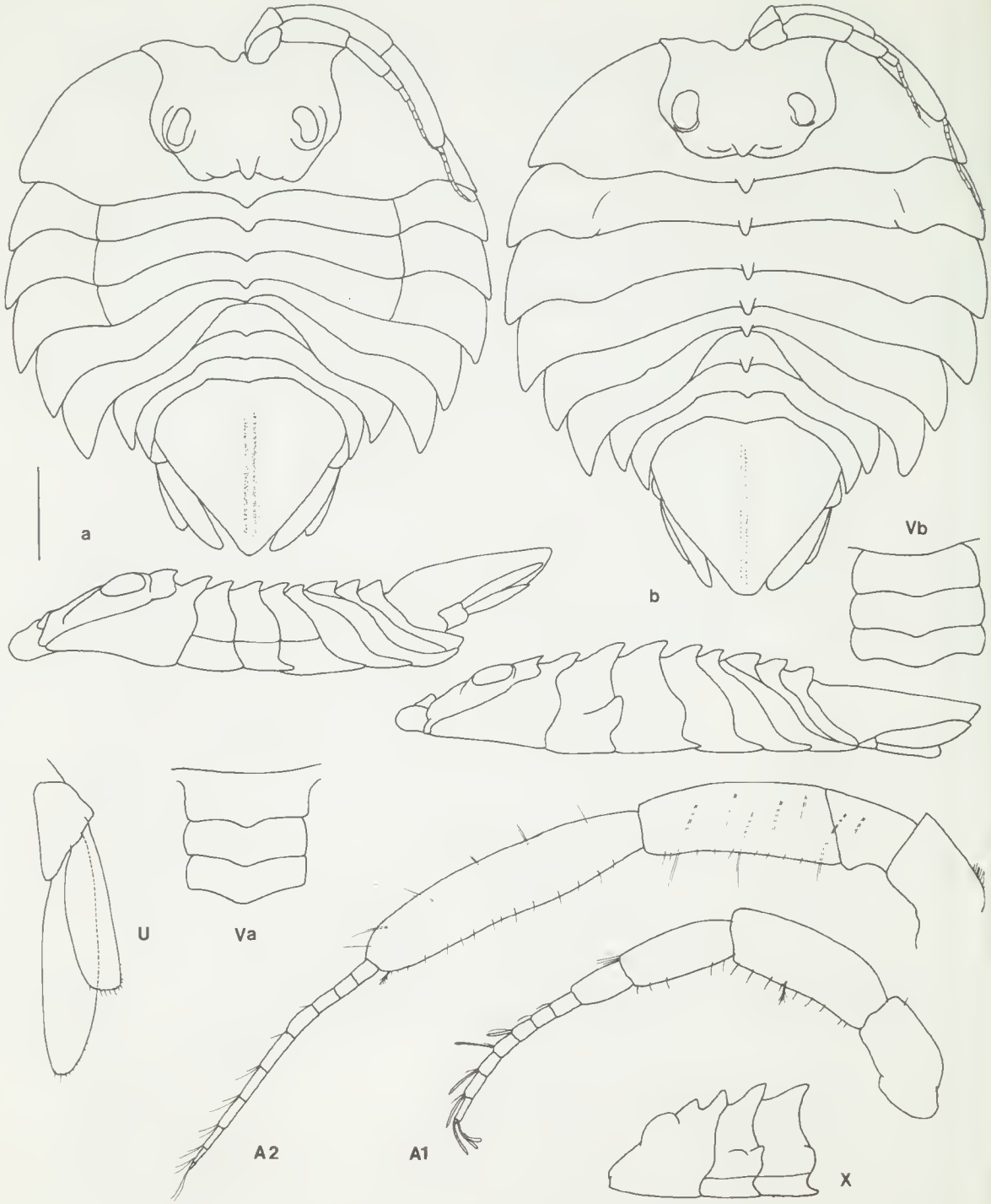

Figure 4. *Serolina acaste.* a, male holotype, 5.6 mm; b, female paratype, 6.1 mm; X, illustrating left lateral boss and marginal lateral flange of pereonite 2, female, 5.0 mm, NMV J11955.

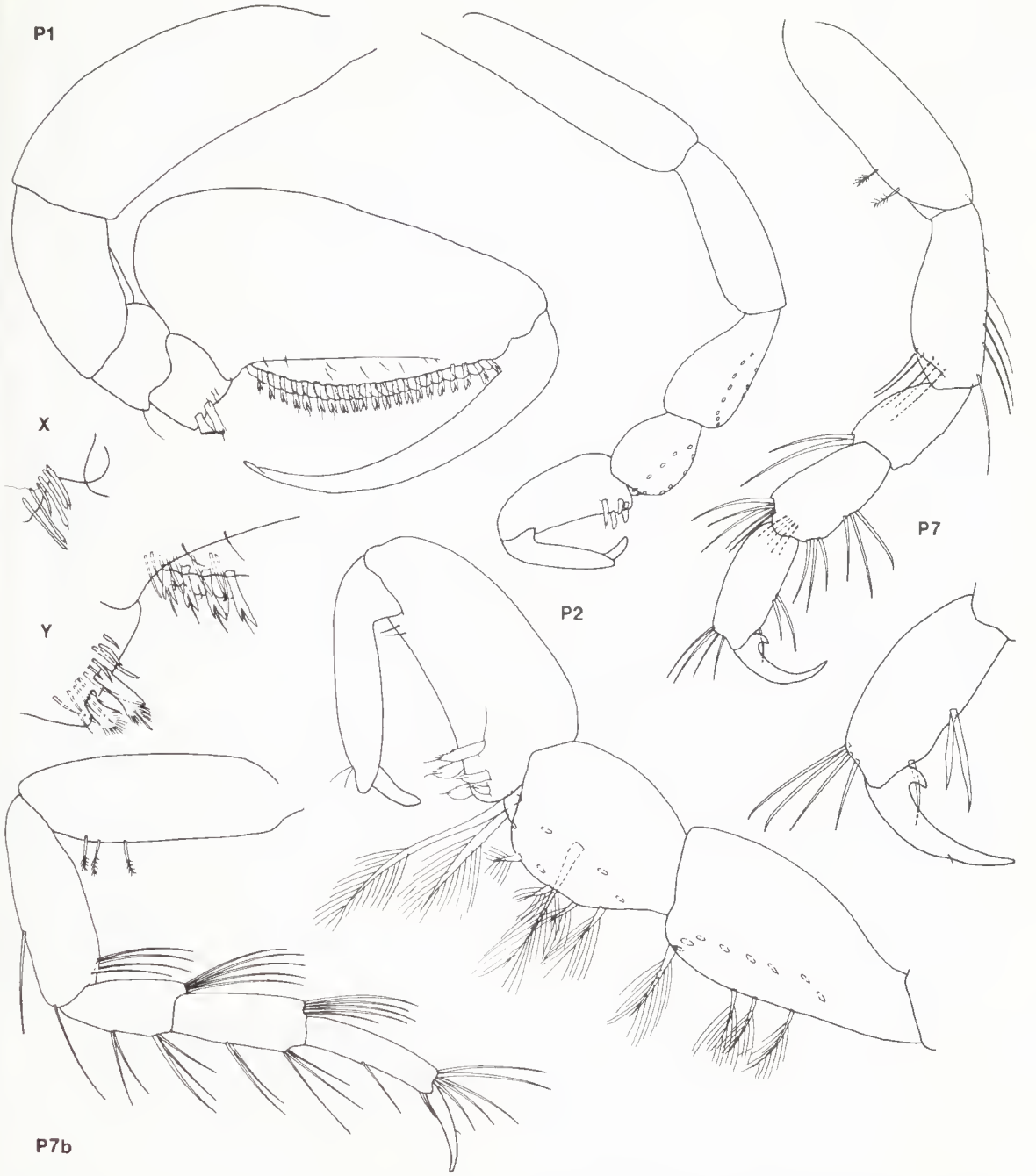

Figure 5. *Serolina acaste.* a, male holotype, 5.6 mm; b, female paratype, 6.1 mm; X, pereopod 1, article 5, lateral view; Y, pereopod 1, article 5 and palm of article 6, medial view.

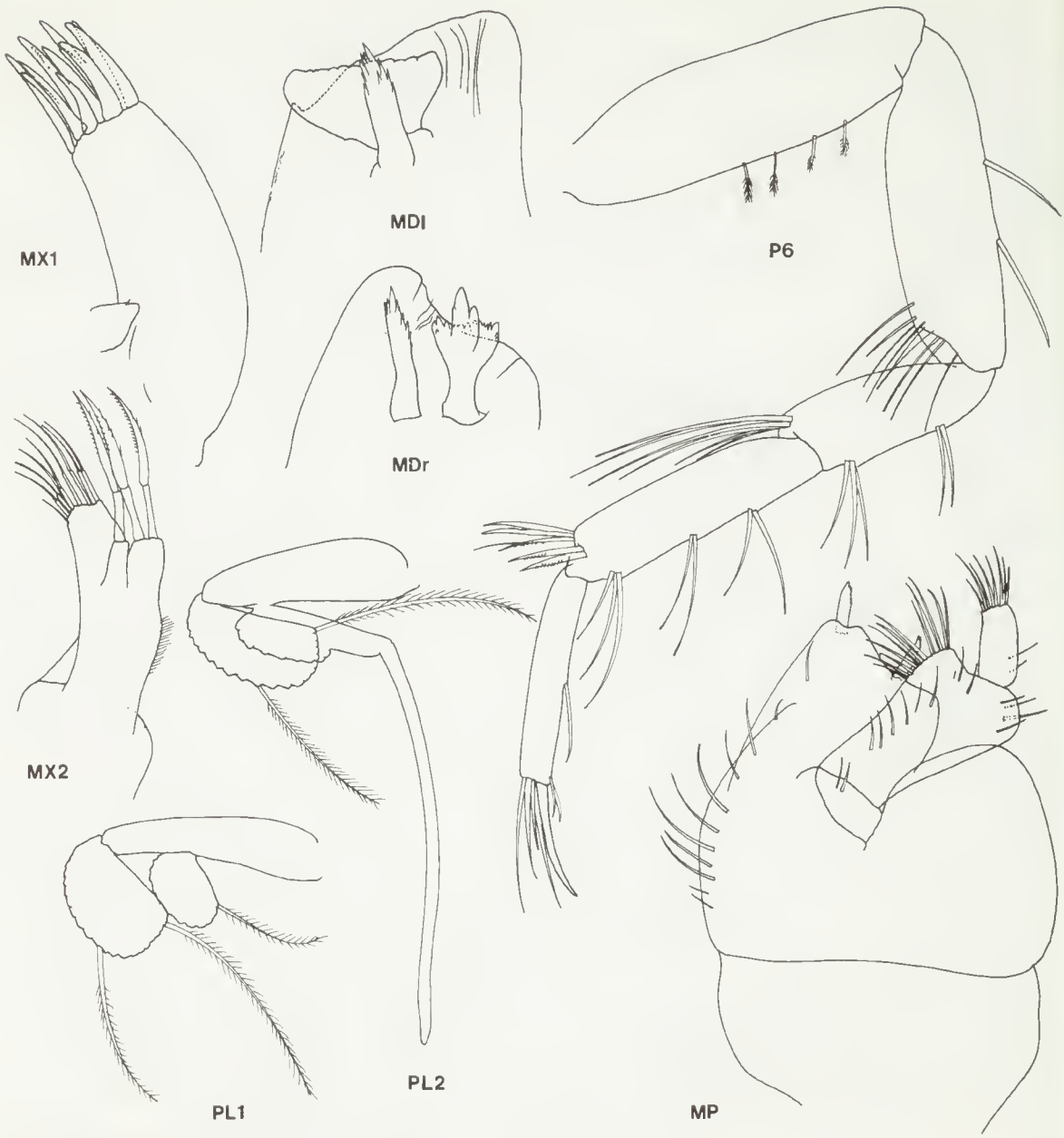

Figure 6. *Serolina acaste,* male holotype, 5.6 mm.

long as wide, tapering slightly over distal two-thirds; flagellum of 10 articles.

Pereopod 2 article 3 shorter than article 2; article 4 with 12 plumose setae in 2 rows; article 5 0.7 times length of article 4, posterior margin distally lobed, with 12 plumose setae in 2 rows; article 6 tapering distally, posterior margin concave, with 5 spines on proximal heel; dactylus unguis attached subapically, about one-fifth of whole length. Pereopod 6 articles 3-6 with anterodistal rows of 6-8 setae and single setae and groups of setae along posterior margin; article 5 3.8 times as long as wide. Pereopod 7 articles 3-5 subquadrate-linear, with anterodistal clusters

of setae; article 6 widest at midpoint, with pair of setae at midpoint and 1 distally on convex posterior margin; dactylus curved, with short proximal thumb.

Pleopod 2 appendix masculina 3.3 times length of endopod. Uropod endopod elongate-ovate, apex narrowly rounded; exopod 0.7 times length of endopod, sub-truncate, with short apical setae.

Female. Body 1.2 times as long as wide. Coxae and pleonal epimera as in male, coxa 6 extending as far posteriorly as epimeron 2. Mid-dorsal sculpture similar to that of male, body deeper. Pereonite 2 with marginal lateral lobes, broadly rounded and upturned, sometimes divided into lobe and denticle (Fig. 4x) and often a lateral boss.

Pereopod 6 similar to that of male. Pereopod 7 basal articles similar to those of male; article 5 more elongate; article 6 much more elongate and with single mid-posterior seta; dactylus fine and without basal thumb.

Distribution. Victoria (Port Phillip Bay), Bass Strait, Tasmania, South Australia; 16-101 m.

Remarks. Serolina acaste is a species frequently found on sandy sediments in south-eastern Australia. The species is distinguished by the strong even mid-dorsal crests and absence of lateral sculpture. The proximal thumb on the dactylus of the male pereopod 7 is similar to that found in *S. bakeri* but the latter is dorsally much smoother than *S. acaste*.

Specimens from South Australia differ slightly from those from more eastern states. The head has three posterior denticles rather than lobes, and the uropodal exopod is almost as long as the endopod rather than much shorter. The South Australian male pereopod 2 has more palmar spines than the male from Victoria and the female marginal lateral lobe is more acute. Females reach 6.1 mm and males 5.1 mm in length.

Serolina bakeri (Chilton) comb. nov.

Figures 7, 8

Serolis bakeri Chilton 1917: 394, 398-400, figs. 12-14.–Hale, 1929: 307, 310.–Sheppard, 1933: 333, 336.–Holdich & Harrison, 1980: 377- 384, figs. 4C, 4D, 5D.–Harrison & Poore, 1984: 13, 15.

Serolis (*Homoserolis*) *minuta* var. *bakeri*.–Nordenstam, 1933: 39, 84, 95.

Serolis minuta.–Dorsey & Synott, 1980: 159. (not *Serolis minuta* Beddard, 1884)

Material examined. Syntypes. SA. Encounter Bay (35°35'S, 138°45'E), 36-54 m, J.C. Verco, SAM C383 (♂, 5.5 mm, with 1 slide); SAM C384 (ovigerous ♀, 6.3 mm; non-ovigerous ♀, 5.2 mm; juvenile, 5.5 mm).

Other material. Vic. McGaurans Beach, Seaspray, 900 m offshore (38°23'S, 147°11'E), 10.5 m, sand, SCUBA, J. Watson et al., 26 Apr 1981, NMV J6797 (non-ovigerous ♀, 4.4 mm, with 2 slides). Breamlea (38°18'S, 144°24'E), 14 m, fine sand, J. Dorsey, 10 Nov 1978, NMV J6798 (3 post-mancas, 2.2-3.2 mm). Breamlea, depth and sediment not recorded, Geelong and Region Water Board, 1986, NMV J14006 (♂, 5.8 mm, 1 slide), NMV J14007 (♀, 5.5 mm, 1 slide), NMV J14008 (2 ♂♂, 3 ♀♀, 3 juveniles).

Description. Male. Body as wide as long. Anterior margins of coxae 2-6 well overlapped by preceding coxae, especially posteriorly, posterodistal corners acute; coxa 6 overlapping pleonal epimera 2 and 3, a deep fissure between each; pleonal epimera 2 and 3 narrow and acute; coxae and epimera fringed with long setae.

Head with 3 flat lobes on posterior margin, medial one more acute than lateral pair; separated from eyes by deep furrow. Eye ovalreniform. Pereonites 1-5 and pleonites 1-3 without mid-dorsal tuberculation or withminute tubercles in Victorian individuals. Pereonites without lateral sculpture. Pleotelson triangular, lateral margin concave distally, apex acute-rounded; with low broad mid-dorsal crest of even height.

Antenna 1 article 2 2.9 times as long as wide, posterodistal corner slightly produced; article 3 0.6 times length of article 2, tapering only over distal two-thirds. Antenna 2 article 4 only slightly tapering over most of length, apically rounded; article 5 1.6 times length of article 4, about 5 times as long as wide, only slightly tapering; flagellum of about 9 articles.

Pereopod 2 articles 2 and 3 elongate; article 4 with 5-10 plumose setae; article 5 0.4 times length of article 4, posterior margin convex, with about 14 plumose setae in 2 rows; article 6 strongly tapering distally, posterior margin sinuous, with 2 rows of 4 spines on proximal two-thirds; dactylus unguis attached near midpoint, about half of whole length. Pereopod 6 article 3 with dense row of setae posteriorly and groupsof 3-6 setae posteriorly; article 5 3 times as long as wide. Pereopod 7 articles 3-5 broad; article 3 with numerous posterior and anterodistal setae

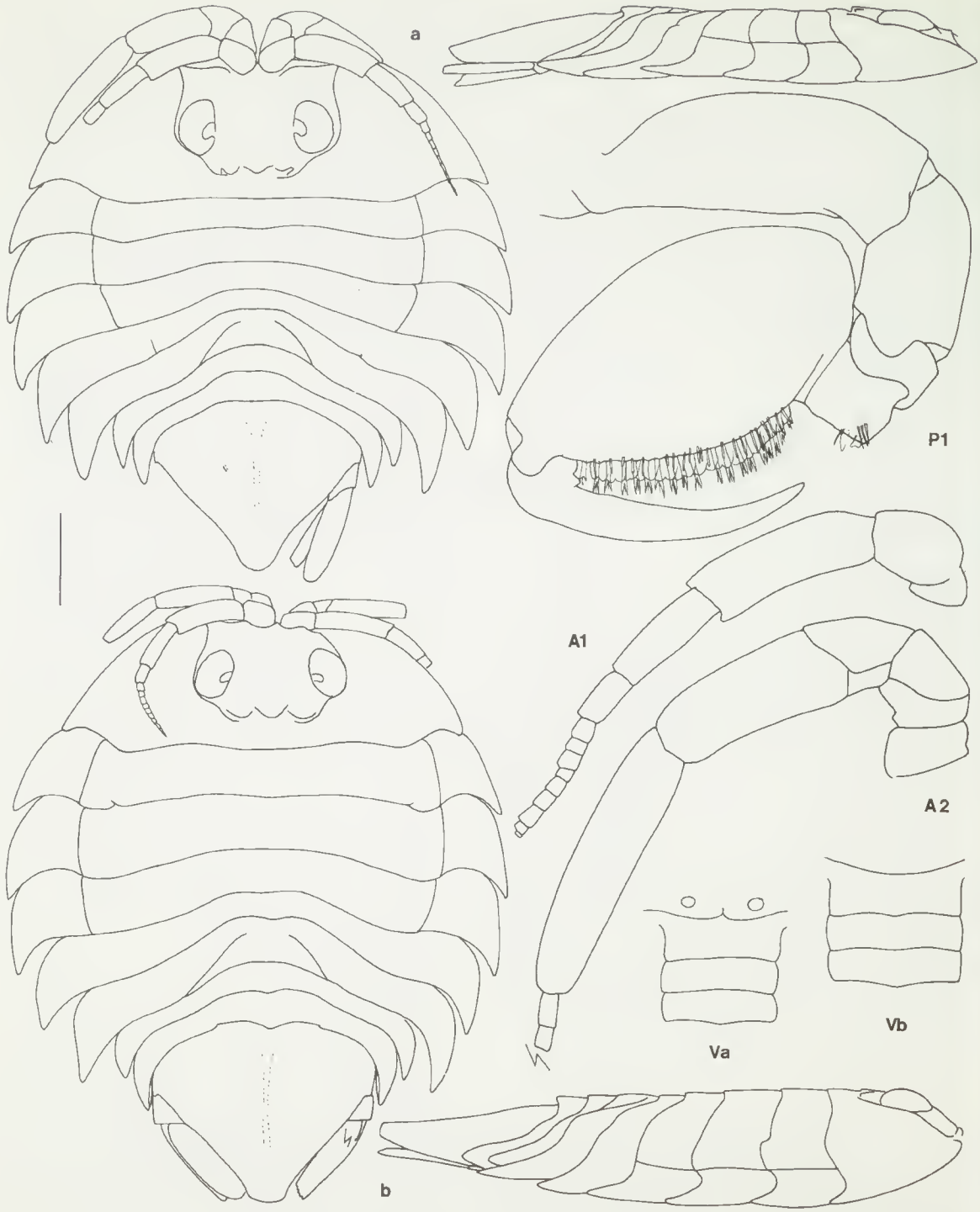

Figure 7. *Serolina bakeri.* a, male holotype, 5.5 mm; b, female paratype, 6.3 mm.

