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ON A SMALL COLLECTION OF VALVIFERA (CRUSTACEA ISOPODA) FROM THE MAGELLAN STRAIT, WITH DESCRIPTION OF *PLATIDOTEA MAGELLANICA* N.GEN. N.SP.

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Running head: Magellanic Valvifera

ABSTRACT

Redescriptions of 5 arcturid species from the Strait of Magellan are presented, the validity of the genus *Rectarcturus* is discussed. *Platidotea magellanica* n.gen. n.sp. is described. It is a new type of idoieid isopod, with flattened body and antennae, probably adapted to life in sandy bottoms.

INTRODUCTION

The Strait of Magellan is biogeographically an area where a characteristic South American isopod fauna with essentially Atlantic species occurs together with subantarctic and a few antarctic elements (summary in Brandt 1991). Some species are probably derived from relicts of Gondwanian origin (Wägele 1989, 1994). The area is not well studied. Few species have been reported from the Pacific coast of southern Chile, the northern Scotia Arc is nearly unexplored. In a series of previous publications some Asellota from the Magellan Strait have been described (Winkler 1992-1994). The present study is

dedicated to a few rare valviferan species, which needed redescrptions, a new idoteid genus and species is presented.

TAXONOMY

Neastacilla magellanica (Ohlin, 1901)

Astacilla magellanica Ohlin, 1901: p. 267-268;
Schultz 1981, p. 91

Neastacilla magellanica (Ohlin): Tattersall 1921, p.
244; Nordenstam 1933, p. 122; Menzies 1962, p.
87.

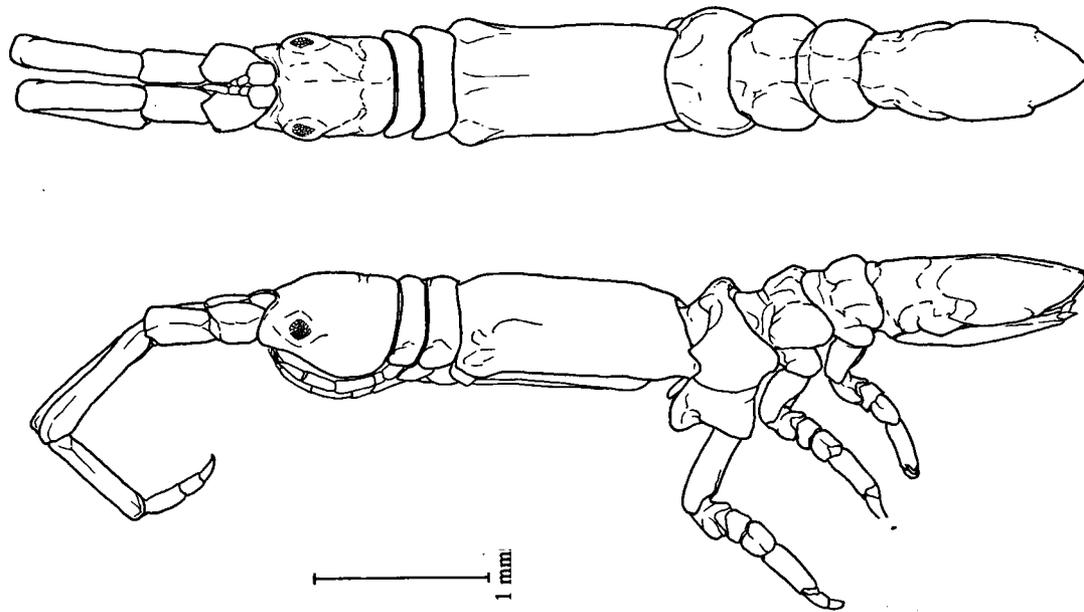


Fig. 1. *Neastacilla magellanica* (Ohlin, 1901), female, 4.9 mm.

Material

female, length: 4.9 mm, 52°46,5'S, 70°01,9'W, 35 m, barnacle clusters; 52°44,9'S, 70°05,4'W, 10 m, barnacles; 52°39,3'S, 69°45,8'W, 26 m, rock and large shells.

Distribution

Strait of Magellan, Dungeness Point, 17.5 m, length: 4.5 mm (Ohlin, 1901); Falkland Islands (Swedish Ant. Exped.), Port William, 51°40'S, 57°41'W, 40 m, sand and small stones, female, length: 5 mm; 51°40'S, 57°47'W, 12 m, sand and gravel, female, length: 4.1 mm (Nordenstam 1933); Southern Chile (Menzies 1962); Punta Dungeness, Strait of Magellan (station Hero 692-69-6A), gravid female, length: 7.3 mm (Schultz 1981).

Description of immature adult

Body without spines or tubercles, more or less smooth, slender and cylindrical. Eyes relatively small, rhomboid. Frontally in the middle of linea frontalis on cephalothorax with a small point. Pereonite 1 fused with cephalothorax, but fusion line indicated by a shallow furrow. Pereonite 1 with ventrofrontally extended coxal plates, mouthparts not visible in lateral view. Pereonites 1-3 gradually increasing in length and width; pereonite 4 twice as long as wide, somewhat longer than cephalothorax and pereonites 2-3 together; pereonite 4 and pleotelson of similar length;

pereonites 5-7 as long as cephalothorax and pereonites 2-3 together; pereonite 5 to 7 gradually narrowing. All pleonites fused completely; pleonites 1-3 only laterally discernible by a short shallow furrow. In dorsal view pleotelson long-oval, with three pairs of lateral edges; apex tapering, distally rounded. Coxal plates of pereonites 2-4 without suture, discernible only by shallow furrows between tergites and coxal plates, directed laterofrontally; on pereonites 5-6 demarcated from tergites by a distinct suture, but fused rigidly; coxal plate 5 very large, broadened, directed ventrally; pereonite 7 with a weakly demarcated suture between tergite and coxal plate.

Antennule (fig. 2) with 3 subequal peduncular articles, surpassing the distal end of second peduncular article of antenna; first very broad, as long as second and third together, ventrally with a feather-like bristle; second somewhat broader and longer than third, dorsomedially with 3 feather-like bristles; first flagellar segment very short and ring-shaped, dorsomedially with 2 feather-like bristles; second flagellar segment distally with 3 relatively short and thick aesthetascs in two groups, 4 short simple setae in a group and a feather-like bristle; all articles except first flagellar article dorsomedially with a seta.

Antenna with 5 peduncular and 4 flagellar articles, about half as long as body; first peduncular arti-

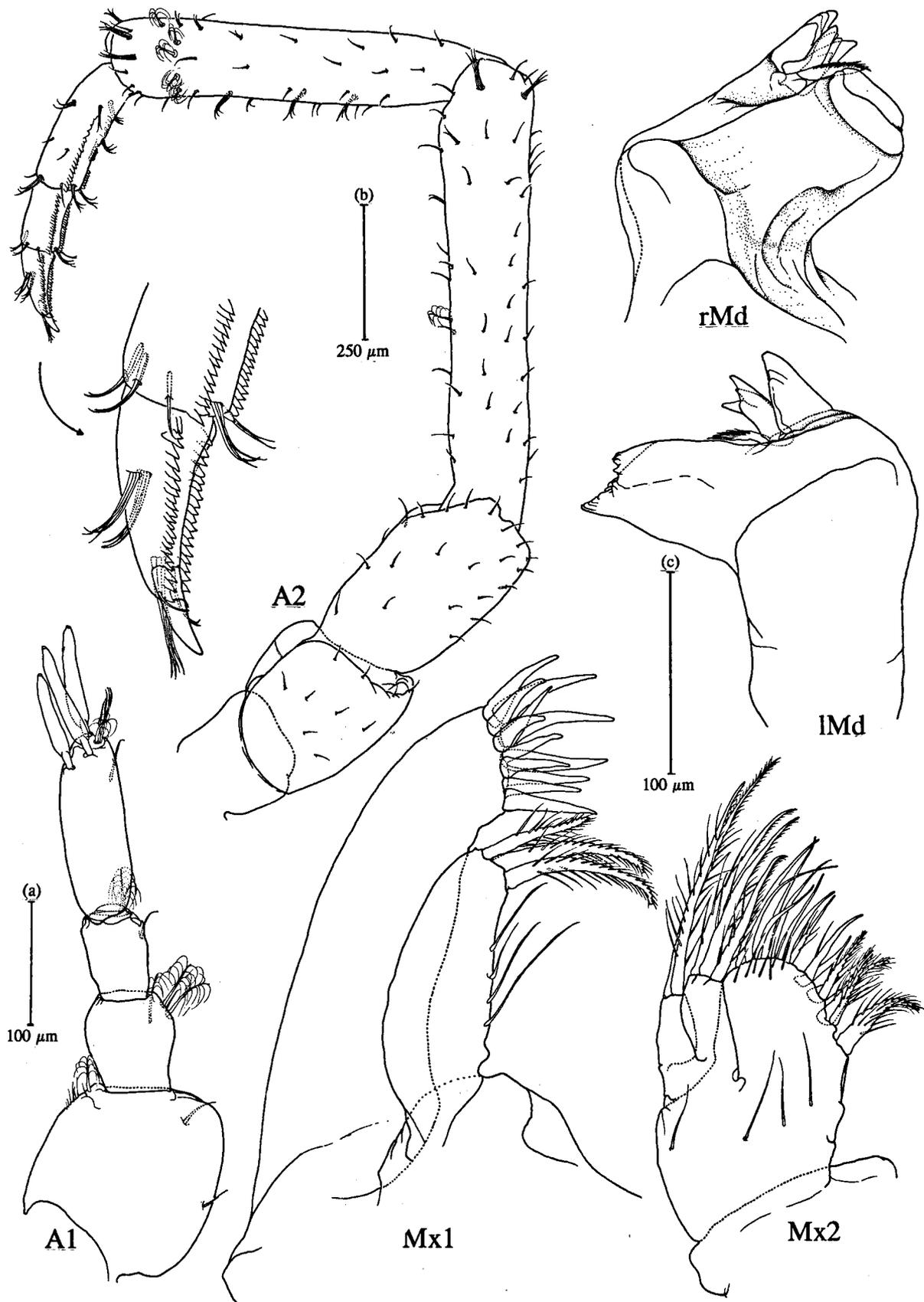


Fig. 2. *Neastacilla magellanica* (Ohlin, 1901), female, 4.9 mm: (a) for A1; (b) for A2; (c) for rMd, IMd, Mx1 and Mx2.

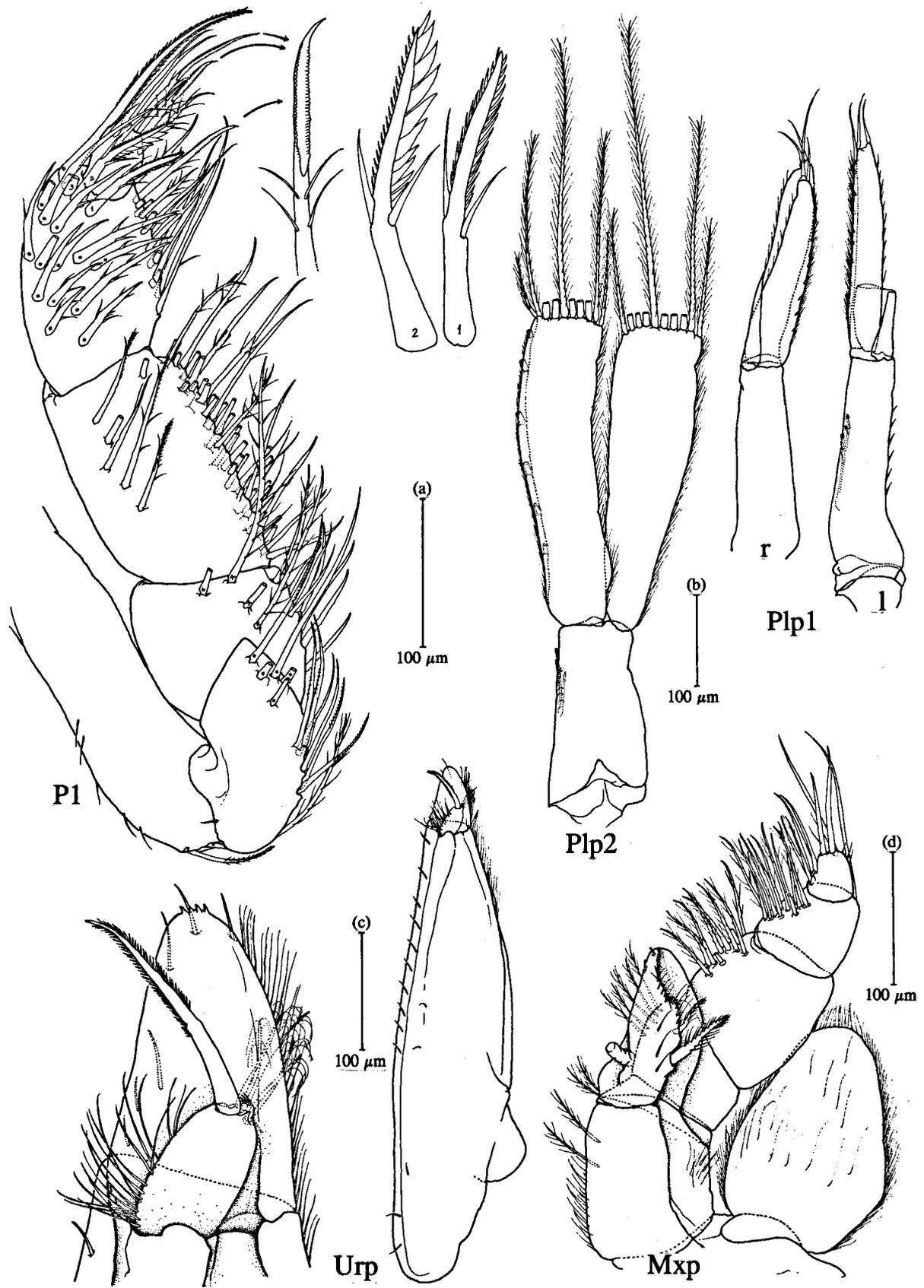


Fig. 3. *Neastacilla magellanica* (Ohlin, 1901), female, 4.9 mm: (a) for P1; (b) for Plp1 and Plp2; (c) for Urp; (d) for Mxp.

cle short and narrower than second; second shorter and broader than third; fourth longer than fifth, ventrally a feather-like bristle, distally and laterally two groups of setae, each of which consists of little setae; fifth twice as long as third, distolaterally with 5 feather-like bristles, distally and ventrally with several groups of setae. Flagellum of 4 articles, two thirds of the length of fifth peduncular article; first longest; second and third of similar length; third distally narrower; on the first 3 segments ventrally cuticular scales in two rows; ventrally and dorsally especially on the distal margin some groups of setae; last article very small and claw-like.

Mandibles asymmetrical, without palp. Pars incisiva of right mandible smaller than left, with 4 distal teeth; lacinia mobilis a little smaller than pars incisiva, with 5 teeth, ventrally with a brush-like spine; pars molaris strong, broad and with concave grinding surface, smooth margin. Pars incisiva of left mandible with 3 teeth; lacinia mobilis with 3 large teeth, proximally a brush-like spine as on the right mandible; pars molaris longer than on right mandible, apically narrower, concave grinding surface with indented margin.

Medial endite of maxillula, apex bearing 3 strong bristles with dense setules, directed medially; lateral bristle a little smaller than the others. Lateral endite longer and larger than medial endite, apically with 12 relatively short and strong spines, directed medially and slightly curved.

Maxilla of 3 endites; inner endite broader, with 15 spines in three groups; 5 spines densely setosed, 3 of these spines thick; sparsely setose spines on distomedial margin; 7 longer, simple setae; medial endite apically with 3 and lateral endite with 2 serrated long spines, which are finely serrated on distal third. Lateral spines are always longer than medial ones and all spines are curved medially.

On medial margin of endite of maxilliped (Fig. 3) a large and a small strong spine-like, serrated seta, directed inwards towards maxilla; laterally on endite a coupling hook (retinaculum), directed medially. Epipod long-oval, surpassing second palpal article, margin with fine setae. Palp of 5 articles; first very short, third longest and broadest, last smallest; all articles medioventrally with setulated setae.

Pereopod 1 (Fig. 3) not much smaller than pereopods 2-4 ($P1 : P2 : P3 : P4 = 0,75 : 0,83 : 0,93 : 1$), with long basis, distally triangular ischium, broad merus, rectangular carpus, propodus; dactylus very small, without claws, with 3 apical and 2 subapical setae; propodus shorter than carpus, medially several thick serrated or setulated setae in five rows. For details of setation see fig. 3 (setae marked with proximal dot similar to type 1; setal group 3: similar to type 2; group 4: similar to type 1). Carpus and merus with sparsely setulated setae (marked proximally with a cross); ischium with short serrated setae (marked with circle); basis with setulated and serrated setae.

Pereopods 2-4 (fig. 4) rather similar and slender; dactylus very small and claw-like; propodus, carpus and merus of similar length; ischium the shortest article; ventral long medially directed setae in two rows, surrounding distally the dactylus; a row of small setae between the two rows of long setae; pereopod 4 longest, its basis with single long seta.

Pereopods 5-7 (fig. 4) stronger than anterior pereopods; dactylus shorter and narrower than propodus, distally with a dorsal large claw and a small hook, which is ventrolaterally directed (fused second claw?), medially 3 setae, laterally a single seta; propodus dorsolaterally with a feather-like bristle; carpus short, dorsomedially a feather-like bristle on distal margin; merus shorter than carpus; basis longest on pereopod 5, which is the longest pereopod.

Protopod of pleopod 1 (fig. 3) longer and narrower than that of pleopod 2, ventromedially with 4 coupling hooks; exopod little longer than endopod, apically with 2 simple setae; proximal area of endopod laterally surrounded by exopod, apically with 2 or 3 simple setae, medially with short setae.

