

Two new genera and twelve new species of Anthuridea (Crustacea: Isopoda) from off the West Coast of New Zealand

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Abstract From the shelf and upper slope off the West Coast of the South Island of New Zealand, the following new taxa of Isopoda Anthuridea (Crustacea) are described: *Kupellonura proberti* n. sp. (Hyssuridae); *Quantanthura pacifica* n. sp., *Haliophasma platytelson* n. sp. and *H. novaezelandiae* n. sp. (Anthuridae) *Albanthura stenodactyla* n. gen. et sp., *A. rotunduropus* n. sp., *Bullowanthura crebrui* n. sp., *Leptanthura truncatitelson* n. sp., *L. exilis* n. sp., *L. profundicola* n. sp., *Paranthura longa* n. sp., and *Psittanthura egregia* n. gen. et sp. (Paranthuridae). Most of these are blind, unpigmented species, adapted to life in deep water. *Albanthura* n. gen. is blind, has a single telsonic statocyst, short flagella of the antennae, a maxilliped with 3 palpal articles, and a triangular carpus on pereopods 4 to 7. *Psittanthura* n. gen. is also blind, with very unusual, enlarged subchelae of pereopods 1 and 2, a large, rectangular telson with a single statocyst; the maxillipedal palp is composed of 1 large and 1 small, distal article; a mandibular palp is absent.

Keywords Isopoda; Anthuridea; *Albanthura* n. gen.; *Psittanthura* n. gen.; New Zealand benthos; *Kupellonura proberti*, *Quantanthura pacifica*; *Haliophasma platytelson*; *Haliophasma novaezelandiae*; *Albanthura stenodactyla*; *Albanthura rotunduropus*; *Bullowanthura crebrui*; *Leptanthura truncatitelson*; *Leptanthura exilis*; *Leptanthura profundicola*; *Paranthura longa*; *Psittanthura egregia*

INTRODUCTION

During a survey of the shelf and upper slope benthos off the West Coast of the South Island of New Zealand several anthuridean isopods were collected by Dr P. K. Probert and submitted to the author for identification. Though the number of specimens is very small and the state of preservation sometimes not very good, the material seemed to be worth a detailed taxonomic study. It is the first time that a large number of samples has been collected in this area and sorted, and the result is an astonishingly large number of new taxa, indicating a high diversity of the benthos. I have the impression that further new species will be discovered in future surveys of this area.

MATERIALS AND METHODS

Specimens were collected and sorted by the New Zealand Oceanographic Institute (NZOI), where all type specimens are deposited. Repository numbers are mentioned with each new species in the following descriptions (H, holotype; P, paratypes).

Specimens were dissected under a Wild M5 dissection microscope and mounted on slides. Drawings were prepared with the help of a camera lucida.

The new species were assigned to the three families sensu Wägele (1981). A complete bibliography can be found in the world list of Anthuridea (Negoescu & Wägele 1984).

STATIONS

Q 692, 42°53.9'S 170°00.5'E, 245 m; Q 693, 42°50.4'S 169°58.7'E, 297 m; Q 694, 42°48.5'S 169°53.5'E, 520 m; Q 695, 42°42'S 169°46.8'E, 808 m; Q 698, 42°23.7'S 169°11.8'E, 1120m; Q 700, 41°15.1'S 170°37.5'E, 560m; Q 703, 41°28.8'S 171°81.6'E, 202m; Q 717, 42°24.5'S 170°57.5'E, 133m; Q 722, 42°23.4'S 170°53.6'E, 167m; Q 723, 41°58.5'S 170°28.1'E, 507m; Q 727, 40°58.5'S 171°40.9'E, 134m; Q 729, 40°51.8'S 171°28'E, 195m.

S 374, 42°50.4'S 169°54.4'E 462m; S 377, 42°36.3'S 169°33.4'E 938m; S 385, 41°59.2'S 170°28.9'E 496m; S 386, 41°20.9'S 170°40.8'E 514m; S 392, 41°07.4'S 172°04.2'E 31m; S 397, 40°55.5'S 171°37.1'E 155m; S 398, 40°53.1'S 171°31.7'E 177m; S 400, 40°41.3'S 171°06.0'E 506m.

All Q-samples obtained with an anchor-box dredge, S-samples from replicate box-core of an area of 1/15 m².

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Abbreviations

A1, antenna 1; A2, antenna 2; Md, mandible; Mx, maxilla 1; P 1-7, pereopods 1-7; Plp 1-5, pleopods 1-5; Tel, pleotelson; UEx, exopod of uropod; UEn, endopod (and, in figures, sympod) of uropod.

Mx 2 (second maxilla) is reduced in all Anthuridea (see Wägele 1979, 1981).

SYSTEMATICS

Family Hyssuridae Wägele, 1981

Genus *Kupellonura*

Kupellonura proberti n. sp.

(Fig. 1-4)

Type data. **Holotype**, immature adult, 5.8 mm; Q 727 (H434); 40°58.5'S, 171°40.9'E, 134 m.

Description. HOLOTYPE. Blind hyssurid, integument without chromatophores; habitus (Fig. 1). Flagellum of A 1 with 4 articles, first article shorter than second, with small feather-like bristle; second and third articles without setae; last article short, with 1 prominent aesthetasc, 3 short setae (Fig. 1). Flagellum of A 2 shorter than 5-jointed peduncle, with 8 articles; setation (Fig. 2). Pars incisiva of Md with 3 teeth, 2 lateral teeth each with a further notch; lamina dentata of 3 teeth, pars molaris very short, rounded. Mandibular palp with 3 articles, second article longest; last article with 3 stout setae (Fig. 1). Medial endite of Mx short as usual, with 1 distal seta; lateral endite with medially directed apex ending in 6-7 acute teeth; lateral tooth strongest (Fig. 1). Mxp slender, palp longer than basis; endite surpassing second palpal article, with 2 apical setae; palp of 5 articles, first very short, second and third longest; last article tiny, with 4 setae (Fig. 1). Pereopods 1-3 subchelate, but not very strong. Propodal palm of P 1 very slightly concave, with 4 acute spines; thin cuticular scales between spines; few setae (Fig. 2). Propodus of P 2 with 3, P 3 with only 2 sensory spines (detail 1, Fig. 2); carpus triangular, elongated; posterodistal point acute with 2 strong setae. P 4-7, carpus trapezoidal, propodus cylindrical; podomeres of last pereopods more slender; propodus and carpus each with 1 anterodistal sensory spine (Fig. 2). Outlines of pleopods similar; Plp 1 not operculiform, exopod with 18, endopod with 7 swimming setae (Fig. 4). Uropods hardly surpassing telson, endopod slightly longer than sympod; medial margin of endopod nearly straight, apex rounded, with about 20 simple setae (Fig. 4); UEx of singular shape (Fig. 4); lobe on *in situ* medially-directed margin overlapping same lobe of other UEx (Fig. 1, 4); apex rounded, with

11 setae. Tel long-oval, margins parallel, tapering, apex rounded, with 7 pairs of setae (Fig. 3). Dorsal surface of Tel smooth, some small setae on lateral margins.

Remarks. Only one specimen of this new species was available. Its good state of preservation and the characteristic tail-fan, which distinguishes *K. proberti* n. sp. from all other known species of this genus, justify a description. This species has, besides the features of the antennae and pereopods, the typical Md of the genus *Kupellonura*, which with the plesiomorphic, dentated lamina dentata can be used to distinguish this genus from the similar *Ocsanthura*. The A 1 of the present specimen had no aesthetasc on the second flagellar article, which in other species (*K. mediterranea* Barnard, *K. serritelson* Wägele) is always present.

Family Anthuridae Menzies & Glynn, 1968

Genus *Quantanthura*

Quantanthura pacifica n. sp.

(Fig. 5-9)

Type data. **Holotype** immature adult, 6 mm, Q 727 (H 435), 40°58.5'S 171°40.9'E, 134 m. 5 **paratypes**: 1 ♂, damaged (Q 694, P 657) 1 manca, 4.5 mm (Q 700, P 658), 1 manca, 5.2 mm (S 386 C, P660), 1 ♀, 11.5 mm, (S 374 A, P659).

Description. HOLOTYPE. Blind, without chromatophores, habitus (Fig. 5); pleonites fused dorsally. Flagellum of A 1 with 4 articles; first article short, with 1 feather-like bristle, second longest, without setae; last article with 3 aesthetascs and 4 setae (Fig. 5). Flagellum of A 2 scarcely longer than 5th peduncular article, with 5 articles and many short setae (Fig. 5). Palp of Md with 3 articles, 4 setae on last article; pars incisiva of 3 cusps, lamina dentata with 5-6 teeth, pars molaris short, blunted. Mx of the Anthuridae-type, 7 acute teeth on apex. Basis of Mxp shorter than palp, palp somewhat broader; endite lobate, > 0.5× width of palp, surpassing second palpal article; palp of 5 articles, last article very small, with 4 medially-directed setae (Fig. 5). P 1 with stout subchela; palm of propodus slightly convex, few strong setae (Fig. 6). Carpus of P 2 and P 3 triangular, with 1 posterodistal sensory spine, few setae; propodus oval, few setae (Fig. 6). P 4-7 more slender, carpus rectangular; 1 distal, 1 proximal sensory spine on anterior margin; 1 feather-like bristle on posterior margin; propodus less broad, nearly as long as carpus, 1 sensory spine, 2 fringed spines on distal edge of palm (Fig. 7; P 7 of holotype incompletely developed). Exopod of Plp 1 operculiform, covering remaining pleopods;

exopod with 24 marginal swimming setae (except on medial margin), endopod with 6 setae; apex of exopod of Plp 2 with 6, endopod with 4 swimming setae. Tail-fan in lateral view as in Fig. 5, with dorsally convex telson; uropods not surpassing telsonic apex. Sympod of uropods longer than endopod, endopod with few minute setae on medial margin, several long setae and groups of feather-like small bristles on distal and lateral margins (Fig. 8). UEx long-oval, tapering to rounded point, margin with about 20 plumose setae, fewer long, simple setae (Fig. 8). Tel linguiform, broadest at mid-length; 2 groups of long setae (4 pairs) plus central pair of fringed setae on distal margin; dorsal surface convex, with many short hair-like setae. Two basal statocysts (Fig. 7).

PRE-MALE SPECIMEN. (Fig. 9) This specimen is damaged; only the anterior segments are complete. Mouthparts similar to those of holotype; Mxp with 2 additional setae (on palpal articles 2 and 3). A 1 with long, 30-jointed flagellum, aesthetascs only on the last 4 articles, hence 1 moult from sexual maturity (pre-male stage). A 2 as in foregoing specimen (Fig. 9). P 1 stouter than in holotype, 9 setae on propodal palm, row of 10 long setae on medial surface of propodus; medial surface of carpus with 11 similar setae. P 2 with many more setae than holotype (Fig. 9).

Remarks. This is the first species of *Quantanthuria* discovered in the western Pacific Ocean. The remaining species are known from the Peru-Chile Trench (*Q. globitelson*), South Africa (*Q. remipes*), and the Atlantic Ocean (*Q. brasiliensis*, *Q. menziesi*, *Q. sinuata*). All of these species have antennae with longer flagella than the new species (A 1 at least 5, A 2 at least 7 articles; only *Q. remipes* has 4 or 5 flagellar articles on A 2) and a row of long setae on the peduncular articles 1 and 3 of A 1 (excepting *Q. globitelson* and *Q. sinuata*). Only *Q. remipes* has also, as in *Q. pacifica* n. sp., a Mxp with 5 palpal articles, but the setation is richer than in the new species.

Haliophasma platytelson n. sp. (Fig. 10–13)

Type data. Holotype immature adult, 6.5 mm, Q 703 (H 436), 41°28.8'S 171°1.6'E, 202 m.

Description. HOLOTYPE. Cephalothorax shorter than most pereonites (except pereonite 7), anterior margin with small lateral horn-like projections, a chin on ventral surface caudal to insertion of Mxp. Pereonite 7 smallest; pleon with fused segments, nearly as long as pereonite 6. Dorsal cuticle with few small pits (Fig. 10). Flagellum of A 1 short, 3 articles; first article partly covered by third pedun-

cular article, with 1 feather-like bristle; last article small, with 3 aesthetascs and 6 setae (Fig. 10). Flagellum of A 2 with 6 articles, on each several setae distally (Fig. 10); third peduncular article with strongly cuticularised, rounded medial edge. Mandibular palp of 3 articles, 4 setae on last article; pars incisiva of 2 cusps, lamina dentata with 5 serrulations; pars molaris prominent, grinding surface flat (Fig. 10). Apex of Mx with 6 spine-like teeth. Mxp of 3 articles, second article (first palpal article) as long as basis but narrower, distal margin with medial, rounded edge; small second (last) palpal article inserts in lateral sinuosity of distal margin of first article; second palpal article with 5 medially-directed setae. P 1 subchelate, propodal palm crenulate, with 5 short setae, 3 further (longer) setae on medial surface, group of 8 setae distally (Fig. 11). Propodi of P 2, P 3 long, slender, with posterodistal sensory spine (detail on Fig. 11), 3 (P 2) or 2 (P 3) setae on palm; carpus small, triangular; basis and ischium long, cylindrical. P 4–7 similar, carpus rectangular, propodus long, oval; podomeres with only few setae (Fig. 12, 13). Operculiform exopod of Plp 1 strongly chitinised, lateral border bent dorsally, bearing 36 swimming setae, endopod with only 4 setae; exopod of Plp 2 with 12, endopod with 7 swimming setae (Fig. 13). Cuticle of tail-fan thick, uropods not surpassing Tel (Fig. 10, 13). UEx long-oval, with distal sinuosity on lateral margin; margin crenulate, with 37 plumose setae, very few small, simple setae (Fig. 11, 13). UEn shorter, narrower than sympod, medial margin straight; only few simple setae on distal, lateral margins (Fig. 11). Tel < 2× as long as wide, broadest part on half of its length, apex gently rounded; margins, dorsal surface with scattered small setae (Fig. 13); mediadorsal keel prominent on distal part of telson, flatter on proximal part, where UEx arches over Tel (Fig. 10, 13). Setation of telsonic apex not complete; 2 basal statocysts.

Remarks. This is the first blind species known in *Haliophasma*. Only one specimen was caught, but its unique features allow an easy identification. The tail-fan is similar to that of many other species (*H. canale*, *H. cribensis*, *H. pugnatum*, *H. purpureum*, *H. yarra*), but its distally raised dorsal keel and the broad outline are unique. The anterolateral horns of the cephalothorax are also remarkable; they are also present, though not so prominently, in *H. falcatum* and *H. alaticaudum*. A short third maxillipedal article is known in many species, in combination with the typical P 1-form it can be found in *H. caprii* and *H. geminatum*.

Haliophasma is a typical genus of the upper littoral of the warmer seas, only a few species live in deeper water (below 200 m; e.g., *H. alaticaudum*, *H. geminatum*; Amar 1966, Schultz 1977), but they still have eyes, in contrast to the present species.

***Haliophasma novaezelandiae* n. sp.**

(Fig. 14–16)

Type data. Holotype, manca, 5.8 mm, Q 722 (H 437), 42°23.4'S 170°53.6'E, 167m.

Description. HOLOTYPE. Form of body as in *H. platytelson*, cephalothorax without anterolateral horns, pleonites fused. Cuticle of most appendages covered with scattered small cuticular scales. Flagellum of A 1 3-articulate; first article with 1 feather-like bristle; second article longest, with few hairs; last, minute article with 3 aesthetascs, 6 setae (Fig. 14). Flagellum of A 2 shorter than last peduncular segment, of 5 articles with many simple setae; peduncle as in Fig. 14. Palp of Md with 3 setae on third (last) article; pars incisiva with 2 cusps, lamina dentata with 5 serrulations, pars molaris blunt (Fig. 14). Mx with medially curved apex ending in 6 spine-like teeth. Mxp of 3 articles; last article $\frac{2}{3}$ as wide as second article, 5 short setae on medial margin (Fig. 14). P 1 stout, subchelate, palm of propodus bilobed, proximal lobe 3× broader than distal lobe, margin crenulate, with 4 simple setae, medial surface with further scattered setae (Fig. 14). Setation of P 2, 3 poor; carpus short, triangular; propodus long, oval, palm straight, with posterodistal sensory spine (Fig. 14). Carpus of P 4–6 rectangular, with anterodistal sensory spine; feather-like bristle on posterior margin; propodus longer than carpus, palm with few setae, anterodistal sensory spine serrated (Fig. 15: P 4). P 7 not developed. Exopod of Plp 1 operculiform, form as in *H. platytelson*, with 31 swimming setae; endopod shorter, < 0.5× width of exopod, with 9 setae. Exopod of Plp 2 with 12, endopod with 6 swimming setae. Uropods not surpassing Tel; UEx lanceolate, margin crenulate, framed with 36 short, plumose setae and few simple setae (see Fig. 15). UEn much shorter than sympod but broader, outline nearly trapezoidal (Fig. 16); distal margin deeply crenulate, 1 simple seta inserting in each notch, with short hairs. Tel rectangular in dorsal view, widening distally, apex truncate; in lateral view similar to that in *H. platytelson*, dorsal keel not so prominent. Dorsal surface with scattered short setae, distal margin with 4 pairs of setae (1 seta missing in holotype) (Fig. 15).

Remarks. Though only 1 large manca is available, the specimen allows an assignment to a new species without difficulties. The animal is blind, as in *H. platytelson* n. sp., and bears a singular combination of features. It differs from *H. platytelson* n. sp. by the outline of several appendages (Mxp, A 2, P 1, tail-fan) and can easily be recognised by its lanceolate UEx and rectangular Tel. No other

Haliophasma has such a P 1-propodus, only 3 species (*H. cycneum*, *H. palmatum*, *H. tricarinatum*) also possess a convex palm, but not in the bilobed form of *H. novaezelandiae* n. sp.

Family Paranthuridae Menzies & Glynn, 1968***Albanthura* n. gen.**

Diagnosis. Blind paranthurids with piercing-sucking mouthparts and telsonic statocyst, pleonites not fused. Flagella of antennae short, A 1 with 5, A 2 with 4–5 small articles; only A 1 of male with multiarticulate flagellum. Md with acute endite, pars molaris and lamina dentata reduced; Mx stiletto-like; Mxp narrow, basis longer than palp, endite present, palp with 2 large articles and small, distal article. P 1–3 subchelate; P 4–7 with triangular carpus, dactylus very slender and longer than propodus. Exopod of Plp 1 operculiform, exopod of uropods folded over telson, endopod half as long as sympod.

Type species. *Albanthura stenodactyla* n. sp.

Remarks. *Albanthura* n. gen. can be distinguished from other paranthurid genera by the form of its Mxp, the short flagella, the triangular carpus of P 4–7 and the presence of a telsonic statocyst. A Mxp with endite and 3 palpal articles is only known in the genera *Accalathura* (see *A. gigantissima* in Wägele 1984), *Calathura*, and *Pseudanthura* (see *P. albatrossae* Kensley, 1978b). *Aenigmathura* (see Poore 1981) has a palp with 1 basal joint and a distal part with 2 sutures indicating the fusion of 3 articles. Furthermore, this genus has long rectangular carpi of P 4–7 and on P 1–3 a large basal projection of the propodus. *Accalathura* has rectangular carpi of P 4–7 and multiarticulate flagella, *Calathura* has no statocyst and a different arrangement of maxillipedal articles (1 short, 2 large), *Pseudanthura* has long, multiarticulate flagella, long carpi of P 4–7, and specialised uropods (UEn fused to sympod, UEx minute).

Leptanthura sculpta Pasternak, 1982 (Mediterranean) probably also belongs to this genus, but Pasternak's drawings are too incomplete for analysis; this species has, at least in Pasternak's drawings, only 2 palpal articles of the Mxp and no (?) telsonic statocyst.

***Albanthura stenodactyla* n. sp.**

(Fig. 17–20)

Type data. Holotype ♂, 8.5 mm, Q 695(H438), 42°42'S 169°46.8'E, 808 m; paratype manca, 3.8 mm, S 377 (P 661).

Description. HOLOTYPE. Blind *Albanthura*, integument unpigmented, pleonites free, body form as in Fig. 17. Flagellum of A 1 with 13 articles; first article shorter than last peduncular article, with 1 feather-like bristle; following articles broader, diameter diminishing distally, each article with apical row of long, slender aesthetascs (only place of insertion shown in Fig. 17), —twelfth article with only 3, last article with 1 aesthetasc—5 simple setae visible through mass of aesthetascs. Flagellum of A 2 shorter than last peduncular article, with many simple setae; setation of peduncle as in Fig. 17. Endite of Md, acute lamina dentata, pars molaris reduced; palp of 3 articles with 2 apical setae; Mx stiletto-like, lateral serrulations on distal part. Mxp slender, basis longer than palp, endite surpassing first palpal article; palp with 2 large articles, 1 small, apical article; first article with 2 long setae on medial margin, second article with 5 (1 lateral, 4 medial) setae, 4 setae on last article (Fig. 17). P 1 with stout, subchelate propodus, palm nearly straight, with 8 sensory spines, simple seta between second and third spines; comb of 43 long setae on medial surface (Fig. 18); short claw of dactylus surpassing basal edge of propodus when subchela closed. P 2, 3 similar, subchelate, propodus smaller than in P 1, palm of propodus with 6 sensory spines; carpus short, triangular, with 2 spines; dactylus slender, sickle-shaped, claw very short (Fig. 18). P 4–7, carpus small, triangular; propodus long, oval; dactylus very slender, sickle-shaped, terminal claw minute; length of podomeres increasing in posterior legs; carpus with 2 long sensory spines, propodus with 2 (P 4, P 6) or 3 (P 5, P 7) spines (Fig. 18, 19). Exopod of Plp 1 operculiform, with 20 swimming setae, endopod with 19 setae; exopod of Plp 2 with 21, endopod with 9 swimming setae. Appendix masculina a slender stylet with rounded apex (Fig. 17), surpassing exopod of Plp 2. Endopod of uropod surpassing Tel, 0.5× length of sympod, medial margin with 4 long plumose setae, bunch of about 12 simple setae distally. UEx not reaching beyond distal end of sympod, leaf-like, with distal shallow concavity on outer margin, fringed with about 26 plumose setae (Fig. 19). Tel long-oval, narrower distally than proximally, tapering to rounded point; setation as in Fig. 19. Single basal statocyst.

Remarks. The manca stage (Fig. 20) shows the same features as the male holotype, but the setation is poorer and the male appendix masculina and brush-like A 1 are lacking. The flagellum of A 1 is similar to that of the *A. rotunduropus* (Fig. 21), the second article bears no seta, the third 1 seta and 1 aesthetasc, the fourth 1 aesthetasc, and the last 1 aesthetasc and 4 setae.

***Albanthura rotunduropus* n. sp.**

(Fig. 21–23)

Type data. **Holotype:** immature adult, 6.3 mm, S 392 (H 439), 41°07.4' S 172°04.2' E, 31 m; **Paratype,** immature adult, 4.5 mm, S 397 C (P 662).

Description. HOLOTYPE. Blind, unpigmented, pleonites free, habitus as in Fig. 21. Last peduncular article of A 2 with 11 long setae; flagellum of 5 articles. First flagellar article partly covered by last peduncular article, with 1 feather-like bristle; second article longest, with 1 distal seta; third article with 1 seta, 1 aesthetasc; fourth article with 1 aesthetasc; last with 1 aesthetasc, 3 setae (Fig. 21). Flagellum of A 2 with 4 articles as in *A. stenodactyla* (Fig. 23). Mouthparts as in *A. stenodactyla* (Mxp, Fig. 21; Md, Fig. 22). P 1 with stout subchela, propodal palm straight, with 7 hand-like sensory spines, plus larger basal spine; stout seta between second and third spines (Fig. 21); carpus with 2 distal spines. P 2, 3 smaller than P 1, propodal palm convex, with 6 (P 2) or 5 (P 3) spines; carpus small, triangular, with 2 distal spines; several long, simple setae on podomeres (see Fig. 21, 22). P 4–7 as in *A. stenodactyla* (Fig. 22). Exopod of Plp 1 operculiform, with 21, endopod with 9 swimming setae; exopod of Plp 2 with 11, endopod with 6 swimming setae. UEn surpassing Tel, long-oval, medial margin with 2 simple setae, distal, lateral margins with more than 20 setae (Fig. 23); UEx nearly round, with deep distal concavity on outer margin (Fig. 22), framed with 37 plumose setae, few simple setae. Tel broader distally than proximally, apex truncate, with 2 pairs of setae; few further setae on dorsal surface (Fig. 23). Single telsonic statocyst.

Remarks. *A. rotunduropus* n. sp. is the second species of the new genus *Albanthura*. It differs from the type-species in the shape and setation of the tail-fan and can be recognised easily by its rounded UEx. More material is necessary for the description of the sexual dimorphism, which might yield further differences from *A. stenodactylan* sp.

***Bullowanthura crebrui* n. sp.**

(Fig. 24–30)

Type data. **Holotype** ♂, 5.5 mm, Q 694 (H 440), 42°48.5' S 169°53.5' E, 520 m; **paratypes,** several mancas, 2.5–3.0 mm, immature adults 3.5–7 mm, mature ♀ 4.0–7.8 mm, ♂ 4.5–5.5 mm, from stations Q 692, Q 693, Q 717, Q 723, Q 729, S 374, S 385, S 386, S 398, S 400 (P 663–672).

Description. HOLOTYPE ♂. Blind, unpigmented paranthurid, pleonites free (Fig. 24). Third peduncular article of A 1 with group of only 6 small

distal setae; flagellum of 10 articles, basal articles swollen, diameter diminishing in distal articles; first article short, with 1 feather-like bristle; following articles with apical row of long, slender aesthetascs; last article with 3 small aesthetascs, 3 short setae (Fig. 24). Four-articulate flagellum of A 2 as long as last peduncular article, long simple setae inserting on peduncular articles 4, 5 (Fig. 25). Palp of Md of 1 cylindrical article with single distal seta, endite as in other paranthurids (Fig. 25). Mx a long stylet with lateral apical serrulations. Mxp long, slender, insertion of palp indicated by suture line; below this suture 2 long setae on medial margin; palp of 2 articles, larger basal article fused to basis, with 5 setae, second article very small, with 4 setae (Fig. 25, Mxp (M)). P 1 subchelate, stout propodus with concave palm, 7 spines, 1 seta between second and third basal spines; comb of 26 setae inserting on medial surface of propodus (Fig. 26). P 2, 3 smaller than P 1, also subchelate, with small triangular carpus; propodus oval, broader basally, palm concave, with 4 (P2) or 3 (P 3) sensory spines; dactylus sickle-shaped, slender, with minute distal claw; further setation see Fig. 27. P 4–7 with small triangular carpus (with 1 spine), oval propodus (2 sensory spines); dactylus slender, sickle-shaped, distal claw very short (Fig. 27, P 4 (M); fig. 28, P 7 (M)). Exopod of Plp 1 operculiform, apex framed by 17 swimming setae; endopod with 10 apical setae. Exopod of Plp 2 with 12, endopod with 5 swimming setae; appendix masculina on endopod surpassing exopod, tip rounded (Fig. 29). Endopod of Urp surpassing Tel, basally nearly as broad as sympod, tapering to rounded apex, few simple setae on medial and lateral margins, several long setae inserting on distal margin. UEx of nearly circular outline, outer margin with few (4) short plumose setae, further short simple setae more distally on sinuous part of margin, margin ending in small, rounded point (Fig. 29). Tel with parallel lateral margins, distally gently rounded, with deep medial notch (Fig. 30), in which 2 pairs of setae insert. Single basal statocyst.