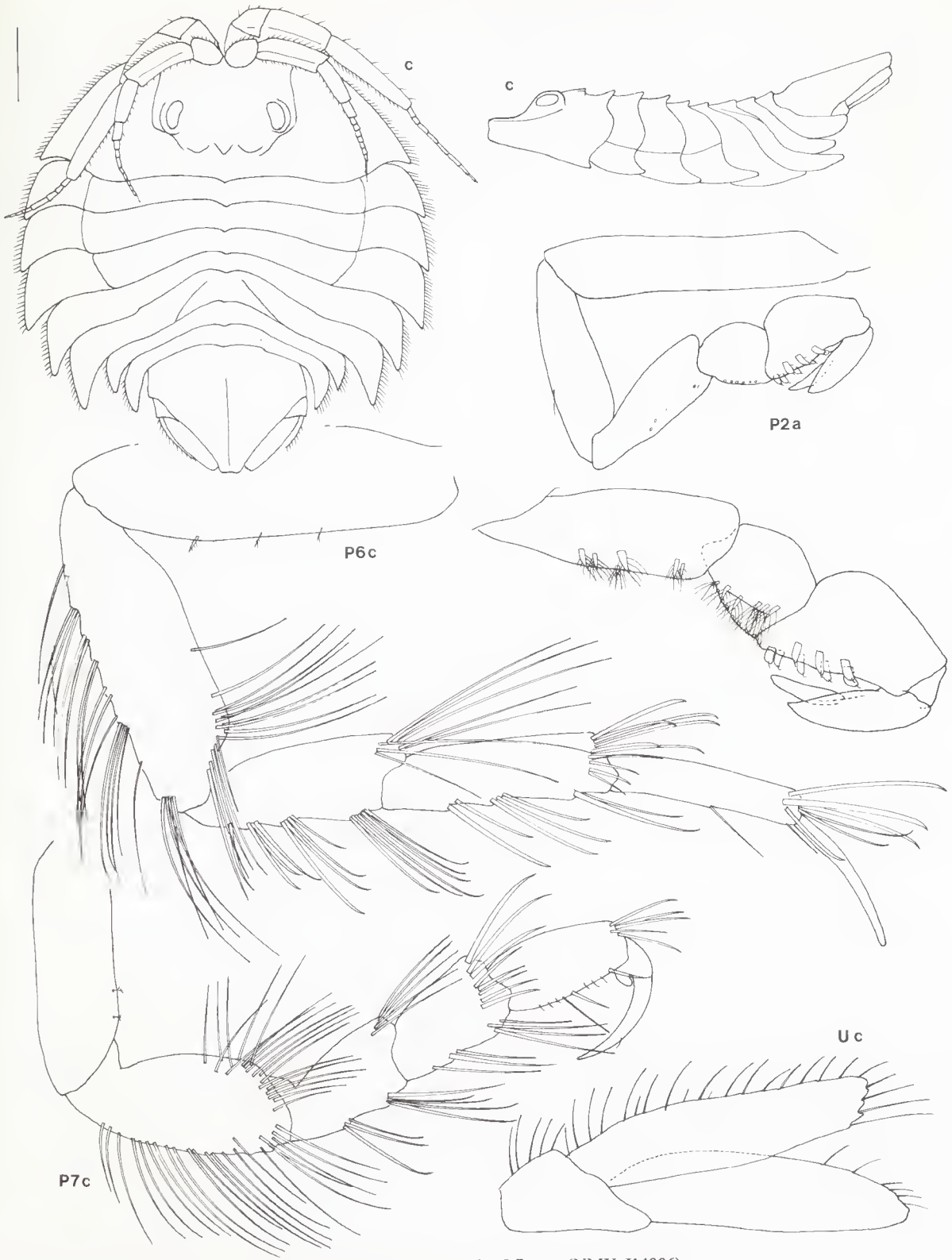

Figure 8. *Serolina bakeri,* a, male holotype, 5.5 mm. c, male, 5.7 mm (NMV J14006).

(posterior setae only on figured type); articles 4 and 5 with anterodistal rows of 3 setae; article 6 broadest proximally and tapering, 3 long setae at midlength of sinuous posterior margin; dactylus curved, with a basal thumb.

Uropod endopod tapering to obliquely truncate apex, with terminal setae; exopod narrower than endopod, widest distally, apex oblique, serrate, with terminal setae.

Female. Body 1.15 times as long as wide. Anterior margin of coxa 2 overlapping coxa 1, anterior margins of coxae 3-6 overlapped by preceding coxae, especially posteriorly, posterodistal corners acute; coxa 6 reaches just beyond pleonal epimeron 3.

Dorsal sculpture of head, pereon and pleon as in male except on pereonite 2. Pereonite 2 with lateral lobe on posterior margin.

Pereopod 6 similar to that of male but without anterior setae on article 3. Pereopod 7 basal articles similar to those of male; article 5 more elongate; article 6 much more elongate and with single mid-posterior seta; dactylus fine and without basal thumb.

Distribution. South Australia and Victoria, 10-54 m.

Remarks. Serolina bakeri was previously known only from the type specimens. Most setae have been lost but the specimens are sufficiently intact to characterise. Mouthparts were not completely dissected. The species is best recognised by the very long posterior coxae. The Victorian specimens are characterised by the fringes of long setae on the coxae and epimera, not seen elsewhere in the genus. The dactylus of the male pereopod 7 is similar to that of *S. acaste* but this species has a shorter uropodal exopod.

Serolina clarella sp. nov.

Figures 9-11

Serolis sp.–Holdich & Harrison, 1980: 380, 382, figs. 4E, 4F.

Material examined. Holotype. Vic. Western Port, Crib Point, (38°21'S., 145°14'E.), 10 m, sandy sediments, Smith-McIntyre grab, Marine Studies Group, Fisheries and Wildlife Department, 13 Oct 1964 (stn CPBS C5), NMV J6514 (♂, 9.3 mm).

Paratypes. Type locality, NMV J6515 (♀, 10.0 mm). Western Port, Crib Point, other CPBS stations: stn C4, NMV J6532 (1 ♀); stn C5, J6516 (2 juveniles); stn C6, J6533 (1 juvenile); stn 22N, J6534 (1 juvenile); stn 26N, AM P34791 (1 ♀, 2 juveniles); stn 32E, NMV J6536 (2 juveniles; stn 34N, J6535 (2 juveniles) LACM 3001 (1 juvenile), USNM 221527 (1 juvenile); stn 34S, NMV J6537 (1 ♀, 1 juvenile); stn 36N, J6538 (1 juvenile); stn 40E, J6539 (1 ♀), J6540 (1 ♀, 2 juveniles); stn 51N, J6541 (1 juvenile).

Other material. Vic., Western Port, Shoreham, NMV J6543(1), J6544(1). Western Port, WBES stn 1733, NMV J6542(1). Port Phillip Bay, PPBES stations: stn 968, NMV J6545(1); stn 975, J6546(1).

Bass Strait. BSS stations: stns 72 and 194, off Cape Otway, NMV J7137(1) J6758(2); stn 168, off N. end of Flinders Is., NMV J6559(2).

Tas. Furneaux Group, Fisher Is., TM G2025(1).

Description. Male. Body 1.1 times as long as wide. Coxae 1-4 closely applied, posterodistal corners acute; deep fissure between coxae 4 and 5 and between coxa 6 and pleonite 2. Pleonites 2 and 3 with acute posteriorly-directed corners reaching well beyond base of uropods.

Head with 5 flat rounded lobes along posterior margin, median one most distinct. Eye reniform, with prominent medioposterior eave. Pereonites 1-5 and pleonites 1-3 with broadly-based triangular projections on midline of posterior margin, most pronounced on pereonite 5 and pleonite 1. Pereon without lateral sculpture. Pleotelson broadly triangular, tapering from base, lateral margins concave distally; a sharp flat ridge on lateral anterior two-thirds, often divided into 2 parts, sometimes irregularly; with mid-dorsal crest of even height throughout.

Antenna 1 article 2 2.2 times as long as wide, anterodistal corner produced; article 3 0.8 times length of article 2, decidedly tapering over distal two-thirds; article 4 0.3 times length of article 3; flagellum of 14 articles, last 2 minute. Antenna 2 article 4 evenly tapering from broad base; article 5 1.5 times length of article 4, 4.5 times as long as wide, tapering both distally and proximally; flagellum of 11 articles.

Pereopod 2 articles 2 and 3 elongate; article 4 with more than 20 plumose setae; article 5 ovate, 0.6 length of article 4, with about 30 plumose setae; article 6 compactly falcate, its posterior margin convex distally, with 2 rows of 6 spines proximally; dactylus unguis attached near tip, about one-quarter of whole length. Pereopod 6 article 3 broadened proximally, with dense row of setae along anterior margin; articles 4-6 with groups of strong setae on posterior margin; article 4 with anterodistal group of long setae; arti-

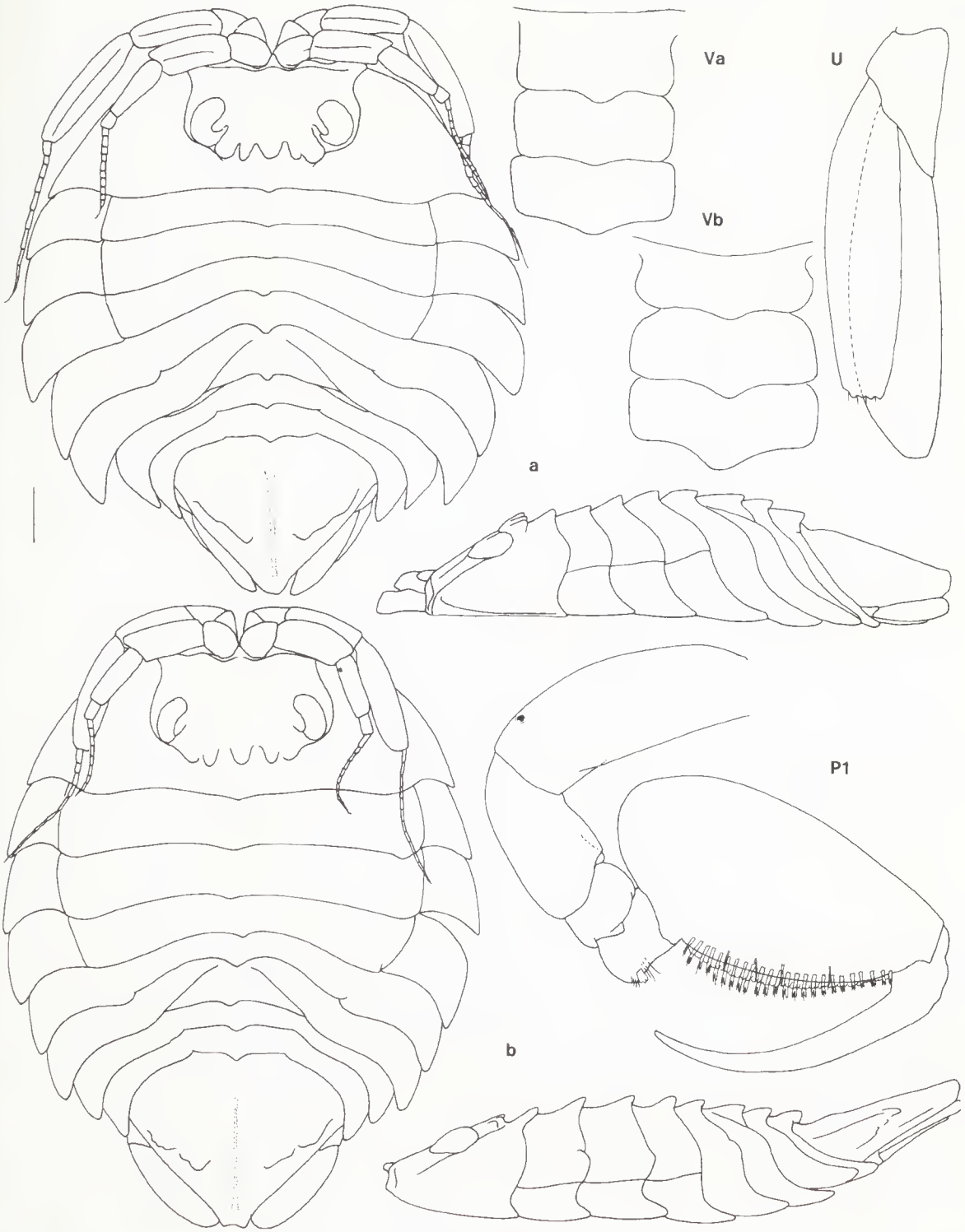

Figure 9. *Serolina clarella.* a, male holotype, 9.3 mm; b, female paratype, 10.0 mm, NMV J6515.

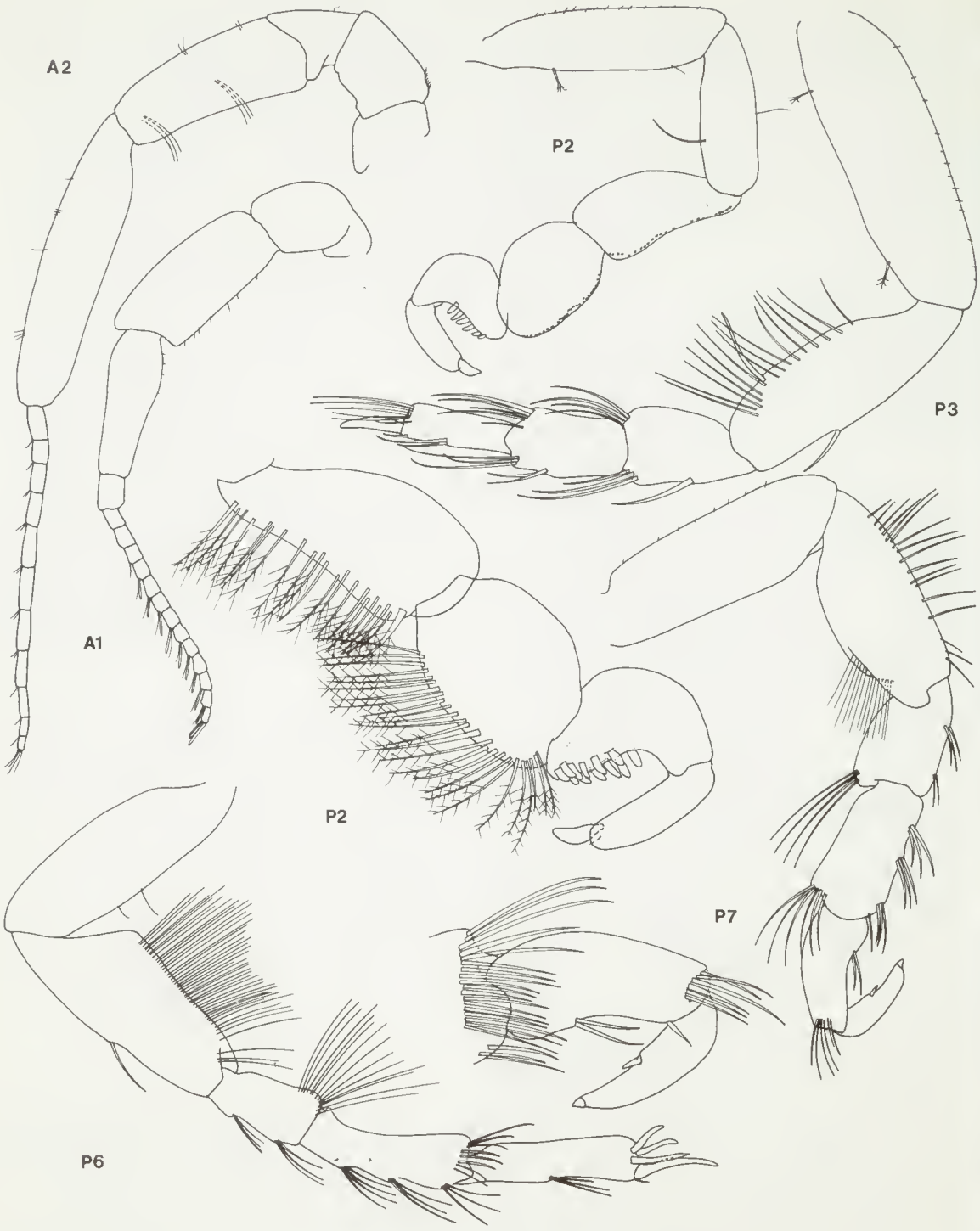

Figure 10. *Serolina clarella,* male holotype, 9.3 mm.

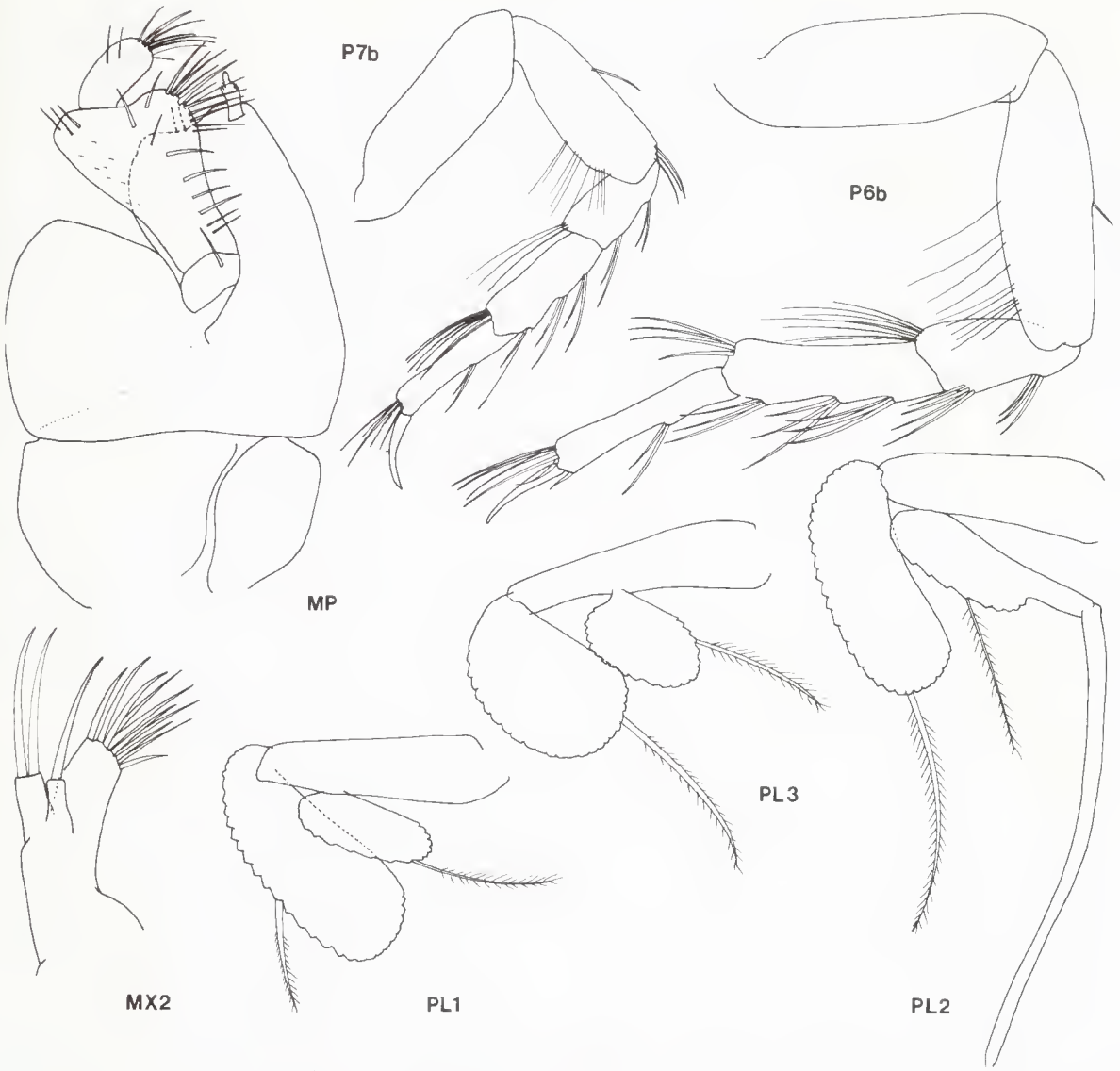

Figure 11. *Serolina clarella.* a, male holotype, 9.3 mm; b, female paratype, 10.0 mm, NMV J6515.

cle 5 with proximal projection anteriorly (on pereopod 5 also); article 6 slightly dilated distally with 3 strong apical spines; dactylus small. Pereopod 7 articles 3-5 broad; article 3 with clusters of setae posteriorly and anteriorly; articles 4-5 with groups of strong setae on posterior margin; article 6 tapering, posterior margin concave with 2 strong setae; dactylus broad, with short spine on mid-posterior margin.

Pleopod 2 appendix masculina 2.4 times length of endopod. Uropod endopod tapering only over distal quarter; exopod 0.8 length of endopod, tapering to truncate-crenulate apex, with short apical setae.

Female. Body 1.2 times as long as greatest width. Coxae and dorsal sculpture much as in male except for presence of very slightly produced marginal lateral lobes on pereonites 2 and 3.