Protopod of pleopod 2 ventromedially with 4 coupling hooks; exo- and endopod of similar size, only proximal area of exopod narrower than of endopod; exopod apically, endopod apically and medially with long swimming setae.

Uropod biramous (fig. 3); lateral margin only with short hair-like setae, medial margin with a row of small setae; surface smooth; endopod much smaller than exopod, medially with several long fine setae; endopod apically with a long strong and distally fine

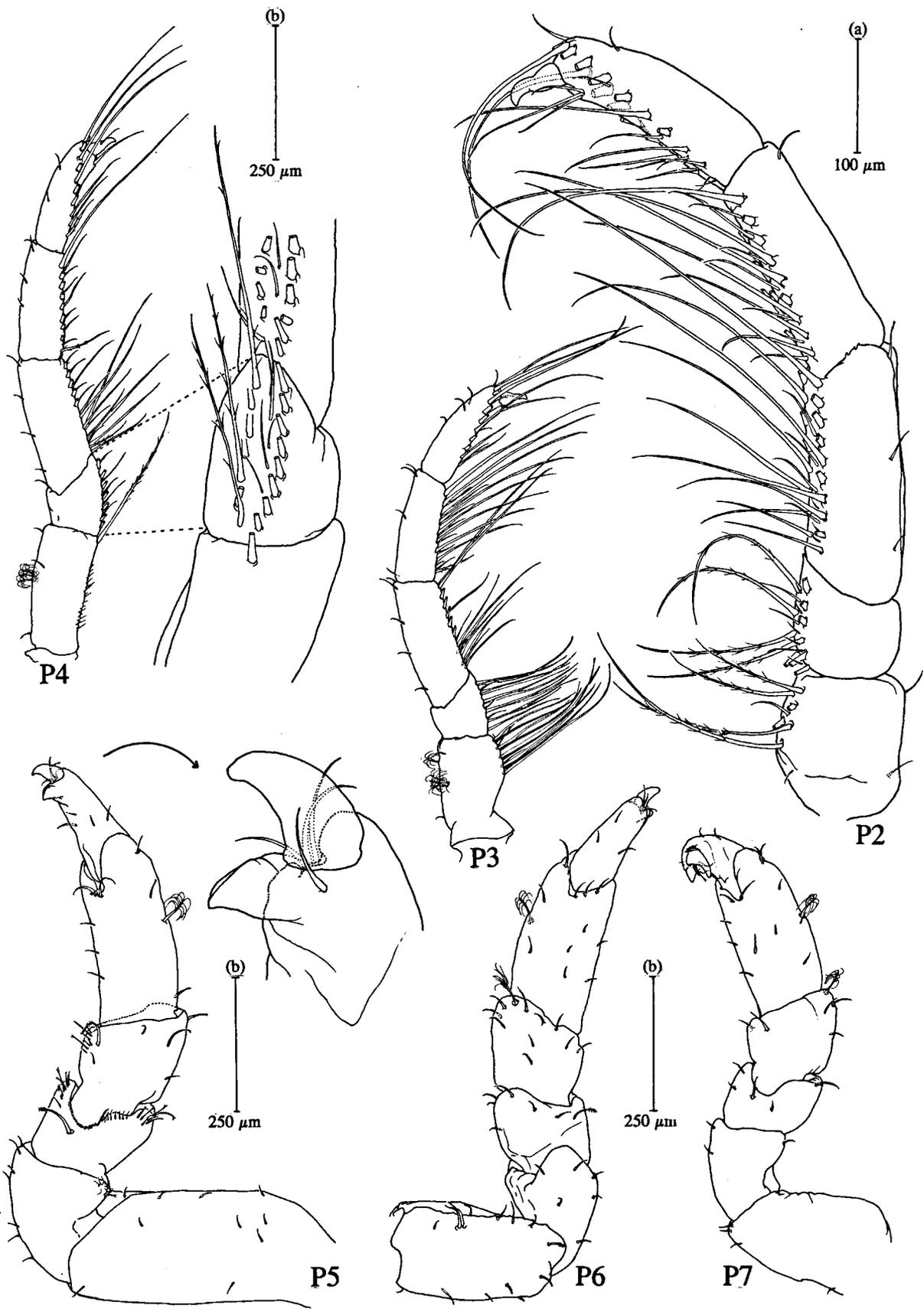


Fig. 4. *Neastacilla magellanica* (Ohlin, 1901), female, 4.9 mm: (a) for P2; (b) for P3-P7.

serrated seta, surpassing the margin of exopod.

Discussion

According to Tattersall (1921) the species belongs to his genus *Neastacilla* (type species: *N. falclandica* (Ohlin, 1901)), where mouthparts are not laterally covered by a cephalothoracic fold and pleonites are fused to a single somite. The latter feature is generally present in all arcturids, differences exist in the depth of fusion lines, which usually are visible between the first 3 pleonites. The present material proved that mouthparts are not visible in lateral view, a character attributed by Tattersall (1921) to the genus *Astacilla*. Characters of generic importance are the short flagellum of the antenna 2 with its ventral scales and the claw-like last article, the setation of pereopods, the peculiar dactylus of the pereopods 2-4 and of pereopods 5-7.

Nordenstam (1933) assumed that the shape of pereopod 1 and of the uropods are diagnostic for *Neastacilla*: "The dactylus is not expanded and tapers towards the setiferous end; claw is absent" (p. 119). Furthermore the second uropodal ramus has a long apical seta. These are indeed differences to *A. longicornis* (type species of *Astacilla*), but other hitherto described species of *Neastacilla* and *Astacilla* vary in these characters.

Hale (1946) proposed to avoid separation of *Neastacilla* from *Astacilla*, an opinion shared by Schultz (1981), who composed a new diagnosis for the genus *Astacilla*, while Lew Ton & Poore (1986) seemed to accept the genus *Neastacilla*.

Without thorough redescriptions of the species in question a well-founded analysis of the composition of the genera *Astacilla* and *Neastacilla* is not possible. In view of these problems we propose to keep *N. magellanica* in the genus *Neastacilla* due to its similarity with the type species. *N. magellanica* differs from *N. falclandica* in its broader uropodal small ramus and shorter pleotelson, for further comparison a more detailed description of *N. falclandica* is needed. Further species are not known from the Magellanic region.

Litarcturus americanus Beddard, 1886

Arcturus americanus: Benedict 1898, p. 48

Arcturus americanus: Ohlin 1901, p. 269-270

Antarcturus americanus: Nordenstam 1933, p. 135-138; Nierstrasz 1941, p. 26; Kussakin 1967, p. 291

Litarcturus americanus: Brandt 1990, p. 89

For the exact identification of our material and the comparison with the holotype a comprehensive description of the specimen from the Magellan Strait was necessary.

Material

Immature female, length: 11 mm, from Magellan Strait: 52°46' 5"S, 70°01'9"W, 35 m, slates, barnacle clusters; Holotype: female, length: 21 mm, British Museum (Natural History), Nr. CR 92/42T, locus typicus: east of Magellan Strait: 52°20'S, 67°39'W, 99 m, sand; 3 specimen and 7 slides, Swedish Museum of Natural History; K-18778 (Mexico), K-18820 (Martha-Bank), K-18785 (Atlantic Ocean), Zoologisches Institut und Zoologisches Museum (Univ. Hamburg).

Distribution

East coast of Patagonia (Benedict 1898): 42°24' 00" S, 61°38'30"W, 77 m; 48°37'00"S, 65°46'00"W, 104 m; Martha's Bank, east of Magellan Strait (Ohlin 1901): 52°50'S, 70°35'W, 77-180 m, pebbles, sandy and stony bottom; Falkland island, Port William (Nordenstam 1933): 51°40'S, 57°41'W. 40 m, sand and stones with algae; Tierra del Fuego (Kussakin 1967): 75-680 m.

Description

Body (fig. 5) dorsally with a pair of spines on each segment forming longitudinal rows and with many small tubercles. Behind a pair of small supraocular tubercles follows a pair of large spines dorsally on cephalothorax, between them two very small tubercles along body midline. Eyes large. Dorsal spines on pereonites 2-4 large, on pereonite 1 shorter; dorsal pairs of spines on pereonites 5-7 smaller and inserting closer to each other; Spines also on pleonites, on pleonite 2 largest. On pereonites 3-4 between dorsal pair of spines a pair of tubercles, on pereonite 5

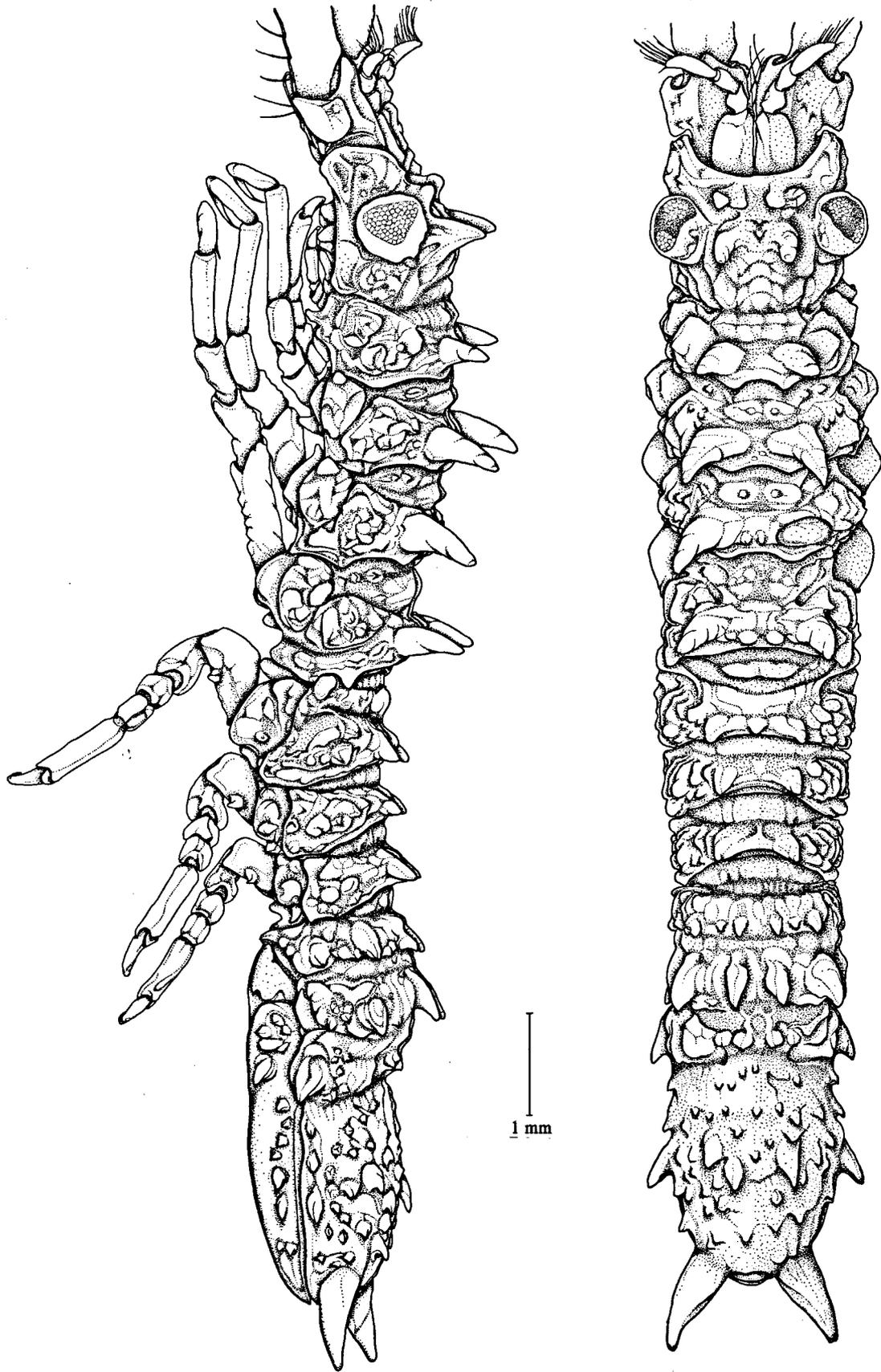


Fig. 5. *Litarcturus americanus* (Beddard, 1886) from the Magellan Strait, female, 11 mm.

a single tubercle. On last half of pleotelson these spines not discernible. Frontal margin of cephalothorax deeply concave, laterally head largely covered by the protruding eyes, eyes with triangular pigmented area. Mouthparts visible in lateral view. Pereonite 1 fused with head rigidly, fusion line marked by a shallow dorsal and deep lateral furrow. Pereonites slightly increasing in breadth up to pereonite 3 and up to pereonite 4 in length, then becoming narrower; pereonites becoming consecutively shorter up to pereonite 7; pereonite 7 and pleonite 1 of similar size, narrowest. All pleonites fused completely; anterior three pleonites separated from each other by a shallow furrow in lateral view; pleonite 2 in lateral view higher than pleonite 1 and 3; pleonite 3 broadest owing to a pair of lateral elongated tubercles. Middle area of the last half of pleotelson as broad as pleonite 3, with many tubercles in various sizes and a pair of laterally protruding spines. Pleotelson caudally with a pair of large furca-like spines; apex rounded. Coxal plates of pereonites 2-4 fused with tergites, with tubercles, directed laterofrontally and surpassing the anterior border of segment; coxal plates on pereonites 5-7 directed ventrally, therefore not visible in dorsal view, also fused with tergites rigidly, but demarcated by a suture.

Antennule (fig. 6) with 3 peduncular articles, surpassing second peduncular article of antenna; first article broad and longer than second and third together, ventrally with a feather-like bristle; second somewhat longer and broader than third, ventrally with a feather-like bristle and dorsally with five; first flagellar segment very short and ringshaped, dorso-laterally with 3 feather-like bristles; second flagellar segment somewhat shorter than first peduncular article, with 12 aesthetascs in six groups, each in addition to aesthetascs with 2 or 3 small simple setae, apically with a small feather-like bristle.

Antennae of our specimen (fig. 6) asymmetrical; left antenna of 5 peduncular articles and 3 flagellar segments, as long as 3/4 of bodylength (A2:8.4 mm); right antenna of 7 flagellar segments (probably normal number). First peduncular article very short, one third of second; second half as long as third; distally on second and proximally on third article on ventral surface with relatively long setae; fourth longest; fifth

a little shorter than fourth.

Mandible (fig. 7) asymmetrical, without palp; pars incisiva of right mandible smaller than left, with a large and 4 small distal teeth; lacinia mobilis a little smaller than pars incisiva, with 5 teeth and a slender proximal spine; pars molaris strong, no large grinding surface, but with indented margin; a row of setae on proximal side, directed caudally. Pars incisiva of left mandible with 3 large distal teeth; lacinia mobilis with 3 relatively strong teeth, and with 5 setae-like spines; pars molaris strong, broad concave grinding surface with indented margin; a row of setae on proximal side, directed caudally.

Medial endite of maxillula (fig. 7) bearing 3 strong setulated setae, directed medially; lateral seta smallest. Lateral endite of maxillula longer and larger than medial endite, with 10 relatively short, strong, indented and slightly curved spines.

Maxilla (fig. 7) of 3 endites; inner endite broadest, with 7 thick, 5 thin setulated setae, and a simple seta; medial and lateral endite, apex bearing 3 distally serrated setae.

Endite of maxilliped (fig. 7), apically with 14 short, thick and spine-like setulated setae; no coupling hooks; epipod oval, surpassing second palpal article, on lateral margin with few short setae; palp of 5 articles, third longest and broadest, last smallest; medioventrally with dense brush of long bristles and short setule-bearing setae, tip split in two.

Pereopod 1 (fig. 7) small, all articles densely setose on medioventral margin with two types of setae: one long, thin and apically split, the other generally shorter, broader and distally on two sides finely serrated; dactylus a little smaller and narrower than oval propodus, with a large, strong apical and a small, subapical claw, between them a short seta; small trapezoidal carpus, broadened merus, narrower ischium; basis as long as and narrower than propodus, distoventrally only with thin, apically split setae of varying length.