Variations. Many specimens of this commonly occurring species were compared. In Fig. 24–30 the holotype is compared with a large mature female (7.8 mm, Q 693), a small female (4 mm, Q 692), and an immature adult (Q 729, 4.5 mm). The A 1 of all non-males has a flagellum of 4 articles; first article short, with 1 feather-like bristle, second article longest, third article with 2 setae and 1 aesthetasc, last article with 2 aesthetascs and 4 setae (Fig. 24). Mouthparts similar to those of male, only palp of Md may vary in length. Palm of P 1 with short sensory spines instead of longer spines of male, medial comb of propodal setae not present. Propodus of P 2, 3 shorter than in holotype, palm

convex. Podomeres of remaining pereopods broader. Together with the female oostegites (on pereonites 2, 3, 4, 5) and the male stiles, these variations, with the exception of the absolute number of setae, are because of sexual dimorphism. Another important variation is in the outline of the telson: in most specimens it is broader distally than in the male. The depth of the medial notch of the telsonic apex also varies (Fig. 30); in immature specimens it may be as deep as in holotype.

Remarks. The genus *Bullowanthur*, erected by Poore (1978), is at first sight very similar to *Leptanthura*, but it has only 1 palpal article on the Md and may be recognised by this feature. Judging from the study of the present species, it seems possible that features of the tail-fan and the Mxp might be used to support the separation of this genus from *Leptanthura*. Such features are badly needed, as the reduction of the mandibular palp alone can happen more than once and might be the result of convergence. More exact descriptions are needed for an analysis of the variations within *Leptanthura* and *Bullowanthur*.

B. crebrui n. sp. differs from *B. aquitanica* Kensley (from the Bay of Biscay) by the form of the tail-fan (UEx with only few and short plumose setae, Tel broader, UEn shorter), the basis of the Mxp of *B. aquitanica* bears only 1 seta. *B. pambula* Poore (type-species from Australia) has more propodal spines on the pereopods and a larger basal projection on the palm of P 1; the telson of the drawn specimen (Poore 1978) has no distal notch.

***Leptanthura truncatitelson* n. sp.**
(Fig. 31–35)

Type data. **Holotype**, Mature ♂, 7.5 mm, Q 700 (H 441), 41°15.1'S 170°37.5'E, 560 m; **paratype** manca, 5 mm, S 400 B (P 673).

Description. **HOTOTYPE.** Blind, unpigmented paranthurid with short seventh pereonite, pleonites free (Fig. 31). Flagellum of A 1 with 14 articles, basal articles swollen, distal articles smaller; articles 2–11 each with distal row of long, slender aesthetascs, last 3 articles each with only 1 aesthetasc, thirteenth article with 1, last article with 3 setae. Six-articulate flagellum of A 2 much longer than last peduncular articles, setation as in Fig. 31. Palp of Md with 3 articles, second article longest, 2 short setae inserting on tip of third article; endite acute, without lamina dentata or pars molaris. Mx an acute stylet. Mxp slender, basis with small distal endite and 1 seta on medial margin, endite with 1 seta; palp of 2 articles, first article with 1 lateral and 5 ventromedial setae, 4 long setae inserting on last, minute article (Fig. 32). P 1 weakly subchelate,

palm of propodus slightly convex, with 3 sensory spines, comb of 24 strong setae on medial surface. P 2, 3 even weaker than P 1, hardly subchelate; carpus triangular, with 1 sensory spine, propodus with 2 spines, few setae (Fig. 33). Exopod of Plp 1 operculiform, short setae on lateral margin, further 21 swimming setae distally; endopod with 19 swimming setae. Exopod of Plp 2 with 17, endopod with 10 swimming setae, appendix masculina surpassing pleopodal branches, apex rounded (Fig. 32). UEn surpassing Tel, nearly 0.5× width of sympod, long plumose setae on medial margin, distally about 11 long, simple setae. UEx not reaching end of sympod, leaf-like with distal concavity on outer margin, fringed with 28 plumose setae, few simple setae. Tel long-oval, apex truncate, 4 setae inserting in distal notch, short dorsal setae on lateral surface, margins fringed with hairs, 1 statocyst (Fig. 33).

Variation. The manca (Fig. 34, 35) has essentially the same feature as the holotype, namely the long flagellum of A 2, the weak propodi of P 1–3, and similar mouthparts. It shows the type of flagellum of A 1 that is characteristic for females and immature specimens: flagellum with 5 articles; first article short, with 1 feather-like bristle, second article longest, articles 3–5 each with 1 aesthetasc, 3 setae on last article (Fig. 34). The setation of the tail-fan is poorer than in the holotype, the UEn has no plumose setae on the medial margin, and the telsonic apex is broader (Fig. 34).

Remarks. The shape of A 2, P 1–3, and tail-fan characterise this new species. In the polymorphic genus *Leptanthura*, the flagellum of A 2 generally is shorter and the propodal palm of P 1 usually has a basal projection. This projection is not present in *L. boweni* Poore, 1981a; a species with short antennal flagellae, nor in *L. urospinosa* Kensley, 1975, a species in which the UEx margin is crenulate and the Mxp-palp 3-articulate.

***Leptanthura exilis* n. sp.**
(Fig. 36–39)

Type data. Holotype immature adult, 3.2 mm, S 400 (H 442), 40°41.3'S 171°06.0'E, 506 m; paratype, immature adult, 3.5 mm, Q 723 (P 674).

Description. HOLOTYPE. Body as in *Leptanthura truncatitelson* n. sp., without pigmentation, eyes lacking, pleonites free (Fig. 36). Flagellum of A 1 with 4 articles; first article very short, annular, with 1 feather-like bristle, second article longest, third article with 1 apical seta and 1 aesthetasc, last article with 2 aesthetascs and 4 setae (Fig. 36). Flagellum of A 2 shorter than last peduncular article, of 4 small articles, with cluster of simple setae (Fig. 36).

Palp of Md with 3 articles, second article longest, last article small, 2 apical setae; endite acute, without lamina dentata or pars molaris (Fig. 36). Mx forming acute stylet. Mxp with long, slender basis, endite reduced; palp of 1 large, 1 small, distal articles; first palpal article with 5, last with 4 setae, basis with 1 mediodistal seta (Fig. 36). P 1 subchelate, propodal palm concave, with 6 mostly hand-like, spines, (Fig. 36), small projecting point basally. P 2, 3 also subchelate, but weaker; palm convex, with 6 (P 2) or 4 (P 3) spines (Fig. 36, 37). P 4–7, carpus small, triangular, propodus oval; propodal palm with 2 slender sensory spines, setation of podomeres poor (Fig. 37). Exopod of Plp 1 operculiform, with 8 short swimming setae, endopod with 3 setae (Fig. 37). Both branches of Plp 2 with 3 swimming setae. UEx outline nearly circular, margin with very few short, simple setae (Fig. 37); UEn length > 2× width, medial margin with 1 seta, 10 long, simple setae on apex (Fig. 37). Tel long-oval, rounded distally, 2 pairs of short distalomedial setae, 1 basal statocyst.

Variations. The second specimen (Fig. 38, 39), also an immature adult, shows the same features as the holotype, but there are more setae on the UEX. The complete setation of the tail-fan must be studied when more material is available.

Remarks. *L. exilis* n. sp. can be distinguished by the features of the Mxp, antennae, P 1, and tail-fan. None of the previously described species shows the same combination of features. Most species with rounded telsonic apex have an UEX with a deeper concavity on the outer margin (as in *L. diemenensis*; see Poore 1978). The Atlantic *L. guianae* (see Kensley 1982a) has a Mxp in which the first palpal article is fused to the basis, the UEX has many marginal setae (20–23), and the UEn is shorter. *L. elegans* Birstein, 1963 (Kurile Islands) also has a richer setation of the UEX (but the specimen was also larger or older), the last article of the Mxp is longer, and the palp of the Md has only 1 distal seta.

***Leptanthura profundicola* n. sp.**

(Fig. 40–44)

Type data. Holotype, mature ♀, 4.8 mm, Q 698 (H 443), 42°23.7'S 169°11.8'E, 1120 m; paratype 1 postmanca stage, 5 mm, S 397 (P 675).

Description. HOLOTYPE. Body as in *L. truncatitelson* n. sp. (see Fig. 31), pleon as in *L. exilis* n. sp.; blind, unpigmented; very similar to *L. exilis*. Flagellum of A 1 with 4 articles; first article short, with 1 feather-like bristle; second article longest; third article with 2 setae, 1 aesthetasc, last article with

5 setae and 2 aesthetascs (Fig. 40). Flagellum of A 2 nearly as long as last peduncular article, of 1 larger, 4 short articles, with cluster of simple setae (Fig. 40). Basis of Mxp long, slender, endite reduced, 1 distomedial seta; palp of 1 larger article, with distal incomplete articulation of further article, and second small article; first article with 5, second with 4 simple setae. Mx and Md (Fig. 40) as in *L. exilis*. P 1 with stout subchela, propodal palm slightly concave, with 6 sensory spines, between second and third spine 1 seta; carpus with 2 spines (Fig. 41). P 2, 3 subchelate, smaller than P 1, propodal palm convex, with 5 (P 2) or 4 (P 3) spines, carpus with 1 spine (Fig. 41). P 4–7 with small, triangular carpus (carpus with 1 anterodistal spine), propodus elongated, nearly rectangular, with 2 (P 4, P 5, P 6) or 1 (P 7) sensory spine, podomeres with very few simple setae (Fig. 41, 42). Exopod of Plp 1 operculiform, margin with 10 swimming setae, endopod with only 4 setae. Exopod of Plp 2 with 5, endopod with 4 swimming setae (Fig. 40). UEn surpassing Tel, length nearly 2× width, only 2 simple setae on medial margin, 13 long apical setae (Fig. 42). UEx rather small, tapering to point, with 2 long, medially directed setae, 1 short, 1 long lateral seta, margin with 8 plumose setae (Fig. 42). Tel long-oval, tapering to small, apical, truncate point, where 2 pairs of setae insert; dorsal surface with few further setae; single statocyst (Fig. 42).

Variation. The postmanca stage (Fig. 43, 44) is in most details very similar to the foregoing mature female, only the P 7 is incompletely developed and the podomeres of P 4–7 are shorter. The UEx (Fig. 44) has some additional plumose setae, but the setation of the Tel is poorer. The propodi of P 1 and P 4–6 have 1 sensory spine less than those in the adult female.

Remarks. This *Leptanthura* is recognisable by its typical tail-fan with a small UEx, and by the features of antennae, mouthparts, and pereopods. A small UEx is also present in other species of the genus: *L. agulhasensis* has 2 setae (instead of 1) on the Mxp-basis, many lateral setae on the sympod of the uropod, and the UEx is distally more rounded and has possibly more simple setae than *L. profundicola* n. sp. (see Kensley 1975, 1982b); *L. minuta* Kensley, 1978a has a flagellum of A 2 with only 4 (but relatively long) articles, the Mxp has no small apical article, the palp of the Md has only 1 distal seta, and the Tel has a more rounded apex; the UEx of *L. nunana* Poore, 1978 is longer, as is the UEn and the flagellum of A 1; in *L. hendili* Wolff, 1956 the UEx is shorter, and the propodal palm of P 1 has more (10) spines; the UEx of *L. micrura* Kensley, 1982a is rounder, the Tel less broad, and the Mxp has 3 palpal articles.

Paranthura longa n. sp.

(Fig. 45–47)

Type data. **Holotype**, mature ♀, 11 mm, S 386 (H 444), 41°20.9'S 170°40.8'E, 514 m.

Description. **HOLOTYPE.** Paranthurid with very slender pereonites, unpigmented; small anterolateral eyes on cephalothorax, pleonites 1, 2, and 3 fused dorsally (Fig. 45). Flagellum of A 1 shorter than peduncle, of 5 articles; first article very short, with 1 feather-like bristle; second article longest, with 2 apical aesthetascs, 4 apical setae; third article shorter, with 1 aesthetasc, 4 setae; last 2 articles minute, with 1 (fourth article) or 2 (last article) aesthetascs and 6 setae (Fig. 45). Flagellum of A 2 very short, first article with groups of setae from at least 4, now fused, articles; distally, 3 minute articles plus cluster of simple setae (Fig. 45). Palp of Md with 3 articles; articles 1 and 2 each with 1 seta, second article longest, last article with 11 setae; lamina dentata, pars molaris reduced, endite acute (Fig. 45). Mx stiletto-like. Mxp without endite, palp of 1 article, with 1 basal, 1 lateral setae, 12 further distal, medial, setae (Fig. 45). P 1 subchelate, with stout propodus; palm concave, with accompanying convex ridge, without spines, setation as in Fig. 46. Subchelate P 2, 3 subequal, smaller than P 1; propodus elongate-oval, palm with 7 sensory spines, 7 simple setae (Fig. 46). P 4–7 with long, slender podomeres; carpus rectangular, with 4 (P 4, P 6) or 3 (P 5, P 7) spines; propodus long-cylindrical, palm with 4 (P 4–7) or 3 (P 7) spines; only few, rather short setae (Fig. 46). Exopod of Plp 1 operculiform, with long, straight inner margin, outer margin arched, 32 swimming setae on border, proximal setae short; setae on medial surface short, simple (Fig. 46); endopod with 5 swimming setae. Exopod of Plp 2 with 8, endopod with 5 swimming setae (Fig. 46). Uropods much shorter than Tel (see Fig. 45). UEx elongated spatulate, margin with several short simple setae (setation incomplete; Fig. 47). UEn truncate, slightly longer than wide, setation (incomplete) as in Fig. 47. Tel surpassing uropods, dorsal surface with several short setae, distal margin with at least 11 pairs of long, simple setae (Fig. 47, setation incomplete). No statocyst.

Remarks. Only 1 specimen was collected. It is a well-preserved, mature female with characteristic features, that allow it to be described as a new species. It has unique features in the fused pleonites 1+2 and the long telson. In other features it resembles several other species, e.g., *P. antarctica* (see Wägele 1984). The fusion of pleonites is also known from other species (*P. astrolabium* Kensley, 1979; *P. japonica* (see Nunomura 1977); *P. polynesica* Kensley, 1979), but they have *all* pleonites dorsally fused. An elongated Tel has been described in *P.*

hasticauda Nunomura, 1974; this species has a very acute telson and dorsal chromatophores. *P. flagellata* (see Poore 1981b), also known from New Zealand waters, has a rectangular Tel, with truncate apex, that does not surpass the uropods.

Psittanthura n. gen.

Diagnosis. Blind paranthurid with free pleonites. Md with acute endite; lamina dentata reduced, pars molaris reduced, no palp. Flagellum of A 1 short, with 5 articles; flagellum of A 2 with 8 articles. Mxp without endite, palp of 1 large, 1 small, distal article. Propodus of P 1 enlarged, palm projected basally, forming large, protruding, lobe. Merus of P 1 with anteromedial point. P 2 similar to P 1. P 3 subchelate, smaller than P 1. Carpus of P 4–7 small, triangular. Exopod of Plp 1 operculiform. Tel nearly rectangular, UEn much shorter than sympod, not surpassing Tel. Telsonic statocyst single, basal.

Type species. *Psittanthura egregia* n. sp.

Remarks. This paranthurid has very peculiar subchelae of pereopods 1 and 2 and a unique Tel. Although the Mxp is of the *Paranthura*-type, the palm of P 1 shows that no close relationship to the genus *Paranthura* is possible, as it bears many sensory spines, which are absent (reduced) in *Paranthura*. Furthermore, a statocyst is present in *Psittanthura* n. gen. In *Leptanthura*, *Bullowanthura*, and *Ulakanthura* similar maxillipeds occur, other similarities are the reduction of the eyes, the presence of spines on the propodal palm of P 1 (2 plesiomorphic feature), and the thin cuticle of the tail-fan; several species have a distally broadened Tel with an apical pair of setae (see Fig. 51). In *Ulakanthura* and *Bullowanthura*, the mandibular palp is reduced to a small article; it is absent in *Psittanthura* n. gen. From this comparison it seems that *Psittanthura* n. gen. is related to the *Leptanthura*-group. The genus conserves relatively long (primitive) antennal flagella and has its special features in the structure of P 1–3, the Md (palp lacking) and the tail-fan.

Psittanthura egregia n. sp. (Fig. 48–51)

Type data. **Holotype**, mature ♂, 6.5 mm, Q 700 (H 445), 41°15.1'S 170°37.5'E, 560 m; **paratype**, 1 immature adult, 5 mm, S 400 (P 676).

Description. **HOLOTYPE.** Blind, unpigmented paranthurid with free pleonites (Fig. 48). Flagellum of A 1 of 5 articles; first article short, with 1 feather-

like bristle; second article longest, with 1 seta; third article bearing 1 aesthetasc, 1 seta; following, short article with only 1 aesthetasc; last article with 1 aesthetasc, 4 setae (Fig. 48). Flagellum of A 2 considerably longer than last peduncular article, of 8 articles, each with several short setae distally (Fig. 48). Md with acute endite, pars molaris reduced, lamina dentata reduced, palp lacking (Fig. 48). Mx stiletto-like (Fig. 49). Mxp with long basis, endite reduced; palp with 1 large first article (on distal part incision of a fused article), 6 setae, minute distal article with 4 setae (Fig. 48). P 1 subchelate, propodus stout, enlarged, form as in Fig. 49; palm convex, with 19 small sensory spines, 2 larger spines on basal point. P 2 similar to P 1 (Fig. 49). P 3 much weaker, subchelate; carpus small, with 1 spine; propodus broad oval, outline of palm pyramidal, distal half of palm with 4 sensory spines. P 4–7 with short, triangular carpus (1 sensory spine); propodus short, oval, palm with 1 long sensory spine (Fig. 50). Exopod of Plp 1 operculiform, with only 1 swimming seta; endopod with 3 setae (Fig. 50). UEn thin, broadly rounded distally, outer margin with shallow concavity, fringed with 22 short plumose setae, 2 simple setae (Fig. 51); UEn nearly half as long as sympod, not surpassing Tel; form, setation as in Fig. 51. Tel roughly rectangular, distally broader than proximally; margin with few short setae, 2 pairs of medial setae on apex (Fig. 51). Oostegites on pereonites 3, 4, and 5.

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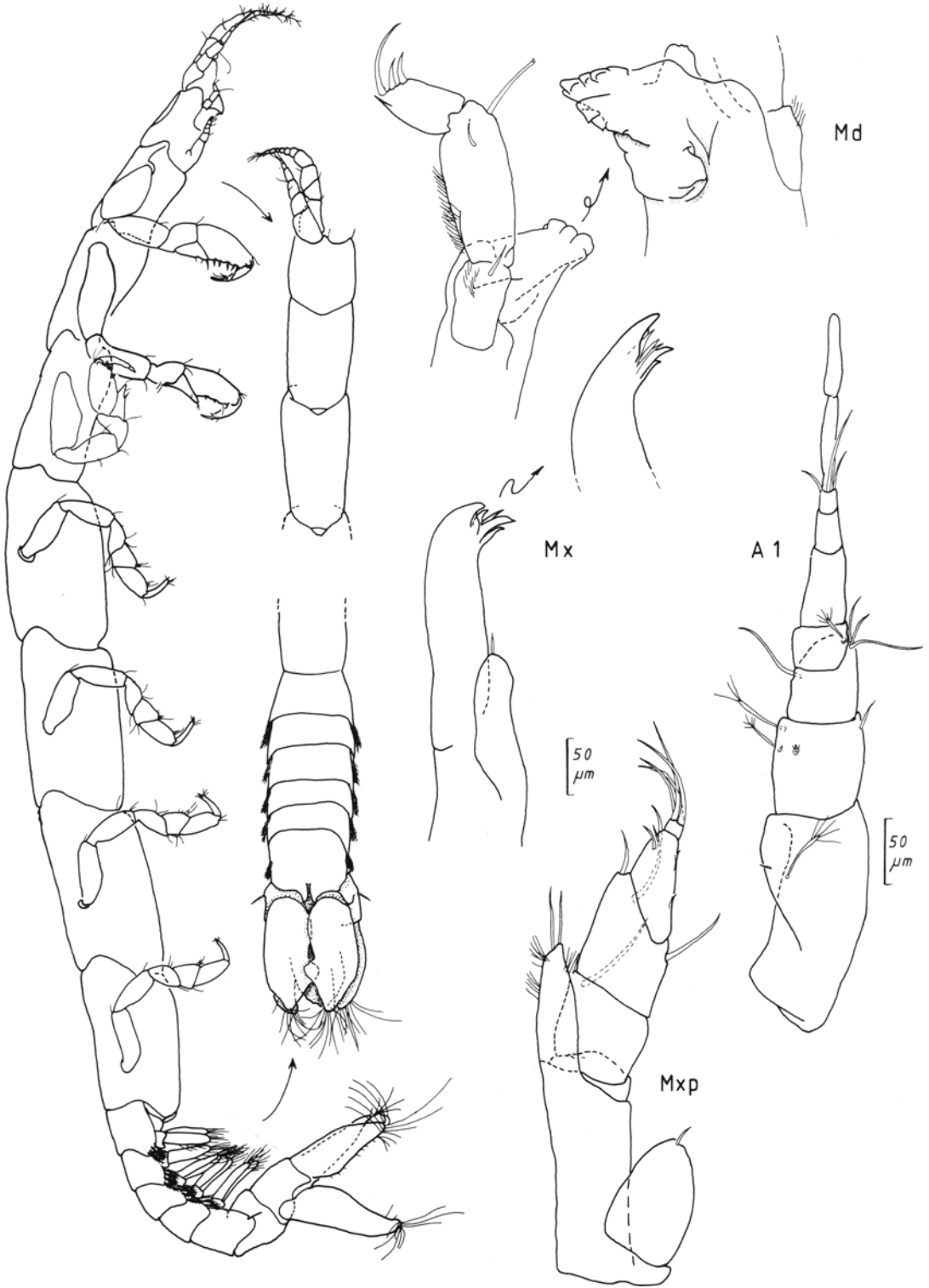




Fig. 2 *Kupellonura proberti* n. sp., holotype. 1, enlarged spine of P 2.

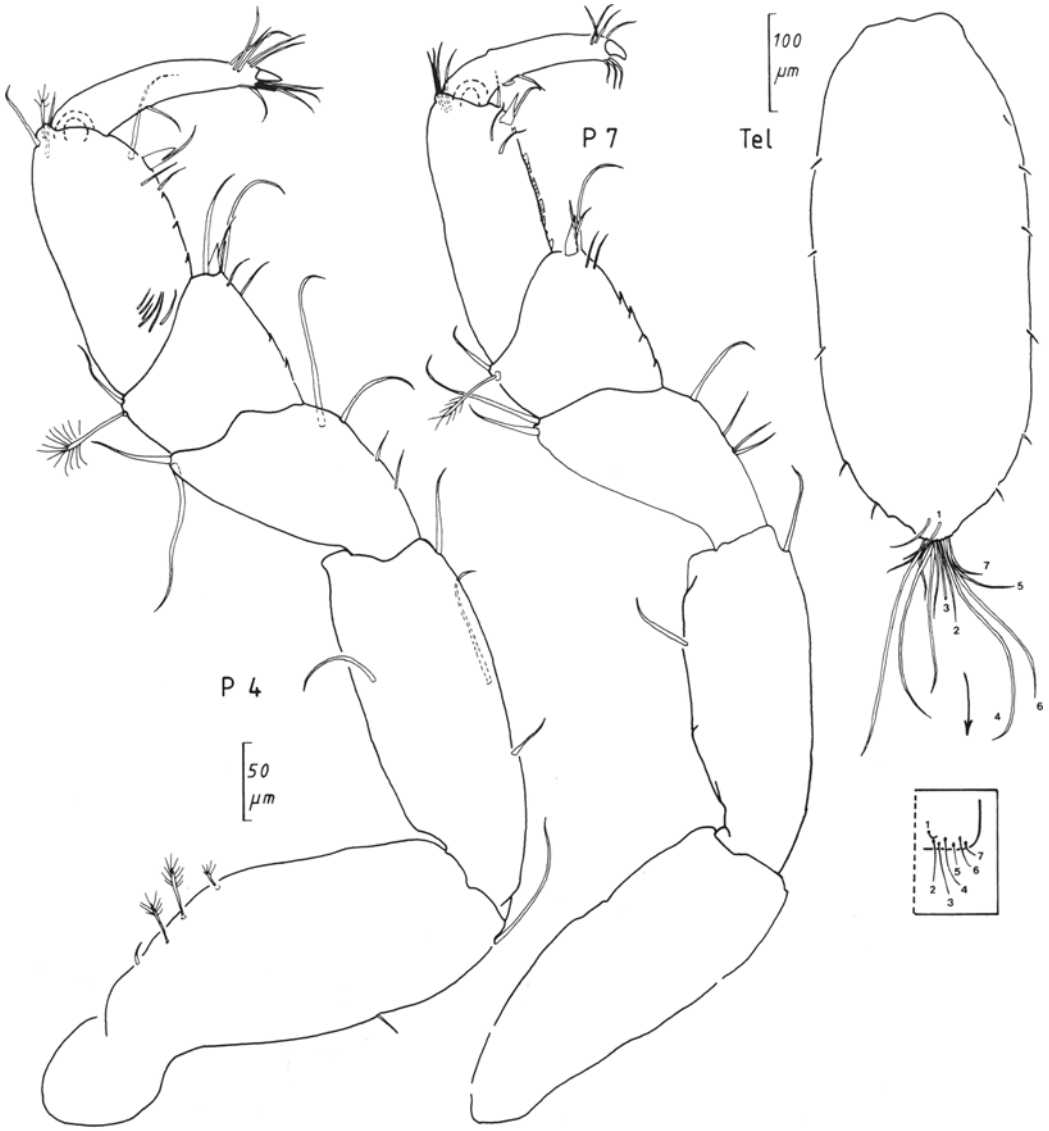


Fig. 3 *Kupellonura proberti* n. sp., holotype. Tel with scheme of apical setation.