Pereopod 6 articles 2-6 of normal narrow proportions, with few anterior setae; dactylus fine. Pereopod 7 articles 2-5 more elongate than in male; article 6 narrower than in male, straight; dactylus fine.

Distribution. Victoria, Bass Strait, Tasmania; 10-90 m.

Remarks. Serolina clarella is distinquished from other species by being highly domed and having only slight mid-dorsal crests. Lateral sculpture is absent. The species is unique in possessing five posterior head lobes.

The pereopods are remarkably dimorphic. The male pereopod 2 has very broad articles 4 and 5 and a strongly curved article 6; pereopod 6 has a broad article 3 and spinose article 6; pereopod 7 is shortened and the dactylus reflexed.

At 9.3 mm the male is one of the largest known in the genus.

Serolina delaria sp. nov.

Figures 12-14

Serolis minuta.–Chilton, 1917: 394, 397, 398.–Holdich & Harrison, 1980: 376, 381, figs. 4A, 4B, 5C. (not *Serolis minuta* Beddard, 1884)

Material examined. Holotype. Vic. Shoreham (38°26′S, 145°03′E), S. Fulton (O.A. Sayce collection purchased 1911–no further details), NMV J6529(♂, 7.2 mm).

Paratypes. Vic. West Channel, probably Western Port (approx 38°25′S, 145°10′E), (O.A. Sayce collection purchased 1911–no further details), NMV J6530 (♀, 9.1 mm). Western Port, Crib Point, (38°21.15′S, 145°14.31′E), 16 m, sand, Smith-McIntyre grab, Marine Studies Group, Fisheries and Wildlife Department, 22 Mar 1965 (CPBS stn 40E), NMV J6531 (2 juveniles, 4.6, 6.6 mm), Western Port, Western Channel (38°25.39′S, 145°15.97′E), 5 m, sand, Marine Studies Group, 25 Nov 1974 (WBES stn 1750), NMV J6790(♀, 9.2 mm).

Bass Strait. Off North Point, Tasmania (40°40′S, 145°15′E), 32 m, medium shelly sand, epibenthic sled, G. Poore et al. on FRV "Sarda", 4 Nov 1980 (BSS stn 115), NMV J6757 (2 juveniles).

Other material. SA. St Francis Island (32°31′S, 133°18′E), 11-24 m, J.C. Verco, SAM C386 (♀, 8.3 mm). Port Hughes (34°05′S, 137°33′E), 2 m, sand and *Posidonia*, G.C.B. Poore and H.M. Lew Ton, 15 Mar 1985 (stn SA21), NMV J11928(10). Giles Point (35°03′S, 137°46′E), 1 m, sand inside *Posidonia* meadow, G.C.B. Poore and H.M. Lew Ton, 19 Mar 1985 (stn SA37), NMV J11929 (♂, 7.2 mm). Flinders Is., bay on NW. coast (33°41.7′S, 134°8.5′E), 3 m, sand, G.C.B. Poore and H.M. Lew Ton, 19 Mar 1985 (stn SA60), NMV J11930(1). "The Hotspot" reef 8 km W. of Flinders Is. (33°40.8′S, 134°22.5′E), 21 m, coarse shelly sand, G.C.B. Poore, 20 Apr 1985 (stn SA73), NMV J11931(1). Venus Bay, off township (33°13.8′S, 134°40.1′E), 3 m, sand flat, G.C.B. Poore, 23 Apr 1985 (stn SA86), NMV J11932(7). Venus Bay, S of Germein Is. (33°13.2′S, 134°40.1′E), 2 m, shelly sand flat, G.C.B. Poore, 23 Apr 1985 (stns SA87 and SA88), NMV J11933(4), J11934(3).

Description. Male. Body only little longer than wide. Coxae 1-4 closely overlapping; coxae 5 and 6 and pleonites 2 and 3 separated by narrow fissures, regularly spaced, apices narrowly acute.

Head with 3 flat, narrow lobes separated by deep grooves on posterior margin; each lobe rounded-truncate posteriorly; lateral lobes separated from eyes by deep grooves. Eye reniform, overhanging posterolateral margin of head.

Pereonites 1-5 and pleonites 1-3 each with narrow acute mid-dorsal crest, largest on pleonite 1 only slightly longer than rest. Pereonites 2-4, and less obviously on 1 and 5, with lateral subtriangular lobes, all posteriorly directed. Pereonites 1-4 with 6-8 midlateral marginal rounded crenulations; pereonites 5 and 6 with only 2-3 uneven lobes. Pleotelson triangular, truncate posteriorly; with mid-dorsal crest more pronounced anteriorly.

Antenna 1 article 2 3.0 times as long as wide, anterodistal corner square; article 3 0.7 times length of article 2, tapering over most of length; article 4 0.3 times length of article 3; flagellum of 10 articles,last 2 minute. Antenna 2 article 4 tapering; article 5 1.5 times length of article 4, 4.1 times as long as wide, elongate-ovate; flagellum of 10 articles.

Pereopod 2 articles 2 and 3 elongate; article 4 with 17 plumose setae; article 5 0.4 times length of article 4, posterior margin distally lobed, with 16 plumose setae; article 6 tapered, posterior margin with proximal lobe, bearing 9 spines in 2 rows, distally concave; dactylus unguis attached near tip, about one-third of whole length. Pereopod 6 articles 3-6 with anterodistal rows of 6-9 setae and clusters of setae along posterior margin; article 5 3.5 times as long as wide. Pereopod 7 articles 3-5 more or less quadrate-linear, with few anterodistal setae; article 6 ovate but tapering and with prominent proximal thumb, posterior margin with 3 setae; dactylus simple, curved.

Pleopod 2 appendix masculina 3.6 times length of endopod. Uropod endopod with rounded-truncate apex; exopod 0.7 length of endopod, truncate.

Female. Body 1.1 times as long as wide. Coxae and body sculpture pattern as in male but sculpture more pronounced. Lateral crests on pereonites 2-5 subacute posteriorly and on pereonite 2 abruptly acute anteriorly also. Midlateral ridges on pereonites 1-6 crenulate and over-

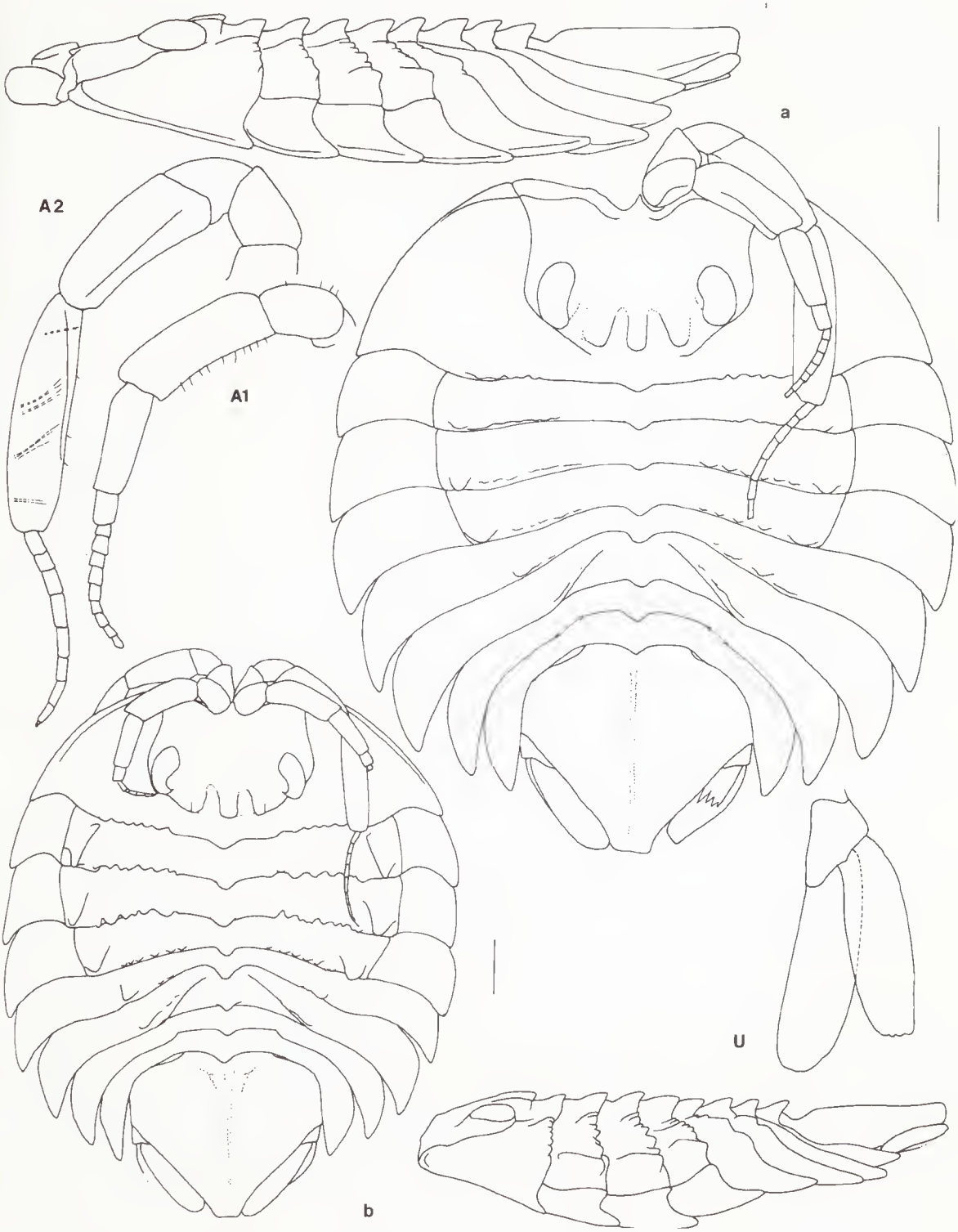

Figure 12. *Serolina delaria.* a, male holotype, 7.2 mm; b, female paratype, 9.1 mm, NMV J6530.

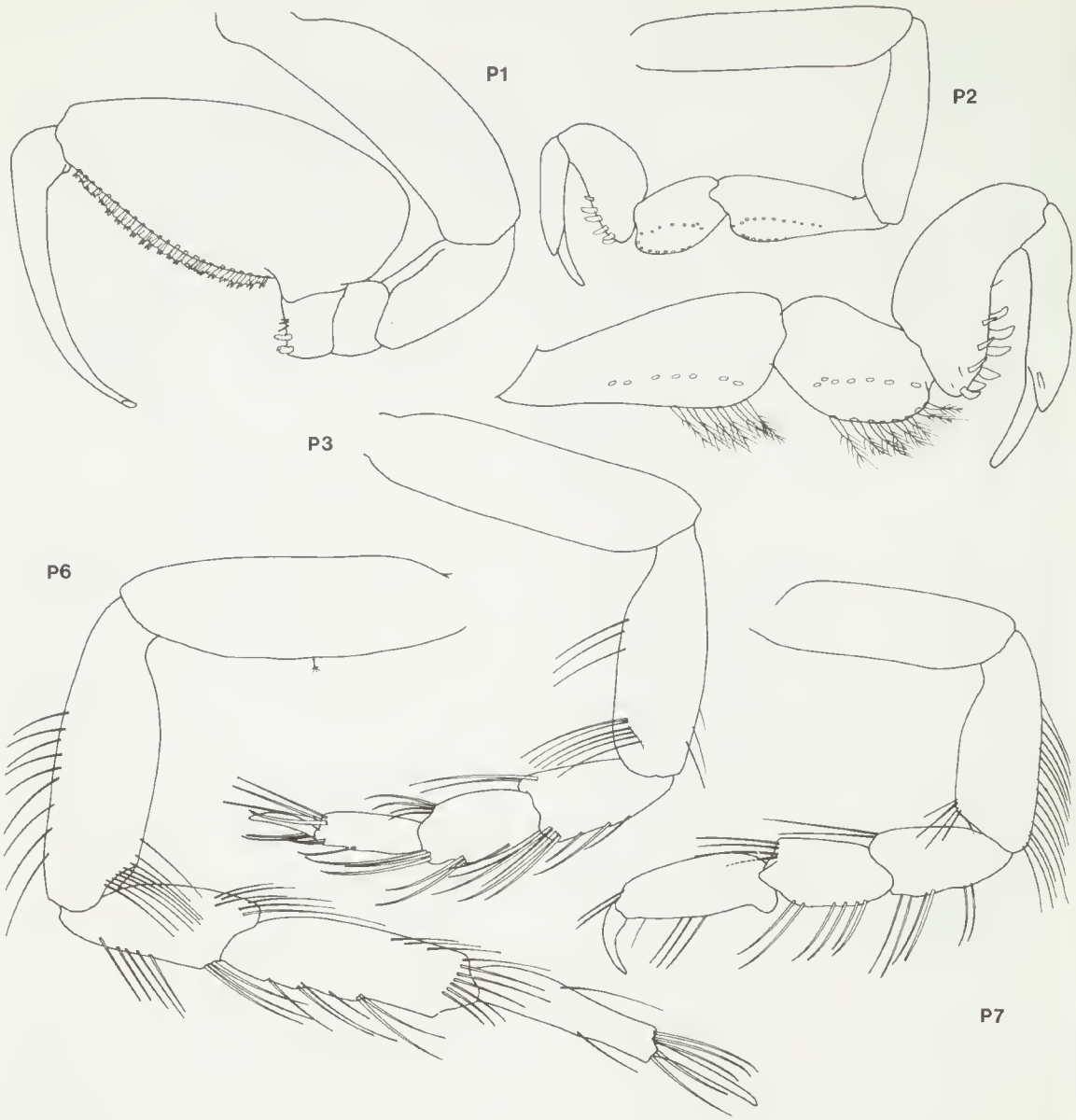

Figure 13. *Serolina delaria,* male holotype, 7.2 mm.

lap posterior margins of pereonites. Pleotelson as in male. Pereopods 6 and 7 more elongate than in male and with simple setation.

Distribution. Victoria, Bass Strait, South Australia; 1-32 m.

Remarks. Serolina delaria is distinguished from other species by its large size and by the strong ridge of midlateral crenulations on each pereonite. the three posterior head lobes are prominent and the mid-dorsal crests are strong and even. The female reaches 9.2 mm and the male 7.2 mm.

Serolina eugeniae (Nordenstam) comb. nov.
Figures 15-17

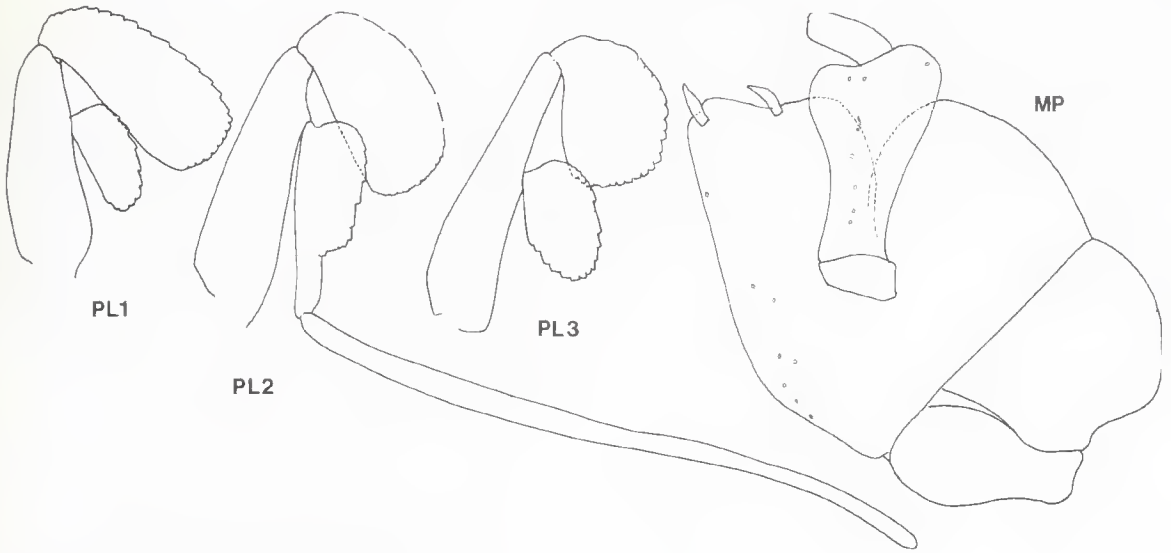

Figure 14. *Serolina delaria,* male holotype, 7.2 mm.

Serolis (*Homoserolis*) *minuta* var. *eugeniae* Nordenstam, 1933: 39, 40, 43-45, 47-49, 82-84, pl 1 fig 3, text-figs. 11b, 20.–Holdich & Harrison, 1980: 377, 381, figs. 3E, F.

Material examined. Holotype. NSW. Port Jackson, "The Lighthouse", 22 m, "Eugenie" Expedition, 1851-1853, SMNH 808 (ovigerous ♀, 7.3 mm, with 5 slides).

Other material. NSW. E of North Head, Port Jackson (33°49′S, 151°18′E), 43 m, AM P24294 (♀, 6.7 mm). Off Moona Moona Creek, Jervis Bay, 8-15 m, AM P35615-P35618, P35623-P35624 (2 ♂♂, 4 ♀♀).

Bass Strait, eastern, north-western and western slope regions, 51-144 m: 10 ♂♂ (4.3-5.8 mm), 15 ♀♀ (4.7-6.5 mm), 35 juveniles (2.5-3.9 mm) from BSS stations 98, 103, 155, 162, 163, 181, 195 and 209, NMV J6763, J6764, J6780-J6787, J7138, J7139.

Description. Male. Body 1.1 times as long as wide. Coxae 1-6 closely overlapping only coxa 6 with a posteriorly produced subacute corner; coxa 6 and pleonite epimera 2 and 3 separated by deep narrow fissures.

Head with broadly-based mid-dorsal cone dominating dorsal sculpture; obscure lateral lobes separated from eyes by shallow grooves. Pereonites 1-3 without mid-dorsal sculpture; pereonites 4 and 5 with low mid-dorsal crest; pleonites 1-3 with triangular mid-dorsal lobe, most prominent on pleonite 1. Pereonites 1-6 with flat lateral tubercles, obscure on pereonite 1, more conical on 2-4, and flatter on 5 and 6. Pleotelson triangular, apex rounded; obscure medial ridge most obvious posteriorly, simple flat lateral tubercle one-third way along.

Antenna 1 article 2 2.4 times as long as wide, anterodistal corner rounded; article 3 0.7 times length of article 2, tapering gradually; article 4 0.4 times length of article 3; flagellum of 11 articles, last 2 minute. Antenna 2 article 4 tapering abruptly distally; article 5 1.3 times length of article 4, 3.3 times as long as wide, elongate-ovate; flagellum of 10 articles.

Pereopod 2 articles 2 and 3 elongate; article 4 with 19 plumose setae in 2 rows; article 5 0.6 length of article 4, posterior margin convex, with 15 plumose setae; article 6 tapering distally, posterior margin concave distally, with 2 rows of 4 or 5 spines in proximal half; dactylus unguis attached near tip, about quarter of whole length. Pereopod 6 article 3 anterior margin convex, with row of distal setae; article 4 with swollen distal lobe on anterior margin bearing about 20 tubular setae; article 5 3.5 times as long as wide. Pereopod 7 articles 3-5 ovate-elongate, with anterodistal clusters of 4-5 setae; article 6 linear, 2 setae on posterior margin, 4 setae anterodistally; dactylus with prominent proximal lobe on posterior margin, lobe and dactylus apex curved mesially.

Pleopod 2 appendix masculina 2.4 times length of endopod. Uropod endopod with evenly convex lateral margin, tapering to acute apex; exopod 0.6 times length of endopod, oblique-truncate, with apical setae.