Pereopods 2-4 (fig. 8) rather similar; pereopod 2 with the longest propodus and carpus; pereopod 4 longest, above all with long basis, ischium and dactylus also rather long; dactylus of pereopods 2-3 with an apical and a smaller, spine-like subapical claw, between them a short seta, on pereopod 4 with 2

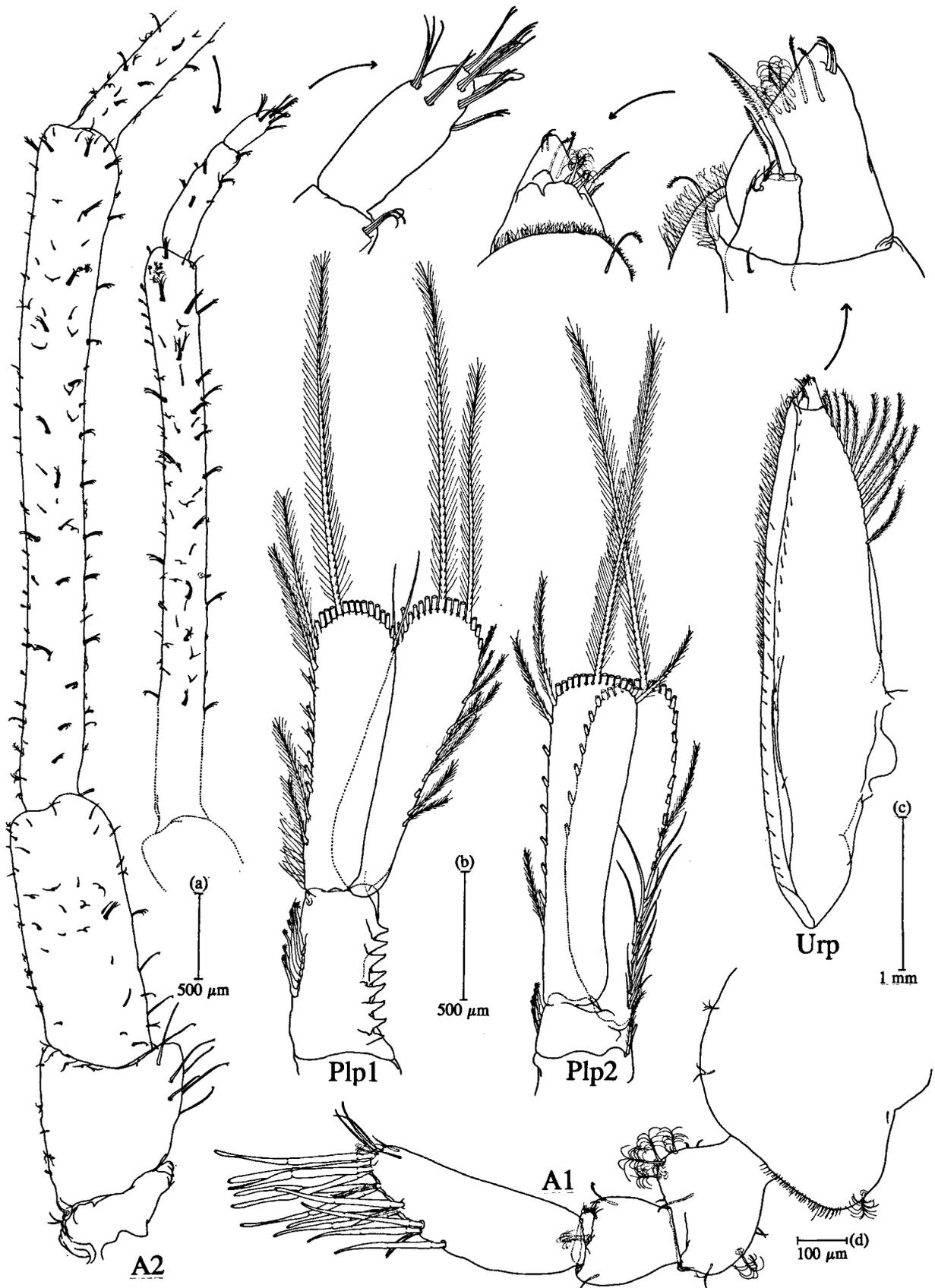


Fig. 6. *Litarcturus americanus* (Beddard, 1886) from the Magellan Strait, female, 11 mm: (a) for A2; (b) for Plp1 and Plp2; (c) for Urp; (d) for A1.

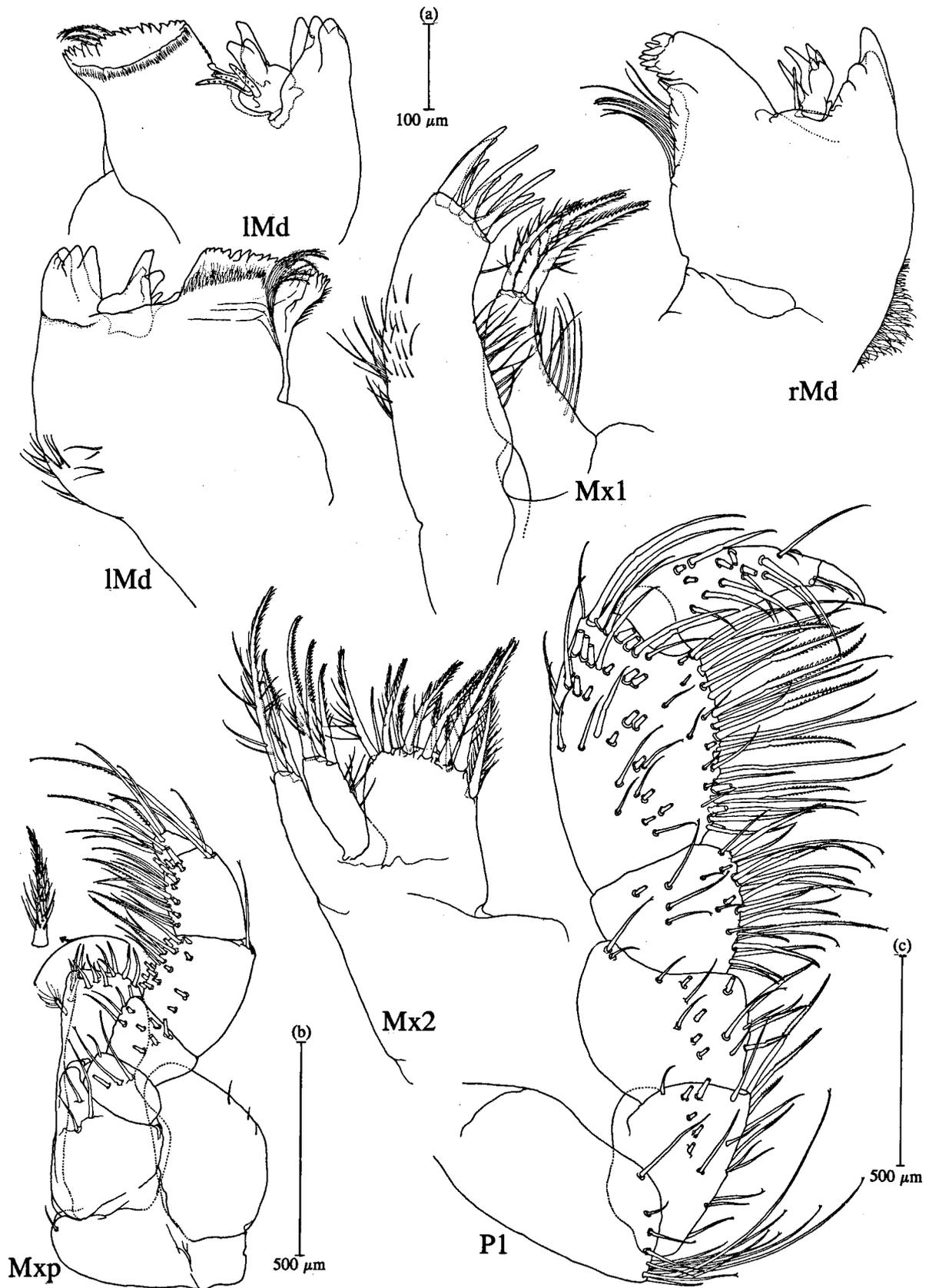


Fig. 7. *Litarcturus americanus* (Beddard, 1886) from the Magellan Strait, female, 11 mm: (a) for rMd, lMd, Mx1 and Mx2; (b) for Mxp; (c) for P1.

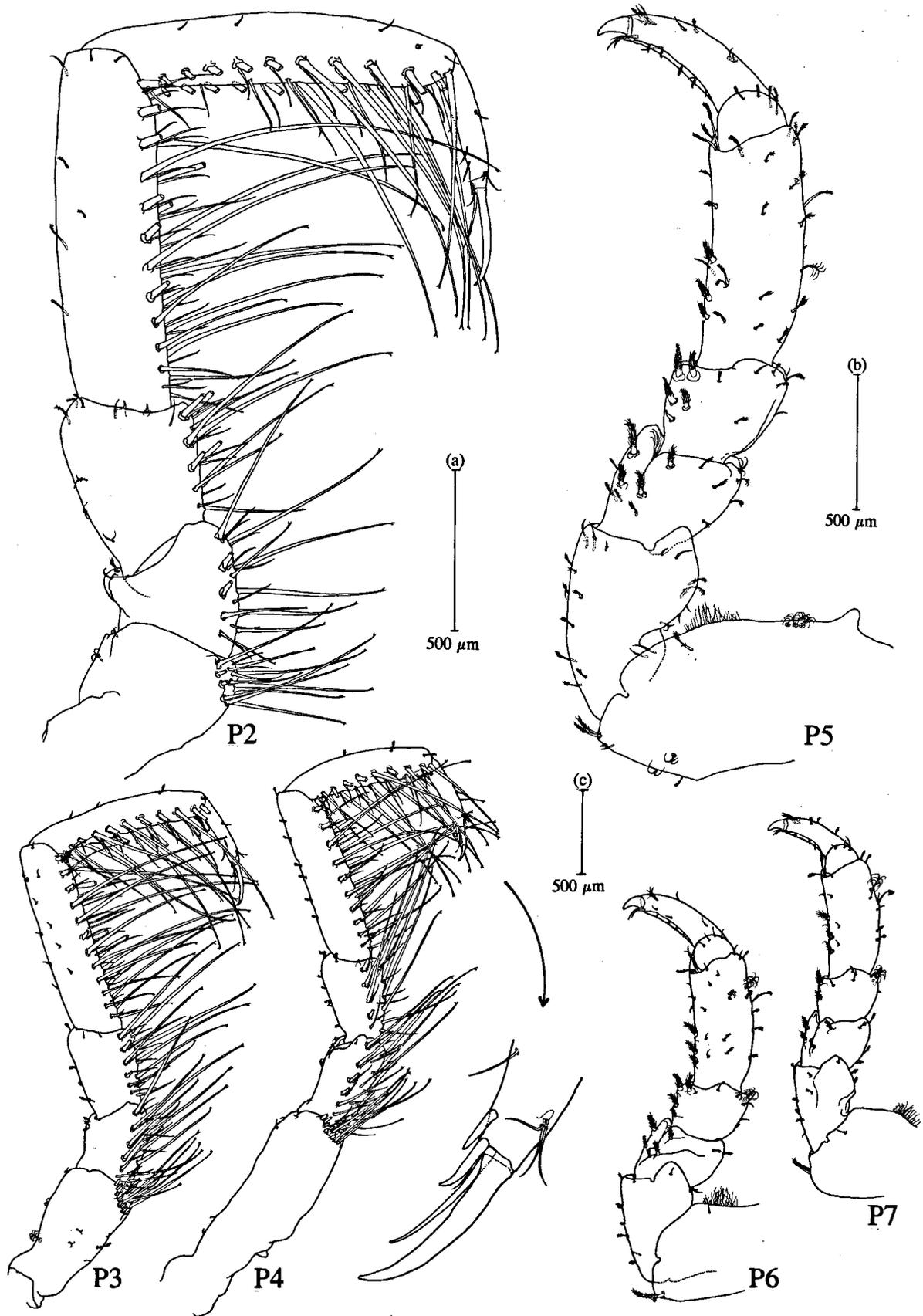


Fig. 8. *Litarcturus americanus* (Beddard, 1886) from the Magellan Strait, female, 11 mm: (a) for P2; (b) for P5; (c) for P3, P4, P6 and P7.

(instead 1) small spine-like subapical claws; all articles except dactylus and basis ventrally with 2 longitudinal rows of groups of long setae, of which the outermost setae longer than the medial ones, between these rows a row of single short setae; basis only posterodistally with a tuft of setae.

Pereopods 5-7 (fig. 8) length similar to anterior pereopods, however carpus a little shorter than merus; pereopod 5 longest; only basis with a spine-like projection, proximally with little feather-like bristles; ischium longer than carpus or merus; carpus and merus with 4 short serrated spine-like bristles in two rows, and propodus with 3 in a single longitudinal row; carpus distally with one, propodus with several feather-like setae; dactylus with a larger apical and a very short subapical spine-like claw, between them 2 or 3 simple setae.

Protopod of female pleopod 1 (fig. 6) four times longer than that of pleopod 2, laterally with 8 triangular, spine-like tubercles in a row, medially with 7 coupling hooks; exopod little longer than endopod; exopod laterally and apically with long swimming setae, on endopod medially and apically. Protopod of pleopod 2 medially with 5 coupling-hooks; exopod margin with long swimming setae, on endopod only apically and medially.

Uropod (fig. 6) biramous; sympod with 12 long setae on distolateral margin; surface laterally with many tubercles; medially a row of short setae; exopod ventrally with 5 feather-like bristles and 2 short serrated setae, apically with 2 short simple setae; endopod small with 2 strong, distally finely serrated setae, directed medially, a short, spine-like seta.

Discussion

The present material is nearly identical with Beddard's specimens from the Magellan Strait (Beddard, 1886). *Litarcturus americanus* is superficially similar to *L. stebbingi*, the only other species of the genus (according to Brandt 1990) that bears dorsal pereonial spines. *L. stebbingi* has larger lateral tubercles, and an acute pleotelsonic apex, the species is known from the Kerguelen Islands and needs a redescription. These two species differ somewhat from the remaining species of the genus proposed by Brandt (1990). As in *Antarcturus*, in *Litarcturus* the flagellum

of antenna 2 is elongated, multiarticulated (an important apomorphic character in comparison e.g. with *Mixarcturus*, *Fissarcturus*, *Neoarcturus* etc.), but most species of *Litarcturus* have no tergal spines and short or blunt terminal pleotelsonic spines. In *L. americanus* and *L. stebbingi* dorsal tergal spines are present, also terminal pleotelsonic spines, though not as acute as in species of *Antarcturus*. A character found in all *Litarcturus* species is the reduction of supracoxal spines, which are absent or blunt. Therefore *L. americanus* is tentatively kept in the genus *Litarcturus*.

REMARKS ON THE GENERA *RECTARCTURUS* SCHULTZ, 1981 AND *NEOARCTURUS* BARNARD, 1914

Poore (1991) proposed the synonymy of *Microarcturus* Nordenstam, 1933 with *Neoarcturus* Barnard, 1914 and pointed out that *Rectarcturus* Schultz, 1981 can hardly be discerned from *Neoarcturus*. He presented a list grouping former species of *Microarcturus* according to known similarities with other genera and stressed the necessity of redescriptions as prerequisite for a better classification (see also Poore & Bardsley 1992). Our material contained species assigned by Schultz (1981) to *Rectarcturus* and we take the opportunity to redescribe them.

The diagnosis for *Rectarcturus* presented by Schultz (1981) contains for the most part general arcturid characters (lateral eyes, "straight body", cephalon fused with pereonite 1, antenna 2 shorter than body, pleon with no free segments). Features interesting for supraspecific classification seen in species placed in *Rectarcturus* are the pentagonal shape of the telson area with posterolateral points (= possibly modified dorsolateral or posterior pair of spines), the absence of ventral scales on the flagellum of antenna 2, the flagellum is short (3 articles), the dorsal claw of pereopods 2 and 3 is not elongated to a seta-like form, the dactylus of P2 to P4 has no filter setae, pereopods 5 to 7 lack ventral spike-like spines, pereonite 4 is not distinctly longer than 3, long dorsal spines are absent on cephalon and pereonites.

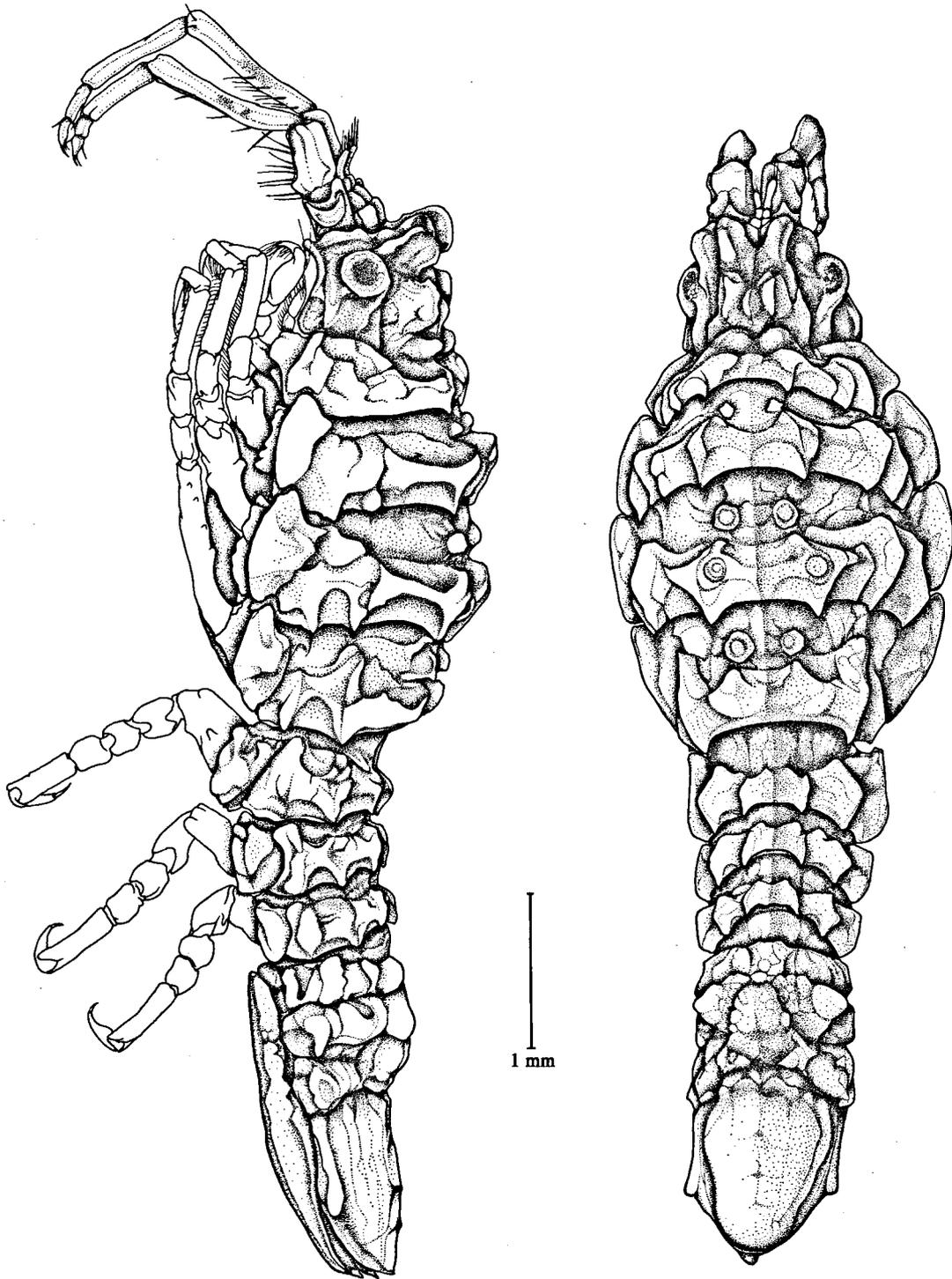


Fig. 9. *Rectarcturus kophameli* (Ohlin, 1901) from the Magellan Strait, female, 11 mm.