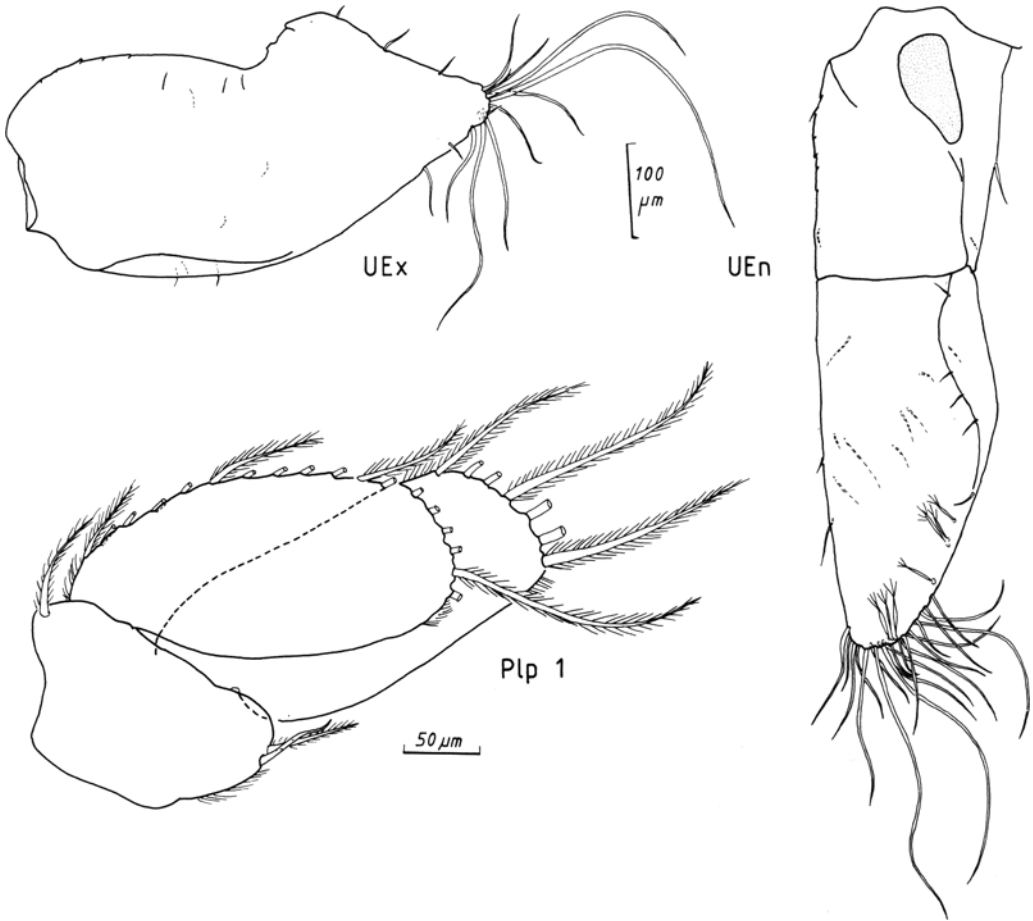


Fig. 4 *Kupellonura proberti* n. sp., holotype. Several swimming setae of Plp 1 cut off.

Fig. 5 *Quantanthura pacifica* n. sp., *opposite*, holotype, in dorsal view (left). Plt, pleotelson in lateral view. Md and Mx shown in different views.

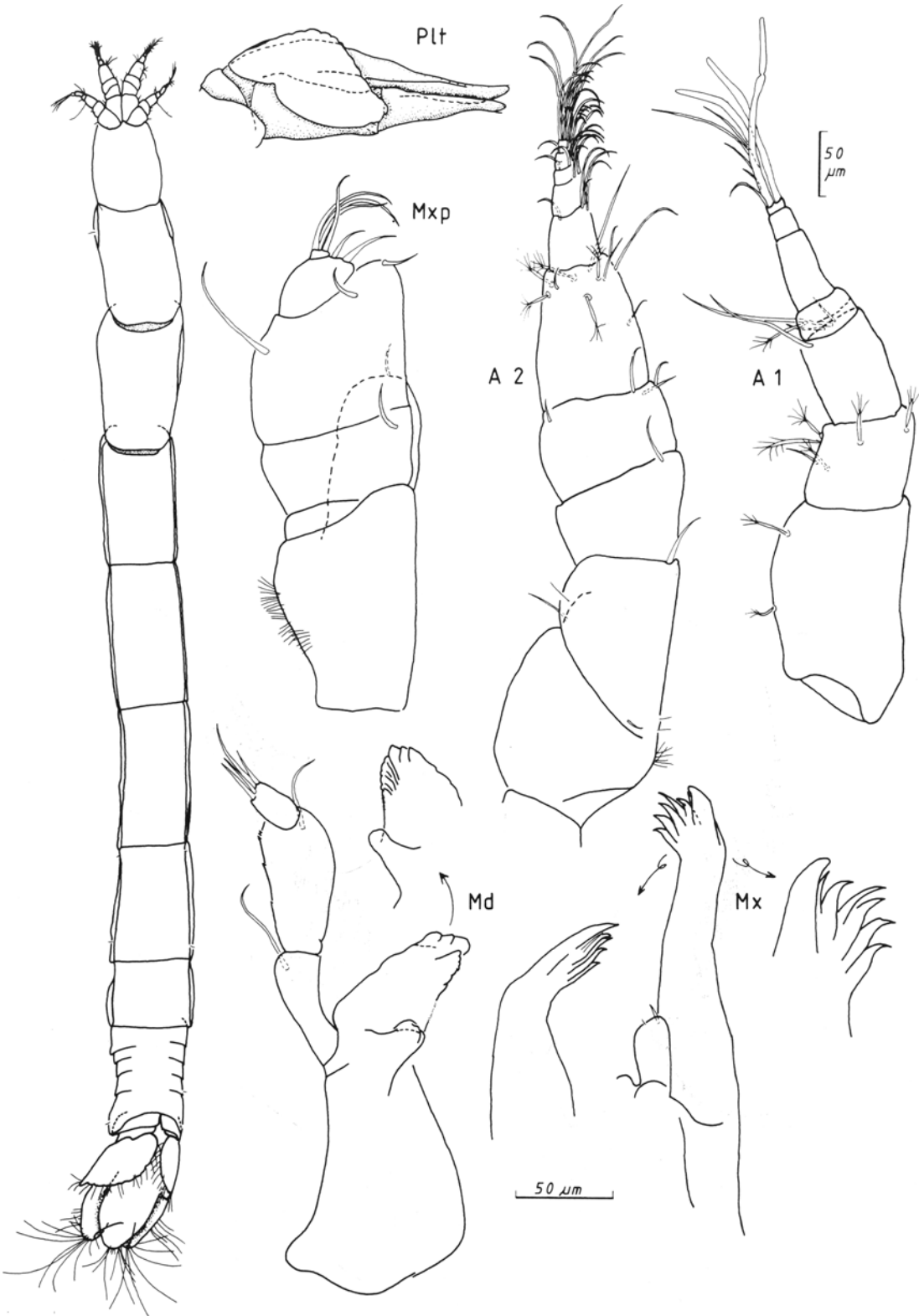


Fig. 6

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Fig. 6 *Quantanthura pacifica* n. sp., holotype.

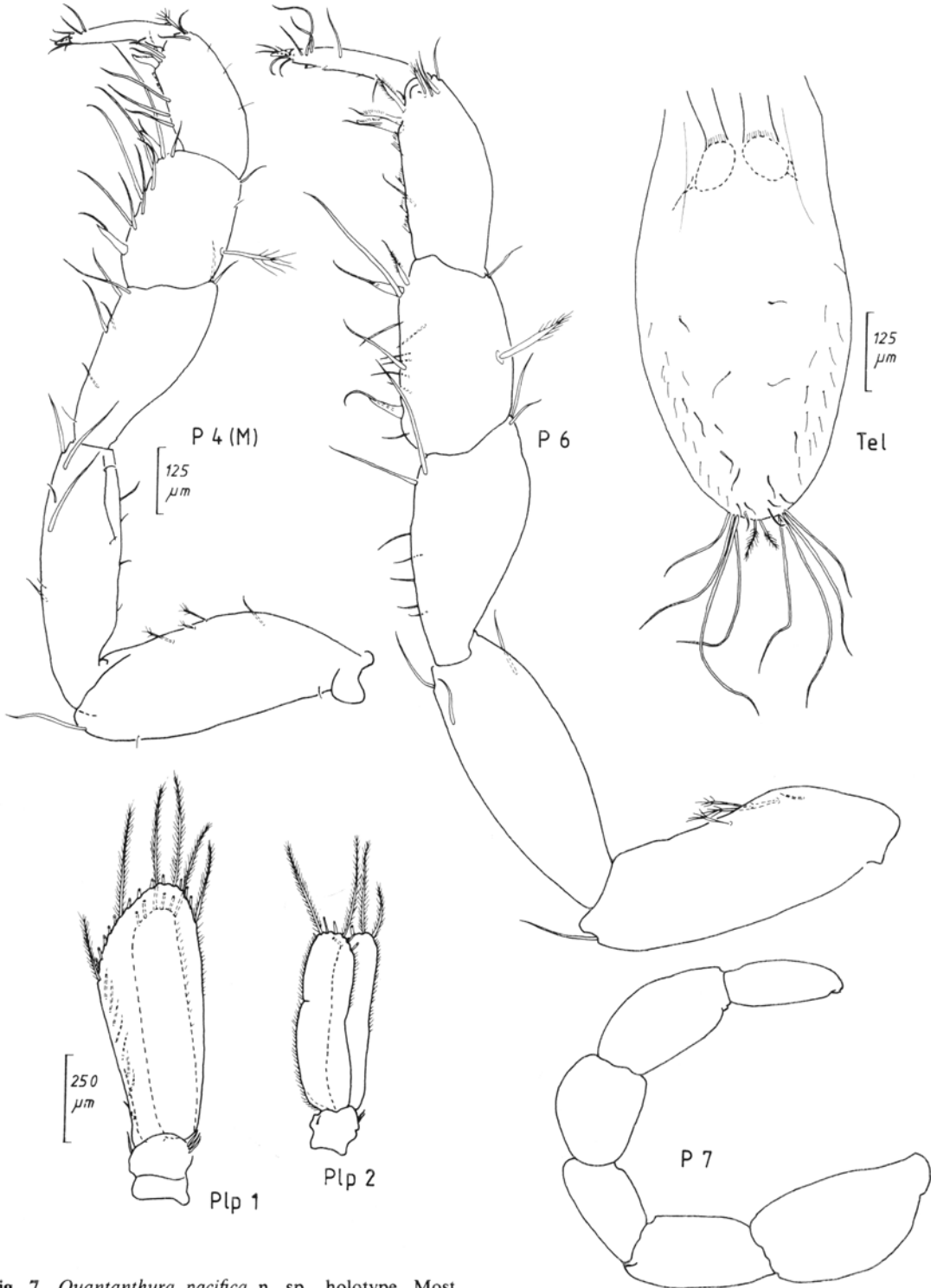


Fig. 7 *Quantanthura pacifica* n. sp., holotype. Most swimming setae of pleopods cut off. P 7 incompletely developed (postmanca).

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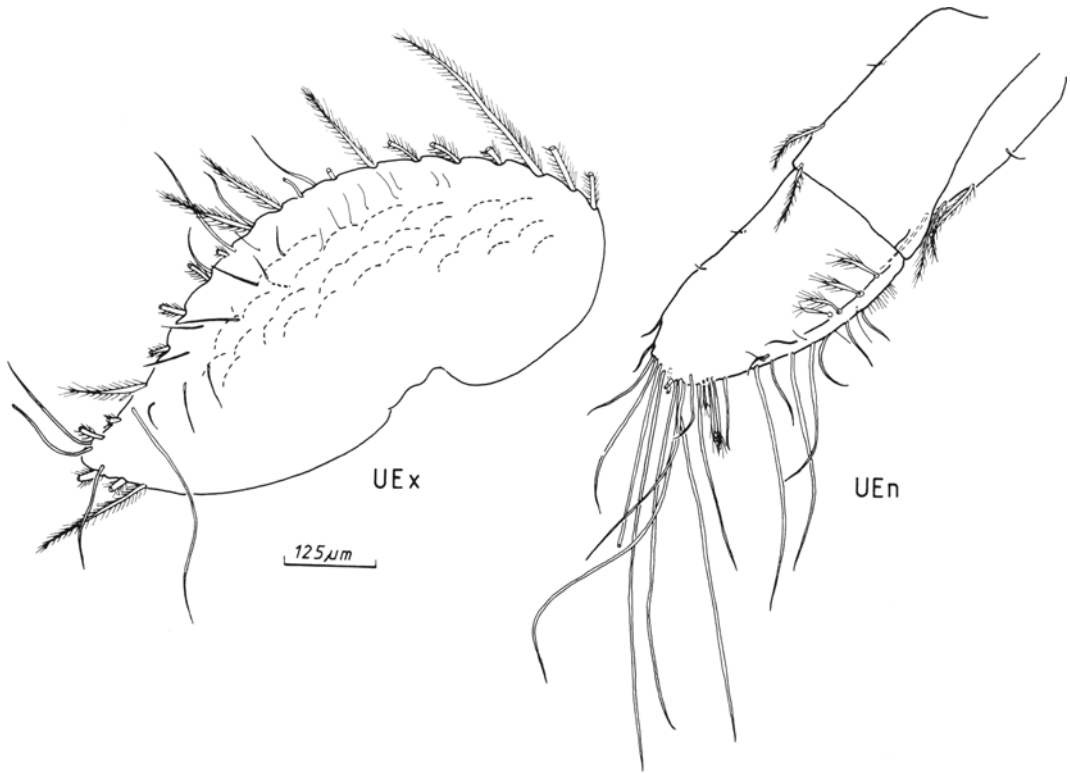
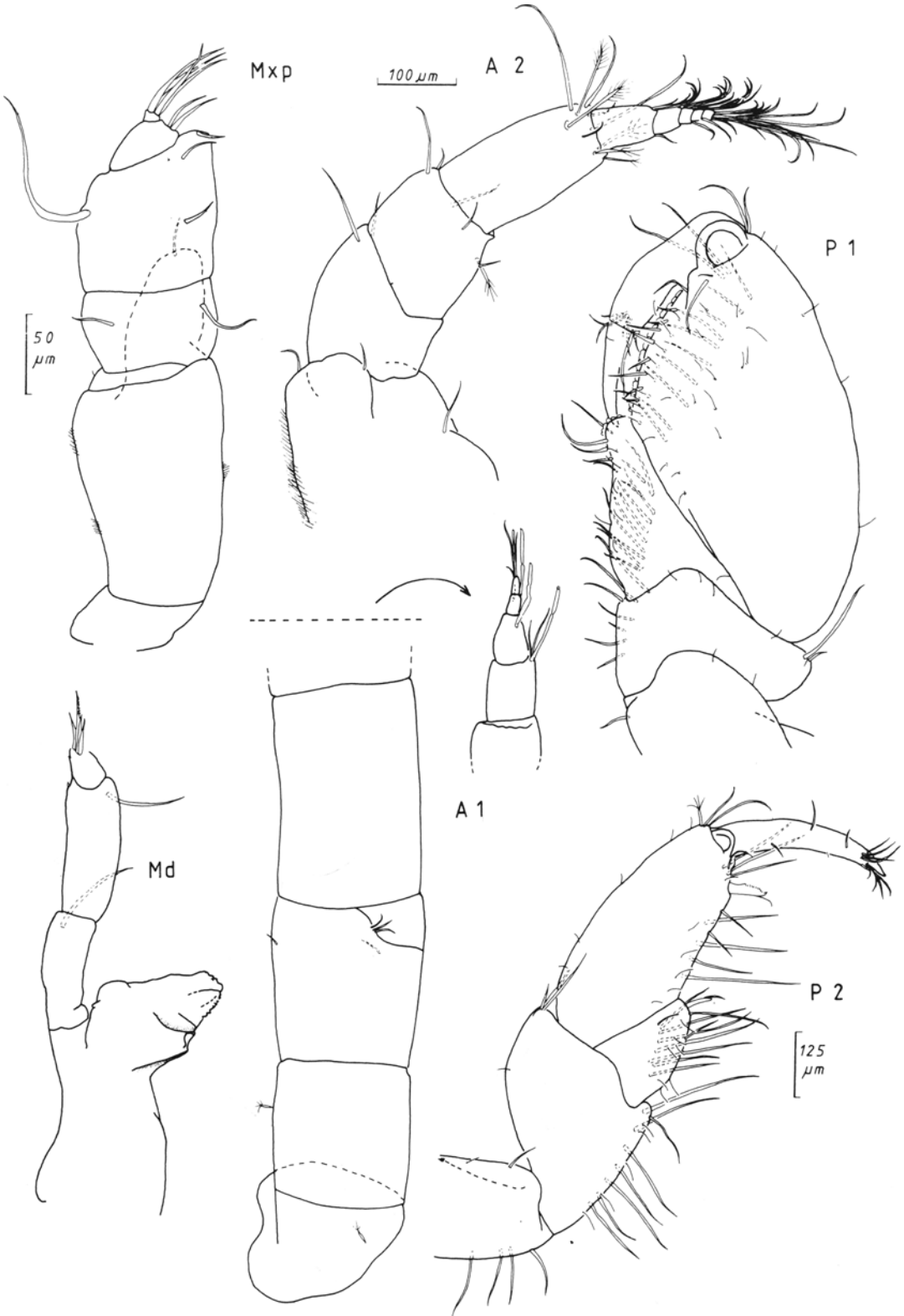


Fig. 8 *Quantanthura pacifica* n. sp., holotype. Most plumose setae of UEx cut off.

Fig. 9 *Quantanthura pacifica* n. sp., opposite, male. Of A 1 only distal and basal articles are shown.



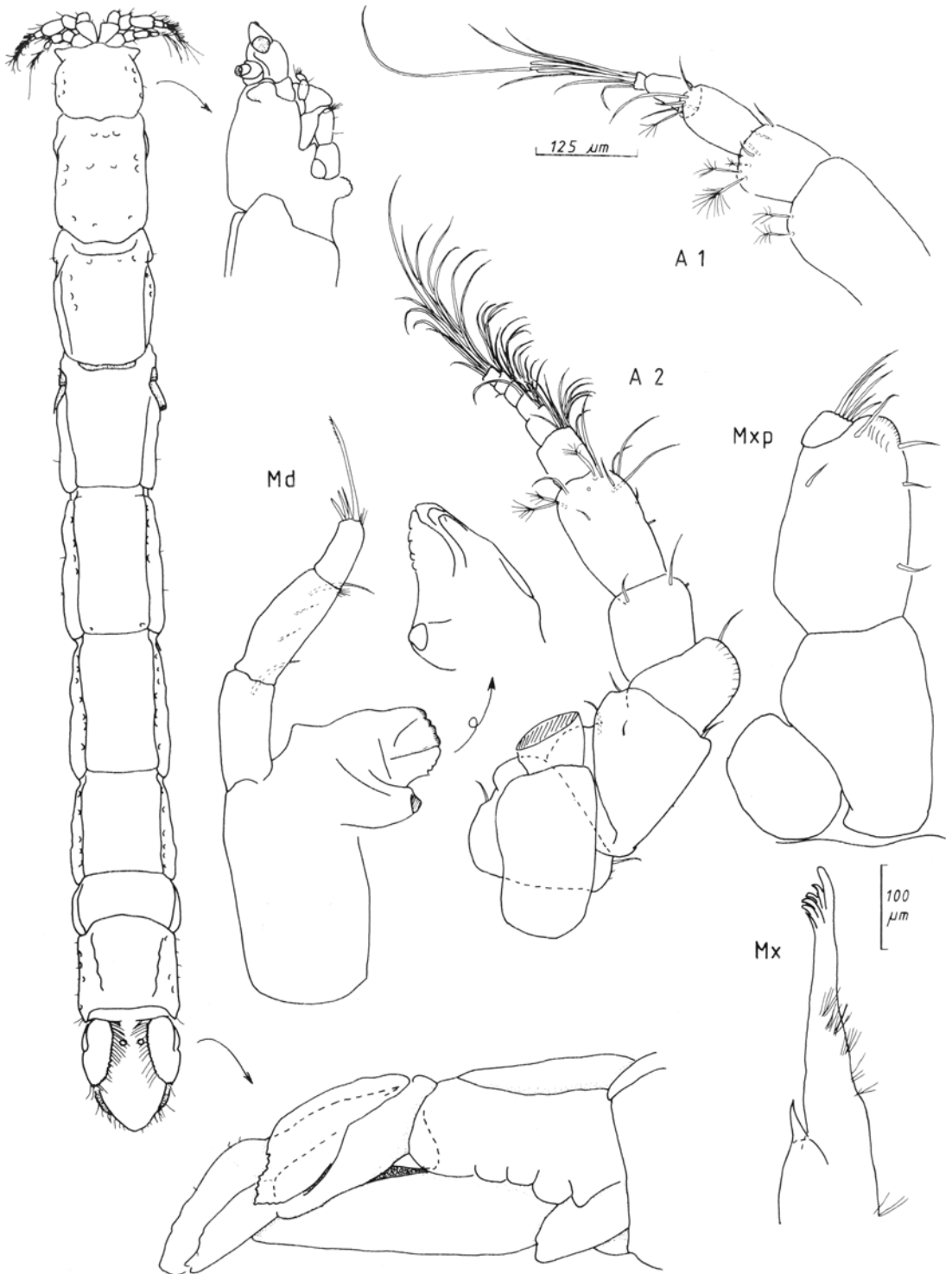


Fig. 10 *Haliophasma platytelson* n. sp., holotype, dorsal view (left); cephalothorax (above) and pleotelson (below) in lateral view.



Fig. 11 *Haliophasma platytelson* n. sp., holotype. Most plumose setae of UEx cut off.

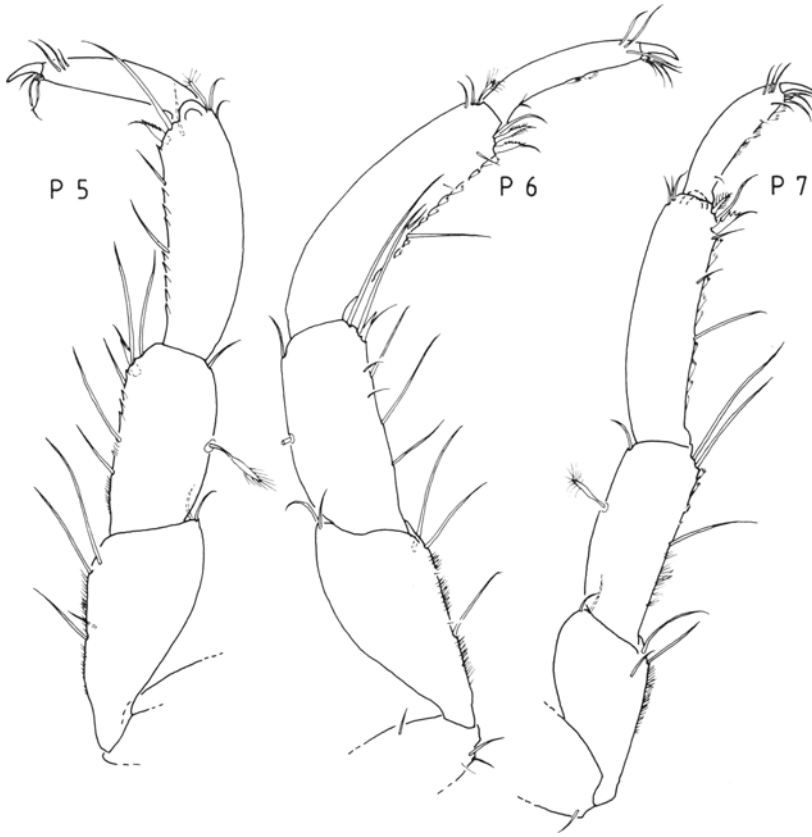


Fig. 12 *Haliophasma platytelson* n. sp., holotype.

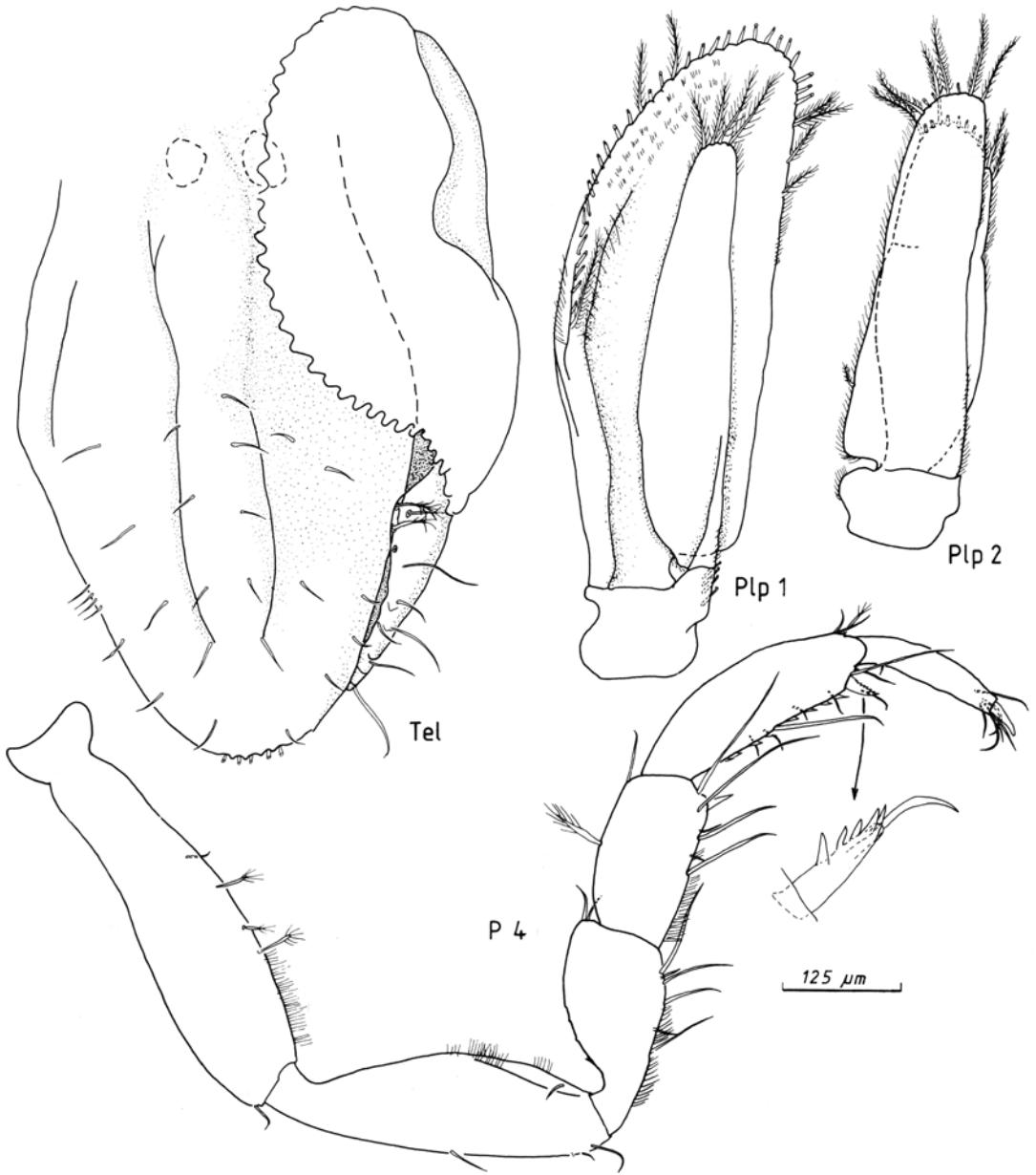


Fig. 13 *Haliophasma platytelson* n. sp., holotype. Most swimming setae of pleopods cut off. Tel shown with outlines of uropods.