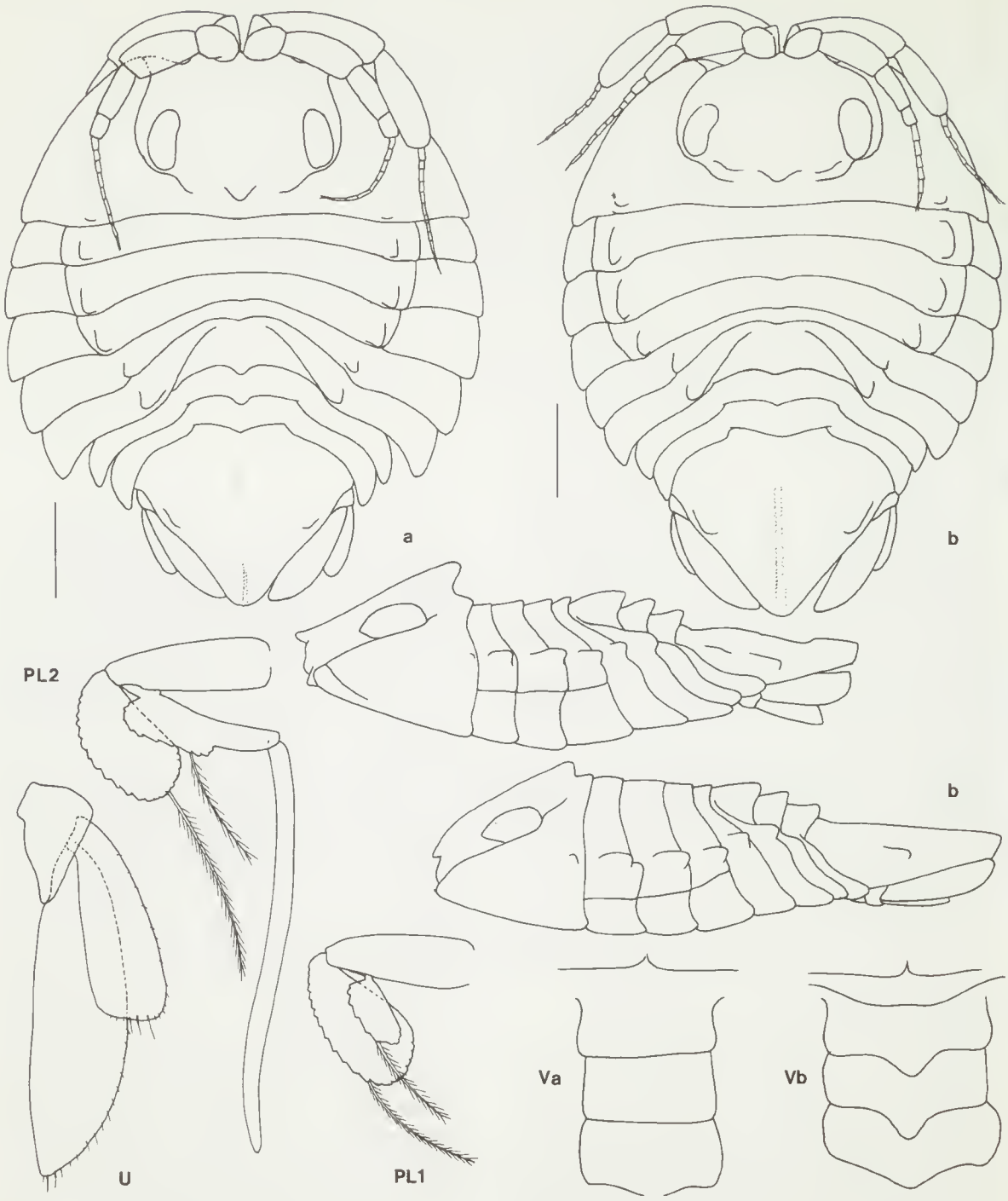

Figure 15. *Serolina eugeniae.* a, male holotype, 5.6 mm; b, female paratype, 5.4 mm, J6764.

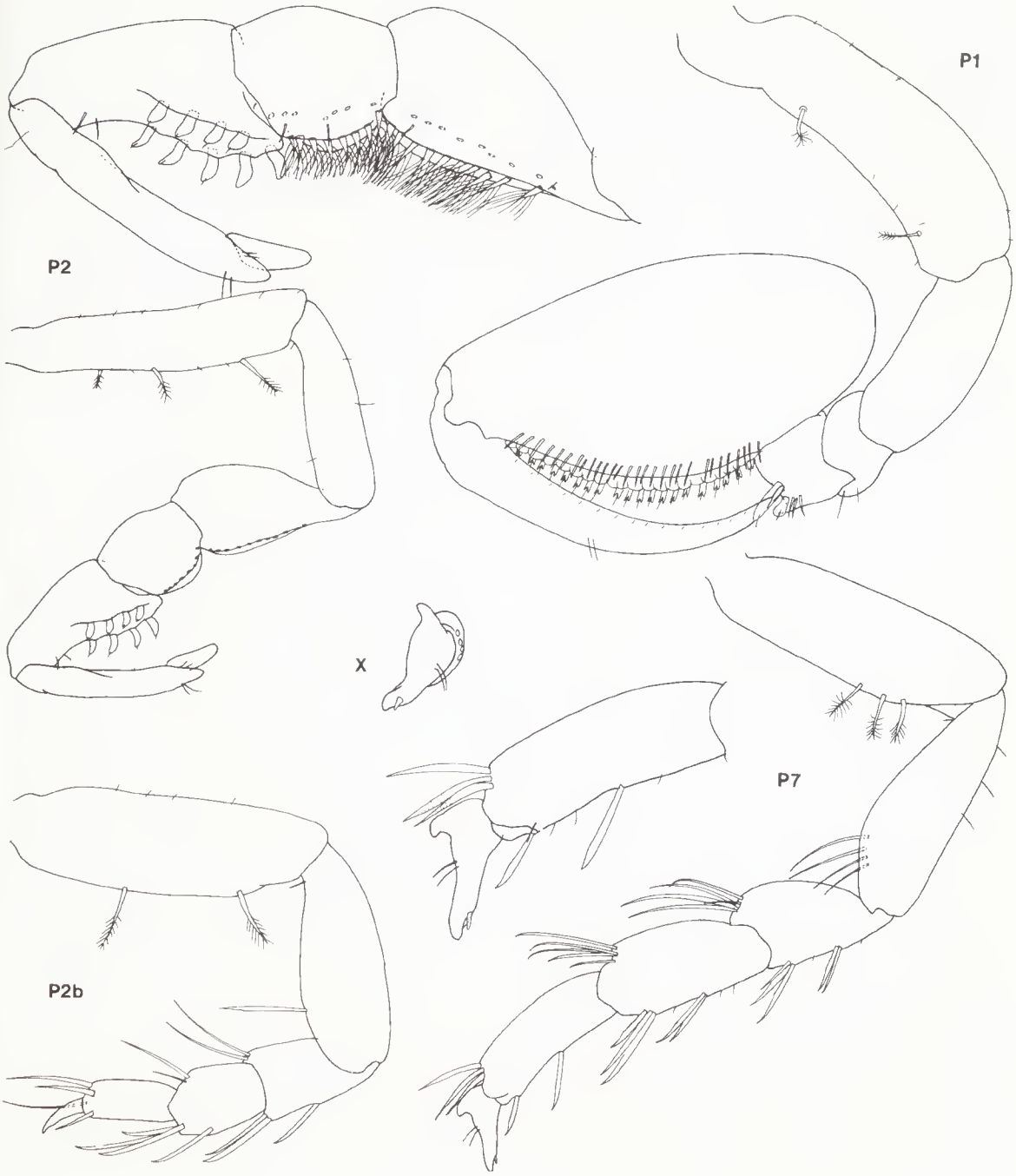

Figure 16. *Serolina eugeniae.* a, male holotype, 5.6 mm; b, female paratype, 5.4 mm, J6764; X, distal view of right pereopod 7 dactylus holotype.

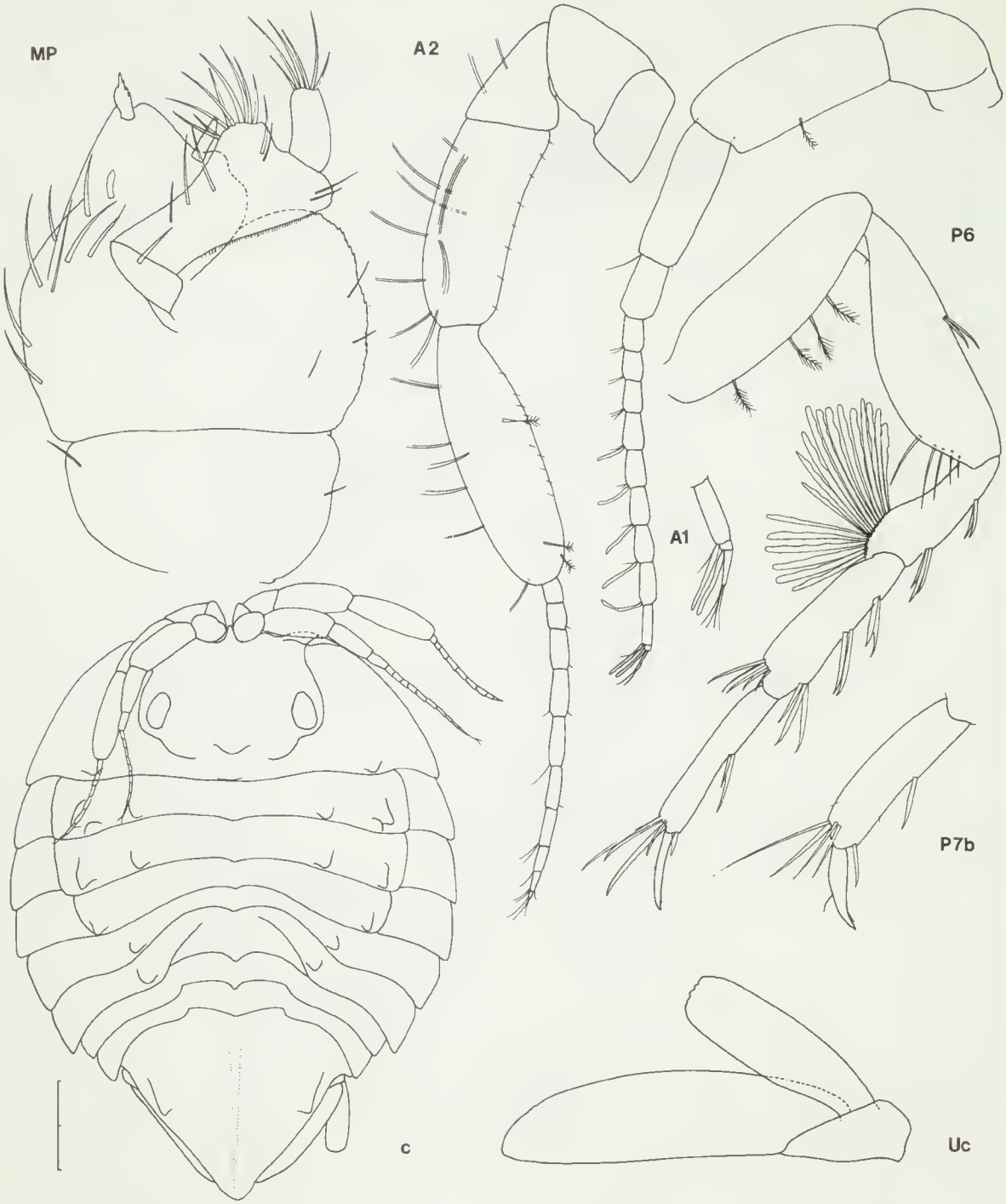

Figure 17. *Serolina eugeniae.* a, male holotype, 5.6 mm; b, female paratype, 5.4 mm, J6764; c, ovigerous female, 6.4 mm, J6784.

Female. Body 1.3 times as long as wide. Coxae and pleonal epimera closely overlapping except for shallow notch between coxa 6 and epimeron 2. Head and dorsal sculpture as in male except that mid-dorsal crests are less prominent. Pereonite 2 sometimes with a bilobed or simple marginal lateral lobe overlapping pereonite 3.

Pereopod 2 with broad articles (article 4 1.8 times as long as wide). Pereopod 6 of similar proportions to that of male but article 4 with fewer and simple setae, article 3 shorter. Pereopod 7 basal articles similar to those of male; article 6 narrower, straight; dactylus simple, falcate.

Distribution. Central New South Wales coast to Bass Strait; 8-144 m.

Remarks. Serolina eugeniae was originally described as a subspecies of *Serolis minuta.* It is here elevated to specific rank on the basis of its characteristic sculpture and male pereopods. The two species are found together in Jervis Bay but although both occur in Bass Strait they were never found together in the same sample.

The species is most easily recognised by its strong mid-dorsal head cone, long mid-dorsal crests posteriorly, lateral crests and pleotelson ridges. The dactylus of the male pereopod 7 has a characteristic anterior tubercle. In the male pereopod 7 tubular setae are seen, similar to those found in *S. granularia* and *S. orriella.*

One female of similar size to other adults (Fig. 17c) is differentiated from all others by midlateral tubercles on pereonites 2 and 3, uropodal exopod much narrower, and narrower antennae and pereopods. It co-occurred in Bass Strait with more typical specimens but no male with similar differences was found.

Serolina granularia sp. nov.

Figures 18, 19

Material examined. Holotype. Tas. Bass Strait, E of Flinders Is. (40°06.8′S, 148°24.3′E), 22 m, coarse shell, Smith-McIntyre grab, G. Poore et al. on RV "Tangaroa", 14 Nov 1981 (BSS stn 166), NMV J6791 (♂, 7.2 mm).

Paratypes. Vic. Western Port, C. Gabriel (O.A. Sayce collection purchased 25 Jul 1911), NMV J6555 (♀, 10.0 mm).

Bass Strait. Central region (39°45.9′S, 145°33.5′E), 74 m, shell-bryozoan-mud, epibenthic sled, G. Poore et al. on RV "Tangaroa", 13 Nov 1981 (BSS stn 156), NMV J6756 (post-manca, 4.3 mm). S of Cape Schanck (38°33.6′S, 144°54.9′E), 55 m, coarse shell, epibenthic sled, G. Poore et al. on RV "Tangaroa", 12 Nov 1981 (BSS stn 154), NMV J7145 (4 juveniles, 3.9-5.3 mm). W. of Cape Otway (38°55′S, 143°25′E), 67 m, naturalists' dredge, G. Poore on HMAS "Kimbla," 8 Oct 1980 (BSS stn 53), NMV J7142 (submale, 6.3 mm). Off Warrnambool (38°32′S, 142°28.6′E), 52 m, sandy coarse shell, epibenthic sled, R. Wilson et al. on RV "Tangaroa", 20 Nov 1981 (BSS stn 187), NMV J6755 (♂, 6.9 mm; post-manca, 4.5 mm).

Description. Male. Body 1.1 times as long as wide. Coxae 1-6 closely overlapping, only coxa 6 with posteriorly produced rounded corner; coxa 6 and pleonal epimera 2 and 3 separated by deep narrow fissures.

Head with low broadly-based lobe on posterior margin; obscure lateral lobes separated from eyes by very broad shallow groove. Eye without eave. Pereonites 1-5 without medial crest; pleonites 1-3 with very low long rounded crest. Pereonites 1-4 with obscure flat lateral lobes, not reaching posterior margin. Pleotelson tapering sharply from base, margins straight, apex truncate, anterior half with poorly-defined marginal-lateral ridges.

Antenna 1 article 2 2.3 times as long as wide, anterodistal corner obliquely angled; article 3 0.7 times length of article 2, tapering, anterior margin concave; article 4 0.3 times length of article 3; flagellum of 12 articles, last 2 minute. Antenna 2 article 4 with rounded distal corners; article 5 1.3 times length of article 4, 2.8 times as wide as long, narrow proximally but otherwise elongate-ovate; flagellum of 11 articles.

Pereopod 2 articles 2 and 3 elongate; article 4 with 14 plumose setae in 2 rows; article 5 0.7 times length of article 4, broad, posterior margin convex, with 9 plumose setae; article 6 tapering distally, posterior margin concave distally, with 2 rows each of 5 spines on proximal two-thirds; dactylus unguis attached near apex, about one-quarter of whole length. Pereopod 6 article 3 with convex anterior margin with row of distal setae; article 4 narrow proximally, distally with posterior ridge bearing about 20 tubular setae; article 5 3.0 times as long as wide. Pereopod 7 articles 3-5 with anterodistal clusters of 6-7 setae, article 6 quadrate-linear, 2+[1 setae on posterior margin, 4 setae anterodistally; dactylus short, with small lateral lobe near base and accessory spine laterally near apex.

Uropodal endopod with evenly convex lateral margin, tapering to acute apex; exopod 0.6 times

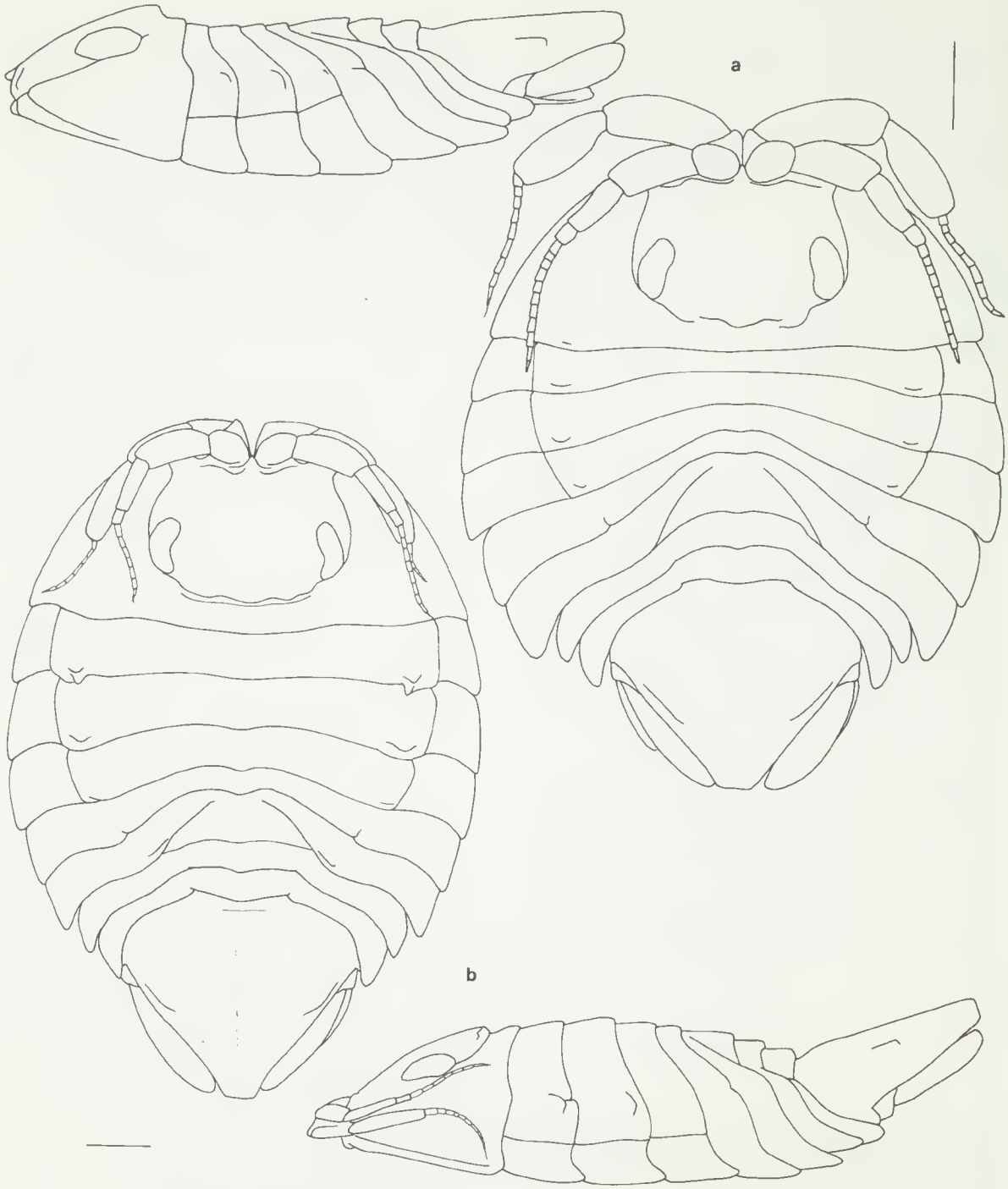

Figure 18. *Serolina granularia,* male holotype, 7.2 mm; b, female paratype, 10.0 mm, NMV J6555.

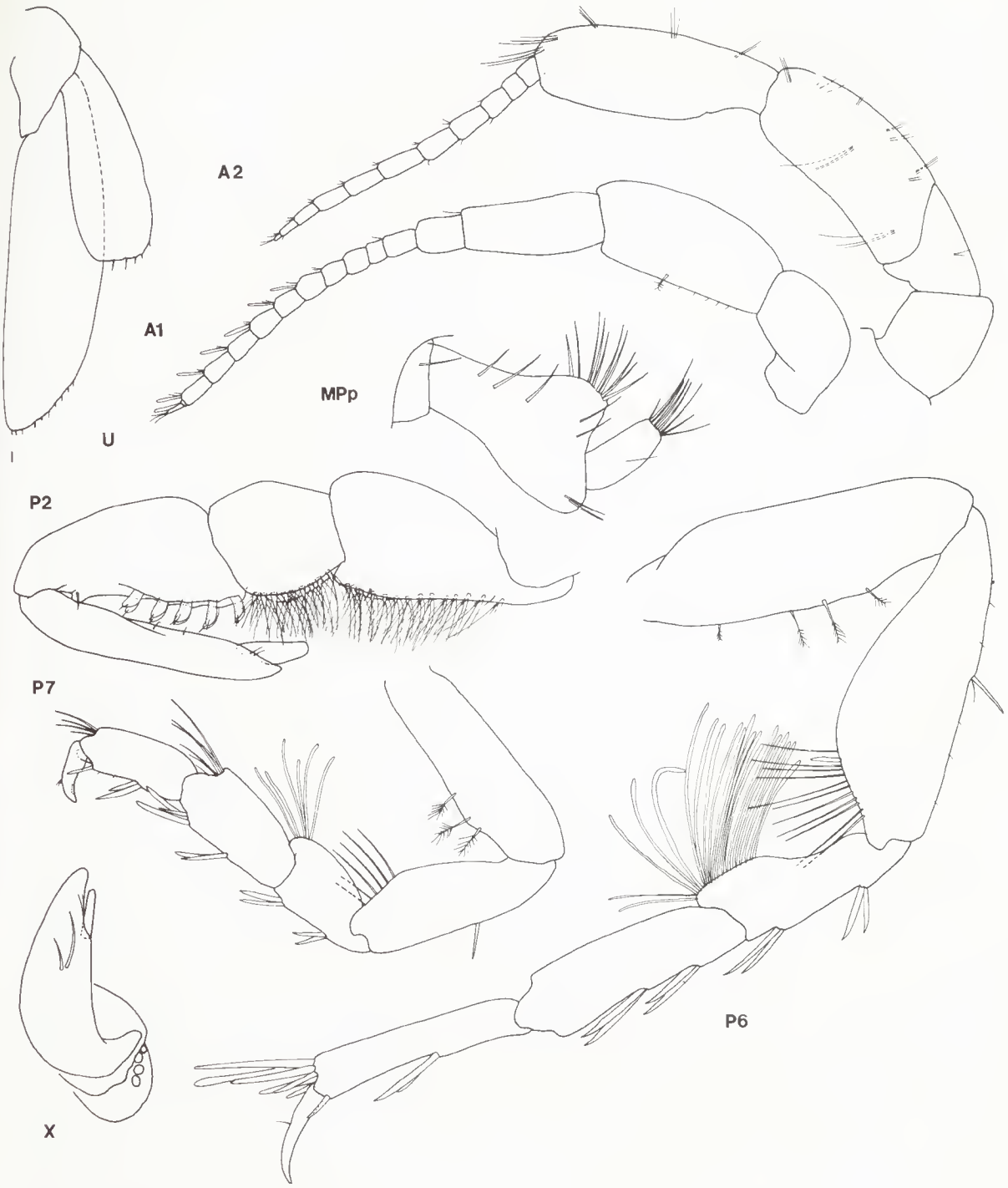

Figure 19. *Serolina granularia,* male holotype, 7.2 mm; X, distal view of right pereopod 7 dactylus holotype.

length of endopod, rounded truncate, with short apical setae.