Some differences of *Rectarcturus* to the diagnosis of *Neoarcturus* sensu Poore (1991) are: dactylus of P2, 3 with elongated claw (unguis) in *Neoarcturus*, male pleopod 1 exopod specialized in *Neoarcturus* (thickened, distolateral corner forming a projecting lobe, lateral margin with combs of setae). Checking published descriptions of the species in question it seems that the specialized male pleopod 1 is an important apomorphy characteristic for some species related to the type of *Neoarcturus*. These species are: *N. oudops* (type), *N. biserialis*, *N. dayi*, *N. laevis*, *N. longispinis*, *N. barnardi*, *N. ornatus*, *N. quadriconis*, *N. youngi*; redescrptions are needed for *N. barnardi*, *N. nordenstami*, *N. similis*, *N. tannerensis*. As far as known most of these species seem to have only a single strong seta on the small uropodal ramus. *Rectarcturus kophameli* and *R. tuberculatus* share with these species of *Neoarcturus* the pentagonal outline of the telson, the absence of a pair of prominent dorsolateral telsonic spines, a more or less elongated dorsal claw of pereopods 2 and 3 (length variable). But these *Rectarcturus* species do not have the apomorphic male pleopod 1. It seems that these form a clade separated from the above-mentioned *Neoarcturus*.

Another group of hitherto described *Neoarcturus* species can be discerned clearly from the species similar to the type *N. oudops*, namely those resembling *N. elongatus*. These do not have the derived male pleopod 1 seen in *N. oudops*, the distal pleotelson is not pentagonal but long-oval, with acute apex and a pair of long dorsolateral spines. These features are seen in *N. elongatus*, *N. minutus*, *N. robustus*, *N. scelerosus* and in "*Rectarcturus*" *patagonicus*; the first four of these have furthermore an elongated second article of antenna 1 and an apomorphic slender propodus of P1. Rather similar seem to be also *N. nodosus* and *N. rugosus*. Thus *R. patagonicus* is more similar to *Neoarcturus* and is transferred to this genus. It does not have the pentagonal pleotelson of *Rectarcturus* species and might be related to the *N. elongatus* group. *N. mawsoni* as described by Hale 1946 (possibly not sensu Brandt, 1990) resembles more "*Rectarcturus*" *patagonicus* with its peculiar elongated pereonite 4. Further species are not well known, to analyze their relationships is not pos-

sible (e.g. *N. serrilatus*, *N. simplicissimus*, *N. stebbingnordenstami*).

We are convinced that future research can stabilize supraspecific classification on the basis of phylogeny for these groups of species, but for the moment a pragmatical solution is to keep the established genera at the present state. We redescribe two species of *Rectarcturus*, the third one (*R. patagonicus*) is transferred to *Neoarcturus*.

***Rectarcturus kophameli* (Ohlin, 1901)**

Arcturus kophameli Ohlin, 1901: p. 272

Microarcturus kophameli (Ohlin): Nordenstam 1933, p. 128

Rectarcturus kophameli (Ohlin): Schultz 1981, p. 68

Material

Female, length: 7 mm (52°37,5'S, 70°06,8'W); 3 females, 9 males and some manca from Strait of Magellan: 52°17,0'S, 69°20,5'W, 10-11 m, stone and shell on surface; 52°32,5'S, 69°53,4'W, 11 m, shell and clay; 52°34,1'S, 69°58,1'W, 10 m, shell and clay; 52°34,5'S, 69°52,0'W, 12 m, barnacle clusters; 52°37,5'S, 70°06,8'W, 38-41 m, shell, pebbles and slates; 52°38,5'S, 70°11,5'W, 12 m, barnacles and clay; 52°46,6'S, 69°58,5'W, 11 m, barnacles and clay.

Holotype: gravid female, length: 11 mm.

Type locality: Northern Argentine Basin; 38°S, 50°W; 95 m.

Distribution

Northern Argentine Basin (38°S, 50°W); 38°S, 56°W, 52 fathoms; much further south of the type locality at two stations near Isla de los Estados, 84-208 m; Strait of Magellan, Patagonia.

Description

Body dorsally with large, blunt tubercles, arranged longitudinally (fig. 9). Frontally on cephalothorax a pair of broad and blunt supraocular spines, behind that pair a pair of less elevated tubercles, between them a single large dorsomedian tubercle, in lateral view somewhat caudally displaced. Pereonite 3 broadest, area of pleonite 1 narrowest. Pereonite 1 fused with head, discernible by a transverse furrow. Dorsally on each pereonite a pair of dorsomedian elevations and two pairs of lateral elevations, arranged longitudinally along body, projecting caudally beyond the border of the segments on pereonites

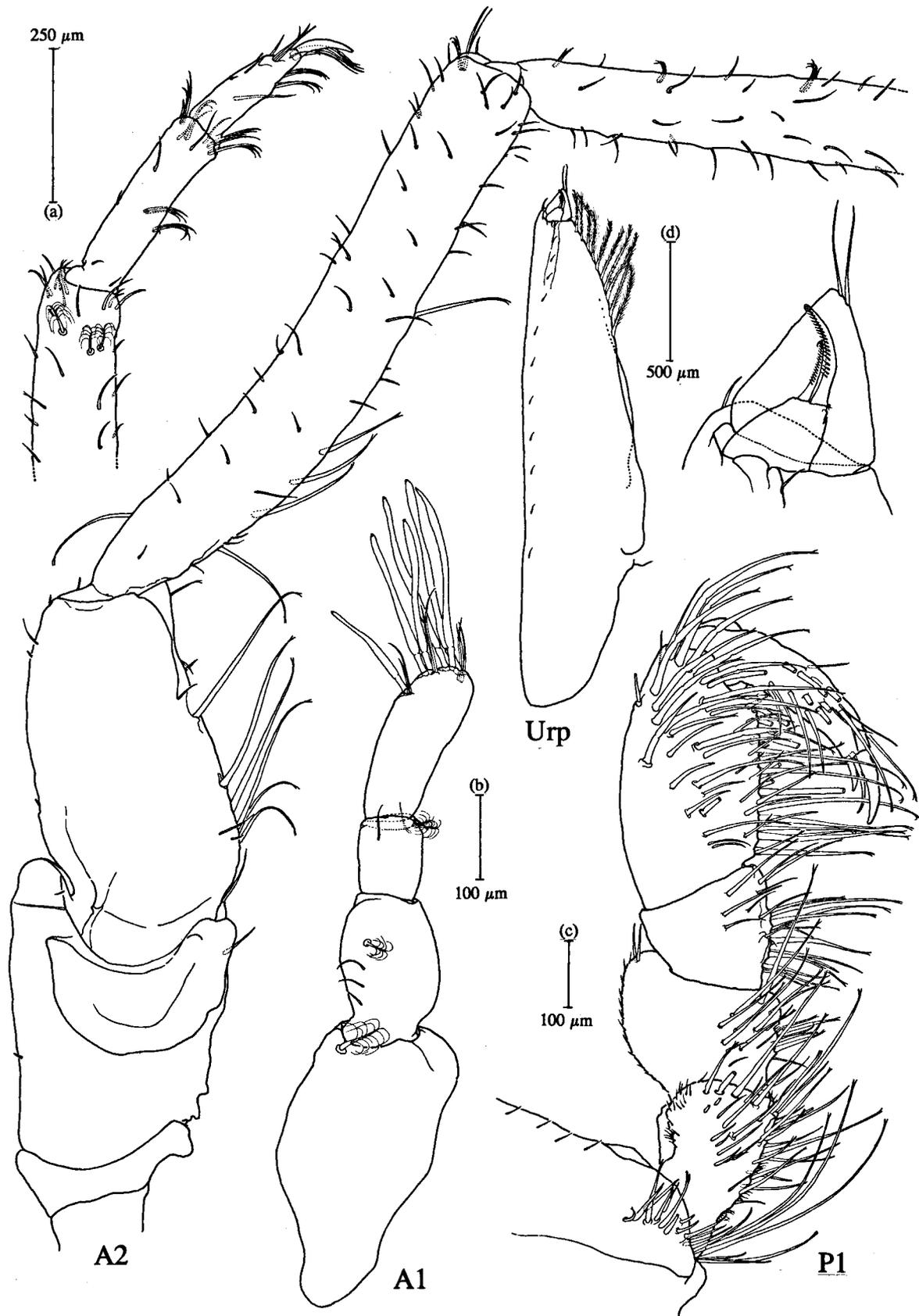


Fig. 10. *Rectarcturus kophameli* (Ohlin, 1901) from the Magellan Strait, female, 11 mm: (a) for A2; (b) for A1; (c) for P1; (d) for Urp.

1-3; supracoxal area of pereonites 1-4 anterior edge projecting beyond the border of segments frontally, especially on pereonites 2-4. Coxal areas on pereonites 5-7 demarcated by a distinct suture, but rigid. All pleonites fused, transverse shallow grooves indicating pleonites 1-3; pleonite 2 with a pair of strong dorsolateral tubercles. Posterior half of pleotelson more or less flat dorsally. A pair of posterolateral spines of pleotelson very small, blunt. Apex of pleotelson rounded.

Antennule (fig. 10) with 3 peduncular articles, surpassing half of third peduncular article of antenna; first article broad and longer than second and third together, ventrolaterally with a feather-like bristle; second somewhat shorter than second flagellar article, laterally with a feather-like bristle; first flagellar article very short, ring-shaped, dorsolaterally with 3 feather-like bristles; second flagellar article with 6 aesthetascs in 3 groups, first group with an aesthetasc and a simple seta, second group with 2 aesthetascs and 2 setae, third group with 3 aesthetascs and 3 simple setae.

Antenna (fig. 10) somewhat shorter than half of the bodylength (A2: 3,4 mm), with 5 peduncular articles; first article very short, only visible ventrally; second and third articles relatively broad; third article about half as long as fourth; fifth article two thirds of fourth. Flagellum of 3 articles, about as long as third peduncular article; first flagellar article longest and longer than second and third flagellar article together; the last very small, claw-shaped.

Mandibles (fig. 11) asymmetrical, without palp; pars incisiva of right mandible with 4 teeth of various sizes; lacinia mobilis somewhat smaller than pars incisiva, with 5 teeth; pars molaris strong, concave grinding surface with indented margin; a row of long setae on proximal border directed caudally.

Medial endite of maxillula (fig. 11), apex bearing 3 strong setae with dense setules, directed medially; lateral setae smallest. Lateral endite longer than medial endite, with 10 relatively short, strong, indented and medially curved spines.

Maxilla (fig. 11) of 3 endites; inner endite broader than the other two endites together, with 5 thick and large setulated setae, 4 small setae and 6 thin and long sparsely setulated setae; medial endite apically

with 3 and lateral endite with 2 sparsely serrated, distally finely indented spines.

Apical margin of endite of maxilliped (fig. 11) with 12 short, spine-like setae, each with 2 rows of spinules; no coupling hook. Epipod long-oval, surpassing second palpal article; distolateral margin with short setae, proximally on lateral margin indented. Palp of 5 articles, with dense brushes of setule-bearing setae, at tip split in two; third article longest and broadest, last smallest.

Pereopod 1 (fig. 10) small, with long basis, short ischium, broadened merus, short trapezoidal carpus, broad-oval subchelate propodus; dactylus as long as propodus with a large apical claw, a strong seta and a shorter subapical claw. All articles densely setose, with two sorts of setae: one long, thin and split at tip, the other in general shorter, broader and with two rows of combs; basis longest article, only distoventrally with long setae.

Pereopods 2-4 rather similar (fig. 12); pereopod 2 on basis with a spine-like process, pereopod 3 with two, pereopod 4 with four; on basis posterodistally a tuft of setae arranged in a semicircle; ischium, merus, carpus and propodus with three longitudinal rows of setae (filter-setae), namely two lateral rows of groups of two simple setae, of which the outermost setae are longer, and a median row of single setae of small size; dactylus without long setae, strongest on pereopod 4, with 2 claws and a seta (P4), on pereopod 3 with a long claw and two short setae, on pereopod 2 with a long claw and one short seta.

Pereopods 5-7 (fig. 12) of similar proportion as anterior pereopods, only carpus much shorter and propodus somewhat broader than in pereopods 2-4. Pereopod 5 longest; all articles without spines, but on basis of pereopod 5 dorsally a small spine-like process; basis proximally with little feather-like bristles; carpus and propodus distally with a feather-like bristle; dactylus with a large apical and a very short, subapical claw, between them 2 relatively long setae and a short seta on pereopod 5 and 6, on pereopod 7 one small seta.

Pleopod 1 rami (fig. 11) of female: margins bearing long swimming setae, on endopod only apically and medially; protopod of pleopod 1 twice as long as pleopod 2, laterally with a row of small tubercles,

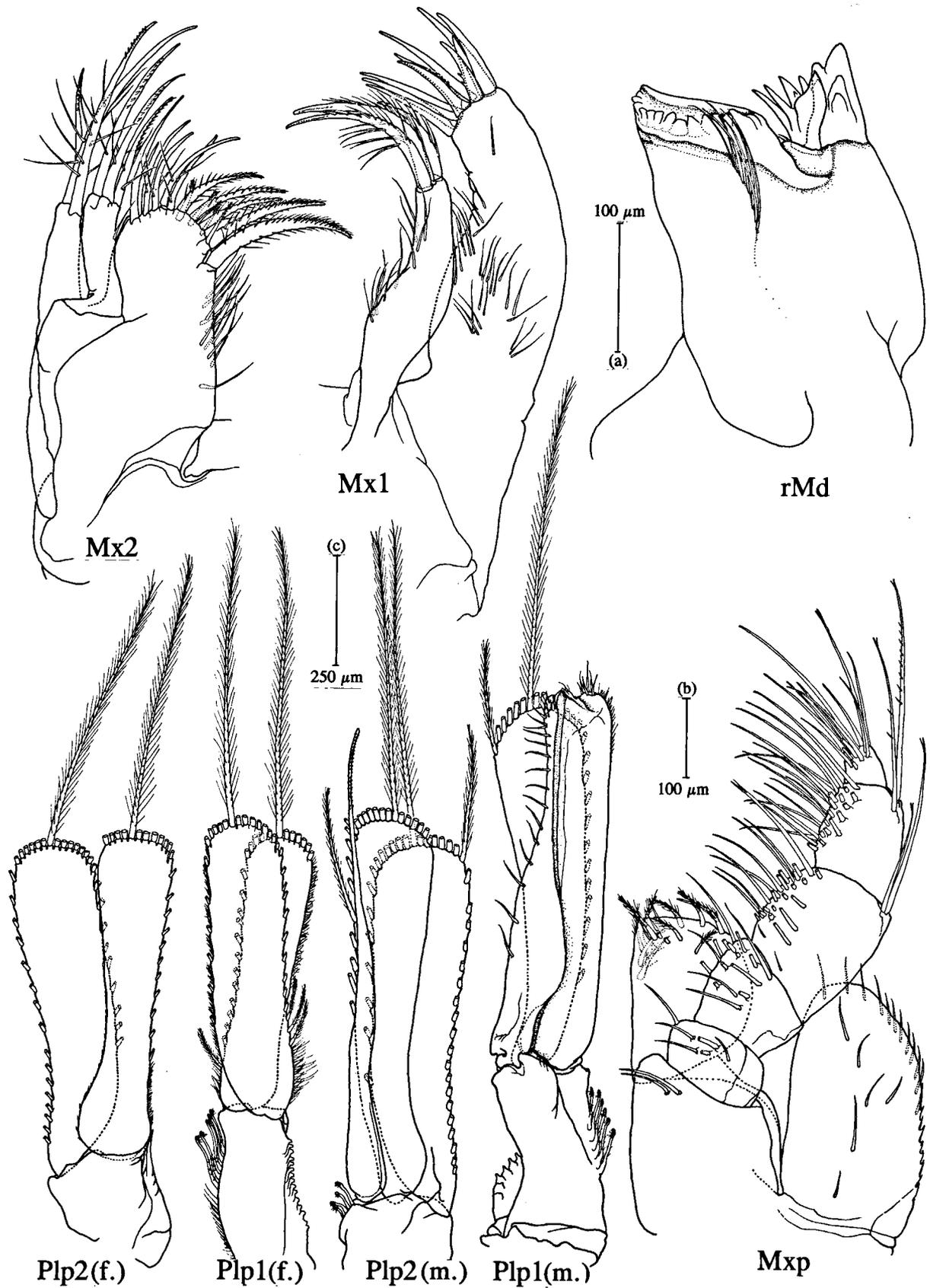


Fig. 11. *Rectarcturus kophameli* (Ohlin, 1901) from the Magellan Strait, female, 11 mm: (a) for rMd, Mx1 and Mx2; (b) for Mxp; (c) for Plp1 and Plp2.

medially 5 coupling hooks; protopod of female pleopod 2 instead of coupling hooks medially with a strong spine-like structure (in male, four coupling hooks). Male with modified pleopods 1 and 2: protopod of pleopod 1 three times longer than of pleopod 2, laterally on a proximal half with a row of small tubercles, medially 6 coupling hooks; endopod of pleopod 1 with a medially protruding basal lobe and a ridge running from this edge diagonally to the distolateral margin, where a tuft of modified short setae inserts; medial and distal margin of exopod with over 25 swimming setae, lateral margin without setae.