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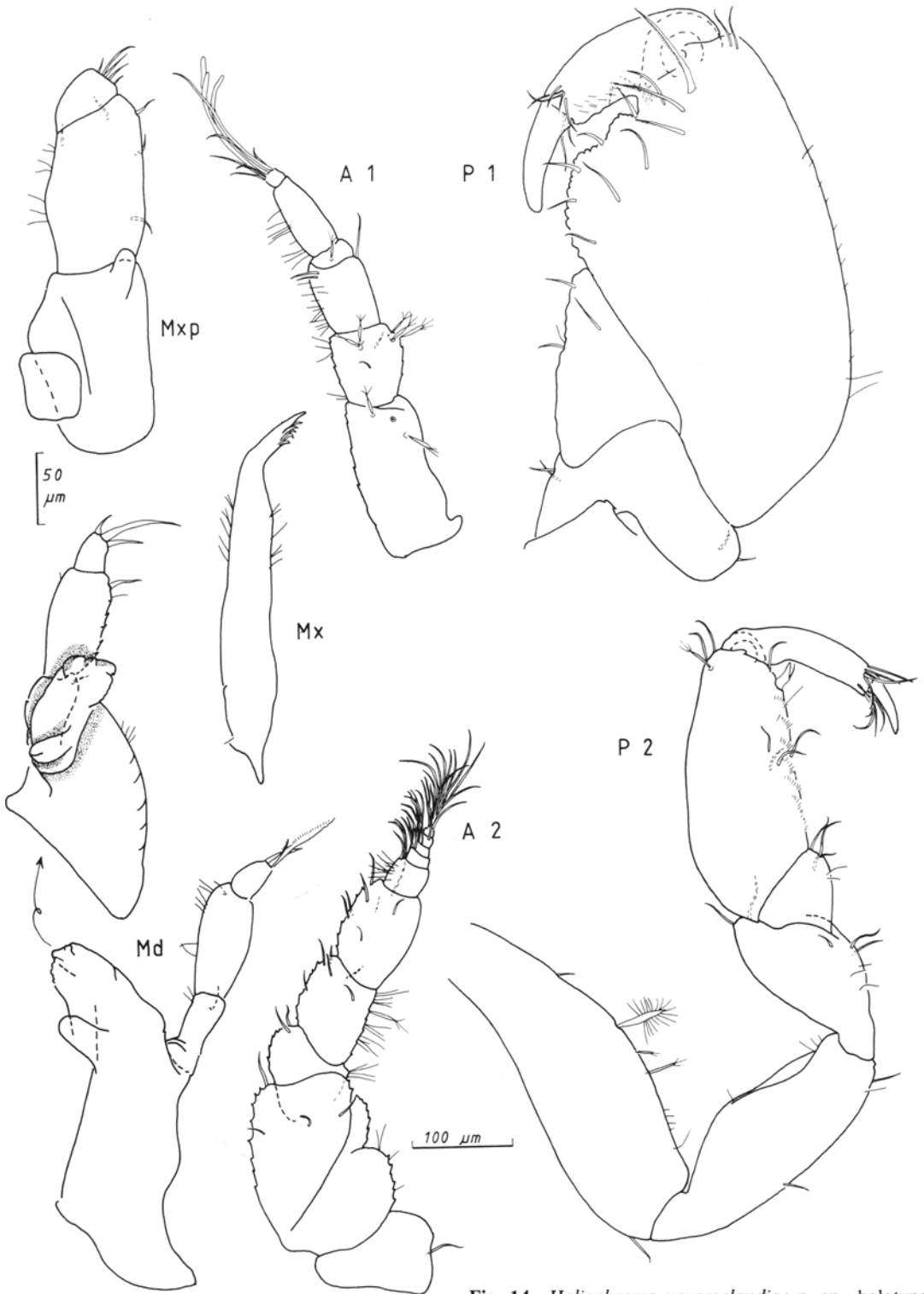


Fig. 14 *Haliophasma novaezelandiae* n. sp., holotype. Md shown in 2 different views.

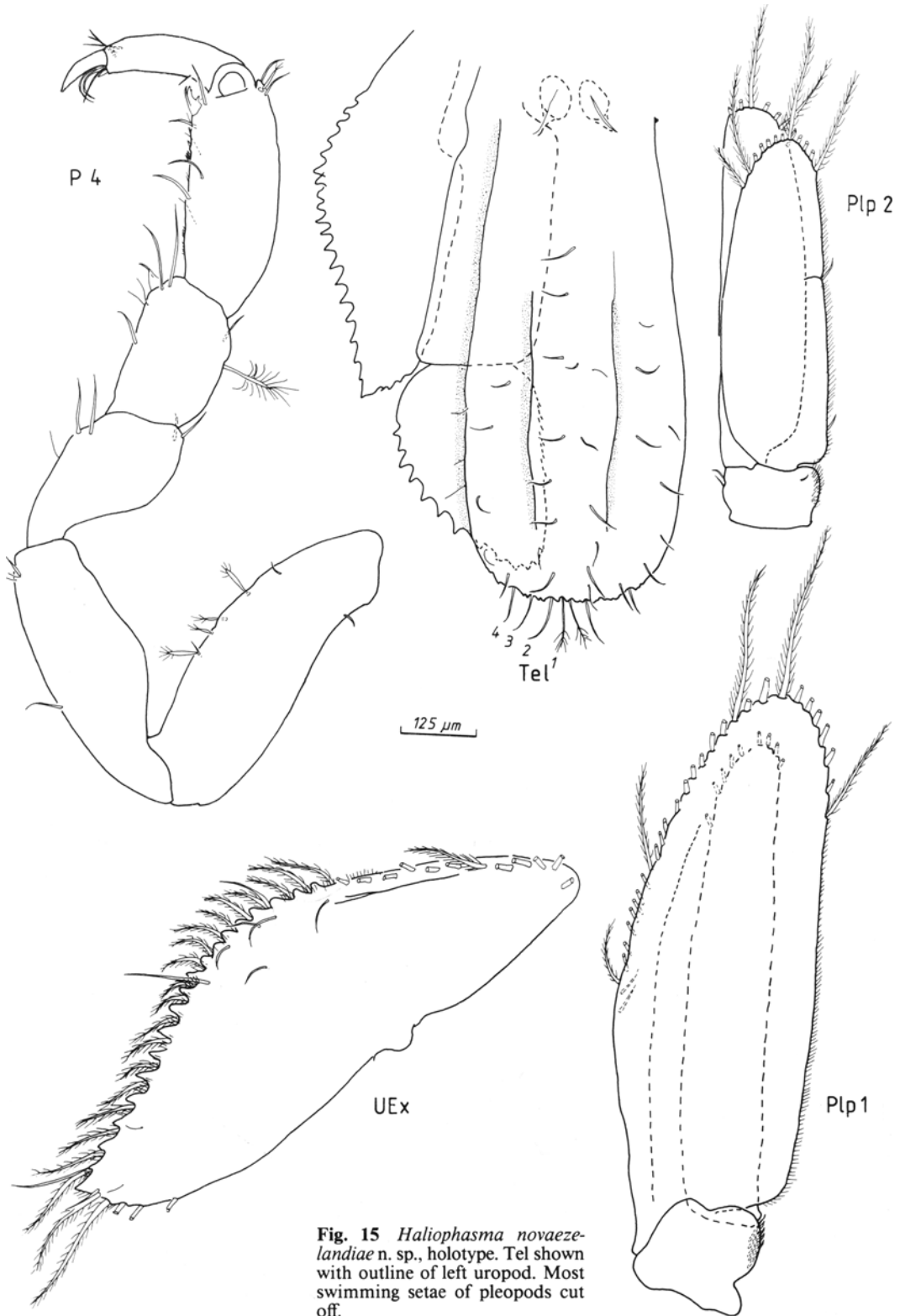


Fig. 15 *Haliophasma novaezealandiae* n. sp., holotype. Tel shown with outline of left uropod. Most swimming setae of pleopods cut off.

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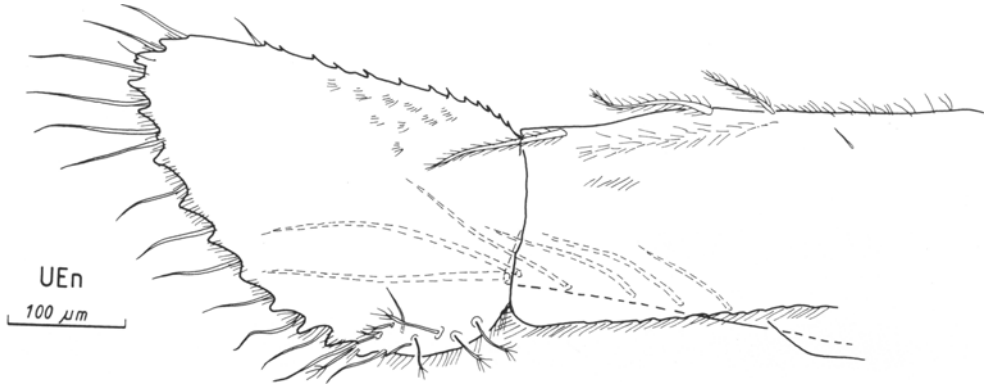
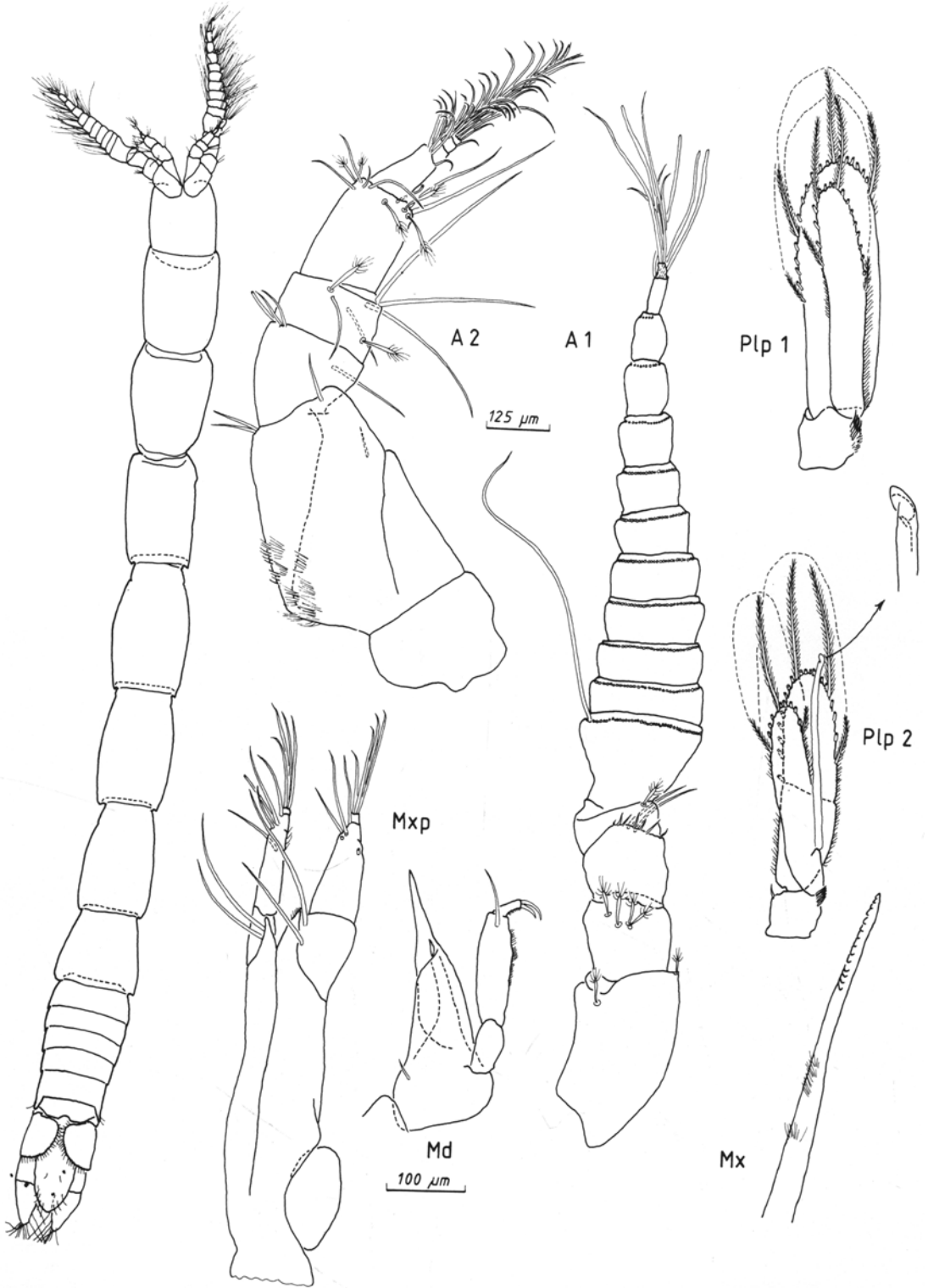


Fig. 16 *Haliophasma novaezelandiae* n. sp., holotype.

Fig. 17 *Albanthura stenodactyla* gen. et n. sp., *opposite*, holotype male, dorsal view (left). Of the aesthetascs of A 1 only the place of insertion is shown. Most swimming setae of pleopods cut off. Apex of appendix masculina of Plp 2 shown in enlarged detail.



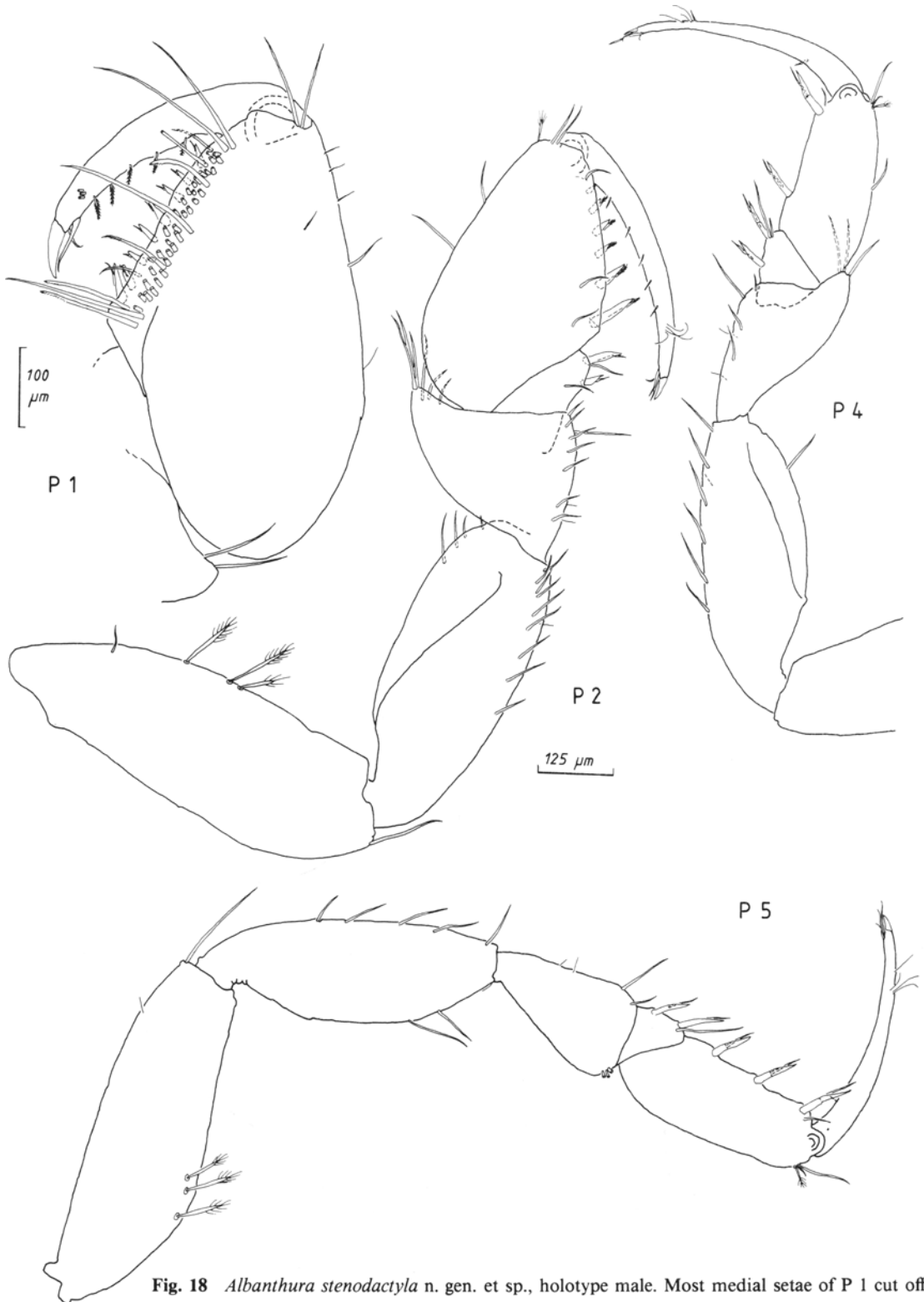


Fig. 18 *Albanthura stenodactyla* n. gen. et sp., holotype male. Most medial setae of P 1 cut off.

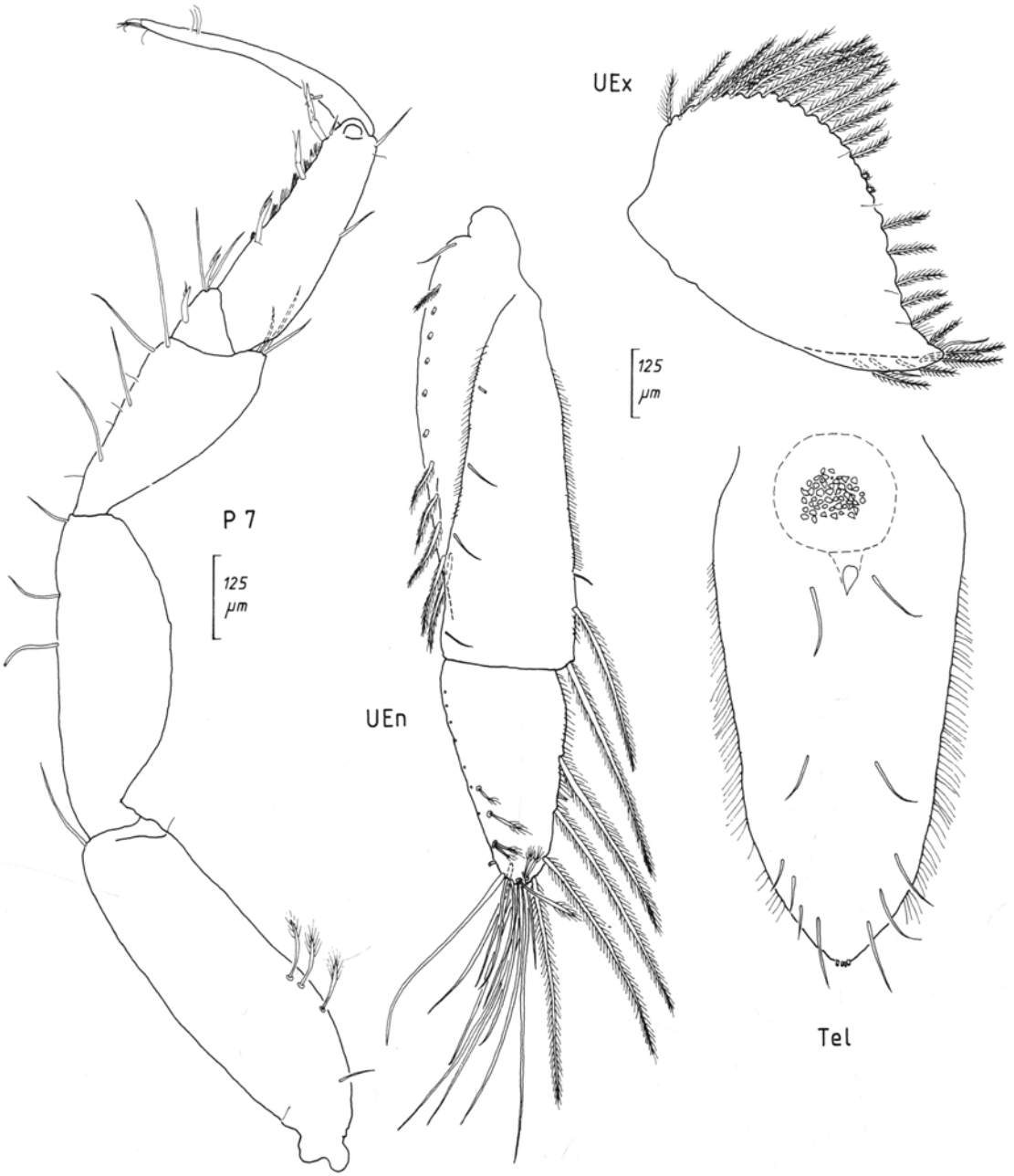


Fig. 19 *Albanthura stenodactyla* n. gen. et sp., holotype male.

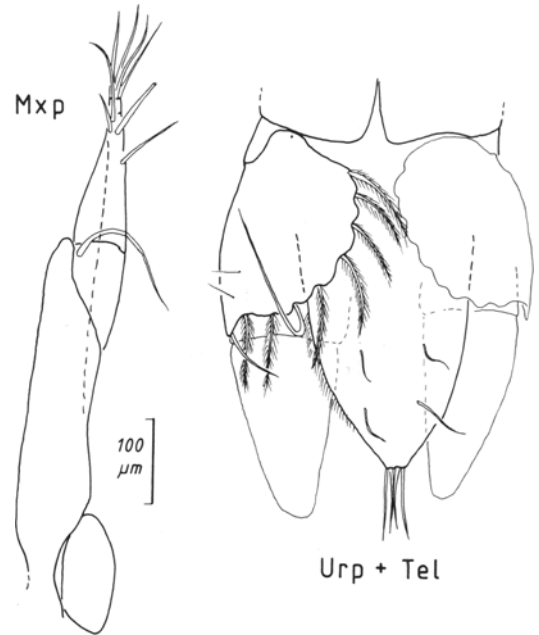
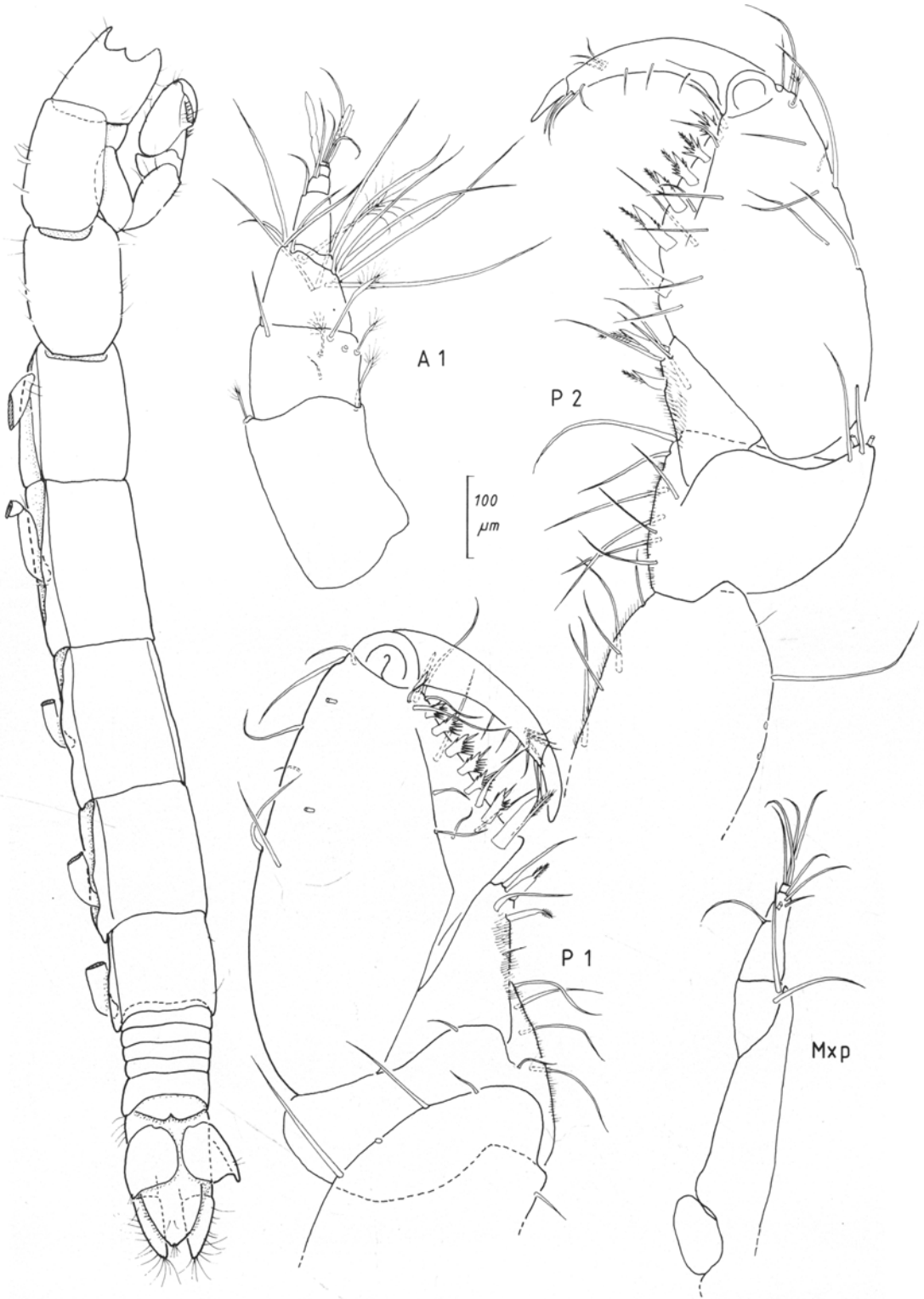
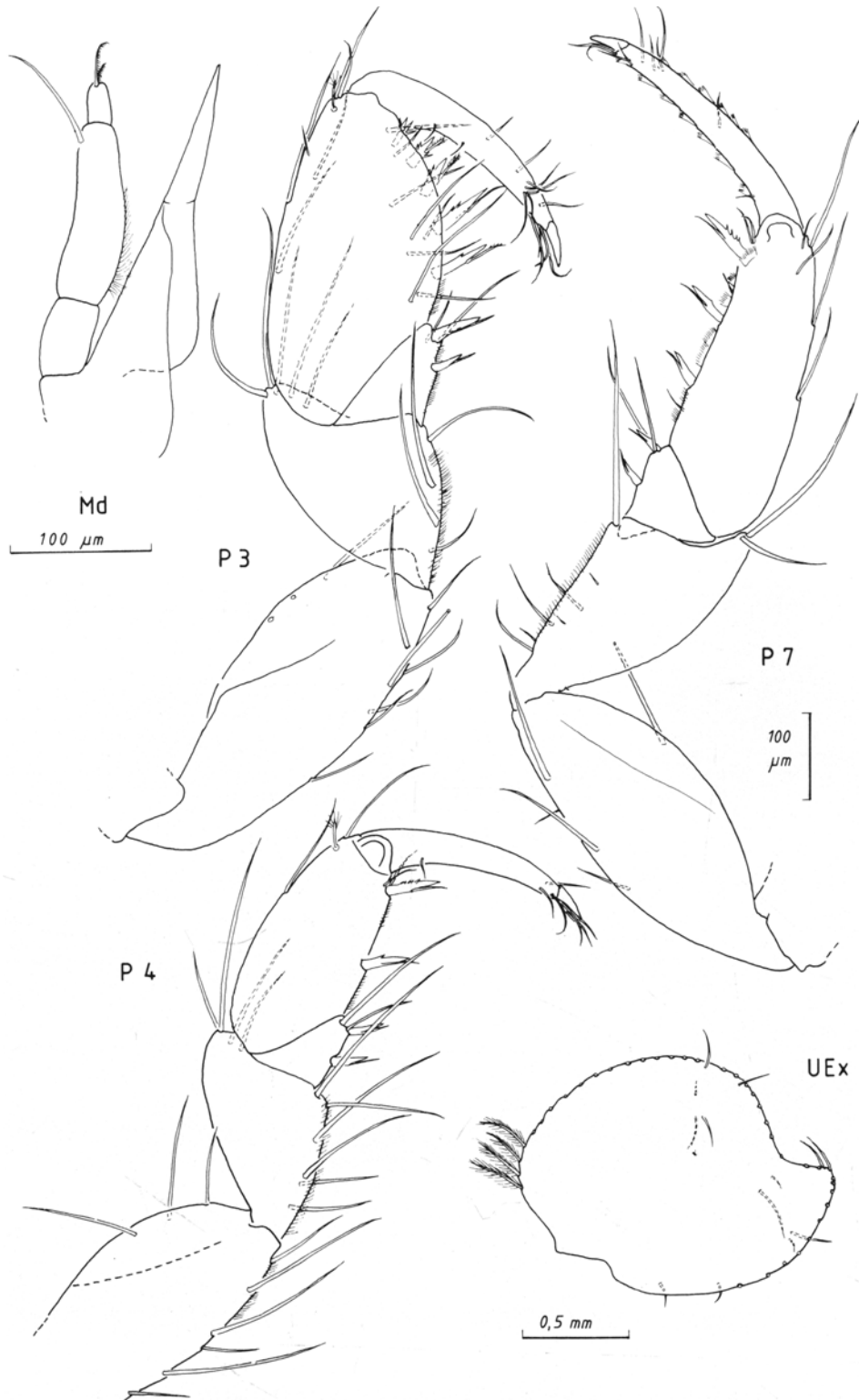


Fig. 20 *Alanthura stenodactyla* n. gen. et sp., manca stage. Urp = uropods (only setation of left UEx shown).