Female. Body 1.3 times as long as wide. Coxae 1-6 closely overlapping; coxa 6 and pleonal epimera separated by narrow shallow fissures. Head sculpture as in male but less developed. Pereonites 1-2 with lateral lobes, pereonite 2 with acute marginal lateral spine. Pereopod 6 narrower than in male, article 3 not lobed, without tubular setae, pereopod 7 more elongate, dactylus simple.

Distribution. Bass Strait; 22-74 m.

Remarks. Serolina granularia is a smooth species with only a slight mid-dorsal head tubercle and posterior ridges. There are slight lateral bosses on some pereonites and on the pleotelson. The male is notable for the tubular setae on pereopod 6 and the short dactylus on pereopod 7. It differs from *S. orriella* in the much shorter uropodal exopod and the simpler male pereopod 7.

Serolina holia sp. nov.

Figures 20-22

Serolis minuta Group I.–Holdich & Harrison, 1980: 374-377, 381, figs. 1A, 1B, 2, Table 1. (not *Serolis minuta* Beddard, 1884)

Material examined. Holotype. Qld. Townsville, Cleveland Bay (19°13'S, 146°55'E), 9 m, soft mud on shell/mud, P. Arnold et al., 10 Jun 1975, QM W6307(♂, 3.0 mm).

Paratypes. Type locality, QM W11947 (♀, 4.3 mm). Qld. Townsville, Halifax Bay, (18°58'S, 146°29'E), 11 m, P. Arnold et al., 23 Feb 1977, BMNH 1978:285:2 (♂, 3.0 mm; ♀, 4.0 mm). Townsville, Halifax Bay, 11 m, P. Arnold et al., 24 Aug 1976, NMV J7146 (♂, 3.5 mm). Townsville, Halifax Bay, muddy sand, 2 m, P. Arnold et al., 24 Feb 1976, NMV J9600 (♂, 3.1 mm). Townsville, Halifax Bay, muddy sand, 10 m, P. Arnold et al., no date, NMV J9801 (♀, 3.8 mm).

Description. Male. Body 1.2 times as long as wide. Coxae 1-6 margins contiguous, posterodistal angles square or more rounded-acute posteriorly; coxa 6 separated from pleonite epimera 2-3 by shallow broad angle.

Head with 3 low obscure lobes on posterior margin, lateral pair more prominent than medial one; eye reniform, defined by shallow broad groove, without eave; 2 low bosses between anterior margins of eyes. Pereonites 1-5 and pleonites 1-3 without mid-dorsal crests (some males with obscure median tubercle on pereonites 2-4). Pereon and pleon without lateral sculpture. Pleotelson with slight broad mid-dorsal crest; lateral margins convex and extending as ridge over uropod.

Antenna 1 article 2 2.5 times as long as wide, distal margin oblique; article 3 half length of article 2; article 4 0.7 times length of article 3; flagellum of 12 articles, last 2 minute. Antenna 2 article 4 tapering; article 5 1.2 times length of article 4, 2.6 times as long as wide, with convex anterior margin; flagellum of 9 articles.

Pereopod 2 article 3 shorter and narrower than article 2; article 4 with 6 plumose setae in 2 rows; article 5 0.7 times length of article 4, posterior margin strongly convex, with 9 plumose setae in 2 rows; article 6 tapering, posterior margin concave beyond strong proximal heel, with 7 spines concentrated on heel; dactylus unguis attached apically, about one-third of whole length. Pereopod 6 articles 3-5 linear, with anterodistal groups of 3- 4 setae, those on article 4 tubular, and groups of setae along posterior margin; article 5 3.0 times as long as wide. Pereopod 7 articles 3-5 quadrate-linear with anterodistal and posterior groups of setae; article 6 slightly tapering, with midposterior and distoposterior setae; dactylus hooked, simple, slightly flattened.

Pleopod 2 appendix masculina 3.2 times length of endopod. Uropod endopod elongate, lateral margin curved, apex acute; exopod 0.7 times length of endopod, widest distally and apically rounded.

Female. Body 1.3 times as long as greatest width. Coxae and pleonal epimera as in male. Head sculpture more pronounced than in male. Pereonites 1-5 and pleonites 1-3 with low mid-dorsal crests; pereonites 1-4 sometimes with obscure lateral bosses, posterior margins laterally convex. Pereopods 5 and 6 slightly shorter than in male. Pereopod 7 more elongate than in male, dactylus fine, straight and simple.

Distribution. Townsville, North Queensland; 9-11 m.

Remarks. This relatively smooth tropical species is easily recognised by the almost-equal lengths of articles 3 and 4 of antenna 1. The male pereopod 6 bears tubular setae on only article 4 (in other species where they occur they are on article 3).

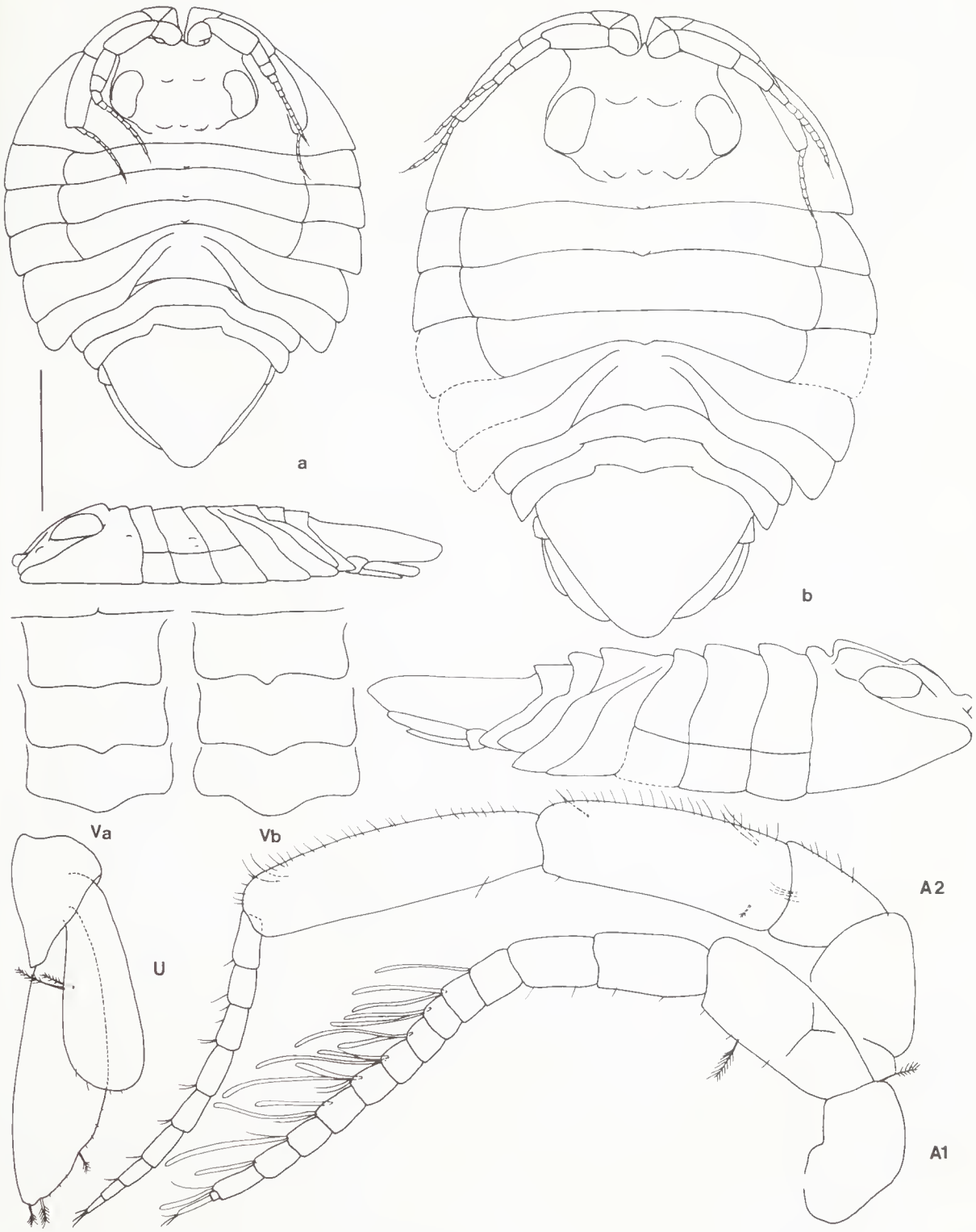

Figure 20. *Serolina holia.* a, male holotype, 3.0 mm; b, female paratype, 4.3 mm, QM W11947.

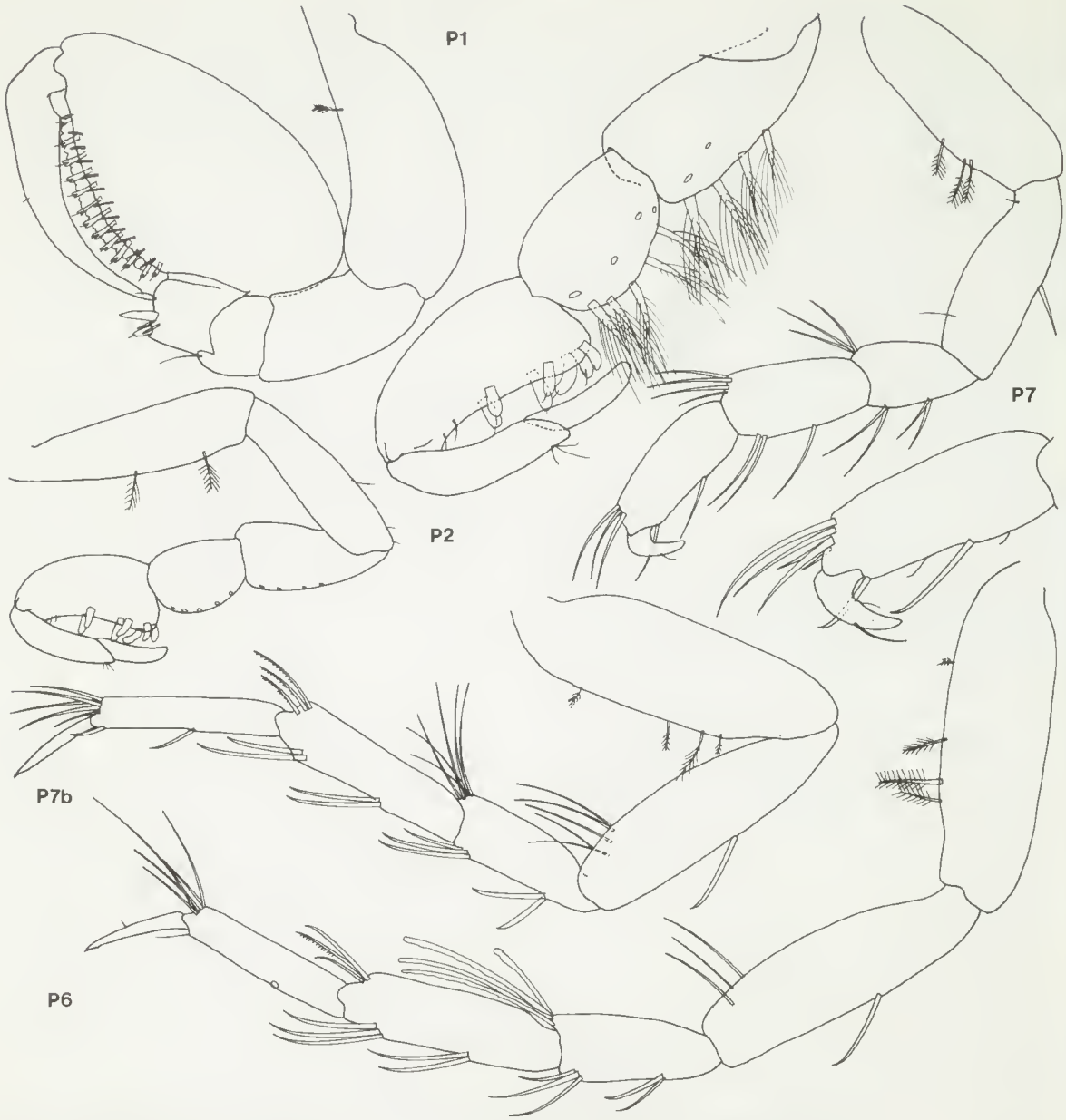

Figure 21. *Serolina holia.* a, male holotype, 3.0 mm; b, female paratype, 4.3 mm, QM W11947.

Holdich and Harrison (1980) differentiated *S. holia* (as *Serolis minuta* Group-I from *S. kawina* (as Group-II) ecologically. They noted that *S. holia* was found consistently in deeper water than *S. kawina*.

Serolina kawina sp. nov.

Figures 23-25

Serolis minuta Group II.–Holdich & Harrison, 1980: 374-377, figs. 1C-E, 2, Table 1. (not *Serolis minuta* Beddard, 1884)

Material examined. Holotype. Qld. Calliope R., near mouth (23°55'S, 151°10'E), 3-5 m, sand, J. Moverley, 1973-83, QM W11945 (♂, 4.0 mm, with 2 slides).

Paratypes. Type locality, QM W11946 (♀, 4.3 mm), QM W10674 (6 ♂♂, 3.0-4.2 mm; 10 ♀♀, 3.1-5.4 mm; 10 juveniles, 1.5-3.0 mm), NMV J7413 (2 ♂♂, 2 ♀♀, 2 juveniles), AM P34796 (2 ♂♂, 2 ♀♀, 2 juveniles).

Other material. Qld. Halifax Bay, Townsville, P. Arnold, 23 Nov 1976, NMV J7147 (♀, 4.2 mm); 24 Aug 1976, NMV J7148 (1 ♂, 3.9 mm; 2 juveniles, 2.5, 3.5 mm); 4.2 m, sandy mud, P. Arnold, 24 May 1976, BMNH 1978:286:2 (♂, 3.6 mm; ♀, 4.1 mm), NMV J2946 (2 ♂♂, 3 ♀♀). Bowling Green Bay, Townsville, 3 m, sandy mud, P. Arnold, 7 Aug 1975, QM W6308 (♂, 3.7 mm; ♀, 4.4 mm).

Description. Male. Body 1.1 times as long as wide. Coxae 1-6 closely overlapping, only most posterior with acute corners; epimera 2 and 3 short, rounded, close and well overlapped by coxa 6.

Head with low mid-dorsal crest on posterior margin. Eye broadly reniform, only slightly elevated. Pereonites 1-6 without dorsal sculpture. Pleonites 1-3 with obscure mid-dorsal crest. Pleotelson with convex lateral margin bearing acute longitudinal ridge overlapping uropod.

Antenna 1 article 2 3.7 times as long as wide, distal margin oblique; article 3 0.6 times length of article 2, widest at midpoint; article 4 0.7 times length of article 3; flagellum of 11 articles, last 2 minute. Antenna 2 article 4 tapering; article 5 1.3 times length of article 4, 5.3 times as long as wide, only very slightly tapering; flagellum of 9 articles.

Pereopod 2 articles 2 and 3 elongate; article 4 with 16 plumose setae; article 5 0.6 times length of article 4, posterior margin convex, with 10 plumose setae; article 6 strongly tapering, posterior margin irregularly concave, with 8 spines in 2 rows; dactylus unguis attached near midpoint, about two-thirds of whole length. Pereopod 5 article 2 swollen proximally; article 3 with anterior margin bearing 7 widely-spaced transverse ridges; articles 4-7 similar to those of pereopod 6. Pereopod 6 articles 4-6 with anterodistal rows of 4-7 setae and small groups of setae along posterior margin; article 5 3.6 times as long as wide. Pereopod 7 articles 4 and 5 rectangular, with anterodistal rows of 3 setae; article 6 ovate, with 2 setae on posterior margin, 3 anterodistally; dactylus bifid, comprising curved anterior claw and tooth-bearing posterior thumb.

Uropod endopod broadest at midpoint and tapering to rounded apex; exopod 0.7 length of endopod, linguiform, rounded apex with short setae.

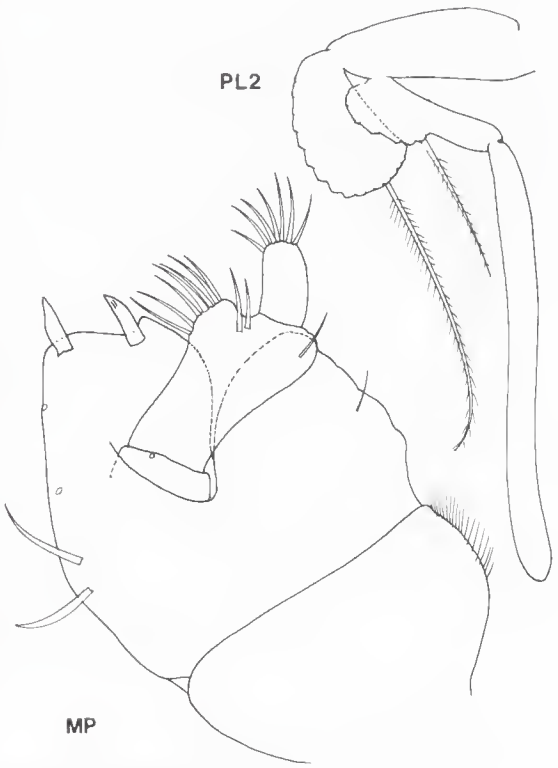

Figure 22. *Serolina holia,* male holotype, 3.0 mm.

Female. Body 1.2 times as long as wide. Coxae, epimera, dorsal sculpture as in male except that pereonite 2 bears broad lateral marginal lobe. Pereopod 5 articles 2 and 3 simple, elongate, without transverse ridges, articles 4-7 as in male. Pereopod 6 as in male. Pereopod 7 article 3 more elongate than in male, articles 4-6 narrower, dactylus simple.

Distribution. Northern to central Queensland; 3-5 m.

Remarks. Serolina kawina is distinguished from *S. holia* with which it co-occurs in north Queensland by its broader form the absence of head lobes,and different male pereopods. The male pereopod 5 is notable for the presence of transverse ridges on article 3, unique in the genus. The species is found at much shallower depths than *S. holia.*

Another species from the tropical continental slope, similar *S. kawina,* is discussed here as *Serolina* sp. following all other descriptions.