Endopod of male pleopod 2 (fig. 11) with long, stiletto-like appendix masculina, surpassing endopod, apically one fifth of it finely indented in two rows; most swimming setae medially and apically; exopod somewhat shorter and broader than endopod, with about 40 setae.

Uropod (fig. 10) biramous, margins bearing distolaterally 10 long setae on sympod, dorsomedially a row of short bristles; surface ventrally without tubercles; exopod with 2 apical simple setae; endopod with 2 strong serrated setae.

Discussion

This is the type species of the genus *Rectarcturus* Schultz, 1981; a detailed redescription is therefore important for the discussion of the monophyly of arc-turid genera. The shape of the pleotelson is diagnostic for the species. *R. tuberculatus* has prominent blunt caudolateral pleotelsonic spines, while they are reduced to rounded knobs in *R. kophameli*.

Rectarcturus tuberculatus Schultz, 1981

Rectarcturus tuberculatus Schultz, 1981: p. 68-70

This species has been found until now only once and was originally only partially described. A detailed redescription was prepared with the present specimens from the Strait of Magellan. For correct identification a comparison with the holotype was necessary. Mouthparts and pleopods of both sexes are described for the first time.

Material

Female, length: 7 mm, (station K 20M OFF 1GRAB; coordinate

unknown); male, length: 8 mm, (52°46,5'S, 70°01,9'W); 15 males, 2 females and 12 mancae from the Strait of Magellan (52°37,5'S, 70°06,8'W, 38-41 m, shell, pebbles and slate; 52°38,5'S, 70°10,5'W, 25 m, clay and slate; 52°46,5'S, 70°01,9'W, 35 m, slate, barnacle clusters).

Holotype: gravid female, length: 9.5 mm, Nat. Mus. Nat. His. Washington, Nr. 181263.

Type locality: North of South Shetland Islands; Eitanin 6-363; 57°09'S, 58°58' W; 58°00'S, 58°50'W; 3477-3590 m

Distribution

North of South Shetland Islands; Strait of Magellan in Patagonia, depth: 25-3590 m.

Redescription

Body (fig. 13) dorsally with many tubercles. Lateral eyes of medium size, protruding. In dorsal view a pair of distally broadened spines between the eyes, somewhat directed frontally. Behind that pair of spines a furrow, demarcated by a pair of shallow elevations, each adorned with about 3 acute tubercles, between that elevations a single dorsomedian tubercle. Area of fusion of cephalothorax and pereonite 1 marked by furrow followed by a narrow transverse tuberculated ridge. On pereonite 1 several lateral and dorsolateral tubercles, caudal margin elevated, tuberculate, with a dorsal pair of caudally directed teeth. On each segment dorsally on caudal margin a pair of elevations, consisting of enlarged tubercles. Lateral edges (supracoxal areas) of pereonites 2-7 with acute protrusions (see dorsal view), largest on pereonites 2 and 3. All pleonites fused, shallow transverse grooves indicating pleonites 1-3. Dorsally on pleonites large tubercles placed close together. Distal half of pleotelson of pentagonal outline, laterally on the edge a moderately large spine. Caudal apex blunt, with shallow notch.

Antennule (fig. 14) with 3 subequal peduncular articles; first article broad; second article a little shorter than second flagellar article, dorsally with 6, ventrally with a single feather-like bristle; first flagellar article very short and ring-shaped, dorsolaterally with 3 feather-like bristles; second flagellar article with 7 aesthetascs in 3 groups, each group with 2 simple setae.

Antenna (fig. 14) longer than half of the body, with 5 peduncular articles; first article very short and only

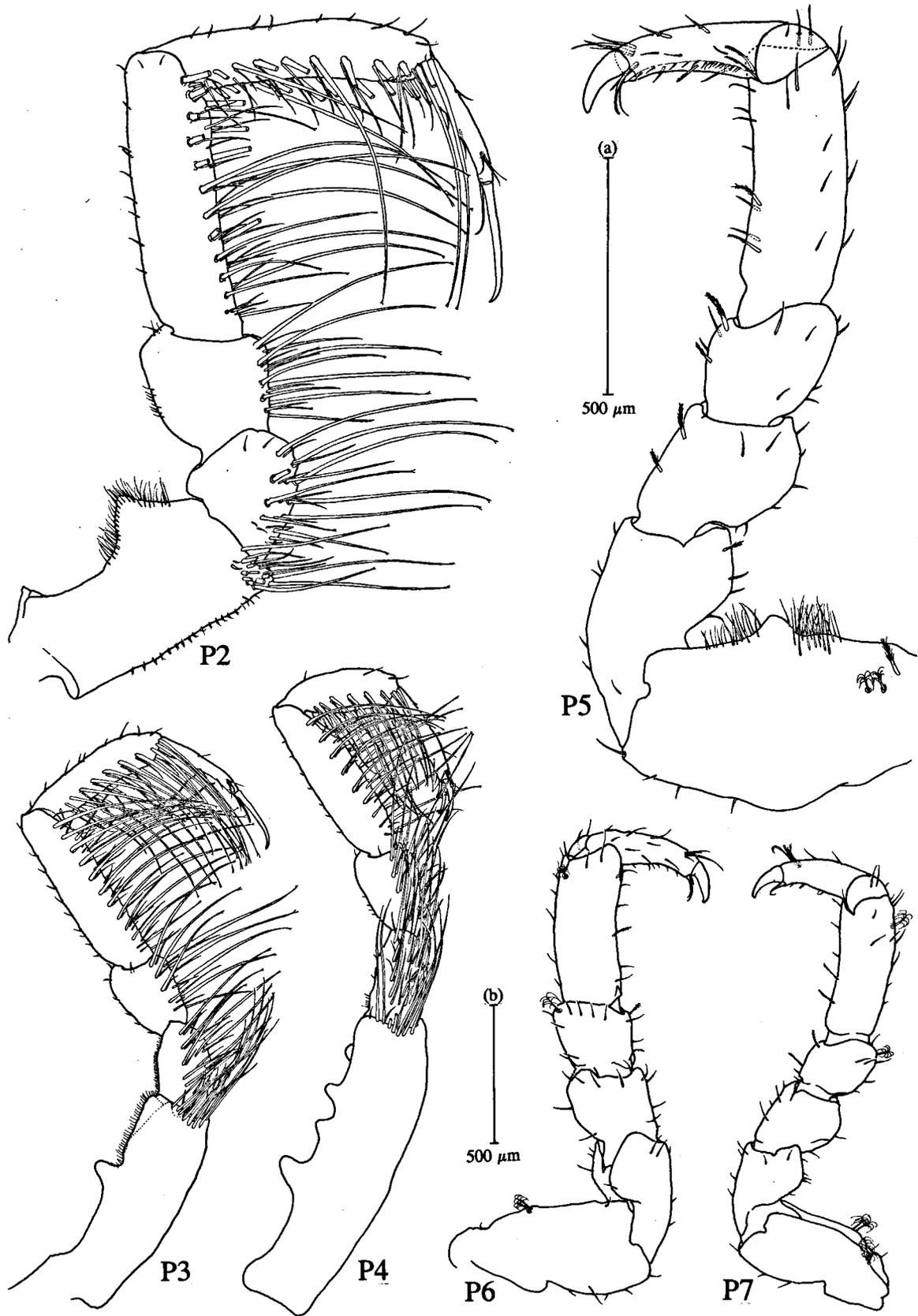


Fig. 12. *Rectarcturus kophamei* (Ohlin, 1901) from the Magellan Strait, female, 11 mm: (a) for P2 and P5; (b) for P3, P4, P6 and P7.

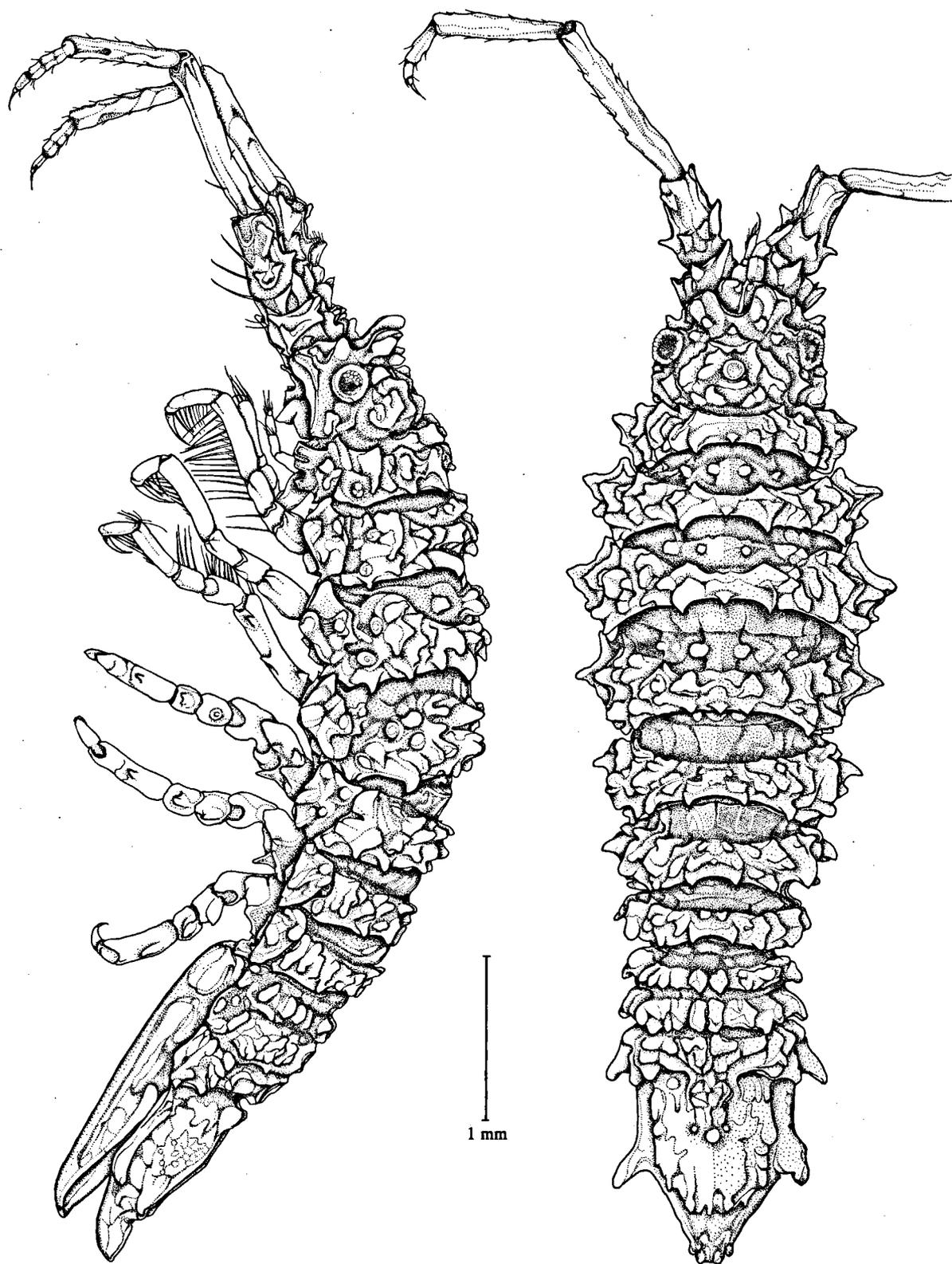


Fig. 13. *Rectarcturus tuberculatus* Schultz, 1981 from the Magellan Strait, female, 7 mm.

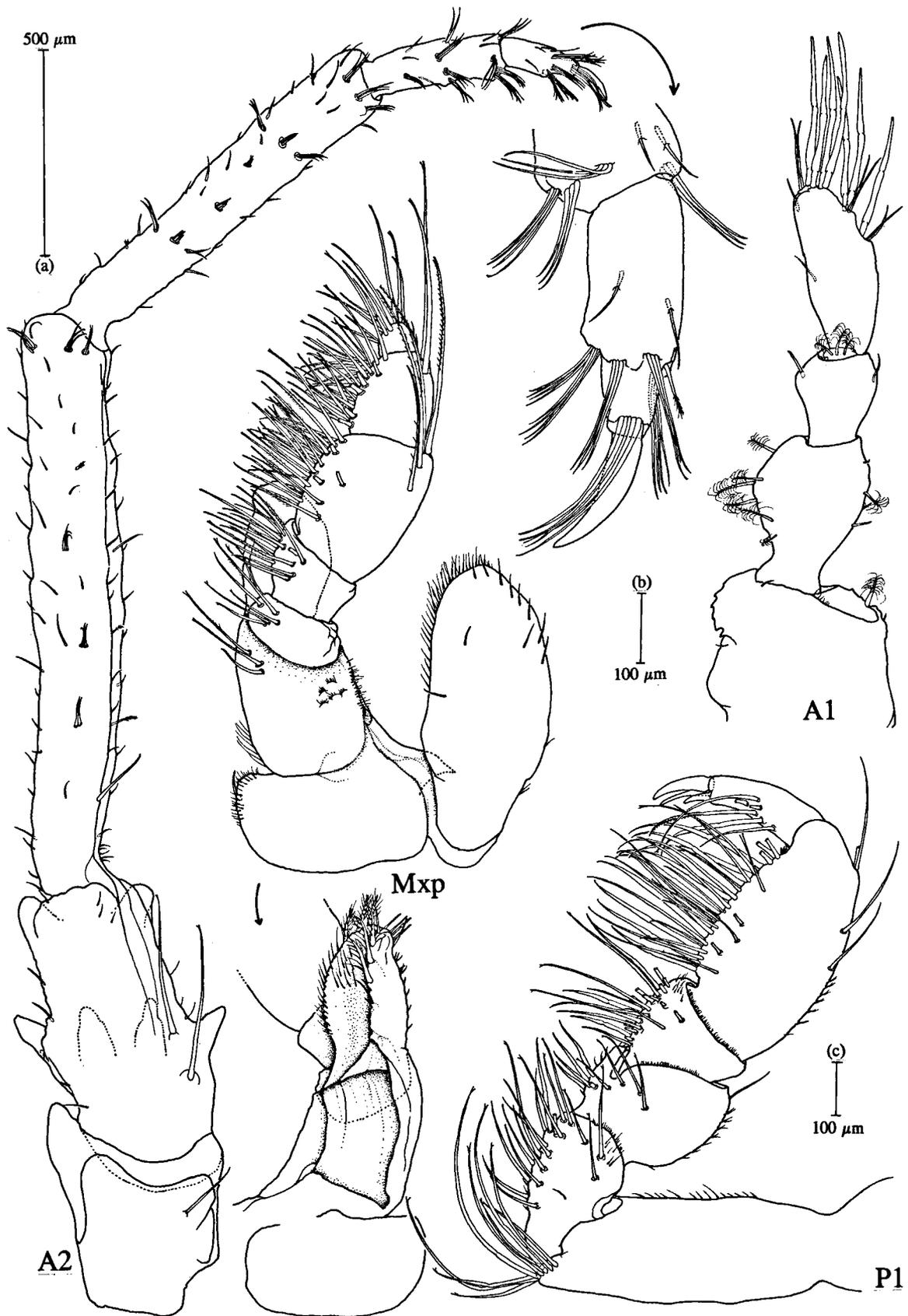


Fig. 14. *Rectarcturus tuberculatus* Schultz, 1981 from the Magellan Strait, female, 7 mm: (a) for A2; (b) for A1 and Mxp; (c) for P1.