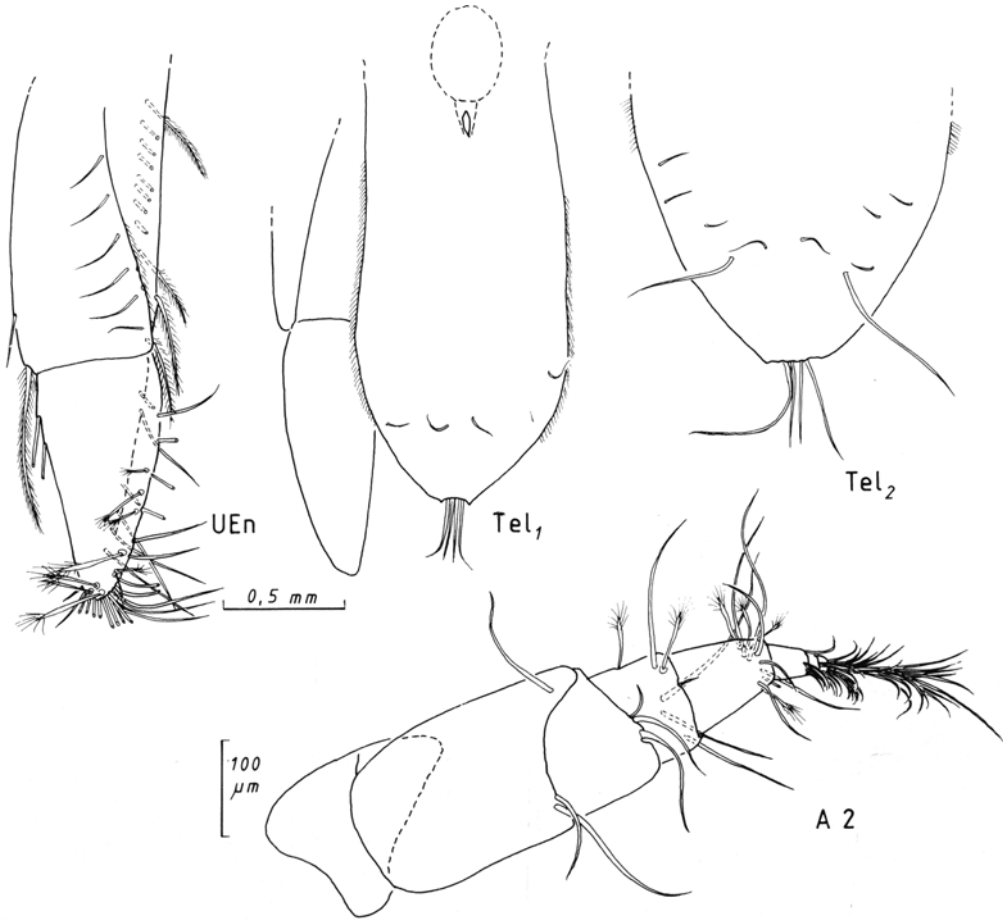


Fig. 23 *Albanthura rotunduropus*, holotype. Tel₂: apex of Tel of second specimen.

Fig. 22 *Albanthura rotunduropus* n. sp., *opposite*, holotype. Most plumose setae of UEx cut off.

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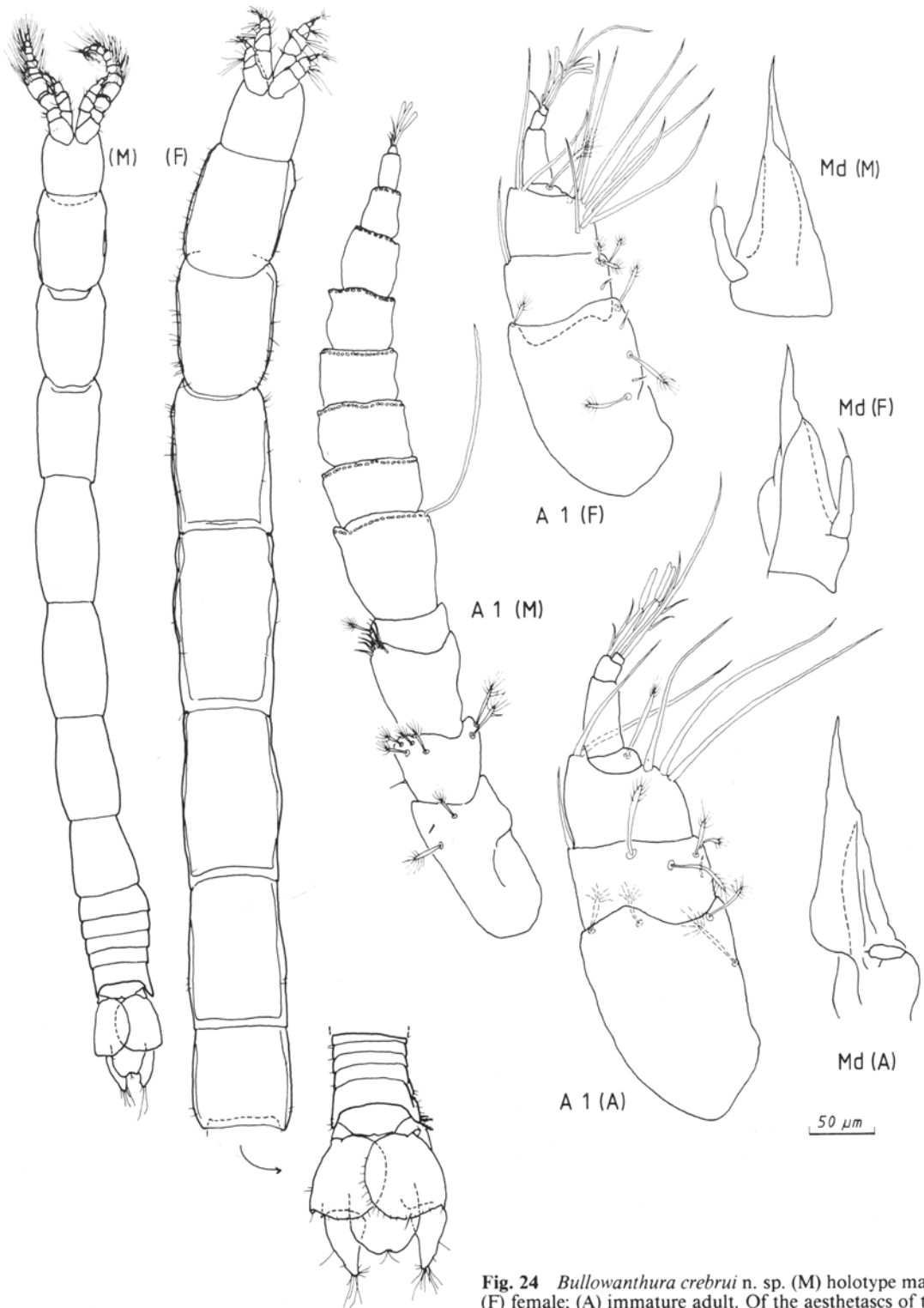


Fig. 24 *Bullovanthura crebrui* n. sp. (M) holotype male, (F) female; (A) immature adult. Of the aesthetascs of the A 1 (M), only place of insertion is shown.

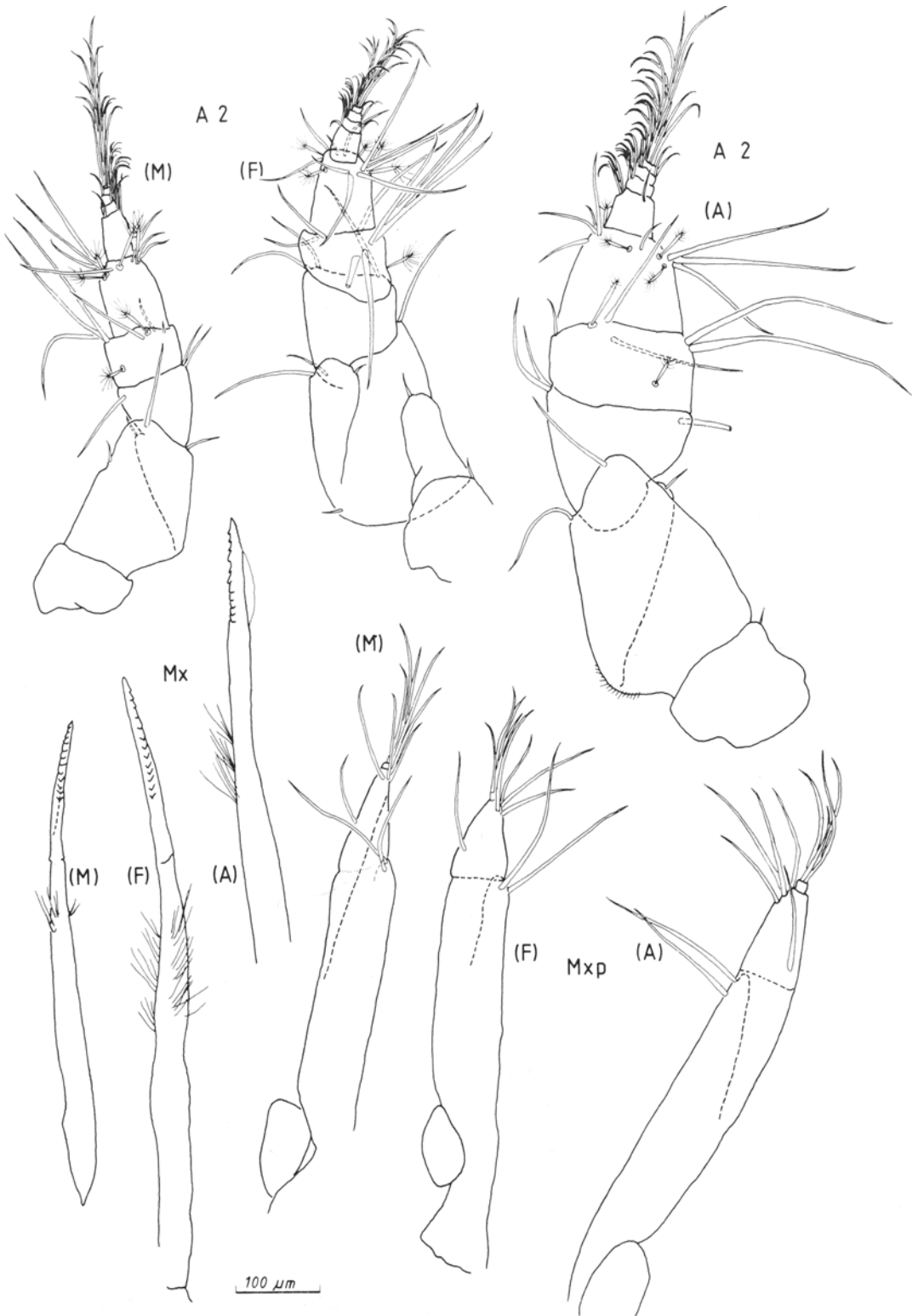


fig. 25 *Builowanthura crebrui* n. sp. (M) holotype male; (F) female, (A) immature adult.

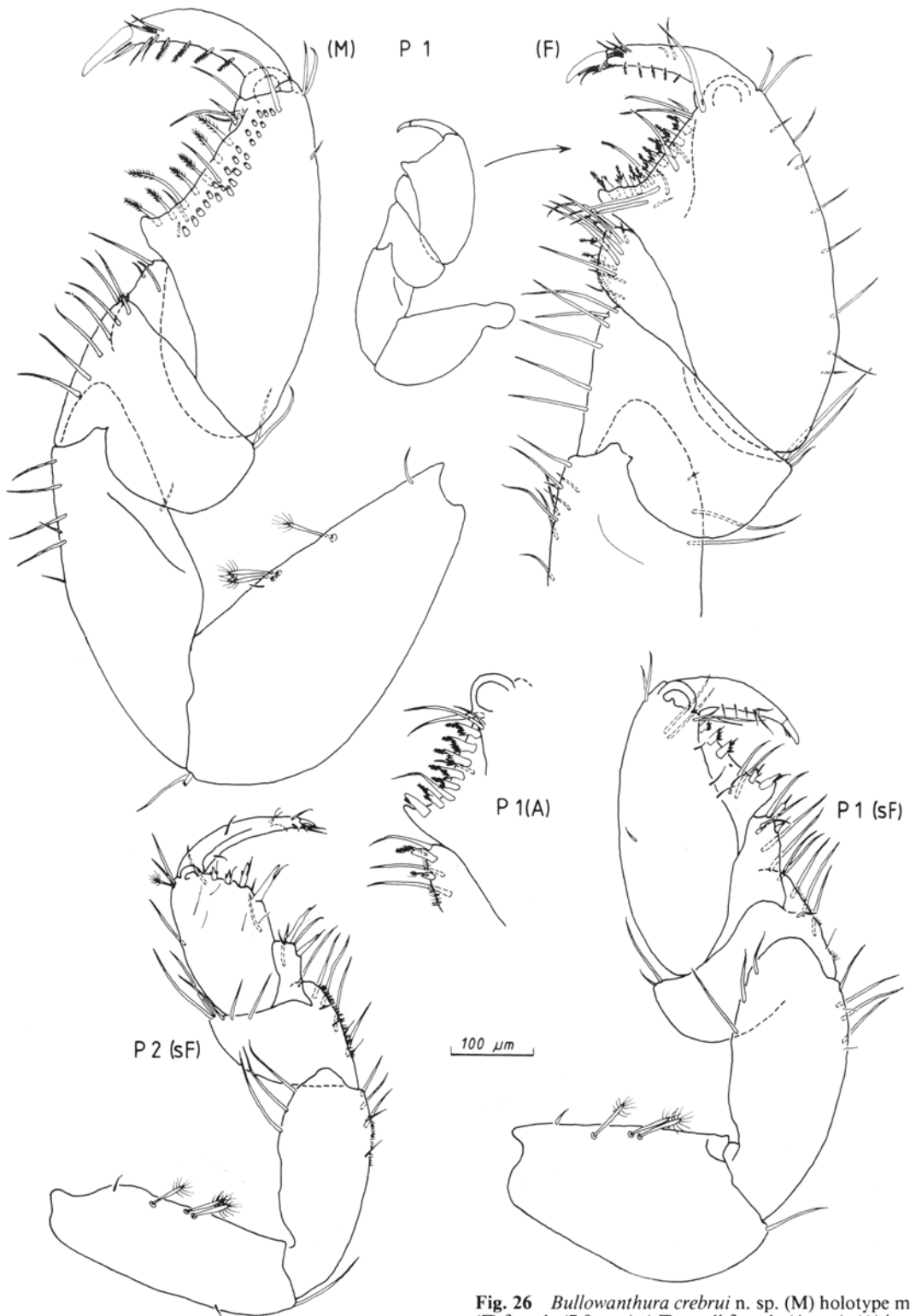


Fig. 26 *Bullowanthura crebrui* n. sp. (M) holotype male; (F) female (7.8 mm), (sF) small female (4 mm); (A) immature adult. Of P 1(A), only palm of propodus and carpus is shown.

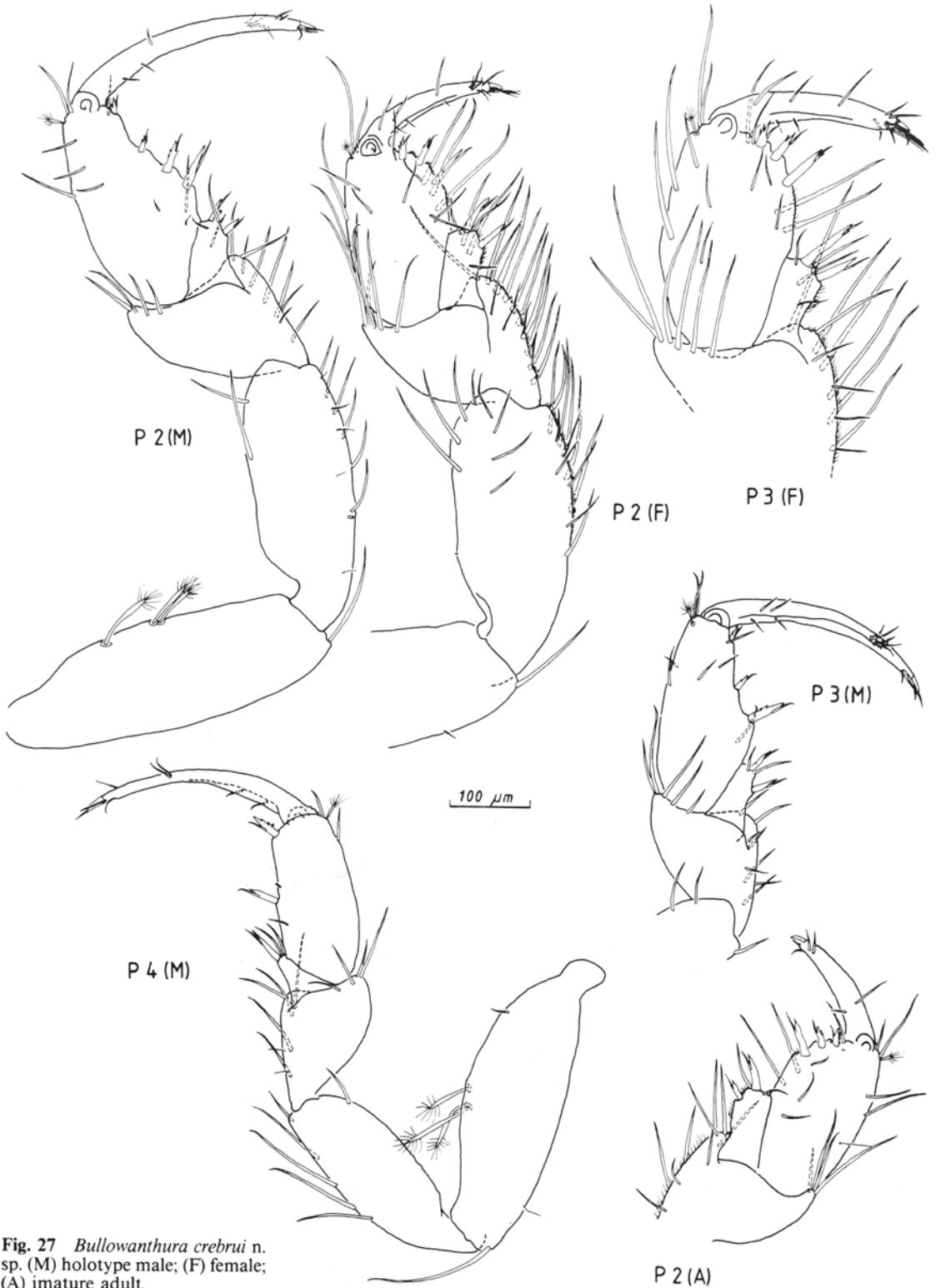


Fig. 27 *Bullowanthura crebrui* n. sp. (M) holotype male; (F) female; (A) immature adult.

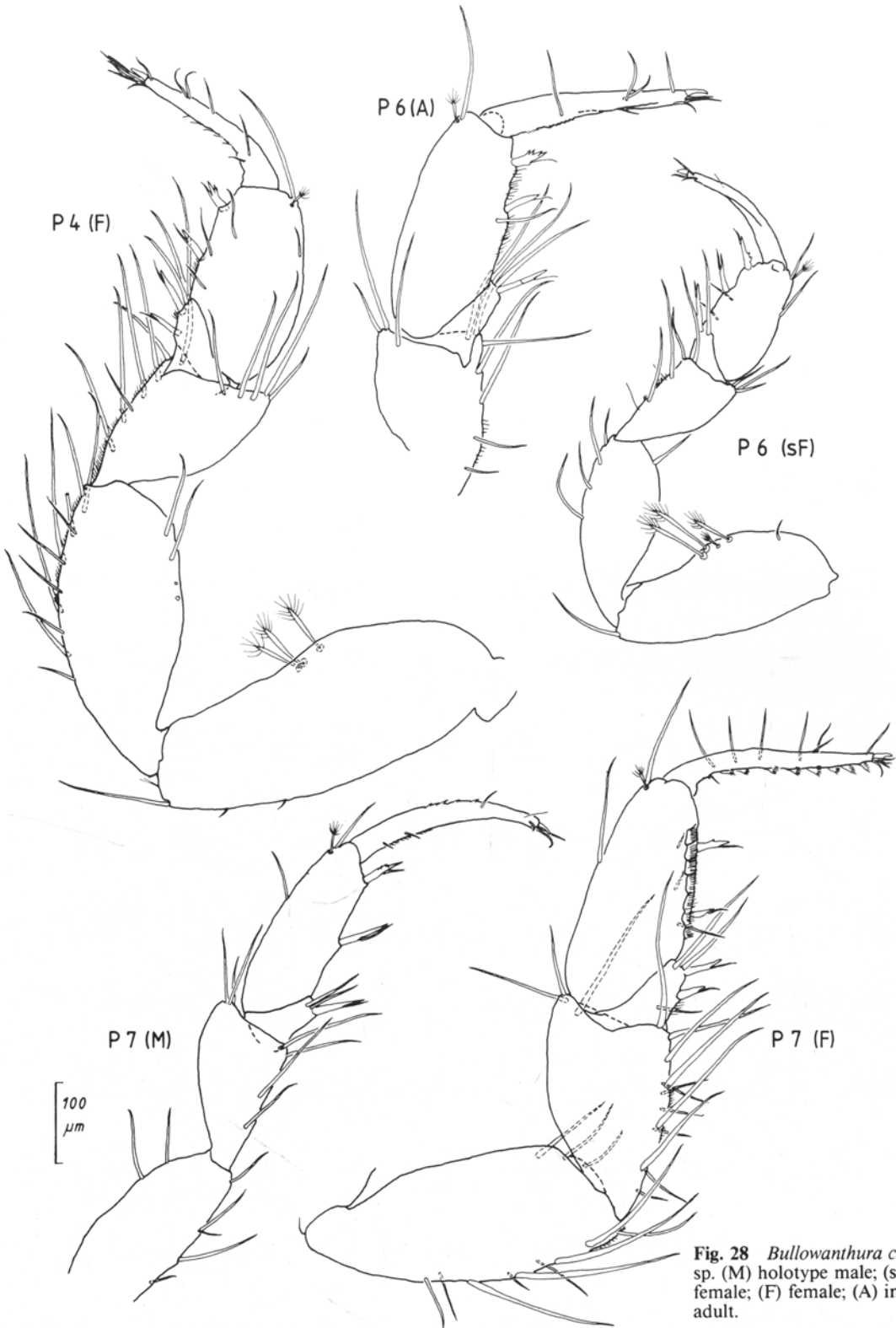


Fig. 28 *Bullowanthura crebrui* n. sp. (M) holotype male; (sF) small female; (F) female; (A) immature adult.