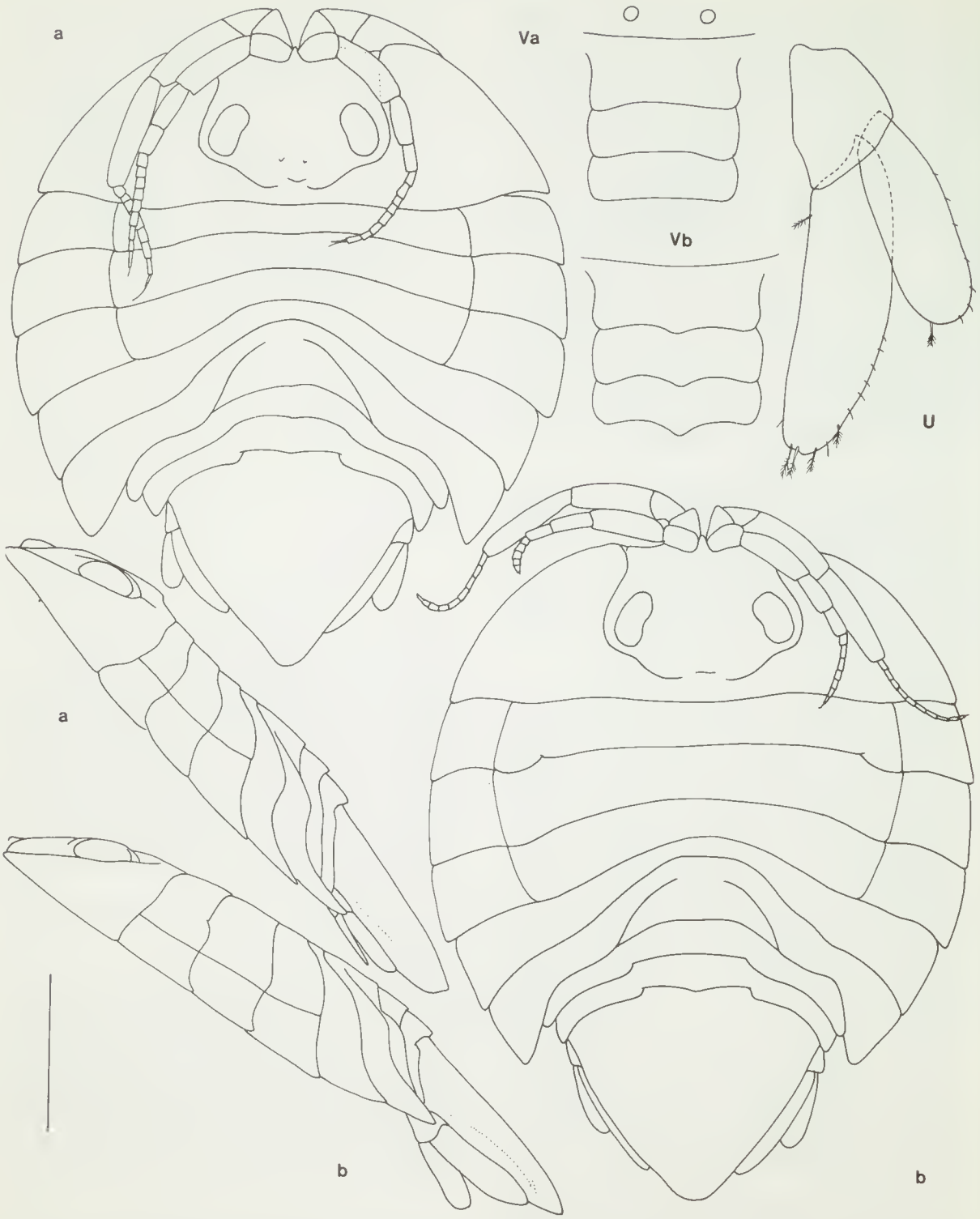

Figure 23. *Serolina kawina.* a, male holotype, 4.0 mm; b, female paratype, 4.3 mm, QM W11946.

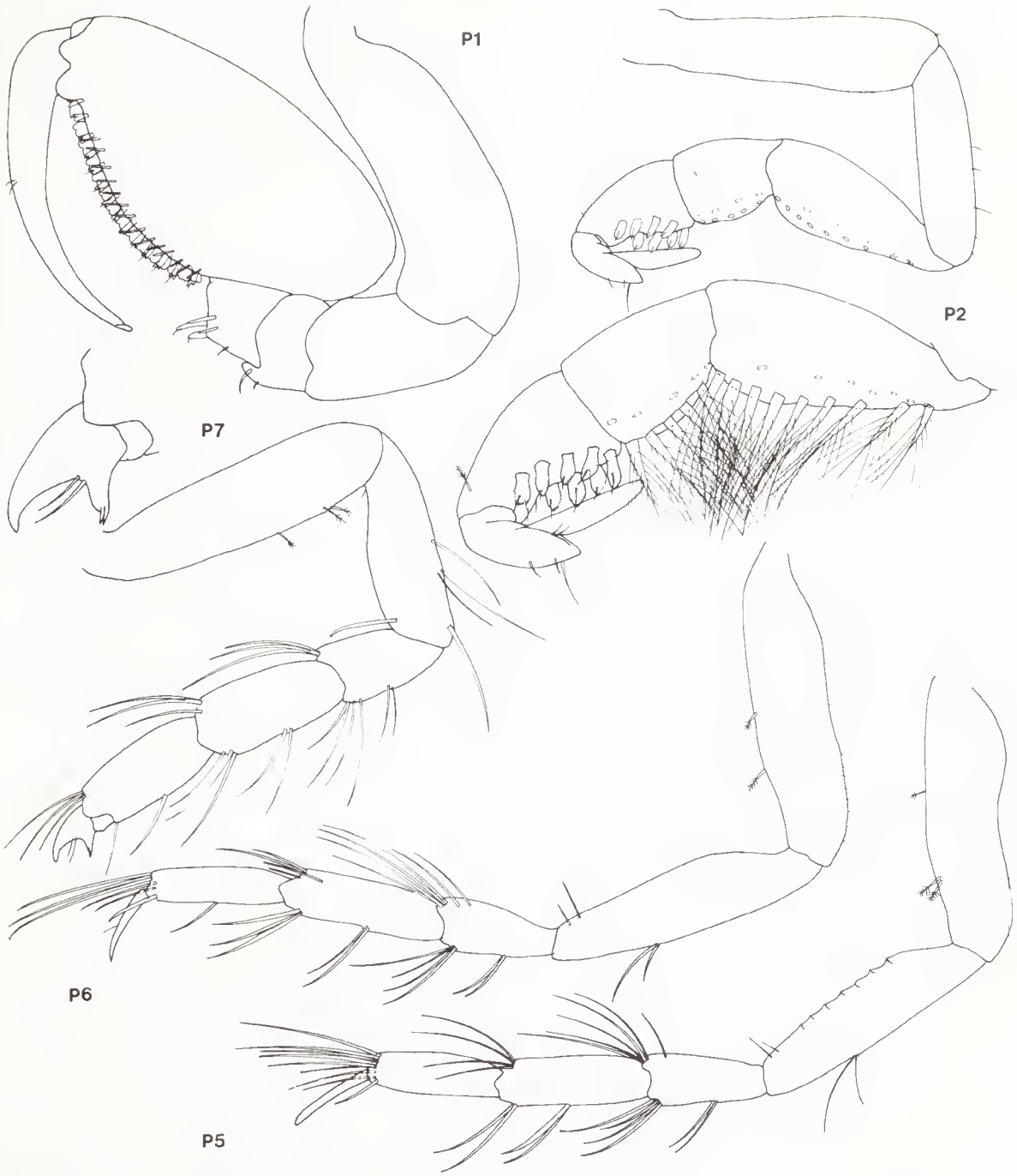

Figure 24. *Serolina kawina,* male holotype, 4.0 mm.

Serolina minuta (Beddard)

Figures 26-28

Serolis minuta Beddard, 1884a: 337.–Beddard, 1884b: 66, 67, 77- 79, pl. 7 figs 2-7.–Stebbing, 1893: 358.–Chilton, 1917: 394.–Hale, 1929: 307, 310, fig. 311.–Sheppard, 1933: 332, 333.–Nordenstam, 1933: 39, 40, 48, 49.–Holdich & Harrison, 1980: 374-386, figs. 3A, 3B.–Harrison & Poore, 1984: 13, 15, Table 1.

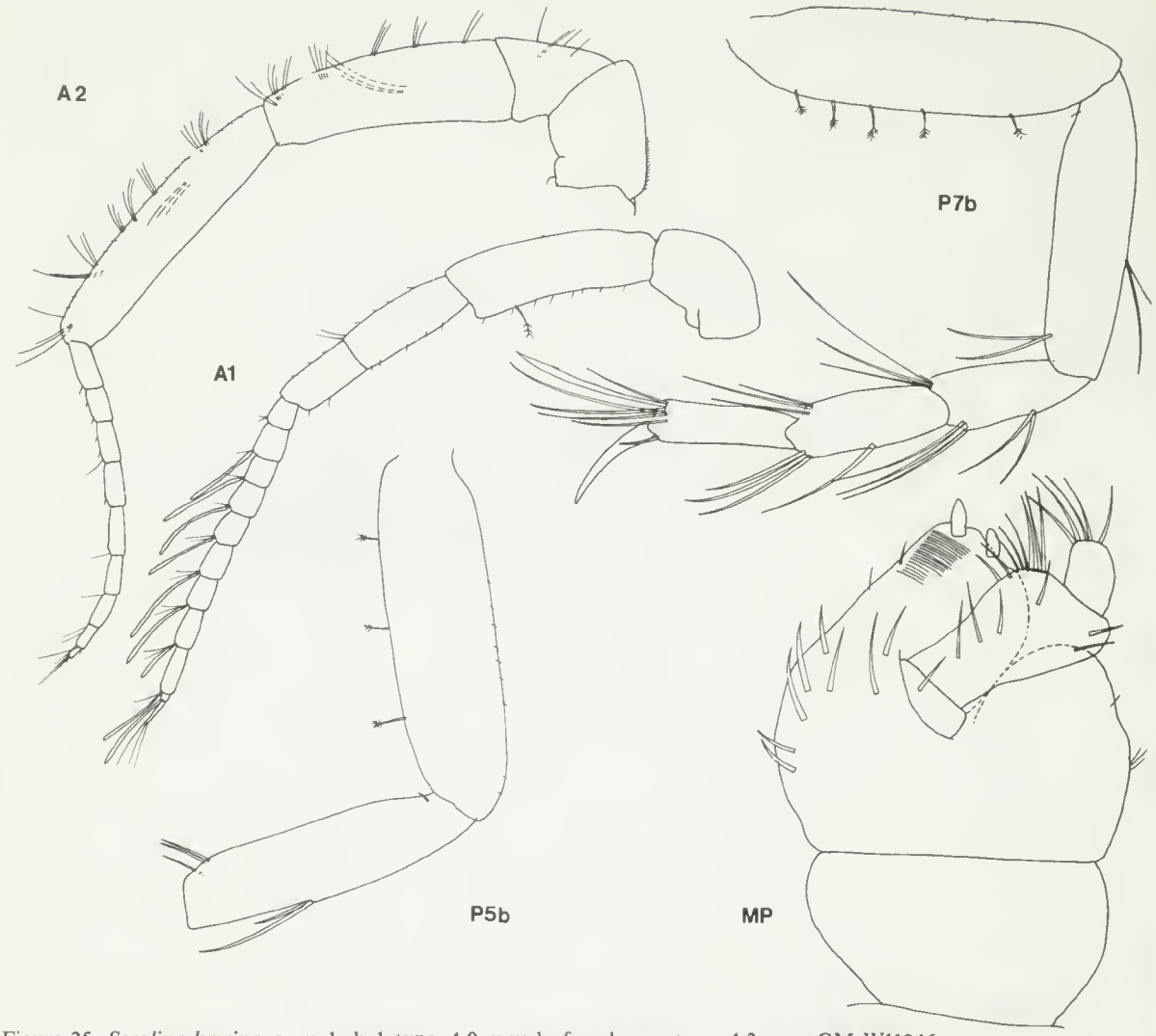

Figure 25. *Serolina kawina.* a, male holotype, 4.0 mm; b, female paratype, 4.3 mm, QM W11946.

Material examined. Holotype. Vic. Bass Strait, off entrance to Port Phillip Bay, 69 m, 1 Apr 1874 ("Challenger" stn 161), BMNH 1889:4:27:37 (♂, 5.0 mm, incomplete).

Other material. NSW. E of Burwood Beach (32°58′S, 151°45′E), 22-24 m, 4 HDWBS stations, AM P23476 (1 ♀), P24003-P24005 (3 ♂♂). E of Belmont Beach (33°03′S, 151°45′E), 23 m, HDWBS station, AM P24007 (1 ♂). Jervis Bay, 15 m, sand, AM P35612-P35614, P35625, P35626(5).

Vic. Western Port, WBES stn 1733, NMV J6517(1). Woodside Beach (38°33′S., 146°59′E.), 20 m, NMV J6518(1 ♂), J6520(3), J6792(3).

Bass Strait. Eastern and north-western regions, 66-122 m: 28 ♂♂ (4.6- 5.6 mm), 12 ♀ ♀ (6.1-6.8 mm), 77 juveniles (2.9-5.9 mm), plus 54 other specimens from BSS stations 38, 47, 48, 55, 85, 118, 119, 120, 165, 171, 172, 178, 182, 201, 212; NMV J6263, J6264, J6454-J6460, J6556-J6558, J6560, J6753, J6754, J6762, J6792, J7132-7136, AM P34792-P34794.

Description. Male. Body 1.1 times as long as greatest width. Anterior margins of coxae 2-4 almost entirely overlapped by preceding coxae, posterodistal corners acute; coxae 4-6 and pleonal epimera 2 and 3 evenly spaced, a deep fissure between each, posterodistal corners becoming narrower posteriorly.

Head with pronounced posteriorly-directed triangular lobe and broad lateral lobes on posterior margin. Eye oval, with slight posterior eave. Pereonites 1-5 and pleonites 1-3 each with narrow erect mid-dorsal crest, extending as conical tubercles especially on pereonite 3 and pleonite 3, crest most elongate on pleonite 1. Pereonites

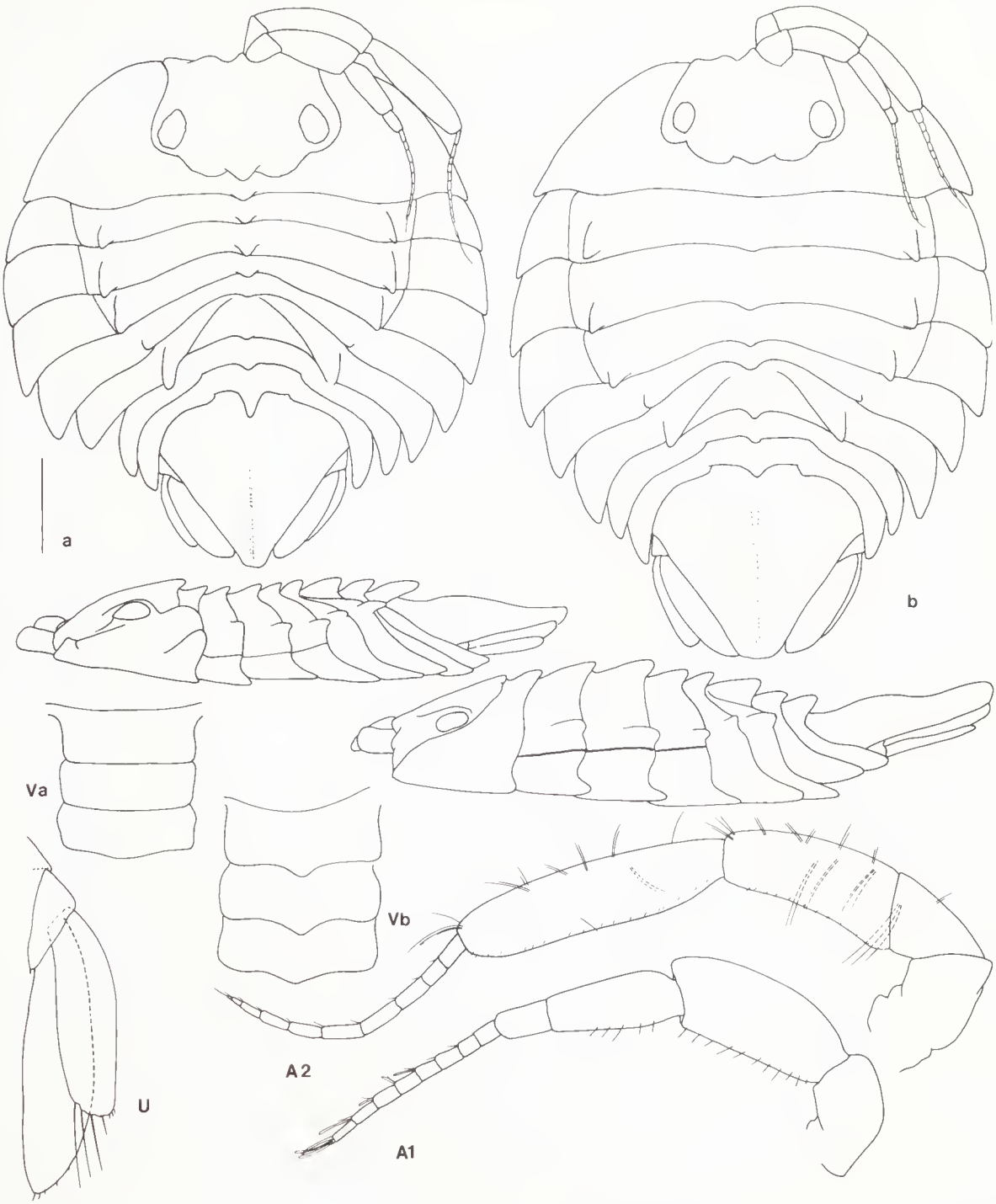

Figure 26. *Serolina minuta.* a, male, 5.3 mm, NMV J6264; b, female, 6.3 mm, NMV J6263.

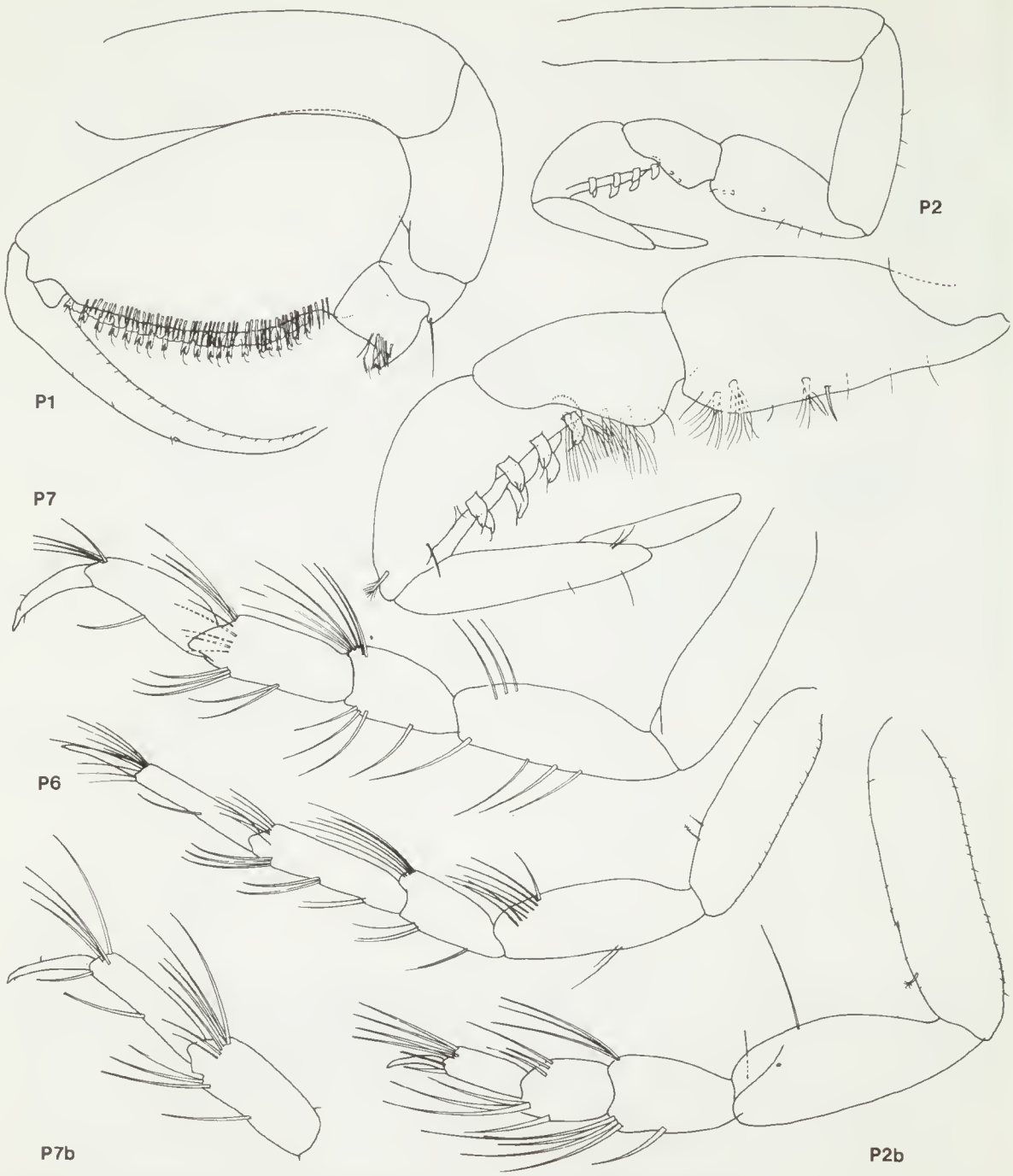

Figure 27. *Serolina minuta,* male, 5.3 mm, NMV J6264; b, female, 6.3 mm, NMV J6263.

2-6 with lateral crests overlapping each posterior margin; narrow on pereonites 2-4, smaller and triangular on pereonite 5, broadly-based and flat on pereonite 6. Pleotelson triangular, little wider than long, lateral margin straight, apex acute; with sharp crest in midline, more prominent anteriorly.