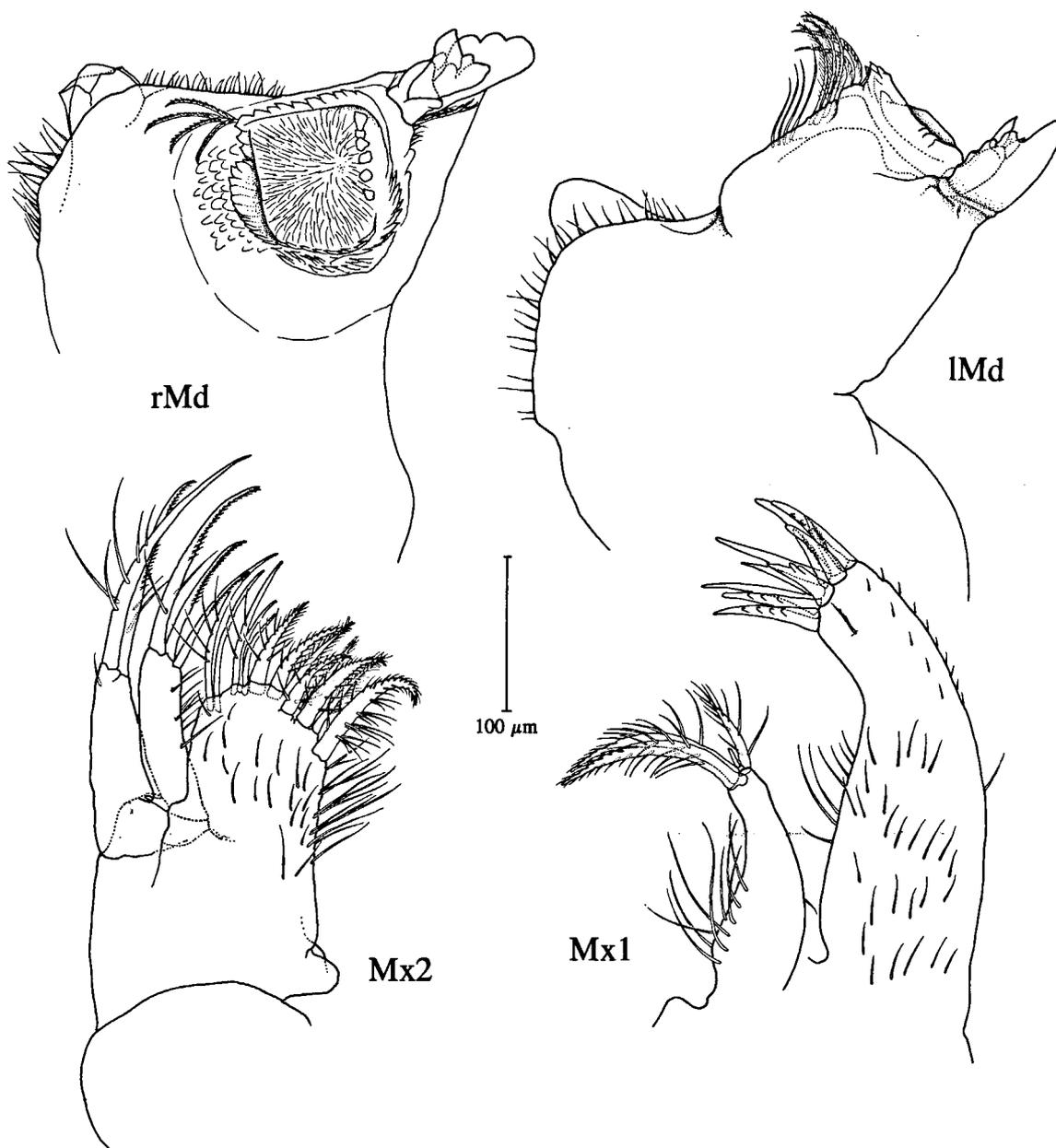


Fig. 15. *Rectarcturus tuberculatus* Schultz, 1981 from the Magellan Strait, female, 7 mm: rMd, lMd, Mx1 and Mx2.

visible ventrally; second article two thirds of third article; third about half as long as fourth; fifth two thirds of fourth; flagellum of 3 articles, shorter than third peduncular article; last very small, claw-like.

Mandibles (fig. 15) asymmetrical, without palp; pars incisiva of right mandible with 3 teeth of similar size; lacinia mobilis not smaller than pars incisiva with a short blunt and 2 strong teeth and with 2 thick setae; pars molaris stout, broad, concave grinding surface with indented margin; row of long setae on

proximal side directed caudally. Pars incisiva of left mandible with 4 teeth; lacinia mobilis smaller than pars incisiva, with a little small and 2 large teeth; pars molaris as in right mandible.

Medial endite of maxillula (fig. 15), apex bearing 3 strong setulated bristles; lateral bristle smallest, beside it a small seta. Lateral endite longer and larger than medial endite, with 11 relatively strong indented and medially curved spines.

Maxilla (fig. 15) of 3 endites; inner endite broad-

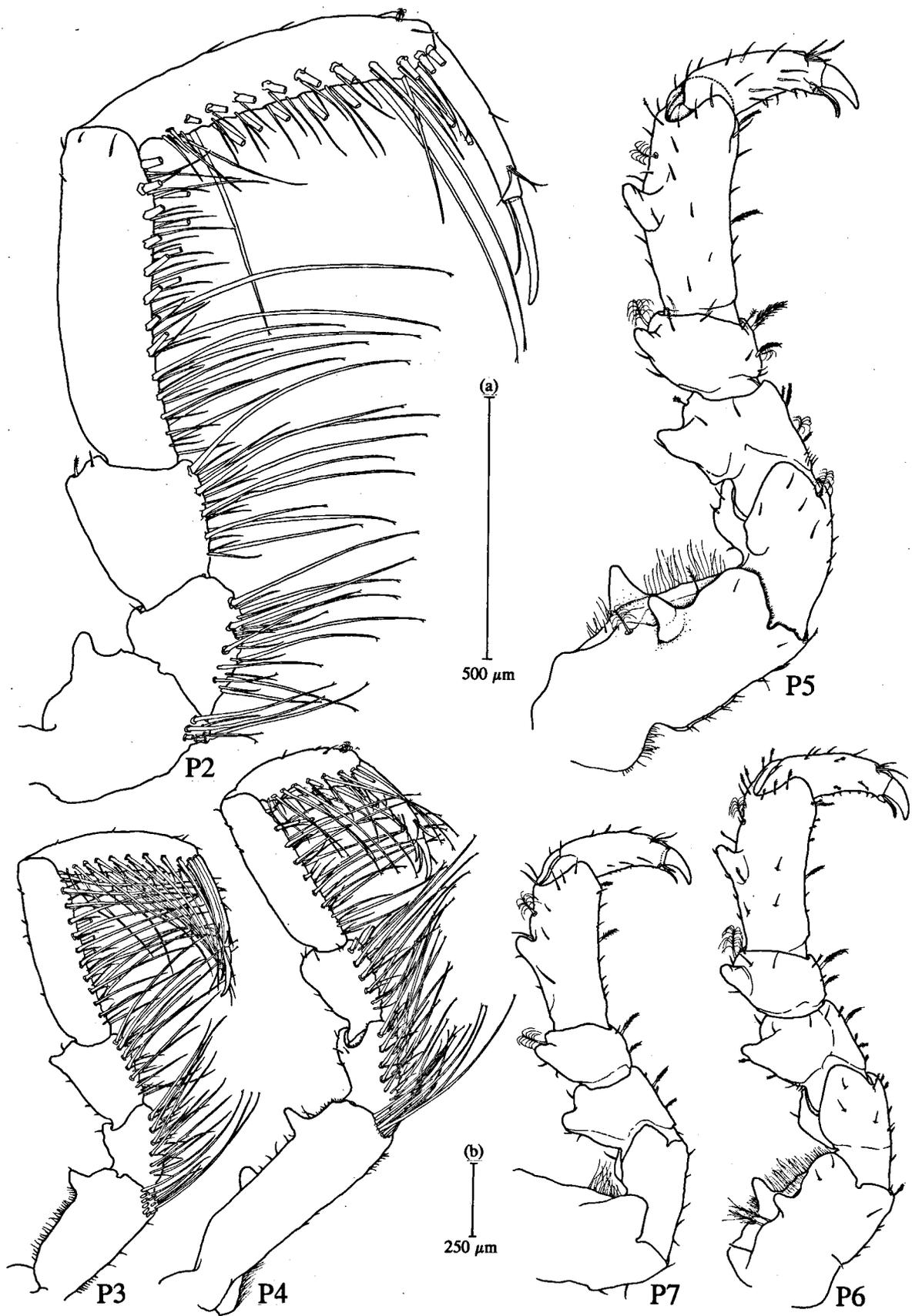


Fig. 16. *Rectarcturus tuberculatus* Schultz, 1981 from the Magellan Strait, female, 7 mm: (a) for P2 and P5; (b) for P3, P4, P6 and P7.

est, with 5 strong setulated setae and 8 thin, long sparsely setulated setae; medial endite apically with 3 and lateral endite with 2 partly serrated, distally fine indented spines.

Apical margin of endite of maxilliped (fig. 14) with a row of 7 short, spine-like setae, each with 2 rows of spinules. Neither endite nor basis with coupling hooks. Epipod long, oval, surpassing second palpal article; medial margin with fine hair-like setae, distolaterally thicker setae. Palp of 5 articles, third longest and broadest, last smallest; all on ventromedial surface with dense brush of setule-bearing setae with tip split in two.

Pereopod 1 (fig. 14) small, with long basis, short ischium, broadened merus, short trapezoidal carpus, broad-oval subchelate propodus; dactylus shorter than propodus, with a large apical, a short subapical claw and inbetween a claw-like seta. All articles except basis ventrally densely setose with two sorts of setae - one long, thin and at tip splited, the other generally shorter, broader and with two rows of combs. Basis distoventrally with long setae.

Pereopods 2-4 (fig. 16) rather similar, but basis of pereopod 4 especially long with 3 strong, relatively short spines (not present on pereopod 1); basis of pereopod 2 and pereopod 3 with a short spine, distally a tuft of setae arranged in a semicircle; ischium, merus, carpus and propodus with three longitudinal rows of setae, namely two lateral rows of groups of two simple setae, of which the outermost seta is long, medial longitudinal row of setae shortest; size of merus and carpus of pereopods 2-4 similar, merus of pereopod 3 dorsally with a short spine; carpus and propodus cylindrical and elongate, propodus of pereopod 2 longest. Dactylus of similar length on pereopods 2-4, without long setae, dactylus of pereopods 2 and 3 with a long claw and a thin, a little shorter seta, a second claw present on pereopod 4.

Pereopods 5-7 (fig. 16) of similar proportions as anterior pereopods but stouter, carpus somewhat shorter; pereopod 5 longest; all articles except ischium and dactylus equipped dorsally with 1 or 2 broad spines; dactylus with a large apical and a very short subapical spine-like claw, between them 2 fine setae.

Pleopods 1 and 2 in female with long branches,

margins bearing long swimming setae, on endopod only apically and medially. Protopod of pleopod 1 (fig. 17) three times longer than of pleopod 2 (in male: five times longer), laterally with a row of small tubercles, medially 5 coupling hooks (in male, also five); protopod of pleopod 2 medially 4 coupling hooks (in male, five). Male endopod of pleopod 1 with a medially protruding basal lobe and a ridge running from this edge diagonally to the distolateral margin, where a tuft of modified setae inserts, most of these are feather-like; medial and distal margin of exopod with over 20 swimming setae, lateral margin without setae. Male endopod of pleopod 2 with long, stiletto-like appendix masculina, longer than remaining endopod, apical third finely indented in two rows, 30 swimming setae on endopod, medially and apically; exopod shorter and broader, with about 50 setae.

Uropod (fig. 17) biramous; sympod with 12 long setae on distolateral margin; surface ventrally without tubercles; exopod with some short apical and dorso-medial setae, dorsally with 2 feather-like bristles; endopod with 3 strong indented (or: serrated) setae.

Discussion

The type material of this species was collected in the deep sea of the Drake Passage (Schultz 1981), while the specimen used for the redescription were caught in shallow water of the Magellan Strait. The animals have well-developed eyes and show no special adaptations to deep water. The species seems to be derived from shallow water ancestors and has probably an eurybathic distribution, not unusual for Antarctic species. The Magellanic specimens have a more pronounced ornamentation (fig. 18), but important difference to the holotype could not be detected. The redescription shows that many details are similar to the foregoing species: the setation and size of the antennae, the slender claw of pereopods 2 and 3, the absence of ventral spikes on pereopods 5 to 7, the general shape of the body. The caudolateral pleotelsonic spines are well developed in *R. tuberculatus*, reduced in *R. kophameli*.

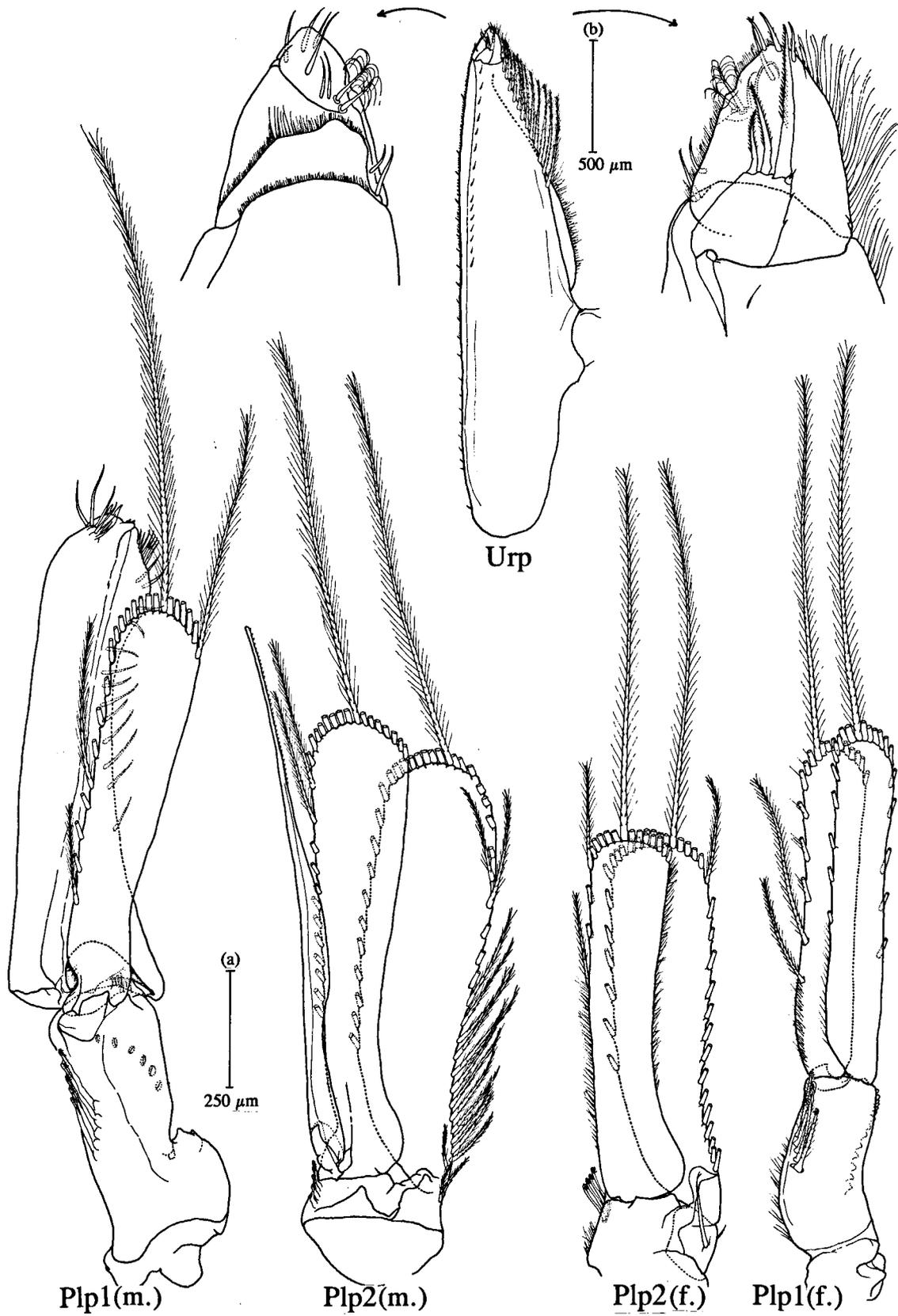


Fig. 17. *Rectarcturus tuberculatus* Schultz, 1981 from the Magellan Strait, female, 7 mm: (a) for Plp1 and Plp2; (b) for Urp.

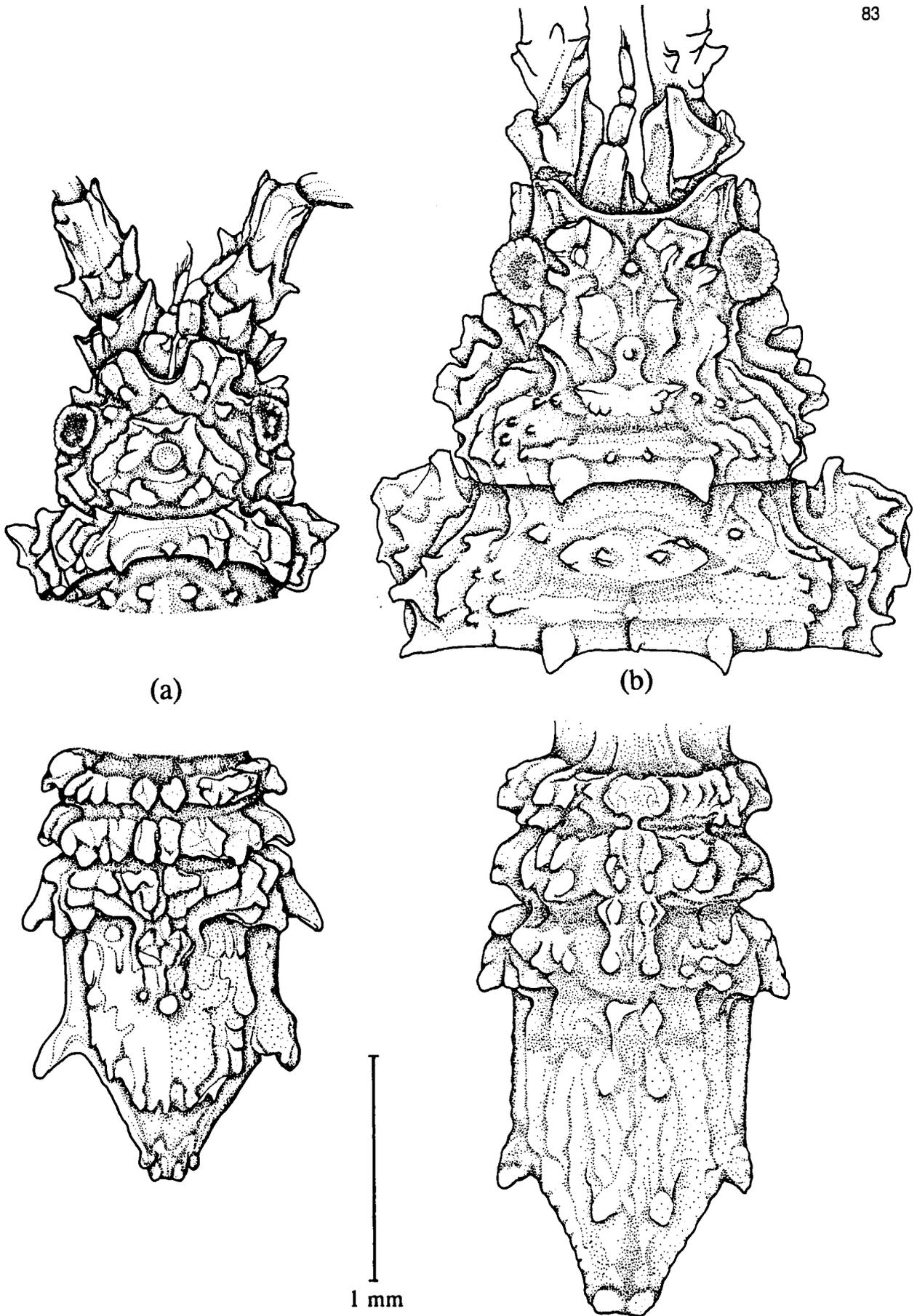


Fig. 18. *Rectarcturus tuberculatus* Schultz, 1981: (a), female from the Strait of Magellan, 7 mm; (b), holotype, gravid female, 9.5 mm.