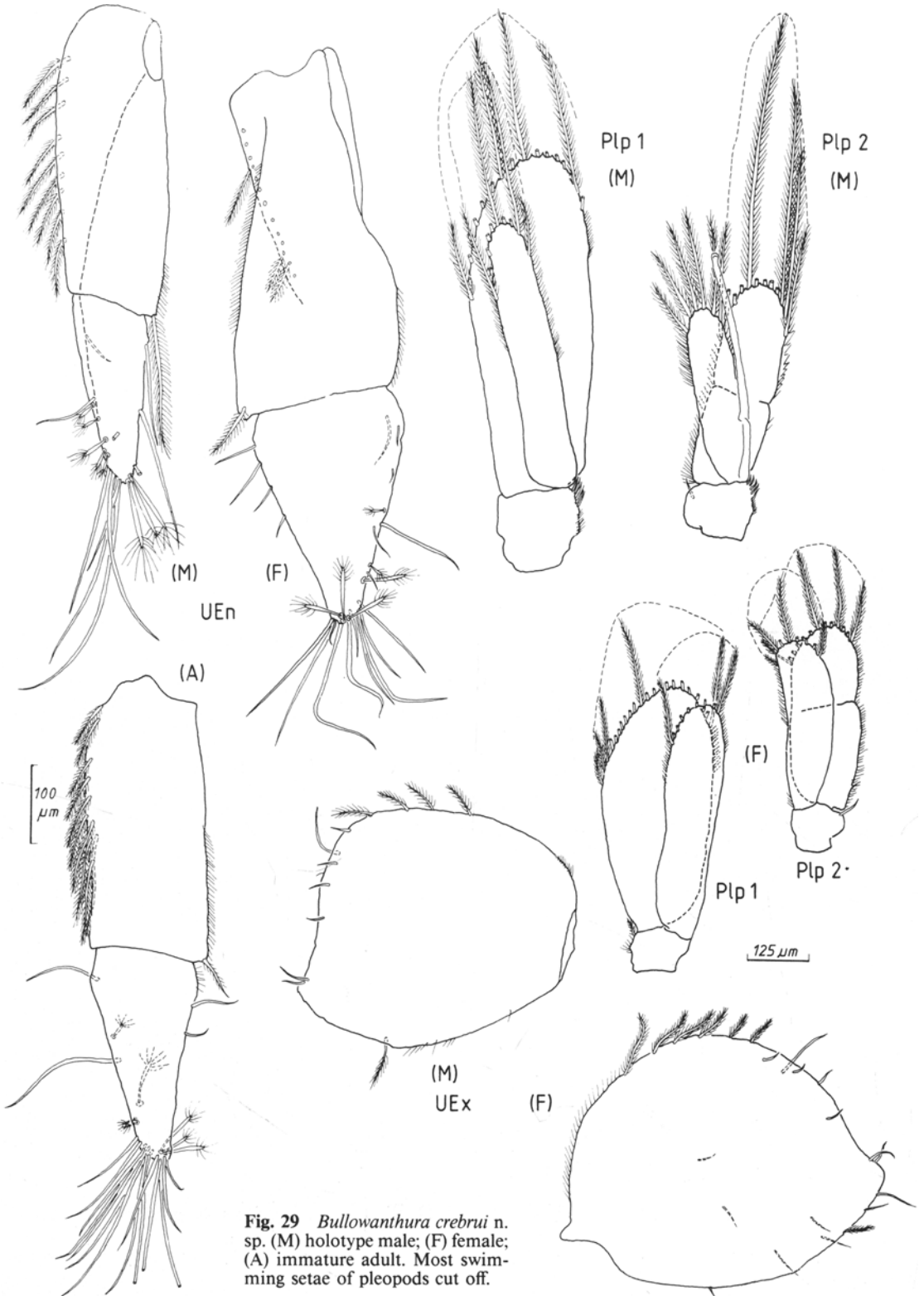


Fig. 29 *Bullowanthura crebrui* n. sp. (M) holotype male; (F) female; (A) immature adult. Most swimming setae of pleopods cut off.

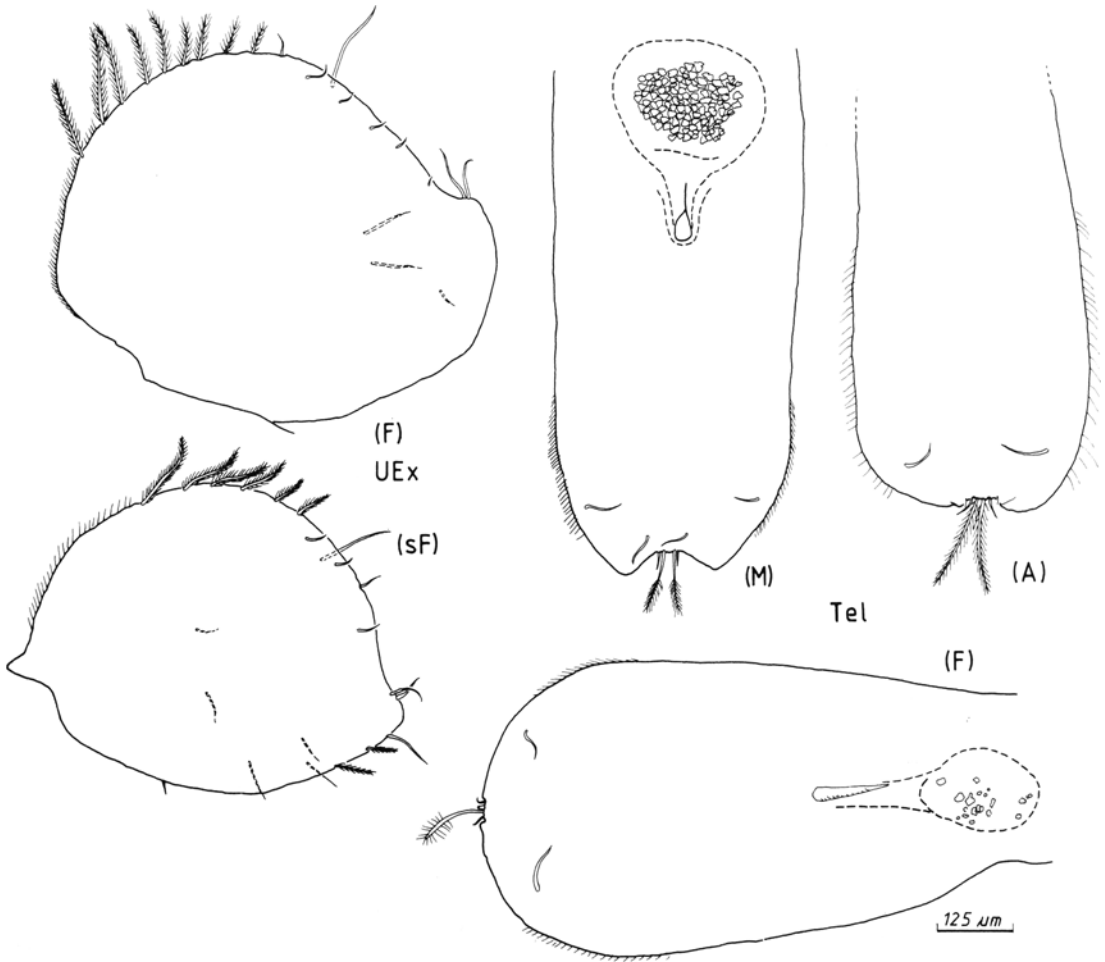
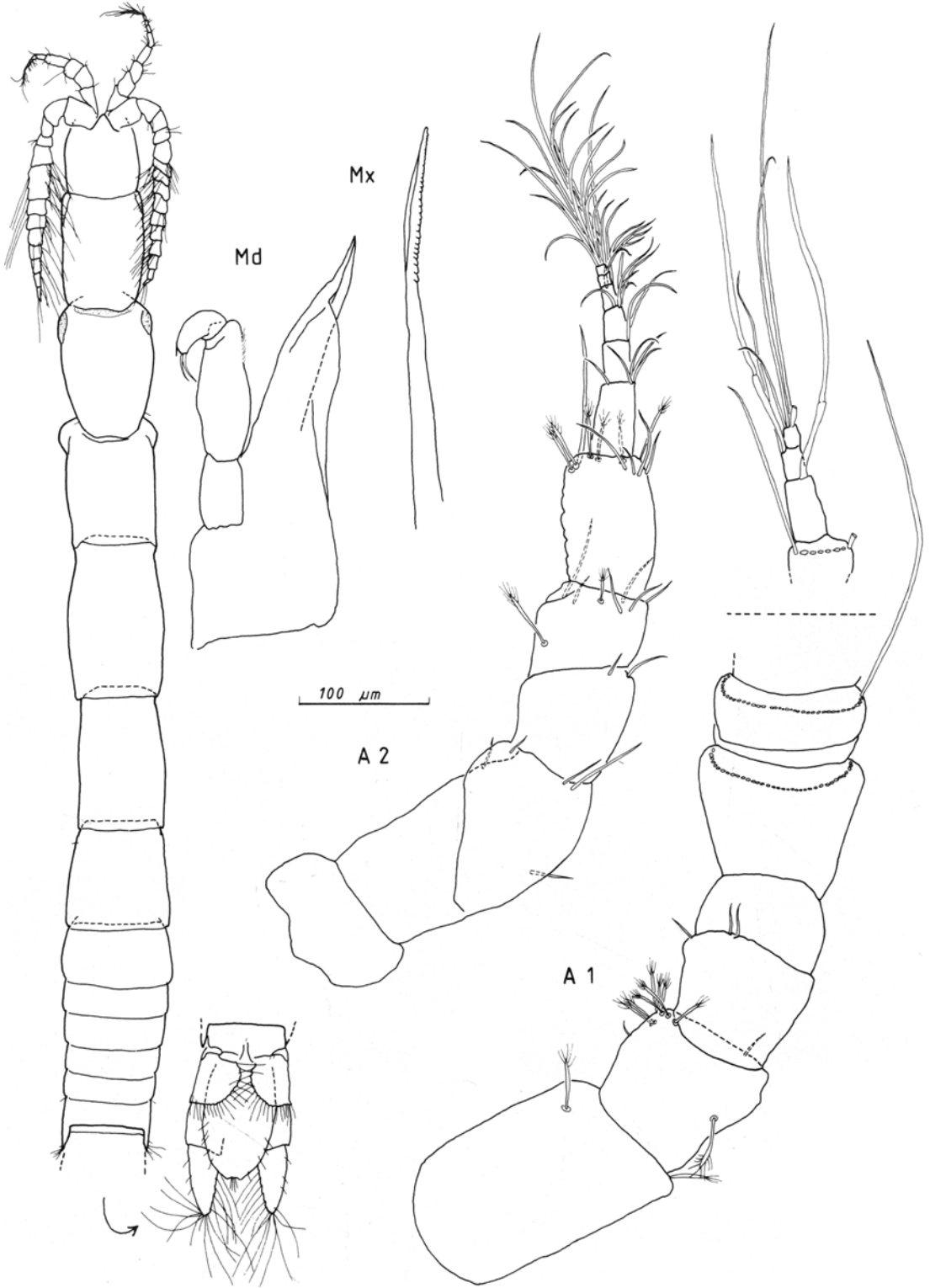
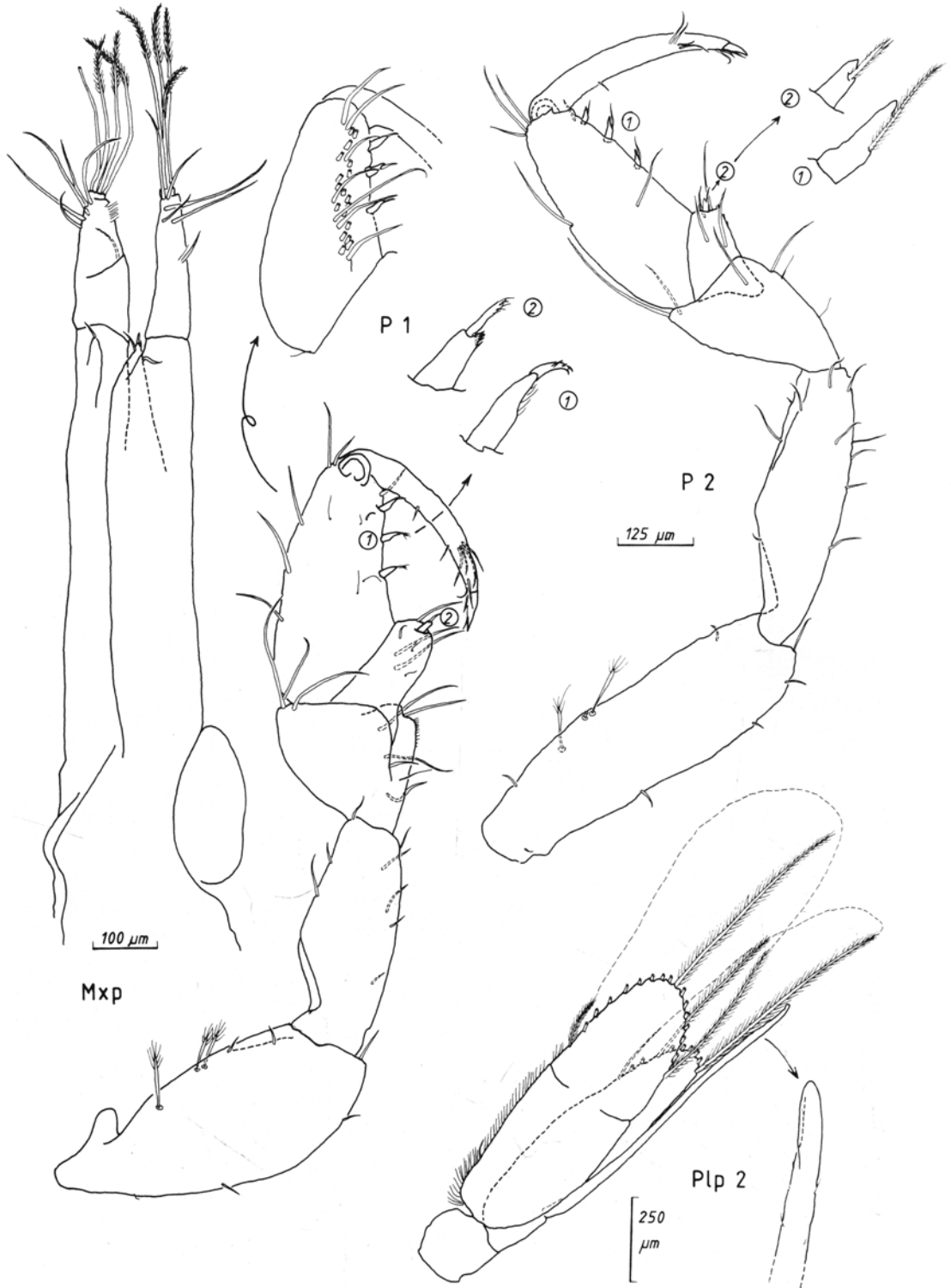


Fig. 30 *Bullovanthura crebrui* n. sp. (M) holotype male; (F) female (7.8 mm); (sF) small female (4 mm); (A) immature adult.

Fig. 31 *Leptanthura truncatitelson* n. sp., *opposite*, holotype male, dorsal view (left). Of the aesthetascs of A 1 only place of insertion is shown; drawing with only the basal and apical articles of A 1.





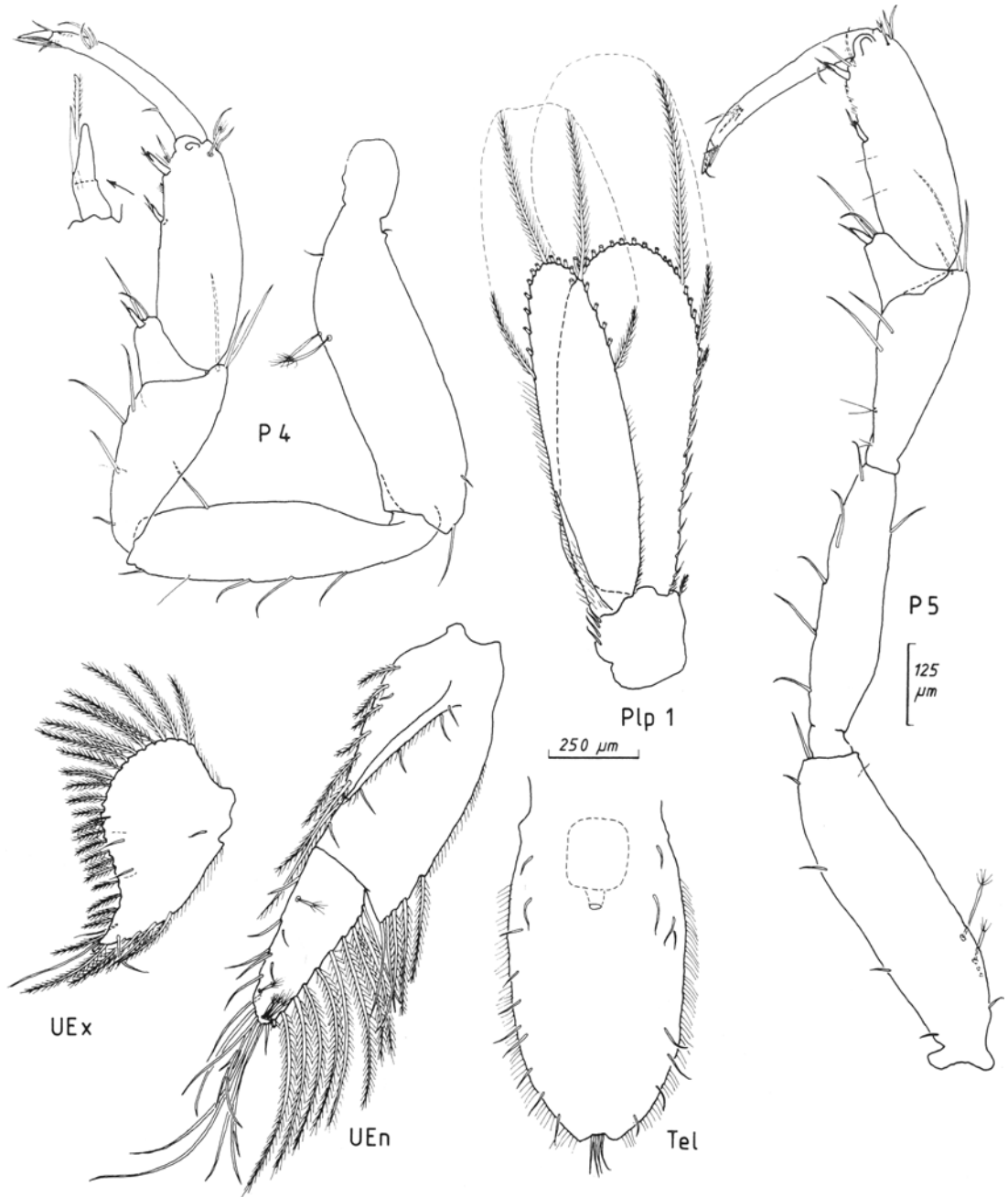
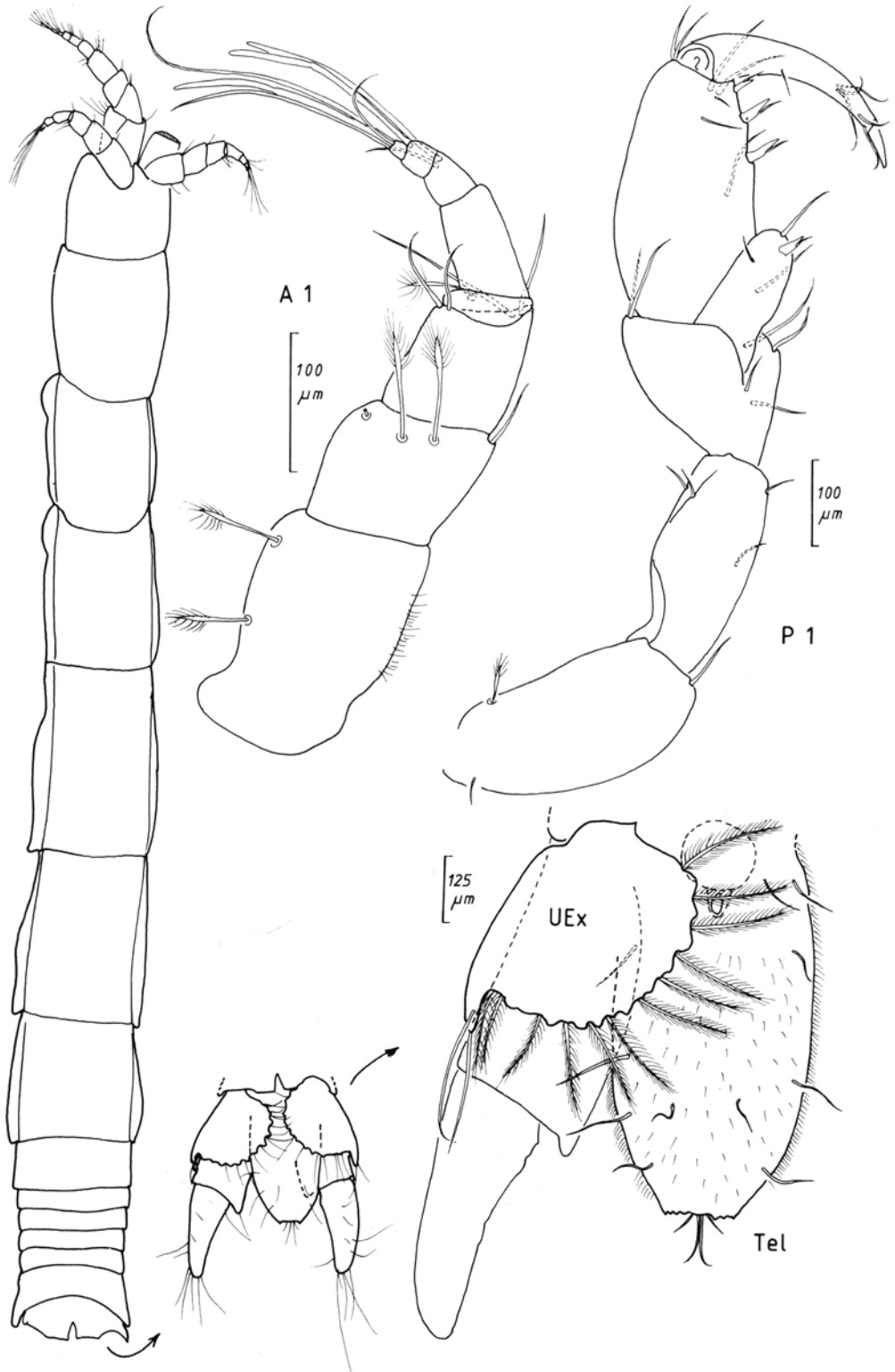


Fig. 33 *Leptanthura truncatitelson* n. sp., holotype male. Most swimming setae of Plp 1 cut off.

Fig. 32 *Leptanthura truncatitelson* n. sp., opposite, holotype male. P 1 shown from both sides, some sensory spines of P 1 and P 2 are enlarged, most swimming setae of Plp 2 cut off. Plp 2 with enlarged detail of distal appendix masculina.



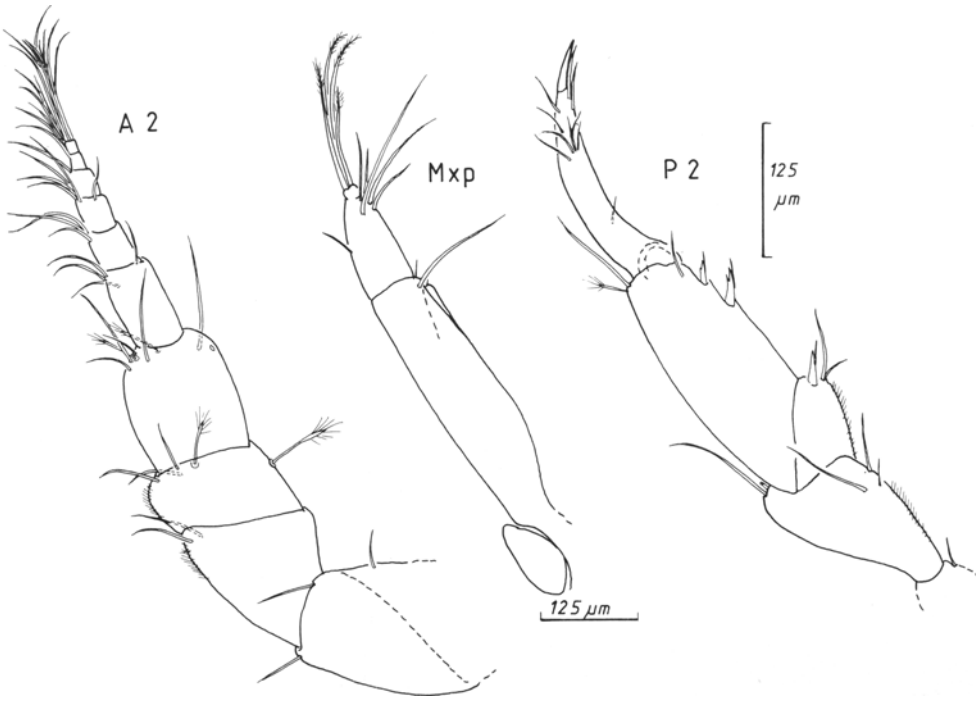
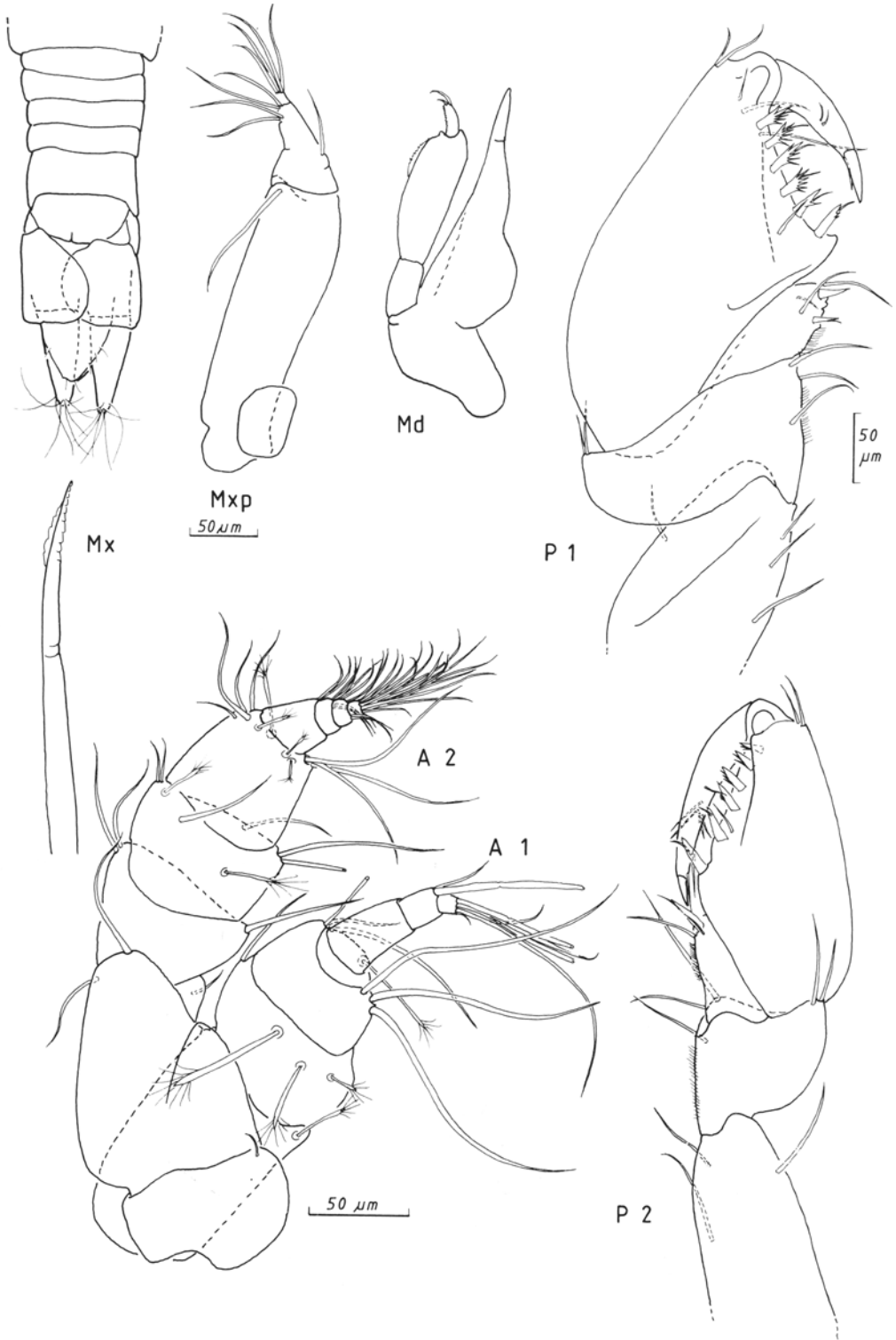


Fig. 35 *Leptanthura truncatitelson* n. sp., manca stage.