Antenna 1 article 2 2.4 times as long as wide,

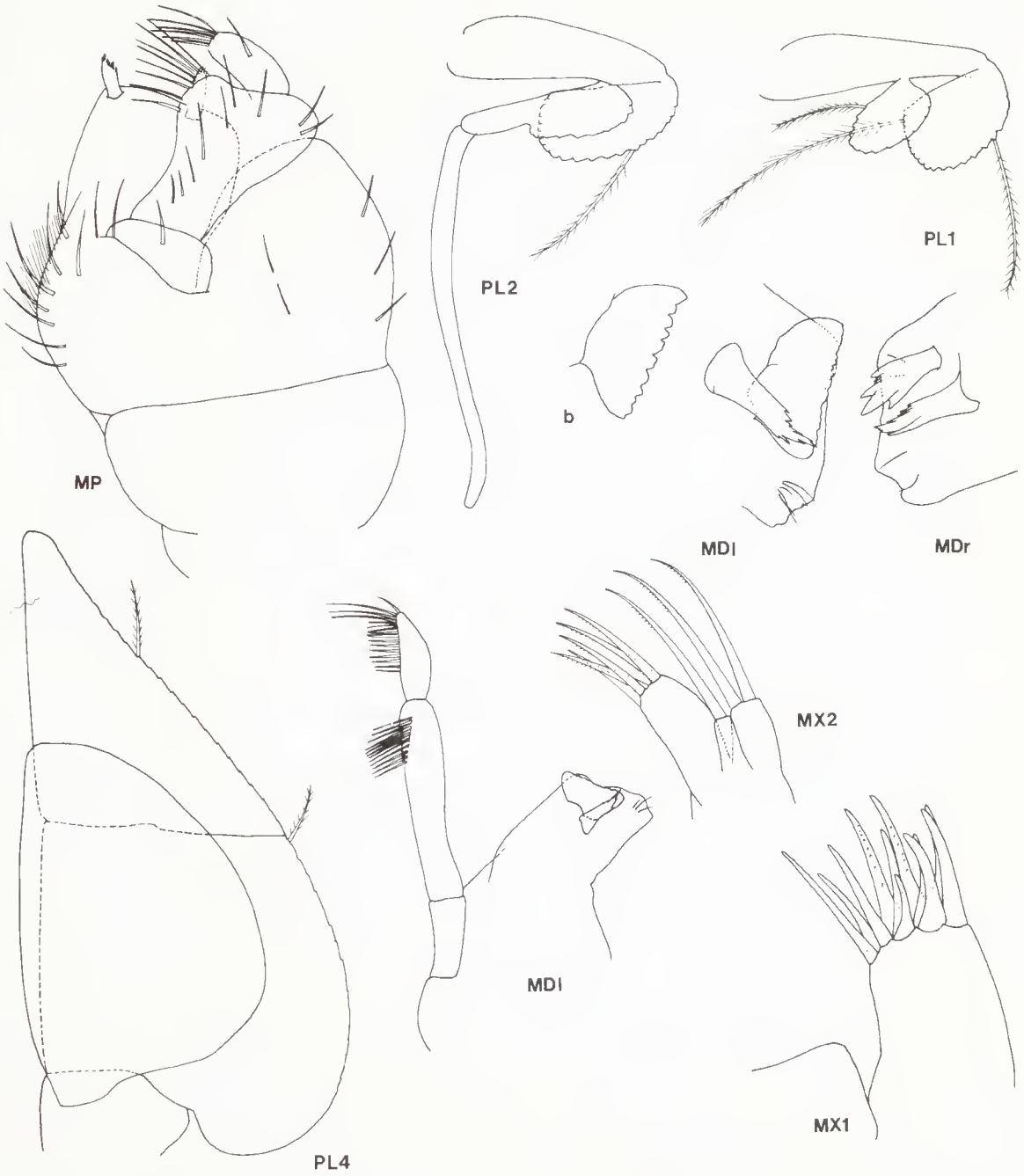

Figure 28. *Serolina minuta,* male, 5.3 mm, NMV J6264; X, female, 6.3 mm, NMV J6263 (left lacinia mobilis).

anterodistal corner produced; article 3 0.8 times length of article 2, clearly tapering; article 4 0.3 times length of article 3; flagellum of 9 articles, last 2 minute. Antenna 2 article 4 evenly tapering; article 5 1.6 times length of article 4, 4.3 times as long as wide, of even width over most of length; flagellum of 10 articles.

Pereopod 2 articles 2 and 3 elongate; article 4

with 3 plumose setae; article 5 0.6 times length of article 4, posterior margin proximally lobed, with 4 plumose setae; article 6 tapering distally, posterior margin more or less straight, with 2 rows of 4 spines on proximal two-thirds; dactylus unguis attached near tip, almost half of whole length. Pereopod 6 articles 3-6 with anterodistal clusters of 6-8 setae and single seta and groups of setae along posterior margin; article 5 4.2 times as long as wide. Pereopod 7 articles 3-5 quadrate-linear, with anterodistal rows of 3-7 setae; article 6 tapering and slightly curved, single long seta at midpoint on posterior margin, 4 setae anterodistally; dactylus simple, tapering.

Pleopod 2 appendix masculina 2.5 times length of endopod. Uropod endopod tapering to subacute apex; exopod 0.7 length of endopod, subtruncate, with long apical setae.

Female. Body 1.3 times as long as wide. Coxae and epimera as in male. Head with medial and lateral pair of flat rounded, broadly based lobes on posterior margin. Pereonite and pleonite mid-dorsal and lateral sculpture as in male but less pronounced. Pleotelson as in male.

Pereopod 2 with broad articles (article 4 1.6 times as long as wide). Pereopod 6 of similar proportions to that of male. Pereopod 7 basal articles similar to those of male; article 6 narrower than in male, straight, with 2 posterior setae; dactylus narrow.

Distribution. Central and southern New South Wales, Victoria, Bass Strait; 15-122 m.

Remarks. The holotype male is in relatively good condition and can be reconciled with more modern material without difficulty. The species is most easily recognised by the prominent lateral lobes on pereonite 6. It might be confused with *S. eugeniae* but lacks the lateral ridges on the pleotelson. Posterior limbs of the adult male are little modified.

Serolina minuta is chosen as type for the new genus because the name has already been used to characterise a serolid group and because the species is well known and widespread.

Serolina nepea sp. nov.

Figures 29-31

Serolis minuta.–Whitelegge, 1901: 204, 208.–Monod, 1971: 325- 328, figs. 1-3.–Holdich & Harrison, 1980: 376, 377, figs. 3C, 3D, 3G, 3H. (not *Serolis minuta* Beddard, 1884)

Material examined. Holotype. Tas. Bass Strait, E of Flinders Island (39°44.8'S, 148°40.6'E), 124 m, fine sand and mud, epibenthic sled, G. Poore et al. on RV "Tangaroa", 14 Nov 1981 (BSS stn 167), NMV J6751 (♂, 4.6 mm).

Paratypes. Type locality, NMV J6752 (♀, 5.0 mm), J6767 (11 ♂♂, 3.3-4.6 mm), NMV J6768 (24 ♀♀, 3.6-5.4 mm), NMV J6769(20 juveniles, 2.4-3.7 mm, AM P34795 (2 ♂♂, 2 ♀♀, 5 juveniles), LACM 3000 (1 ♂, 1 ♀, 1 juvenile), USNM 221525 (1 ♂, 1 ♀, 1 juvenile).

Other material. Qld. Off Brisbane, 136 m, 28 Jul 1968, ("Nimbus" stn 25), AM P20193 (1 ♀).

NSW. Off Ulludulla, 75 m, trawl, K. Sheard, 7 Jun 1944, SAM C4034 (♂, ♀). Sydney, E of Malabar, 66 m, 29 Jan 1974 (AMSBS stn V), AM P22984 (♀). Off Jibbon Head, 84-99 m, sand/mud, 12 Mar 1898 ("Thetis" stn 38), AM P2265 (♂). Off Port Jackson, 82 m, dredge, R. Springthorpe et al., 11 Dec 1980 (stn K80-20-11), AM P32165 (19 ♂♂, 3.9-4.7 mm; 18 ♀♀, 4.0-5.2 mm; 17 juveniles)

Bass Strait. Eastern slope and north-eastern region, 58-174 m: 1 ♂, 2 ♀♀, 14 juveniles from BSS stations 32, 38, 84, 165, 170 and 177, NMV J6770-J6773, J6793-J6794, J11957.

Tas. E of Maria Is., 50 m, fine bryozoa and shell, 23 Apr 1985 (stn TAS29), NMV J11936(35); 75 m, fine bryozoa and shell, 23 Apr 1985 (stn TAS30), NMV J11937(2). 15 km E. of South Bruny Is., 82 m, 22 Oct 1984, NMV J11956(12).

SA. Cape Jaffa, 164 m, SAM C394(1 ♂).

Description. Male. Body 1.1 times as long as wide. Coxae 1-4 with acute posterolateral corners slightly separate from following coxae; coxae 4-6 separated by deep angular fissures; coxa 6 separated from pleonal epimera 2 and 3 by broad angle; epimera narrowly acute.

Head with prominent mid-dorsal conical projection (especially pronounced in juveniles); eye narrow, reniform, without eave, defined by broad shallow groove. Pereonites 1-5 and pleonites 1-3 with mid-dorsal conical crests, most prominent on pereonite 1 and pleonite 1. Pereonites 1-4 with lateral subconical bosses; mid-lateral margins with irregularly-spaced blunt tubercles. Pleotelson broad, tapering abruptly; margins concave distally; apex rounded; with mid-dorsal crest most prominent anteriorly; with dorsolateral curved ridges on each side.

Antenna 1 article 2 2.9 times as long as wide; distal margin slightly oblique; article 3 0.4 times length of article 2, widest sub-proximally; article 4 1.4 times length of article 3; flagellum of 8 articles, last minute. Antenna 2 article 4 evenly tapering, curved; article 5 1.5 times length of article 4, 6.0 times as long as wide, tapering over distal half; flagellum of 10 articles.

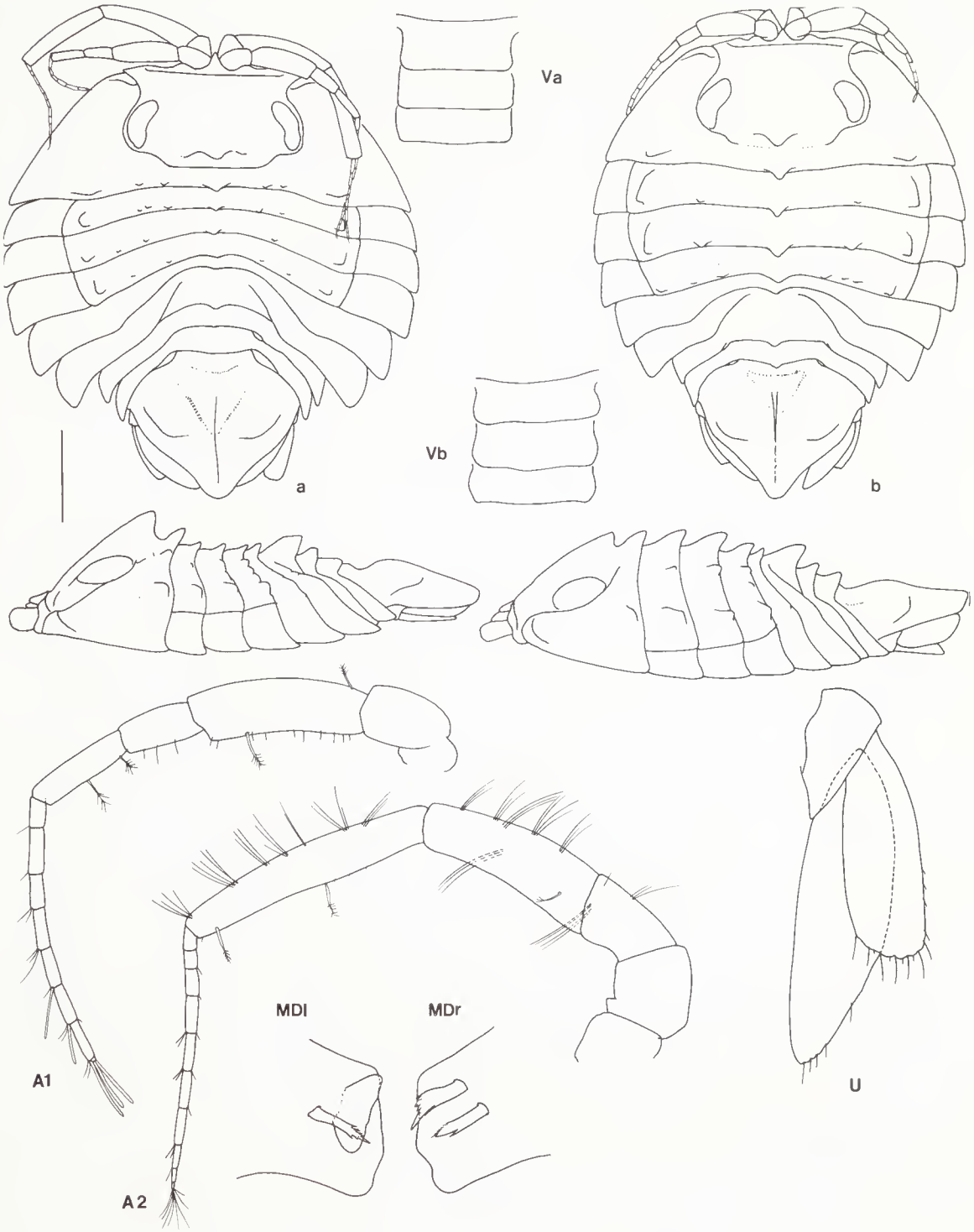

Figure 29. *Serolina nepea.* a, male holotype, 4.6 mm; b, female paratype, 5.0 mm, NMV J6752.

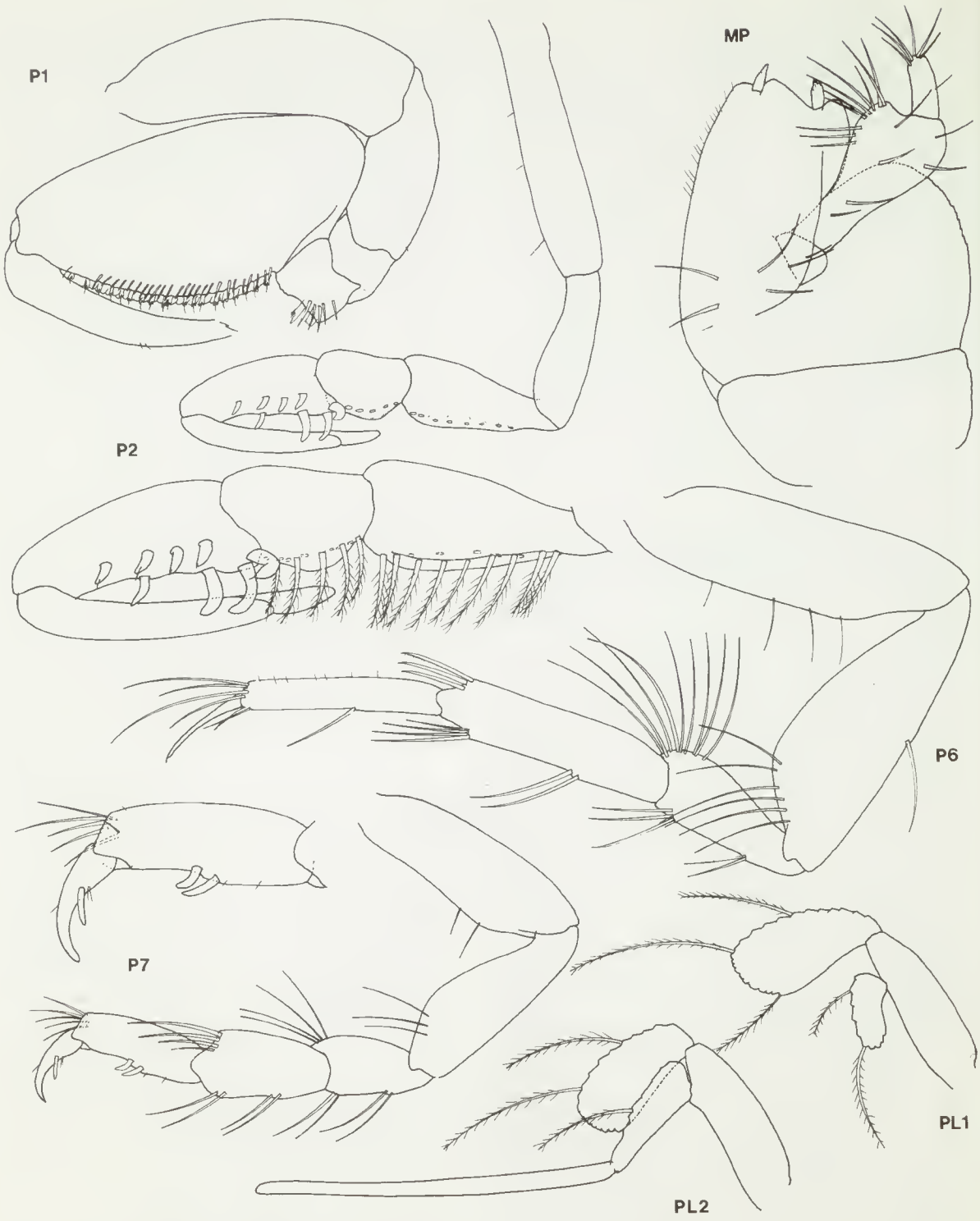

Figure 30. *Serolina nepea,* male holotype, 4.6 mm.

Figure 31. *Serolina nepea*, female paratype, 5.0 mm, NMV J6752.

Pereopod 2 article 3 much shorter than article 2; article 4 with 14 plumose setae in 2 rows; article 5 0.7 times length article 4, posterior margin strongly convex, with 11 plumose setae in 2 rows; article 6 tapering, posterior margin irregularly concave, with 8 spines unevenly arranged; dactylus unguis attached subapically, about one-third of whole length. Pereopod 6 article 3 anteriorly lobed; articles 3 and 4 with anterior row of simple setae; article 5 4.0 times as long as wide. Pereopod 7 articles 2 and 3 anteriorly lobed; articles 3-5 with distal setal row anteriorly; article 6 rectangular, with 2 short curved spines at midpoint on posterior margin; dactylus simple, hooked, with straight spine at midpoint on posterior margin.

Pleopod 2 appendix masculinis 3.0 times length of endopod. Uropod endopod elongate, apically tapering to acute apex; exopod 0.7 times length of endopod, obliquely rounded apex with long apical setae.

Female. Body 1.25 times as long as wide. Coxae and pleonal epimera overlapping more and squarer than in male. Head mid-dorsal cone less pronounced than in female. Pleonites 1-5 and pleonites 1-3 with prominent mid-dorsal crests, most pronounced on pleonite 1. Pereonites 1-4 with lateral crests and single (rarely multiple) midlateral bosses, most pronounced on pereonite 4. Pleotelson as in male.

Pereopod 6 with basal articles more linear than in male. Pereopod 7 distal articles more elongate than in male; article 6 more elongate and with single mid-posterior seta; dactylus fine.

Distribution. Southern Queensland to South Australia, including Bass Strait and Tasmania; 58-174 m.

Remarks. Serolina nepea shares with the much larger species *S. delaria* midlateral sculpture on the pereonites. It is also notable for having article 4 of antenna 1 longer than article 3. The male pereopod 7 carries two strong setae on the propodus. The species is confined to deeper parts of the shelf.

Serolina orriella sp. nov.

Figures 32-34

Material examined. Holotype. NSW. 1 km E of Belmont Beach (33°03'S, 151°41'E), 22 m, grab, 20 Sep 1975 (HDWBS station), AM P23478 (♂, 4.6 mm).