Fig. 19. Text: see p. 85.

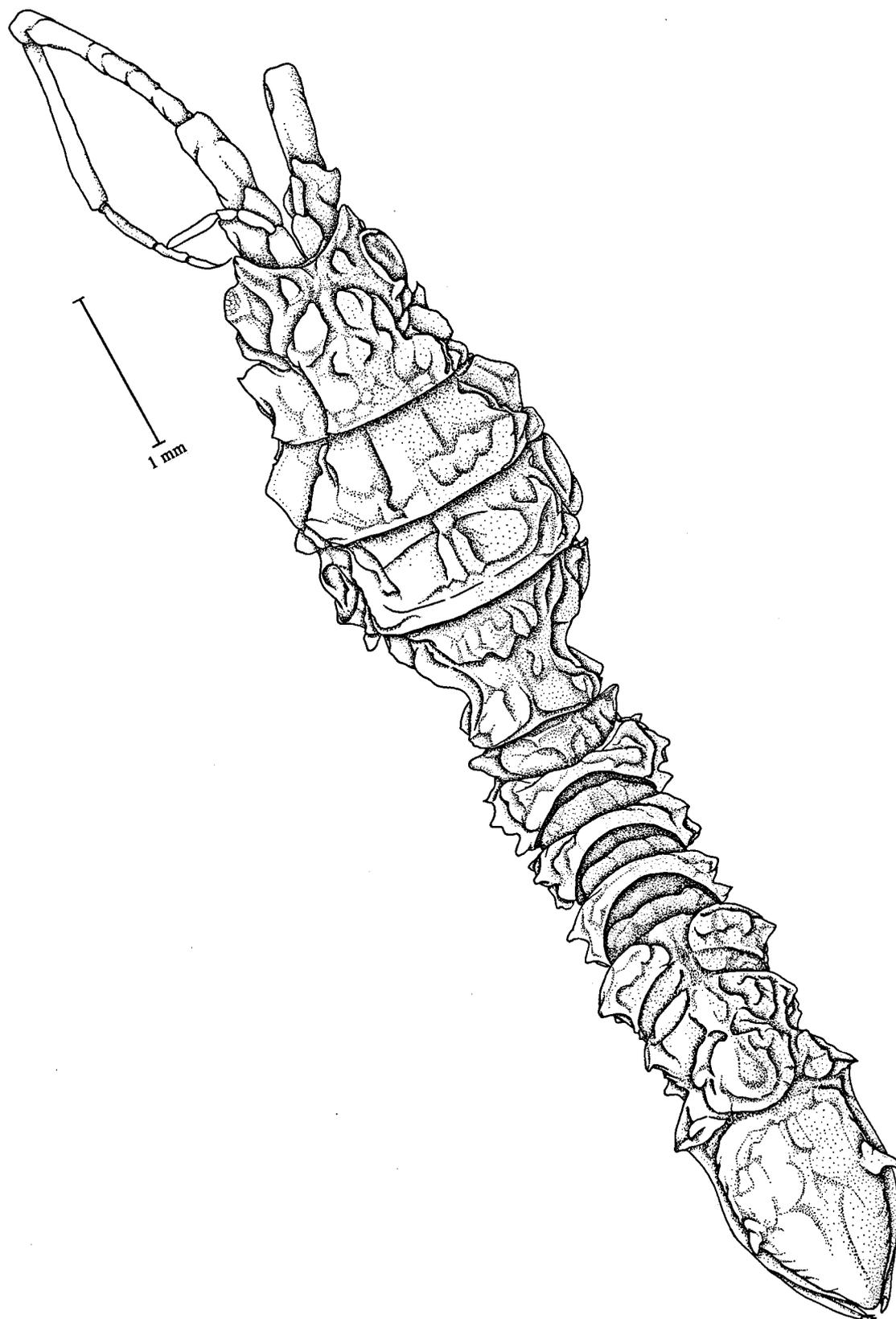


Fig. 19. *Neoarcturus patagonicus* (Ohlin, 1901), holotype, gravid female, 9 mm.

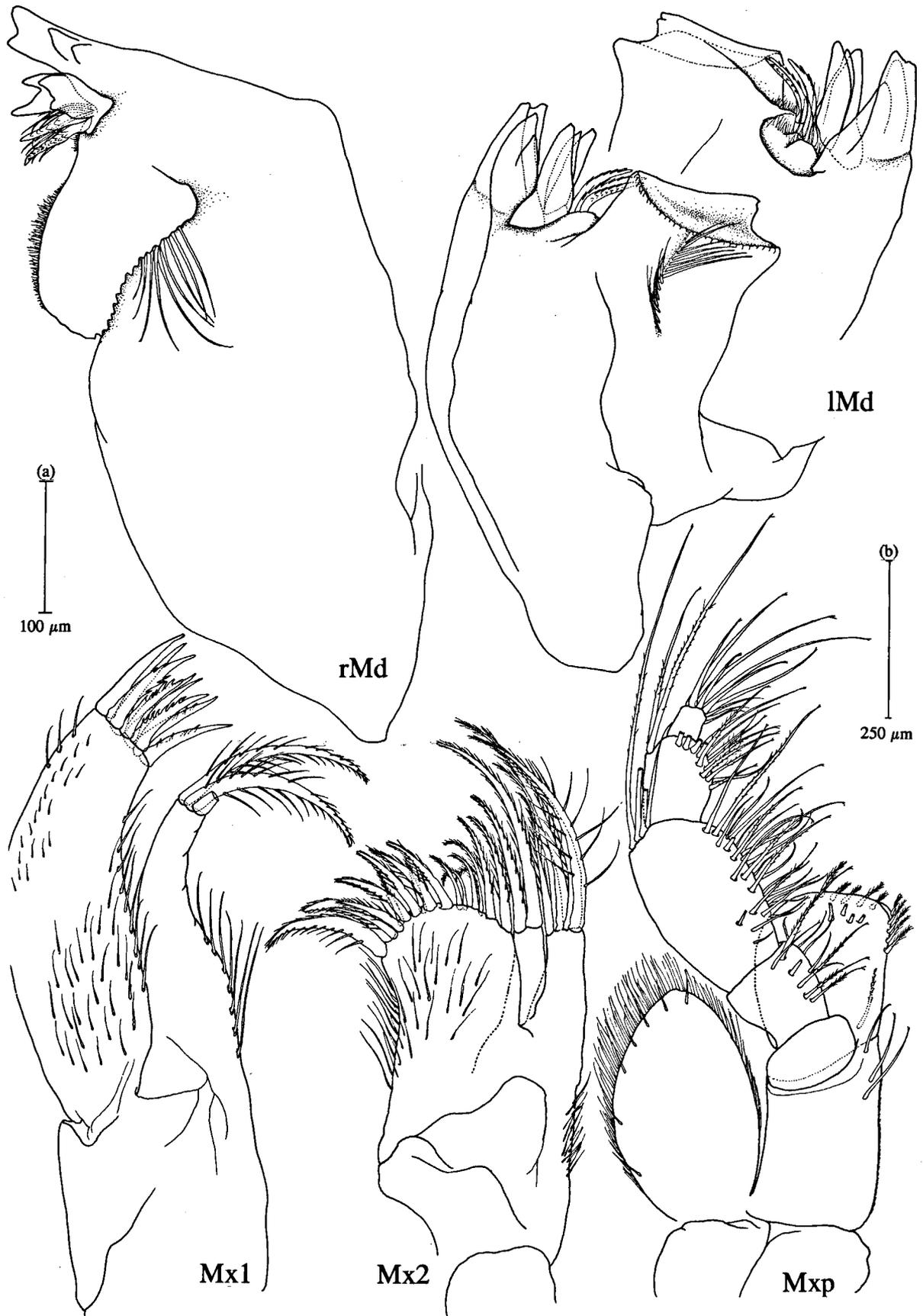


Fig. 20. *Neoarcturus patagonicus* (Ohlin, 1901), holotype, gravid female, 9 mm: (a) for rMd, lMd, Mx1 and Mx2; (b) for Mxp.

Neoarcturus patagonicus (Ohlin, 1901)

Arcturus patagonicus Ohlin, 1901: p. 271

Microarcturus patagonicus (Ohlin): Nordenstam 1933, p. 128

Rectarcturus patagonicus (Ohlin): Schultz 1981, p. 71

For comparison with other specimens from the Strait of Magellan and the analysis of the genus *Rectarcturus*, a reexamination of the holotype of *R. patagonicus* was necessary. It agrees in most details with the descriptions of Ohlin (1901) and Schultz (1981), though this specimen is in a poor condition.

Material

Gravid female, holotype, length: 9 mm, Zoologisches Institut und Zoologisches Museum, Universität Hamburg, K-14434. Type locality: 38°S, 56°W, 95 m, Southwest of La Plata, Northern Argentine Basin.

Distribution:

Known only from type locality.

Description of mature female

Body (fig. 19) with small, blunt tubercles (ornamentation not well preserved). Cephalothorax with deeply concave frontal margin; laterally large, dark and triangular eyes. Mouthparts in lateral view not visible. Supraocular spines short, directed frontally. Caudally of these spines a pair of elevations. Pereonites 1-4 increasing in length, second and third pereonites broadest, pereonite 4 constricted.

Pereonite 1 fused with head rigidly, fusion line indicated by a weakly marked suture on the lateral margin of cephalothorax and a shallow dorsal furrow. Pereonite 4 longest, as long as pereonites 1 and 2 together; pereonite 5 as long as pereonite 3; pereonites 6 and 7 shorter than pereonite 1. Pereonite 5 and the last half of pleotelson of the same width. Dorsal sculpture: see fig. 19. On each anterior pereonite dorsally a broad and shallow transverse furrow (see lateral view); on pereonite 1 and 2 narrowest, broadest and deepest in pereonite 4. Coxal plates of pereonites 2-4 with large rounded tubercles, separated by a suture from tergites. Posterior margin of ter-

gites 5-7 dorsally concave. Suture on pereonites 5-7 marked weakly. Pleonites 1-3 fused with pleotelson, fusion areas visible. In lateral view a deep transverse groove, indicating the suture between pleonite 3 and the posterior half of pleotelson. Laterally in the middle of last half of pleotelson a pair of hook-shaped spines, directed posteriorly and outwards.

Antennule with 3 subequal peduncular articles, surpassing the center of the third peduncular article of antenna; first peduncular article broad and as long as second flagellar segment, which is longer than second peduncular article; first flagellar segment very short and ring-shaped (aesthetascs and setae not preserved).

Antenna with 5 peduncular articles, somewhat shorter than body (A2: bodylength = 1 : 1,3), first peduncular article very short, about one third of the length of second; second two thirds of third; first and second article without setae; third about half as long as fourth; third and fourth each with row of ventral long setae; fifth shorter than fourth; fourth and fifth with several groups of 3 to 5 small setae, on fourth more densely than on fifth. Flagellum as long as third peduncular article, of 4 articles; first longest; last article very small, claw-like.

Mandibles (fig. 20) asymmetrical, without palp; pars incisiva of right mandible narrower than left, with 4 teeth; lacinia mobilis smaller than pars incisiva, with 4 short, blunt, distal teeth and 2 indented, setae-like, proximal structures; in ventral view on the basis of lacinia mobilis several thin hair-like setae, pars molaris strong, broad, concave grinding surface with indented margin; a row of setae on proximal side, directed caudally. Pars incisiva of left mandible also with 4 teeth; lacinia mobilis with 3 relatively long teeth, stronger than those of right mandible, and with 3 indented setae-like proximal structures; pars molaris as in right mandible, grinding surface concave.

Medial endite of maxillula (fig. 20), apex bearing 3 strong setulated setae. Lateral endite longer than medial endite, with 9 relatively short, strong, partly indented and slightly medially curved spines.

Maxilla of 3 endites; inner endite broadest, with 5 slender and 12 strong setae; medial endite apically with 2 and lateral endite with 5 setulated setae.

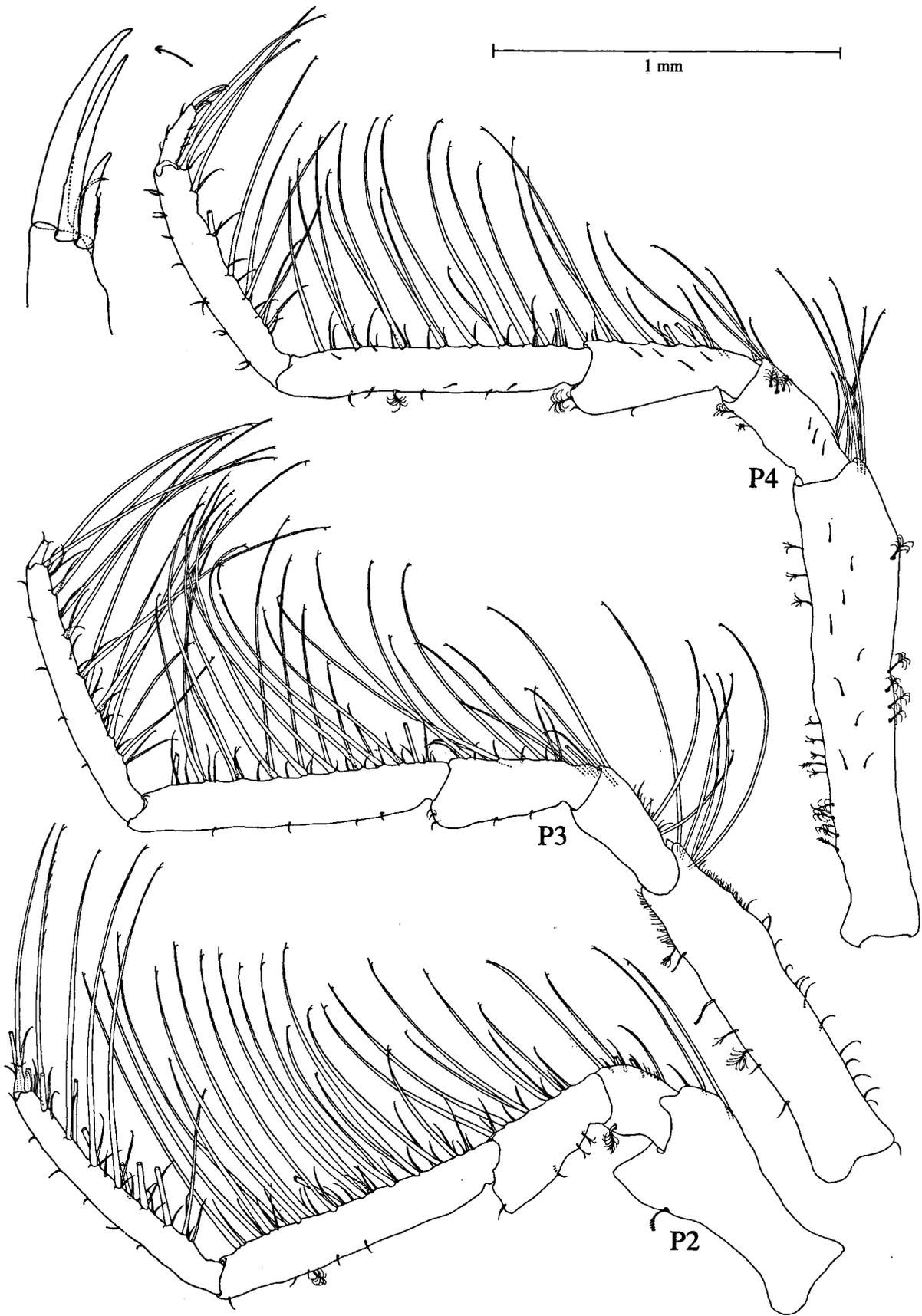


Fig. 21. *Neoarcturus patagonicus* (Ohlin, 1901), holotype, gravid female, 9 mm: P2-4.

Distomedial medial and apical margin of endite of maxilliped (fig. 20) with a row of 10 short, spine-like setae, each with 2 rows of spinules; ventrally near apical margin further 4 similar setae. No coupling hooks. Epipod oval, surpassing second palpal article, bordered by many fine hair-like setae, distolaterally a row of short and stronger setae. Palp of 5 articles, third longest and broadest, last smallest; articles 2-5 with dense brush of setulated setae, tips apically bifurcated; second and third article laterally on distal margin with long setae.

Pereopod (fig. 22) 1 small, with long basis, ischium half as long as basis, broadened merus, short and small trapezoidal carpus, broad-oval subchelate propodus; dactylus as long as propodus, with a large strong apical and a short subapical indented claw, between them two short setae. All articles densely setose on medioventral margin and medial surface (fig. 22), except basis, which bears distoventrally a group of long setae.