Fig. 34 *Leptanthura truncatitelson* n. sp., opposite, manca stage. Dorsum (left) with enlarged detail of tail-fan (UEx + TEL).

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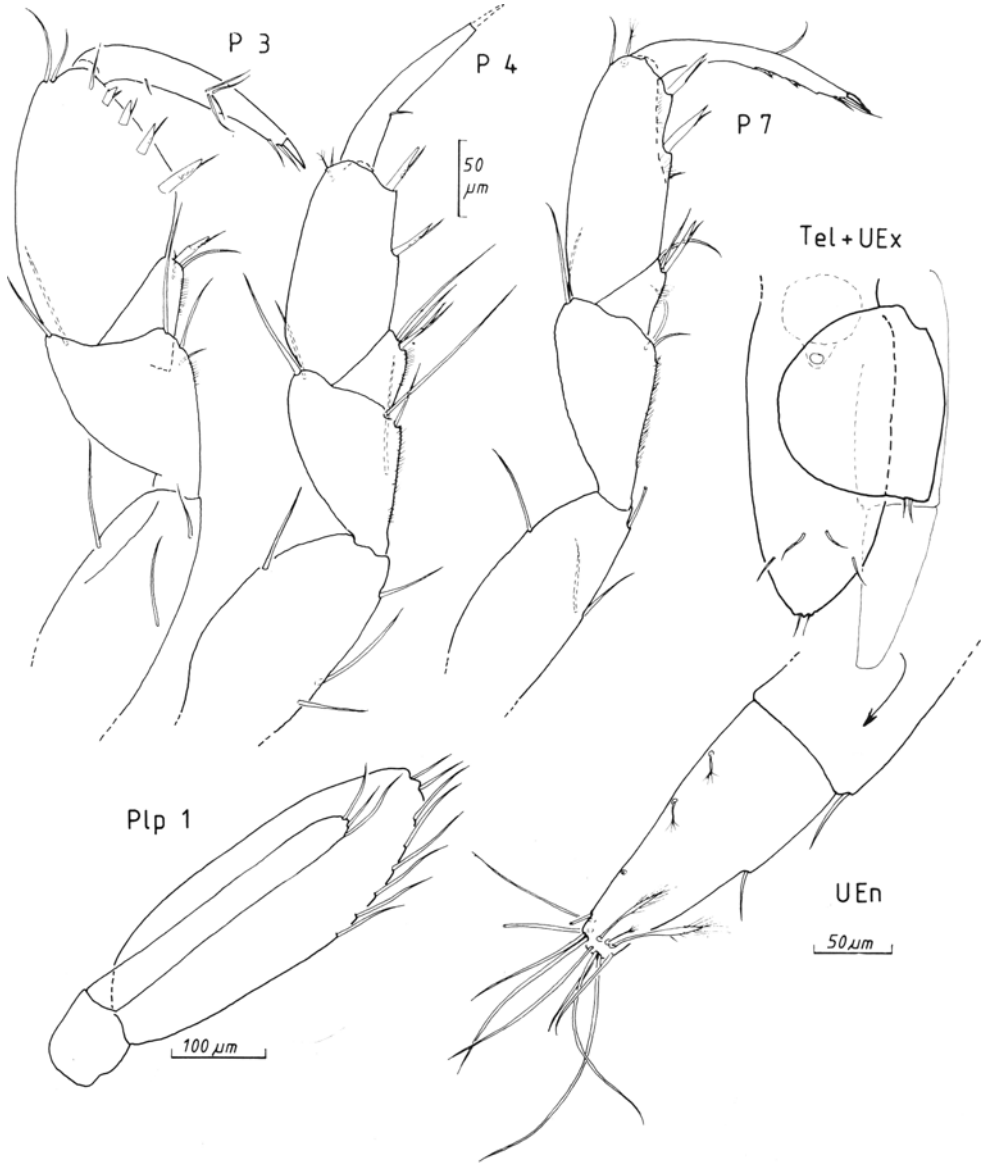


Fig. 37 *Leptanthura exilis* n. sp., holotype, with enlarged detail of UEn. Swimming setae of Plp 1 shown as simple setae.

Fig. 36 *Leptanthura exilis* n. sp., *opposite*, holotype. Pleon and tail-fan in dorsal view (above, left).

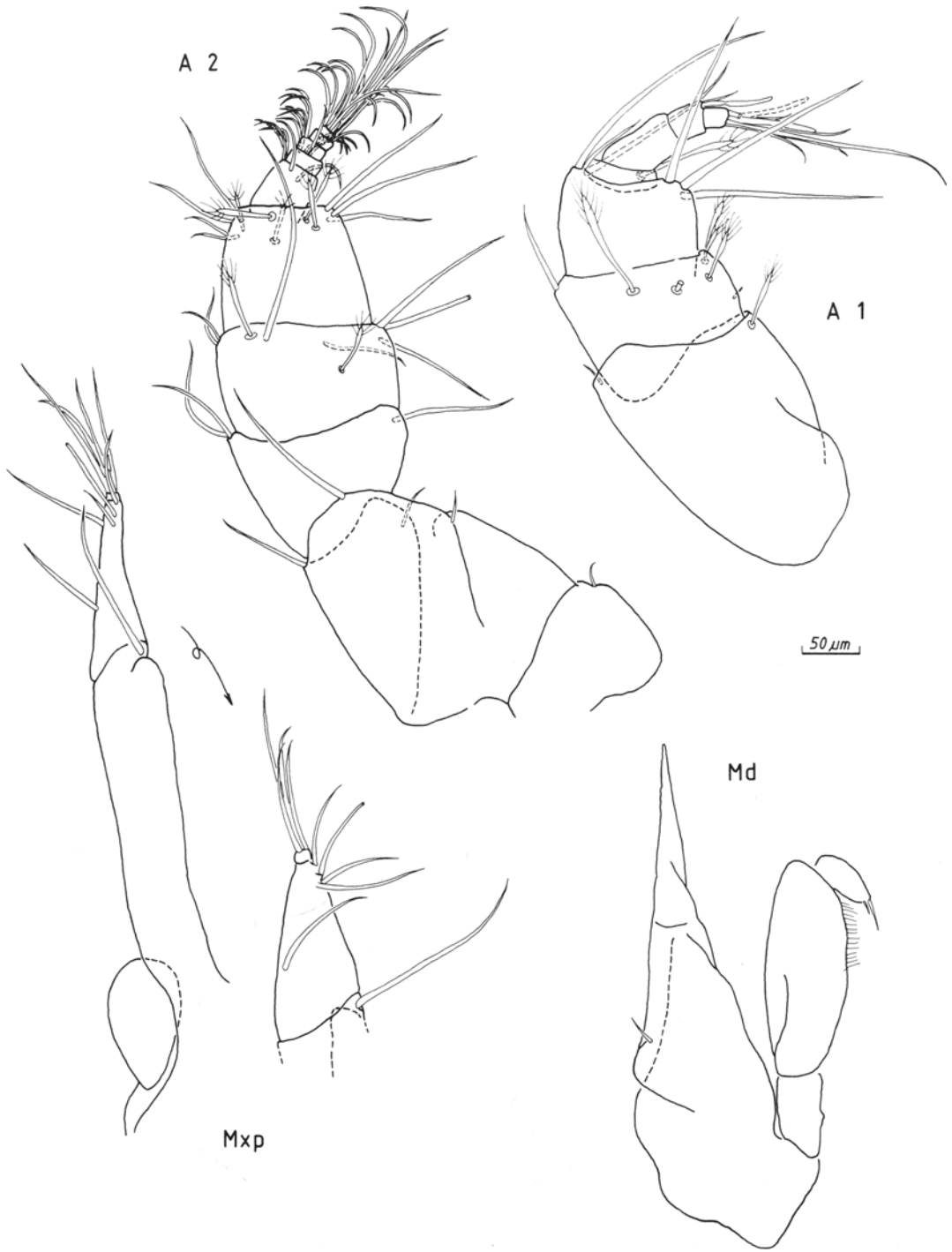


Fig. 38 *Leptanthura exilis* n. sp., second specimen. Palp of Mxp shown in 2 different views.

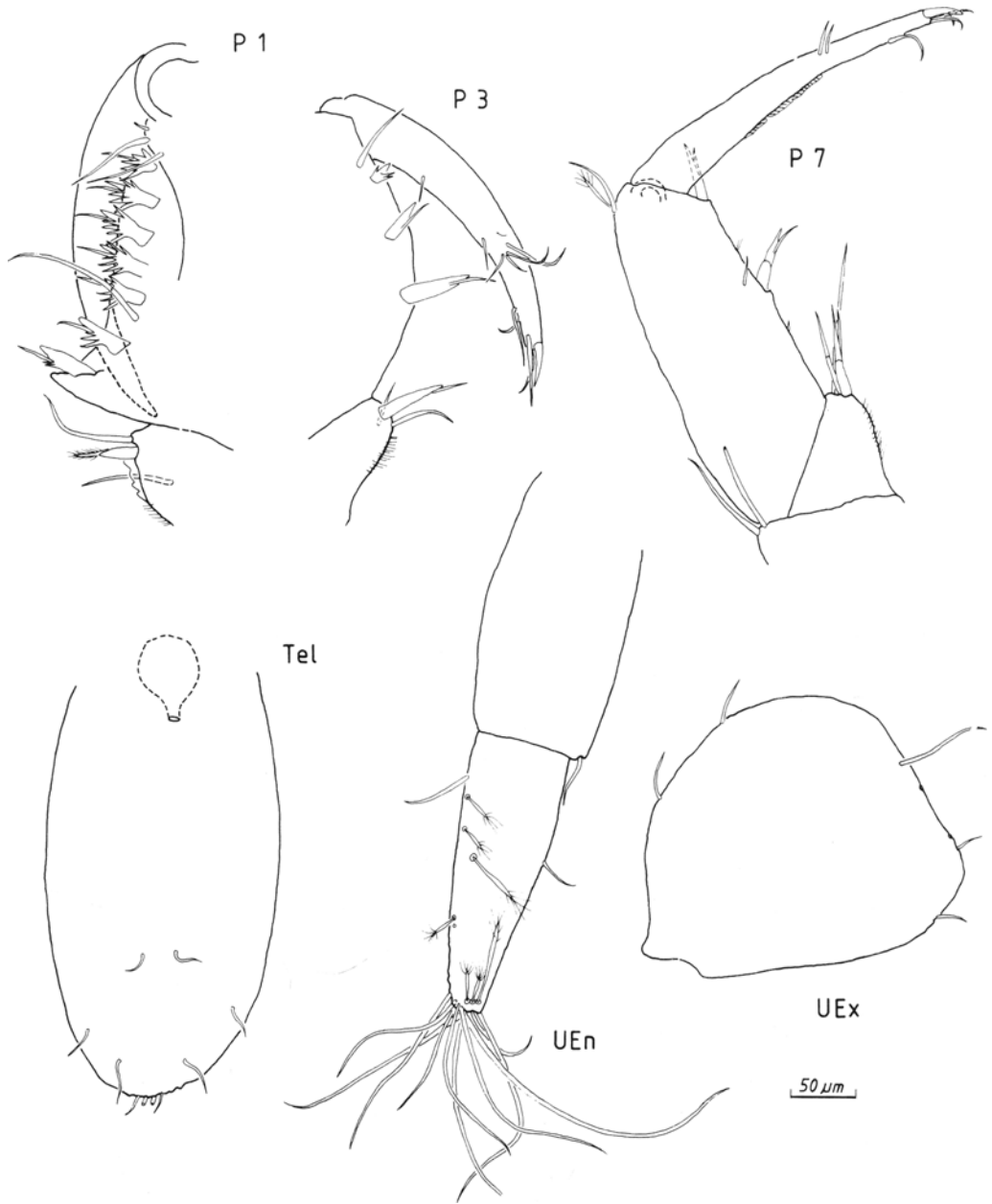


Fig. 39 *Leptanthura exilis* n. sp., second specimen.

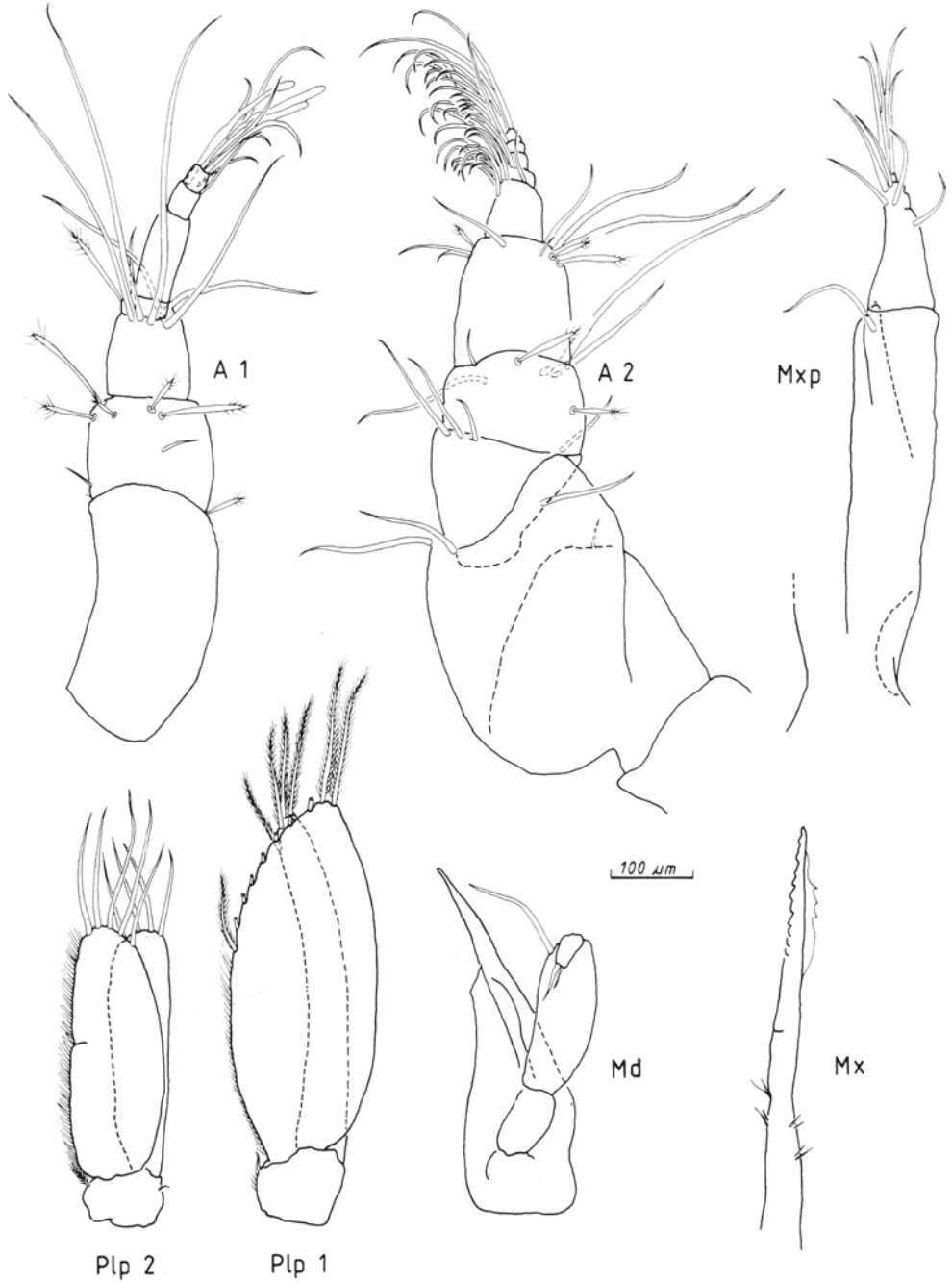


Fig. 40 *Leptanthura profundicola* n. sp., holotype female. Swimming setae of Plp 2 shown as simple setae, of Plp 1 mostly cut off.



Fig. 41 *Leptanthura profundicola* n. sp., holotype female of P 3 only propodus and carpus shown, of P 5 propodal palm.

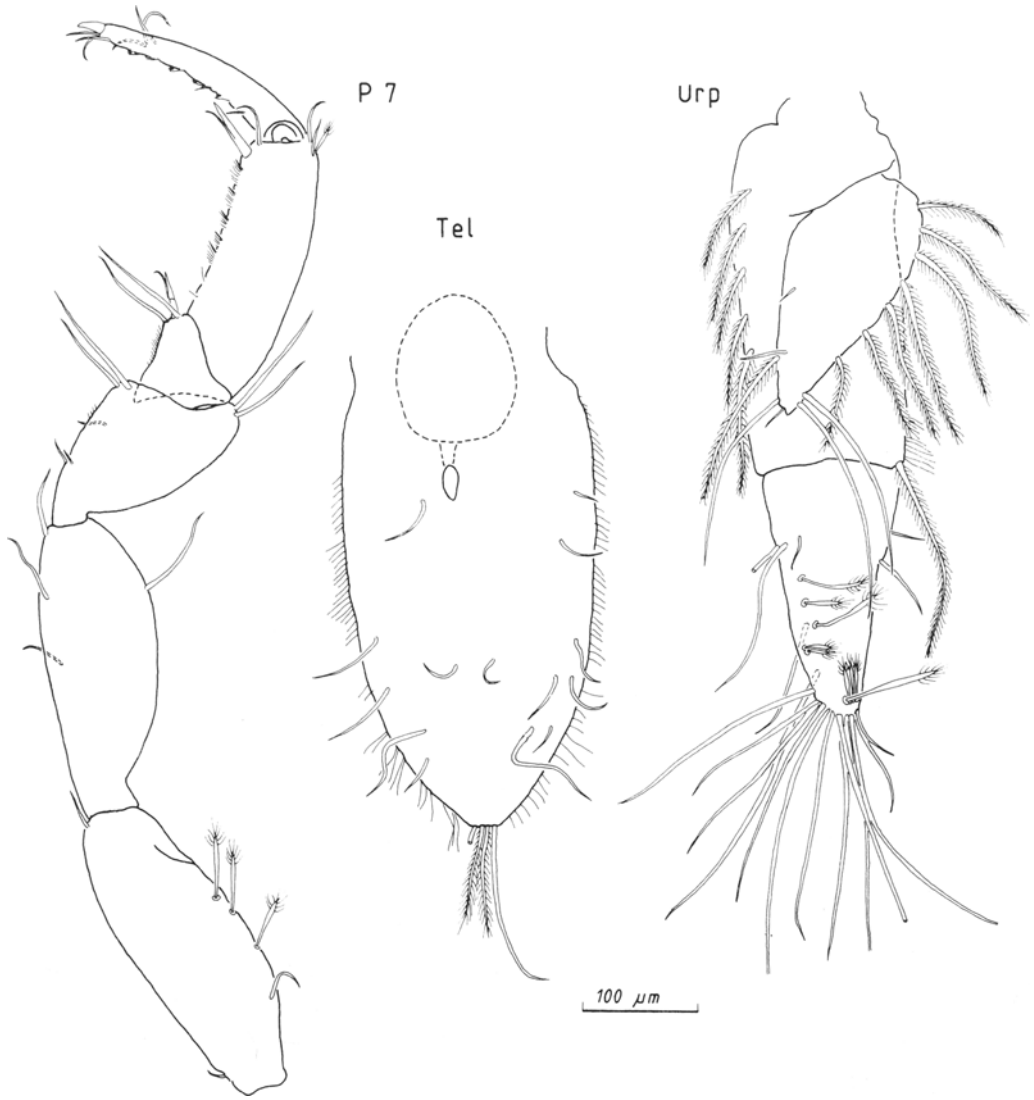


Fig. 42 *Leptanthura profundicola* n. sp., holotype female.

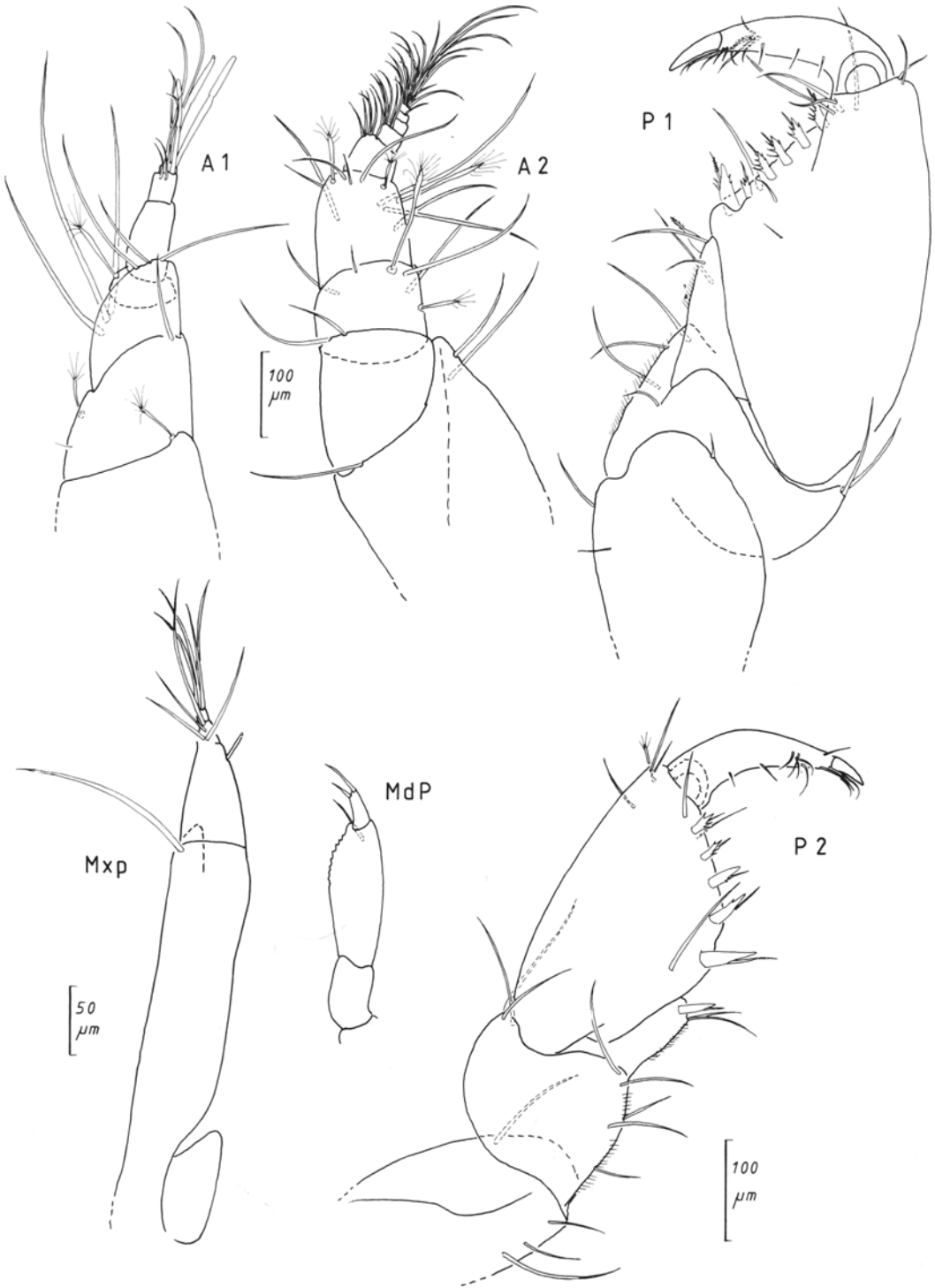


Fig. 43 *Leptanthura profundicola* n. sp., immature adult.