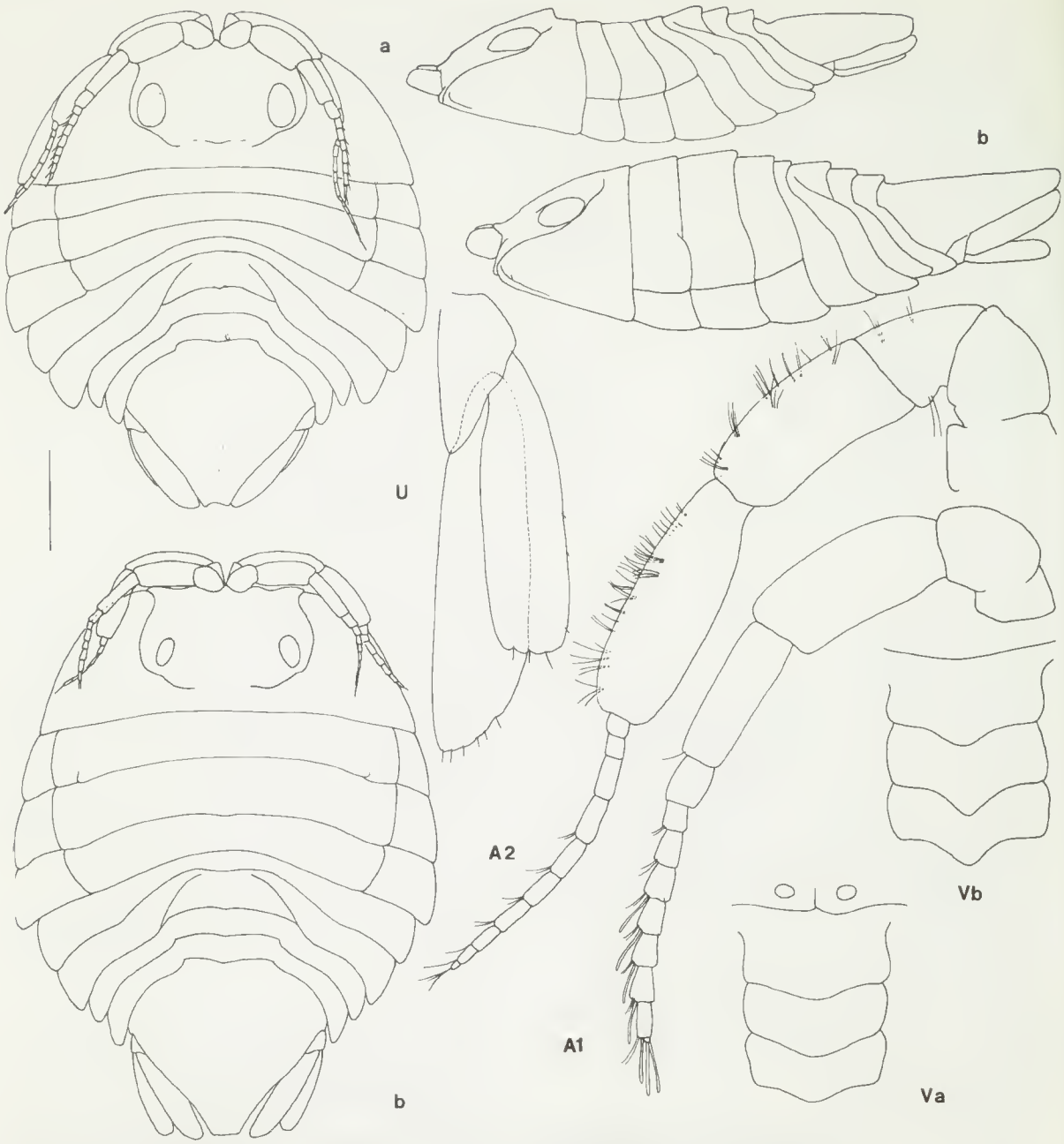

Figure 32. *Serolina orriella.* a, male holotype, 4.6 mm; b, female paratype, 5.4 mm, AM P34797.

Paratypes. NSW. Type locality, AM P34797 (♀, 5.4 mm). 1-1.5 km E of Belmont Beach, 18-23 m, 1975-1976 (HDWBS stations), AM P23479 (♀, 6.0 mm), P24000 (♀, 5.1 mm; juvenile, 3.5 mm), P24006 (♀, 3.8 mm), P24013 (♂), NMV J7696 (♂, 4.4 mm; ♀, 5.1 mm), J7697 (♂, 4.7 mm; juvenile, 3.7 mm). 1-1.5 km E of Burwood Beach (32°58′S, 151°45′E), 20-26 m, 1975-1976 (HDWBS stations), AM P23474 (2 juveniles), P23475 (♀, 5.5 mm), P23477 (juvenile), P24010 (juvenile, 3.8 mm), P24012 (submale). 1.5 km E. of McMasters Beach, 20 m, 1975 (HDWBS stations), AM P24001 (juvenile, 3.4 mm), P24002 (2 ♂♂, 4.5, 5.2 mm; ♀, 5.7 mm).

Other material. SA. 3.8 km W of Tiparra Light, Tiparra Reef (34°10′S, 137°23′E), 10 m, G.C.B. Poore and H.M. Lew Ton, SCUBA, 15 Oct 1985 (stn SA10), NMV J11935 (10 juveniles, 2.5-5.4 mm).

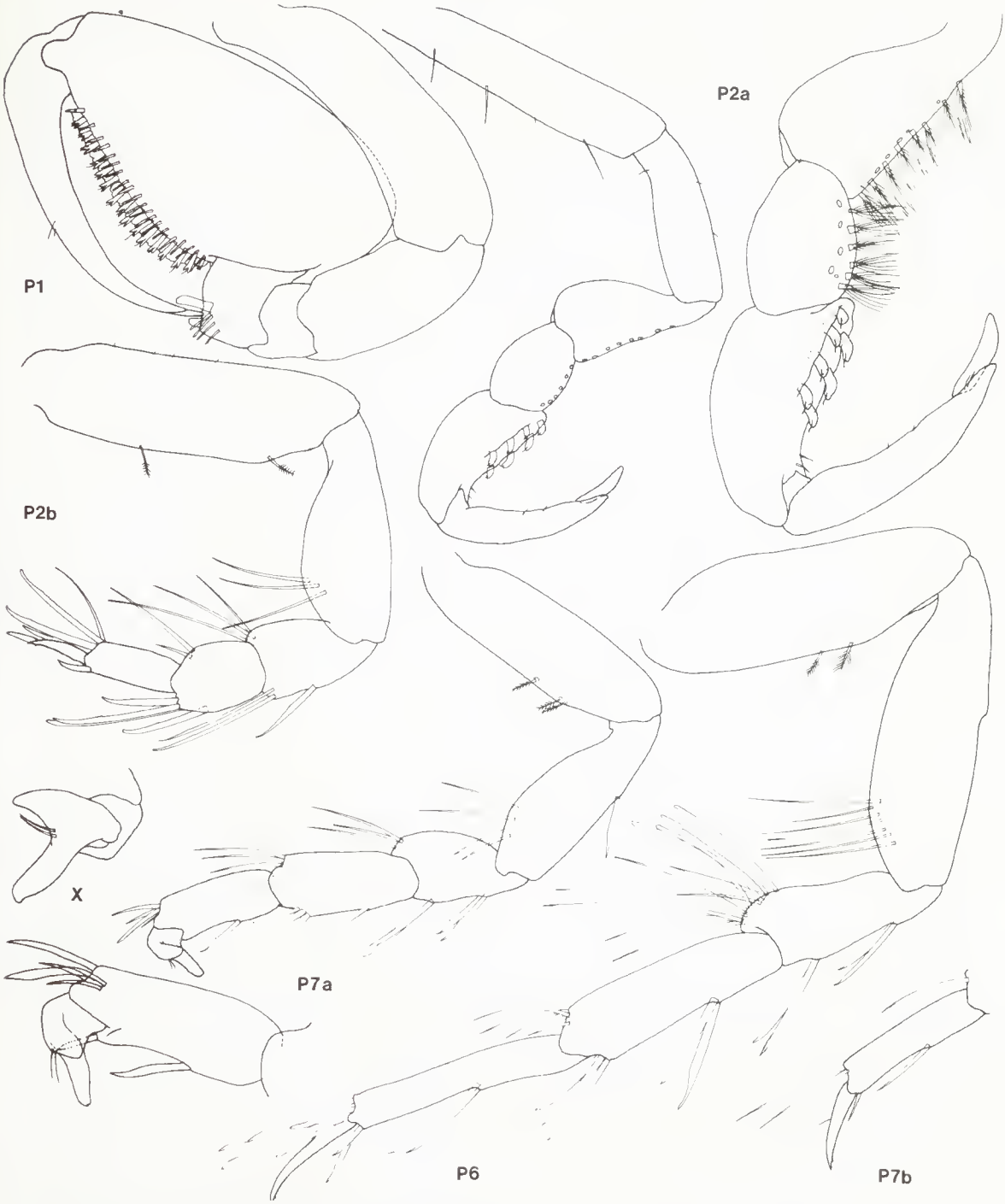

Figure 33. *Serolina orriella.* a, male holotype, 4.5 mm; b, female paratype, 5.4 mm, AM P34797; X, distal view of right pereopod 7 dactylus holotype.

Description. Malc. Body 1.1 times as long as wide. Coxae 1-4 forming more or less continuous margin; coxae 5 and 6 and epimera 2 and 3 more posteriorly directed, short narrow fissure following coxa 6 and epimeron 2.

Head with slightly elevated medial boss on posterior margin, obscure lateral lobes; eye ovoid, very low. Pereonites 1-5 with no mid-dorsal sculpture; pleonites 1-3 with very low broad rounded crests. Pereonites and pleonites with no lateral sculpture. Pleotelson with low even mid-dorsal crest; lateral margins straight; apex slightly concave.

Antenna 1 article 2 2.3 times as long as wide, distal margin slightly oblique; article 3 0.8 times length of article 2, slightly tapering; article 4 0.3 times length of article 3; flagellum of 8 articles, last minute. Antenna 2 article 4 tapering abruptly near end; article 5 1.3 times length of article 4; 3.3 times as long as wide, elongate-ovate; flagellum of 10 articles.

Pereopod 2 article 3 shorter than article 2; article 4 with 15 plumose setae in 2 rows; article 5 0.6 times of article 4, ovate, with 11 plumose setae in 2 rows; article 6 tapering distally, its posterior margin concave, with 7 spines on proximal half; dactylus unguis attached subapically, about one-third of total length. Pereopods 5 and 6 with article 3 broadly lobed anteriorly, article 4 with about 10 tubular setae on anterodistal lobes; article 5 3.8 times as long as wide. Pereopod 7 articles 3-5 with anterodistal clusters of setae and stout spines posteriorly; article 6 rectangular, with seta midposteriorly and distoposteriorly and setae distally; dactylus bilobed, mesial lobe little shorter than the lateral.

Pleopod 2 appendix masculina 2.7 times length of endopod. Uropod endopod elongate, apex tapering; exopod 0.8 times length of endopod, rounded-truncate, with short apical setae.

Female. Body 1.3 times as wide. Coxae as in male, pleonal epimera little more produced posteriorly. Head and mid-dorsal crest with obscure ornamentation. Pereonite 2 with low marginal lateral lobes. Pereopods 5 and 6 marginally more elongate than in male, without tubular setae. Pereopod 7 with simple narrow article 6; dactylus simple.

Distribution. Central New South Wales and South Australia; 10-23 m.

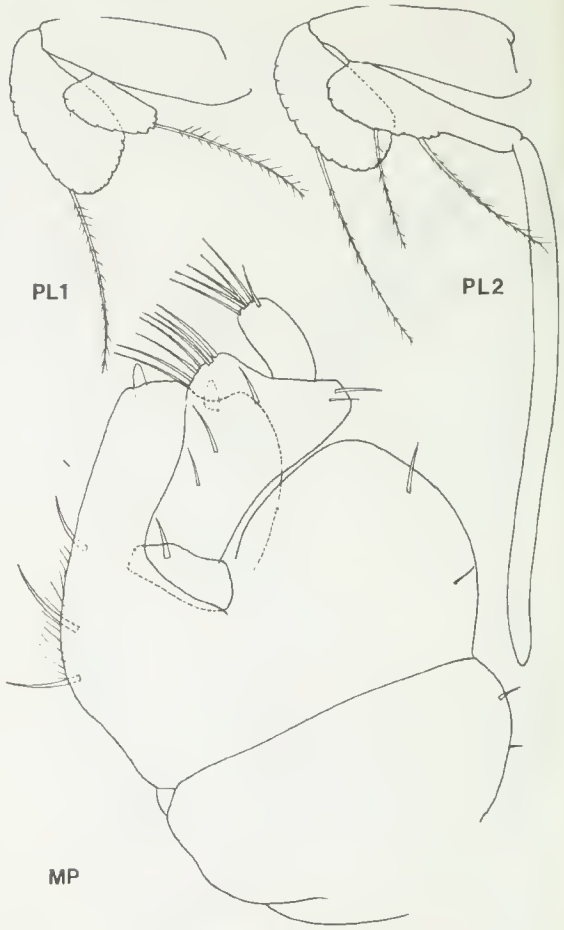

Figure 34. *Serolina orriella*, male holotype 4.6 mm.

Remarks. Serolina orriella is a particularly smooth species but the male is easily recognised by its bifid dactylus on pereopod 7. The species differs from all others in having a disjunct distribution. In spite of intensive sampling which collected about 17 species of serolids in Bass Strait *Serolina orriella* was not found.

Serolina yongei (Hale) comb. nov.

Figures 35-37

Serolis yongei Hale, 1933: 560-561, fig.–Sheppard, 1933: 334-336.–Holdich & Harrison, 1980: 373, 374, 376, 380, 382-384, fig. 6A.–Harrison & Poore, 1984: 13. (not *Serolis yongei*.–Monod, 1971 = *Serolis elongata*).

Material examined. Holotype. Qld. Outside Trinity Opening (16°17'S, 146°02'E), about 200 m, bottom stramin net, 24 Nov

Figure 35. *Serolina yongei.* a, male, 2.8 mm, AM P34786; b, female, 3.3 mm, AM P34787.

Figure 36. *Serolina yongei.* a, male, 2.8 mm, AM P34786; b, female, 3.3 mm, AM P34787; X, distal view of right pereopod 7 dactylus male.

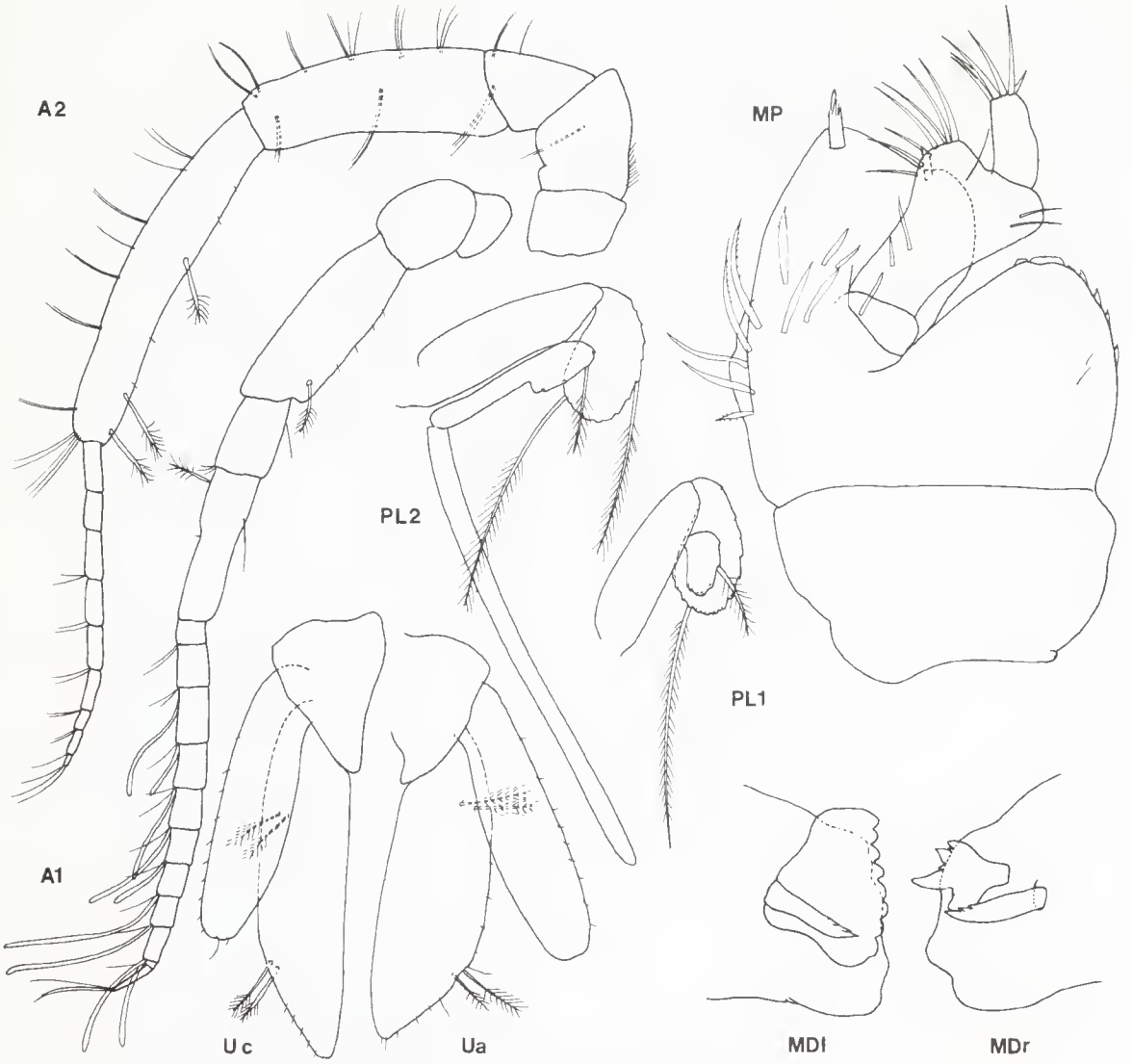

Figure 37. *Serolina yongei.* a, male, 2.8 mm, AM P34786; c, holotype female, 3.0 mm.

1928 (Great Barrier Reef Expedition, 1928-29, plankton station 29), BMNH 1933:9:20:6 (non-ovigerous ♀, 3.0 mm).

Paratype. Type locality, BMNH 1933:9:20:7 (post-manca, 2.1 mm).

Other material. Qld. SE of Cairns (17°14′S, 146°39E), 155-182 m, muddy sand, dredge, R. Springthorpe et al. on HMAS "Kimbla", 12 Oct 1981 (stn C-17), AM P34786 (♂, 2.8 mm), P34787 (♀, 3.3 mm), P32166 (1 juvenile, 3 ♀♀, 2.7-3.5 mm), NMV J7143 (1 ♂, 2 ♀♀). NE. of Lady Elliott Is. (24°03.7′S, 152°49′E), 150 m, rubble, dredge, P. Coleman et al. on HMAS "Kimbla", 4 Jul 1984, AM P36746(5), NMV J11970 (♂), J11971 (♀).

Description. Male. Body 1.1 times as long as wide. Coxae 1-6 closely applied, margins evenly curved; coxa 6 and pleonal epimera 2 and 3 separated by shallow fissures; posterodistal corners of coxae and epimera never very acute.

Head with vaguely three-lobed, low posterior margin. Eye reniform, slightly elevated. Pereonites and pleonites with no dorsal sculpture. Pleotelson broadly subtriangular, apex broadly rounded, lateral margins gently expanded at proximal third, dorsally smooth.

Antenna 1 article 2 3 times as long as wide, anterodistal corner produced; article 3 0.3 length of article 2; article 4 twice length of article 3;

flagellum of 11 articles, last 2 minute. Antenna 2 article 4 tapering and curved; article 5 1.5 times length of article 4, about 6 times as long as wide, of even width over most of length; flagellum of 9 articles.

Pereopod 2 articles 2 and 3 elongate; article 4 with 9 plumose setae in 2 rows, posterodistally lobed; article 5 0.6 times length of article 4, posterodistally lobed, with 11 plumose setae in 2 rows; article 6 ovate, with 5 spines widely spaced on posterior margin; dactylus stout, unguis attached apically, one-quarter of whole length. Pereopod 6 articles 3-6 with anterodistal clusters of 1.4 setae; article 5 5 times as long as wide. Pereopod 7 articles 3-5 quadrate-linear, with anterodistal rows of 1-4 setae; article 6 with 2[1 setae on posterior margin; dactylus short, falcate,apically bifid.

Pleopod 2 appendix masculina 2.7 times length of endopod. Uropod endopod tapering distally to acute apex; exopod 0.8 times length of endopod, tapering distally to truncate-rounded apex, with minute lateral setae.

Female. Body very slightly broader than in male, coxae and epimera as in male. Head with moderately low vaguely 3-lobed posterior margin. Pereonites 1-3 with very obscure lateral bosses; pereonites 2 and 3 with lateral marginal lobes, not at all elevated.

Pereopod 2 with narrow articles (article 4 twice as long as wide). Pereopod 6 of similar proportions to that of male. Pereopod 7 basal articles of similar proportions to those of male; article 6 and dactylus much narrower and elongate.

Distribution. Off central and northern Queensland coast; 155-200 m.

Remarks. The holotype, a non-ovigerous female with small oostegite buds, and the paratype manca were compared with more recently collected specimens. Consistent similarities in shape, pleotelson, profile and antenna 1 confirmed their identity. The only differences were in the shape of the uropodal rami, narrower in the type (Fig. 39). The species is notable for the long antenna 1 article 4 and the triangular margin of pleonal sternite 1.

The species is confined to deep water on the shelf.

Serolina sp.

Serolis sp.–Holdich & Harrison: 380, figs. 4G, 4H.

Material examined. Qld. Capricorn Channel (23°11.5'S, 152°4.5'E), 188 m, thick blue/grey mud, AM P27338 (♂, 3.4 mm).

Remarks. This single male is similar to *S. kawina* in being largely without any dorsal sculpture but the limbs differ in several respects. The sixth coxa is shorter than in *S. kawina*; the antennal peduncles are broader; the uropodal exopod is shorter; the propodus of pereopod 2 is broader; article 2 of pereopod 5 is lobed as in *S. kawina* but article 3 lacks the transverse ridges; and the dactylus of pereopod 7 is simple.

The specimen comes from a much deeper habitat than *S. kawina* so it is not surprising that it does not belong to this species. Its description awaits more material.

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