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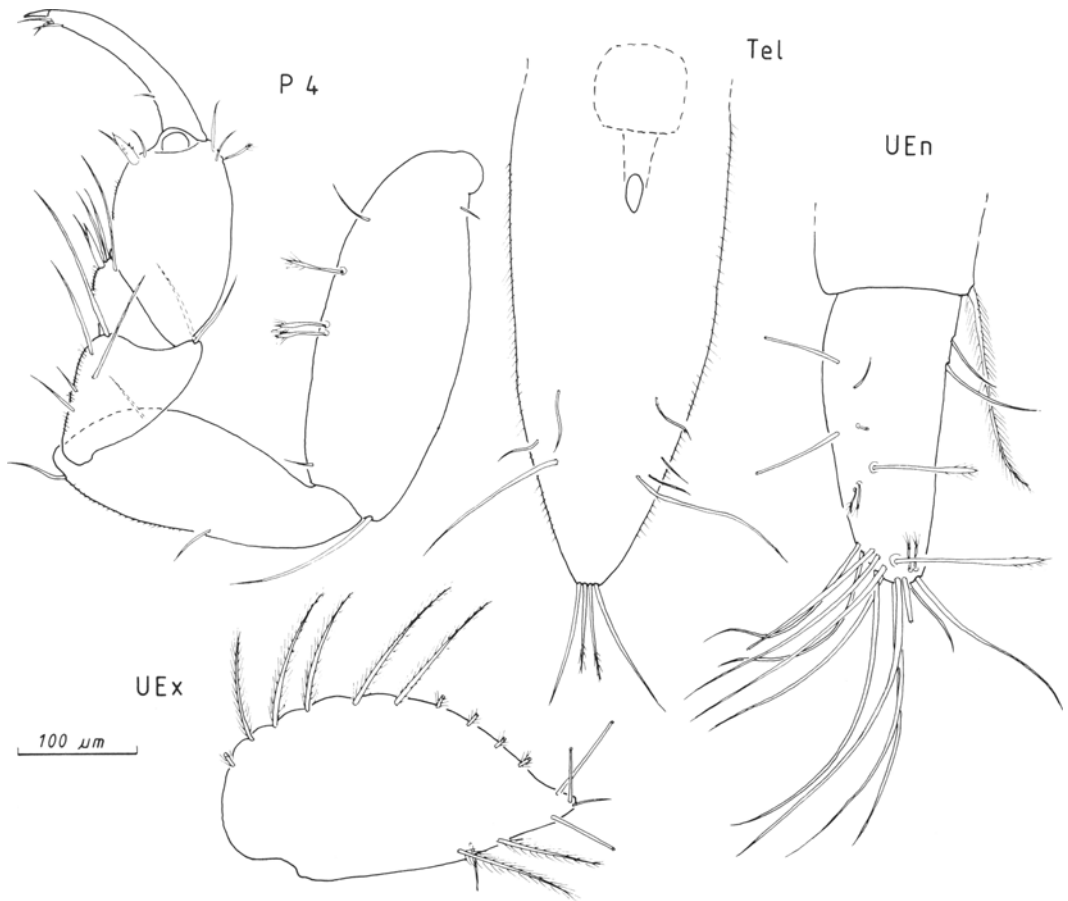
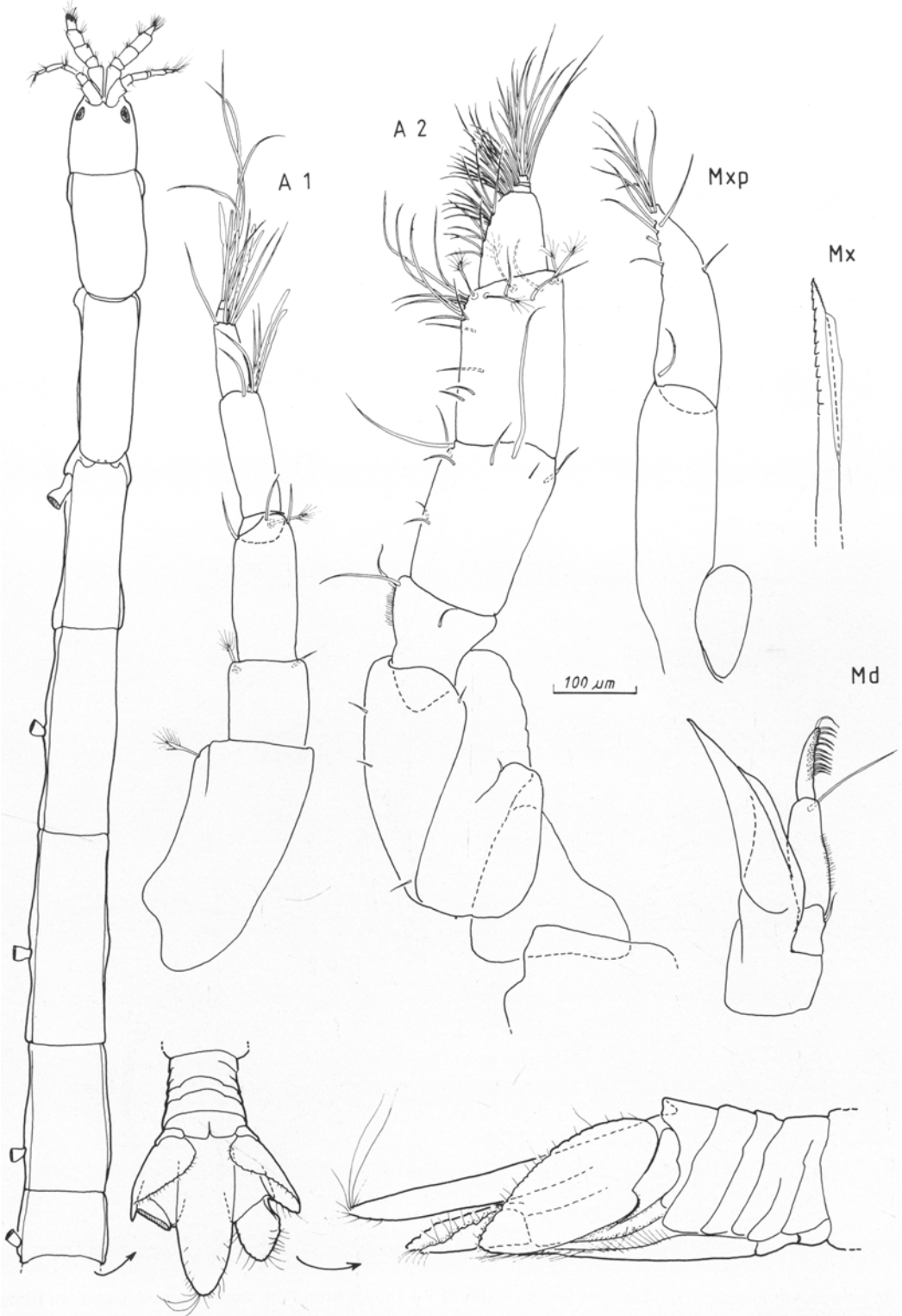


Fig. 44 *Leptanthura profundicola* n. sp., immature adult.

Fig. 45 *Paranthura longa* n. sp., *opposite*, holotype female. Dorsum (left); pleon and tail-fan in dorsal and lateral view (below).



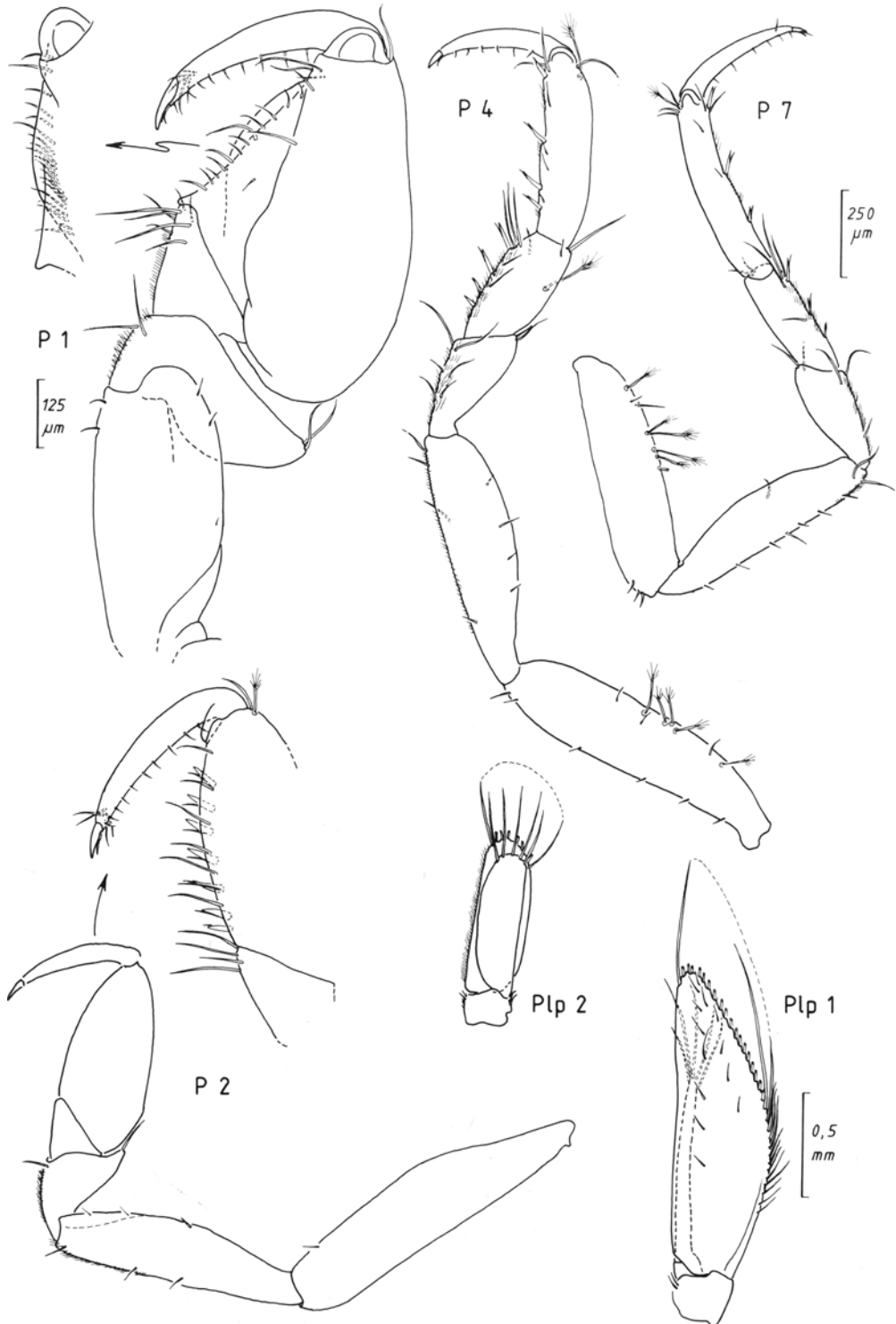


Fig. 46 *Paranthura longa* n. sp., holotype female. Palm of P 1 shown from both sides; swimming setae of pleopods shown as simple setae.

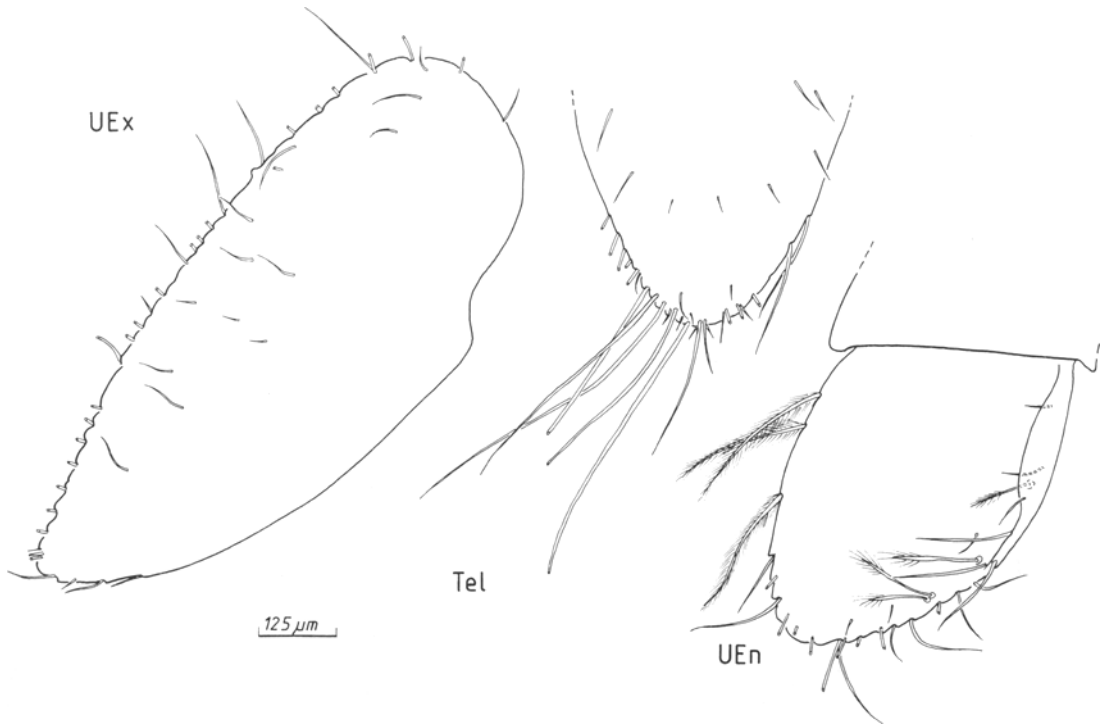
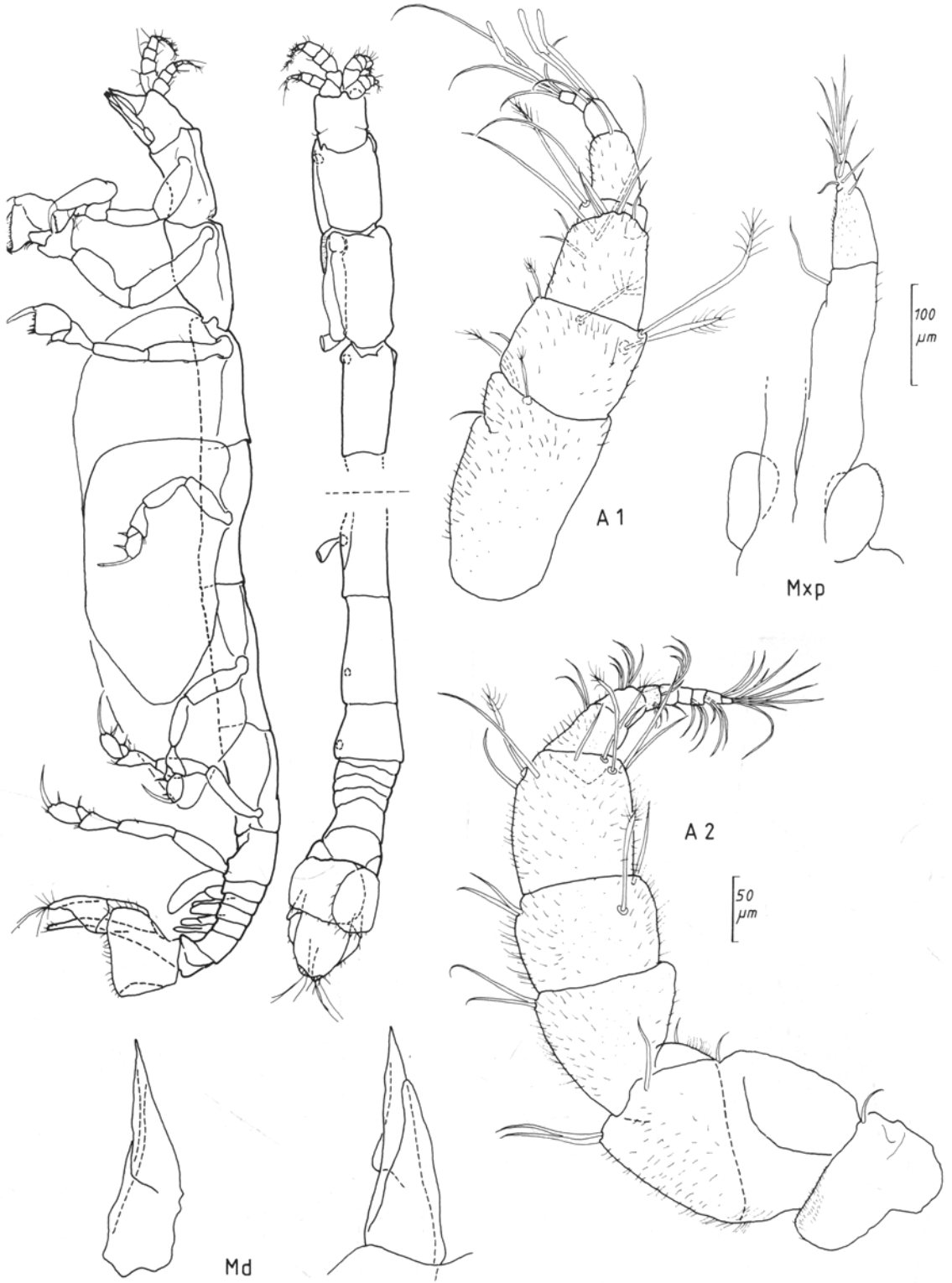


Fig. 47 *Paranthura longa* n. sp., holotype female. Only apex of Tel is shown.



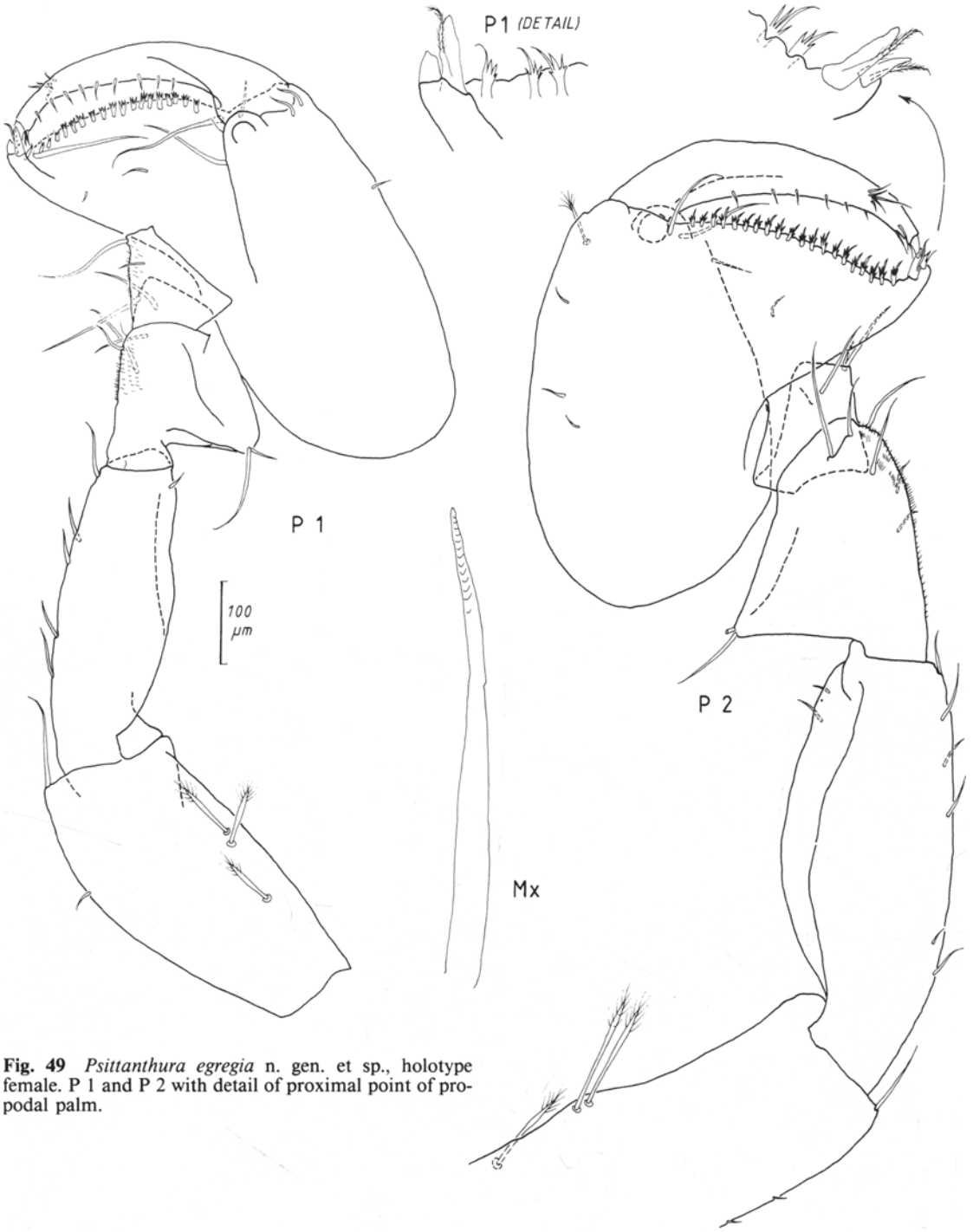


Fig. 49 *Psittanthura egregia* n. gen. et sp., holotype female. P 1 and P 2 with detail of proximal point of propodal palm.

Fig. 48 *Psittanthura egregia* n. gen. et sp., opposite, holotype female in lateral and dorsal view (left), Md shown in 2 views.

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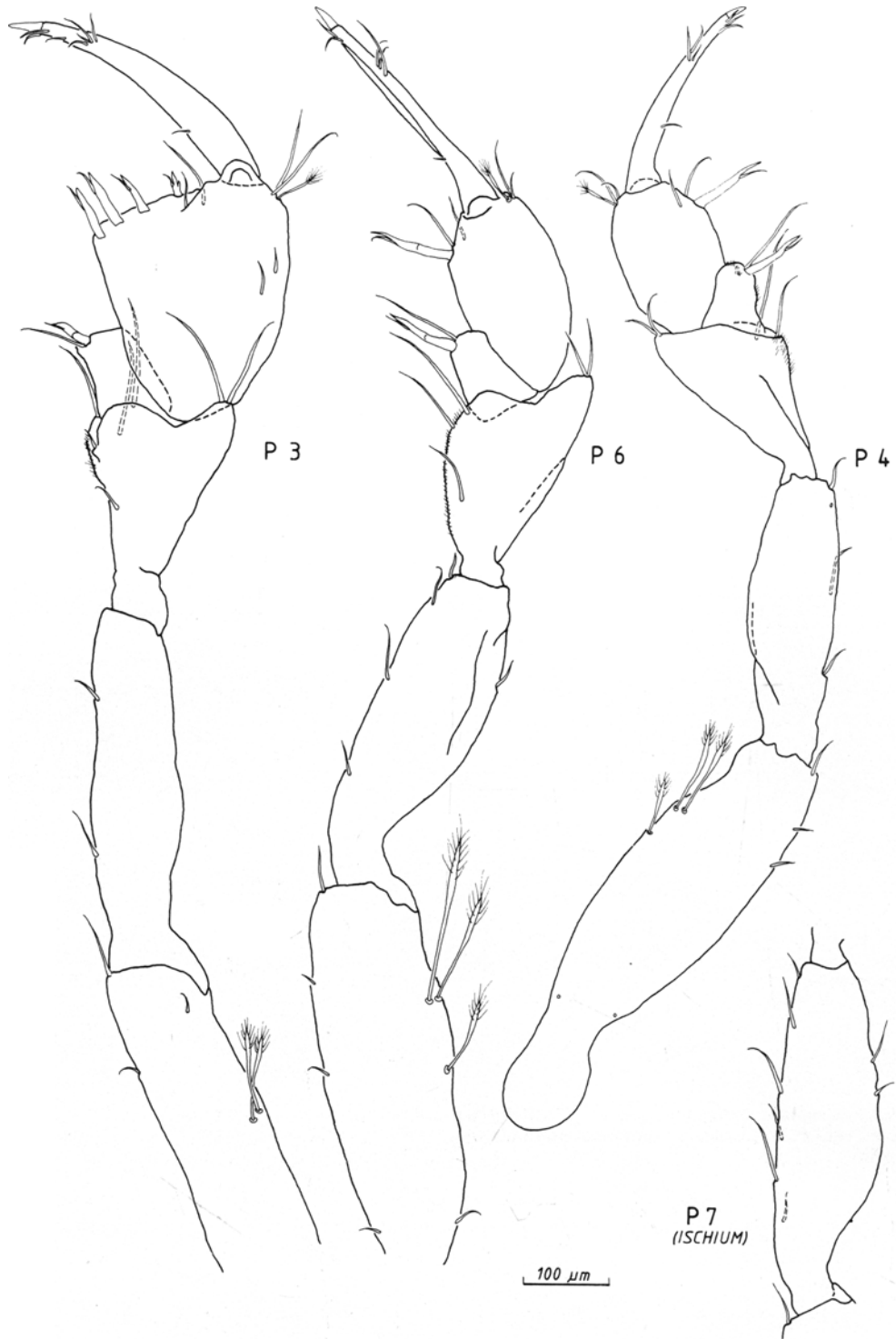


Fig. 50 *Psittanthura egregia* n. gen. et sp., holotype female.

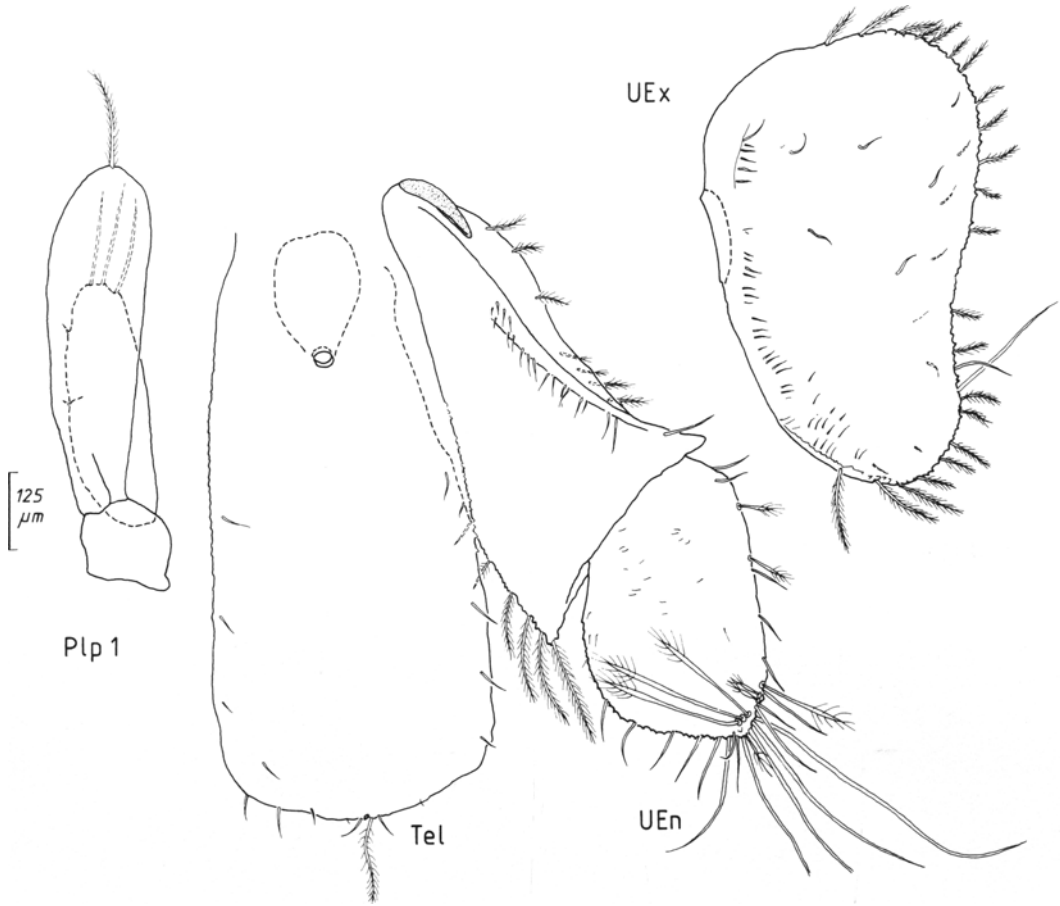


Fig. 51 *Psittanthura egregia* n. gen. et sp., holotype female.