Pereopods 2-4 rather similar. Dactylus of pereopods 2-3 very small, about 1/10 of the length of propodus, with a very long and a small seta-like claw; dactylus of pereopod 4 broader and twice as long as on pereopods 2-3, about 1/3 of length of propodus, with a large apical and a small subapical indented claw, between these a fine small and a strong large seta, which looks like a claw (fig. 21). Propodus longest on pereopod 2 and shortest on pereopod 4; carpus of the same size; merus, ischium and basis longest on pereopod 4 and shortest on pereopod 2. All articles except dactylus and basis ventrally with 2 longitudinal rows of groups of long setae, the outermost setae longest; between these a row of short setae. Basis only with posterodistal tuft of setae; basis of pereopod 2 strong and short.

Pereopods 5-7 (fig. 22) of similar length as anterior pereopods; basis always the longest article, dorsally with some feather-like bristles, propodus and carpus (in pereopod 5 also on merus) ventrally with a row of short combed setae; propodus distally with a feather-like bristle. Dactylus with a strong apical and a small subapical spine-like claw, between them a short seta.

Protopod of pleopod 1 (fig. 23) twice as long as on pleopod 2, laterally with 7 strong spine-like tuber-

cles; medially with 5 coupling hooks; endopod only apically and medially with long swimming setae, exopod bordered by swimming setae; exopod of pleopod 2 with more swimming setae than on pleopod 1; exo- and endopod of similar size, generally rami of pleopod 1 smaller than of pleopod 2.

Table 1: The number of swimming-setae of endo- and exopods on pleopods 1-2 of the holotype *Rectarcturus patagonicus*.

	exopod	endopod
pleopod 1	35	28
pleopod 2	48	26

Uropod biramous (fig. 23); sympod with 10 long setae on distolateral margin; surface ventrally without tubercles; exopod with 2 short apical setae; endopod with 2 strong.

Discussion

This species was placed in *Rectarcturus* by Schultz (1981). The redescription shows that there exist many differences to the foregoing two species: pereonite 4 is longer and has a wasp-waist, the pereopods are longer and more slender, the subterminal pleotelsonic spines are acute and directed dorsolaterally instead of laterally, the filtering appendages P2 to P4 have a considerably shorter dactylus. The clinging appendages P5 to 7 bear ventrally on merus, carpus and propodus setulated spines, which are stronger than the ventral setae of the foregoing two species. P5 to P7 are not shorter than P2 to P4 (see also above discussion of the genera *Rectarcturus* and *Neoarcturus*).

Platidotea n. gen.

Diagnosis

Body dorsoventrally flattened and long (fig. 24); a little wider at pereonites 3-4 in female; surface relatively smooth. Eyes small, on the lateral margin of cephalothorax. In front of eyes the lateral lobes of cephalothorax anteriorly prolonged, both pairs of antenna inserting in deep anteromedian concavity;

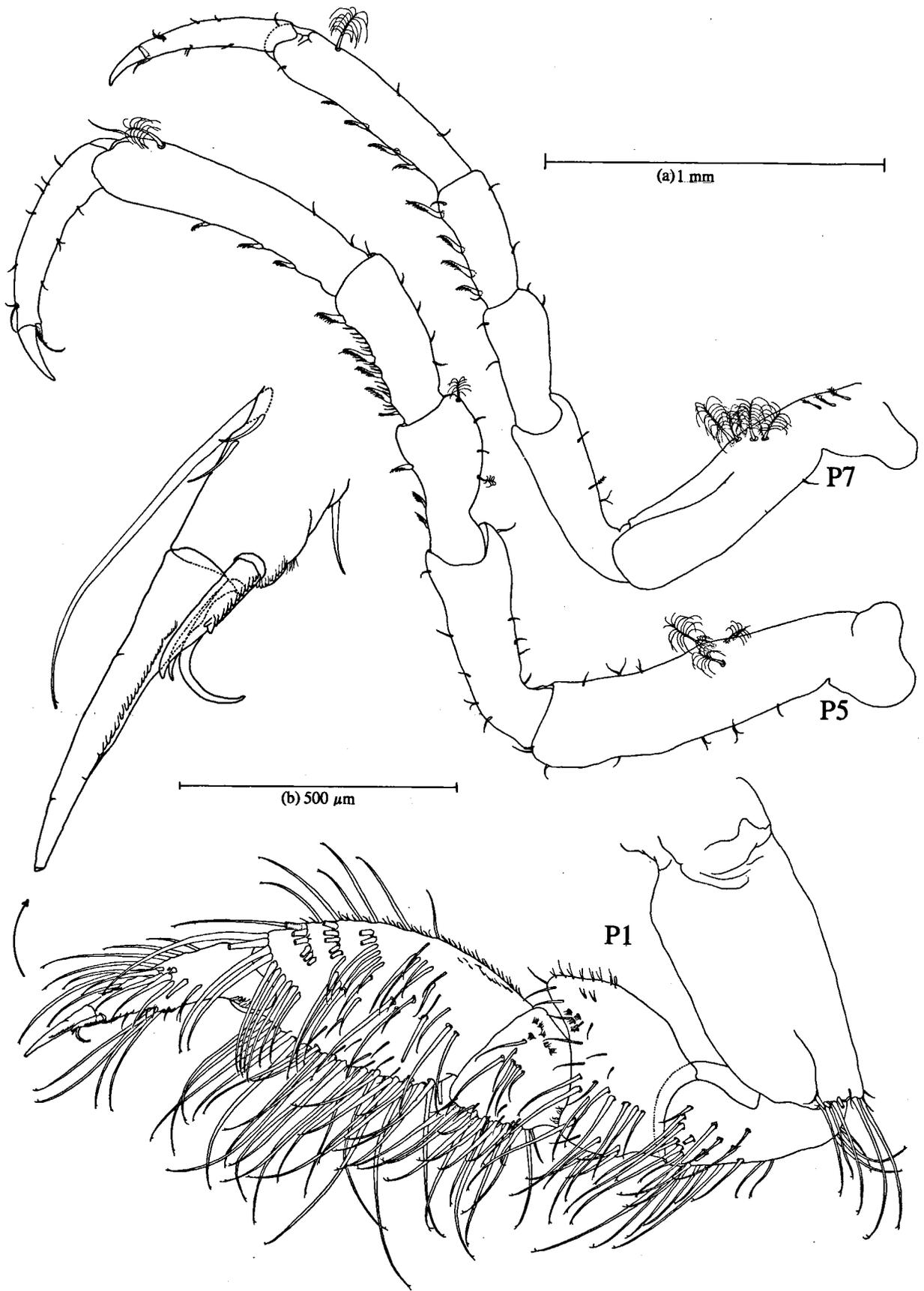


Fig. 22. *Neoarcturus patagonicus* (Ohlin, 1901), holotype, gravid female, 9 mm: (a) for P1; (b) for P5 and P7.

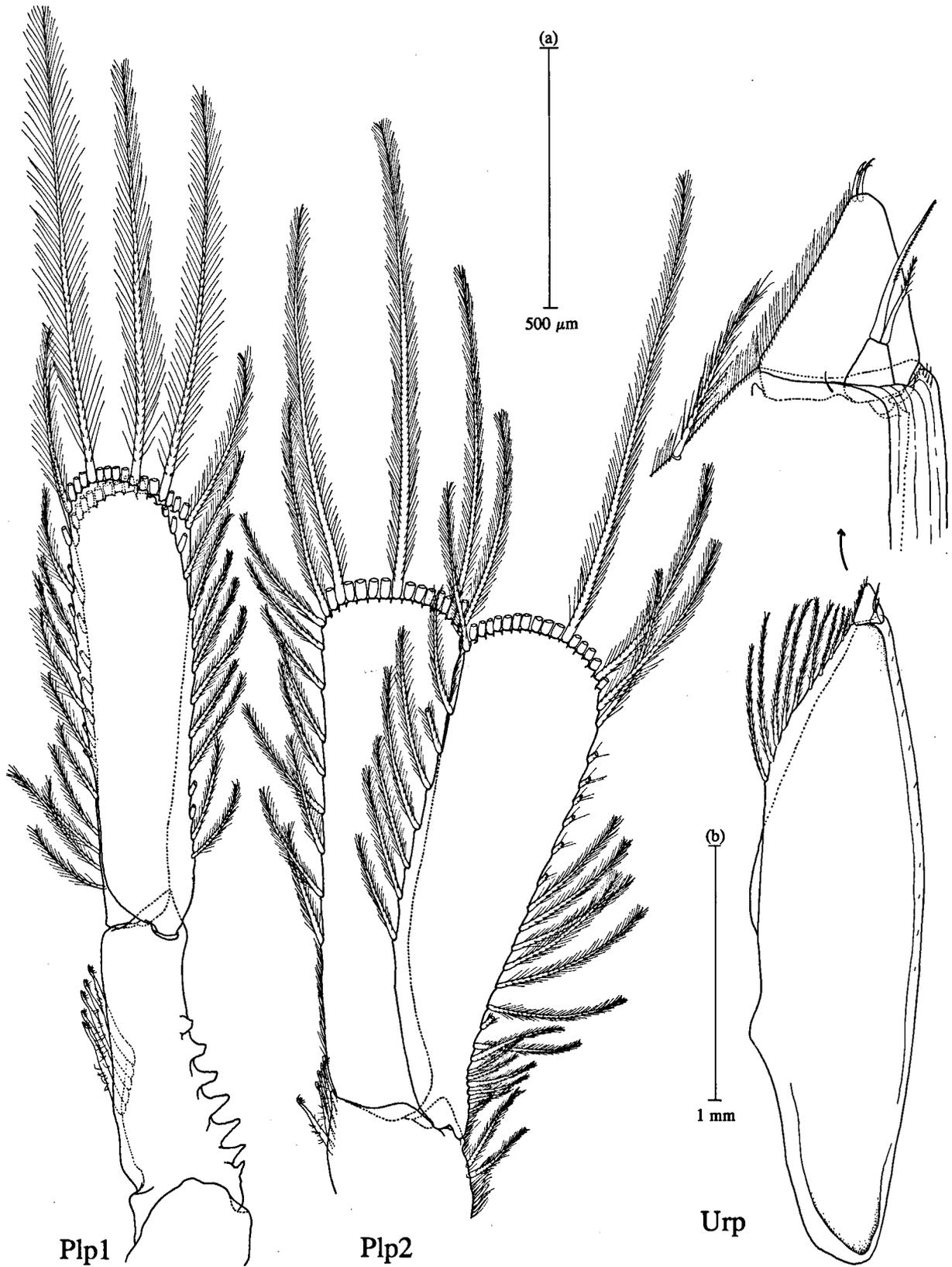
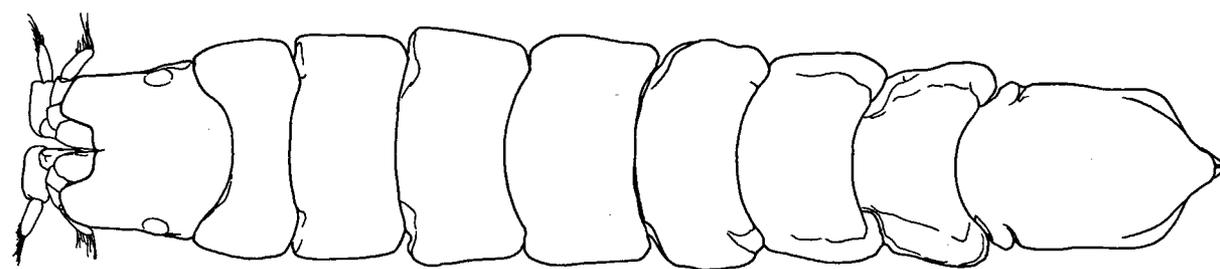
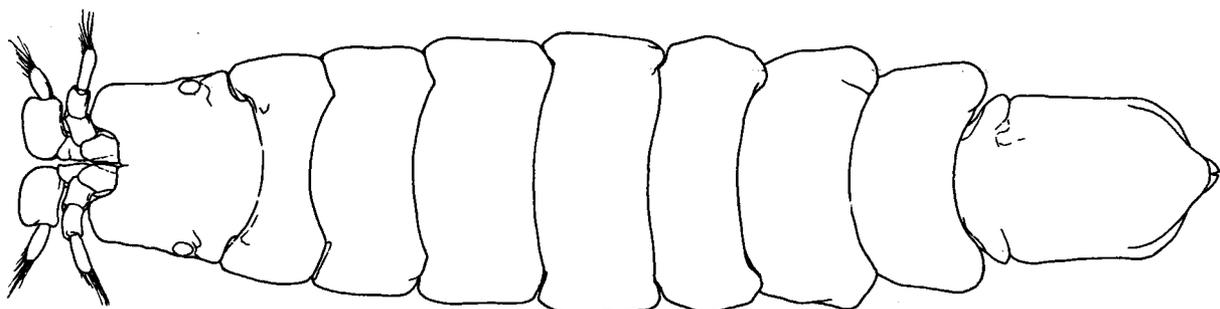
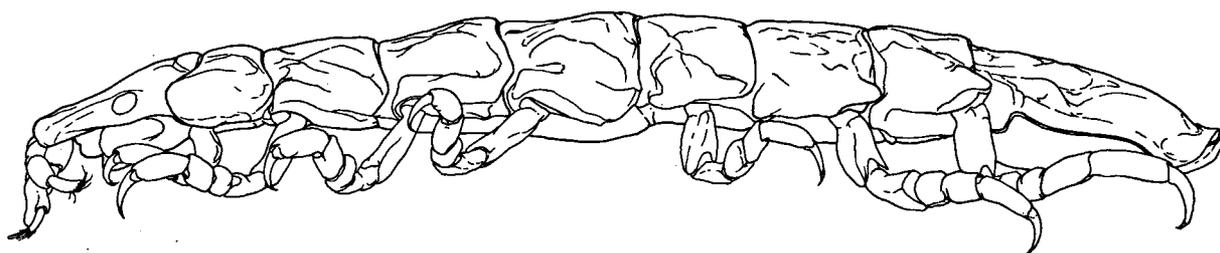


Fig. 23. *Neoarcturus patagonicus* (Ohlin, 1901), holotype, gravid female, 9 mm: (a) for Plp1 and Plp2; (b) for Urp.



(a) ————— 1 mm



(b) ————— 1 mm

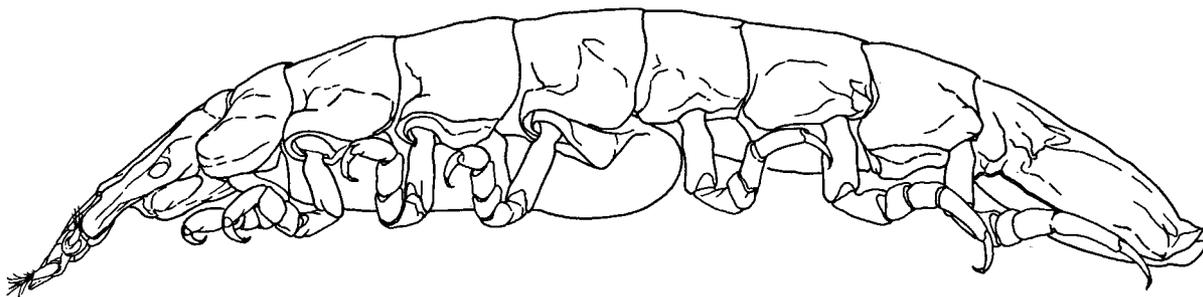


Fig. 24. *Platidotea magellanica* n. sp.: (a), holotype, male, 8.8 mm; (b), female, 7.8 mm.

antennae thus laterally supported by cephalothorax; frontally under the anterolateral lobes of cephalothorax a pair of short, small and hooked processes pointing caudoventrally. All pereonites more or less of the same length; first pereonite not coalesced with cephalothorax. Coxal plates coalesced completely with tergites, no sutures visible. All pleonites fused. Both pairs of antennae of the same length, relatively short, curved laterally forming a right angle. Fifth peduncular article of antenna 2 forming a broad rectangular plate, following by five flagellar articles with many long setae. Maxillipedal palp of three articles. Propodus of P1 broad-oval, medially a row of densely setulated setae. Remaining pereopods subsimilar, not subchelate. Endopod of pleopod 2 in male voluminous; appendix masculina longer than endopod in the form of a robust rod. Uropod uniramous.

Type species: *Platidotea magellanica* n.sp.

Derivation of name: The name is derived from the Greek "*platys*", which means flat or flattened, combined with the root of the family name "*Idotea*". It refers to the flattened antenna and body.

Remarks

Diagnostic for this genus are the flattened broad fifth article of antenna 2, as well as the spatuliform elongation of the anterior part of the cephalothorax. The body, including the pleotelson, is flatter than in many other idoteids. The typically shaped uropods perfectly close the respiratory chamber (fig. 28). A maxilliped with 3 palpal articles in combination with a dorsal fusion of all pleonites occurs in the genera *Moplisa* Moreira, 1974, *Parasymmerus* Brusca & Wallerstein, 1979, and *Synidotea* Harger, 1878. As in *Platidotea* the first pleonite can often be discerned by lateral incisions, while a dorsal fusion line is not visible. No species of these genera has the antennae and forehead modified as in *Platidotea*. The spatuliform forehead and modified antennae remind of amphipod species burrowing in sandy bottoms. The flattened body form is also an indication for adaptation to life on sand, where the type material was indeed collected.

Platidotea magellanica n. sp.

Material

Holotype: male, length: 8.8 mm; allotype: female, length: 7.8 mm; paratype: 16 males, 13 females and many manca.

Type locality: East of the Magellan Strait in South America; 52°17.1'S, 69°05.4'W; depth: 21m; Museum für Naturkunde Berlin, reg. no. xxx.

Description

Body dorsally without spines or tubercles, dorsoventrally flattened. Eyes small, on the posterior lateral margin of cephalothorax. In front of eyes cephalothorax anteriorly prolonged, insertions of both pairs of antennae in deep anteromedian concavity; antennae thus laterally supported by the lobes of cephalothorax; frontally under the anterolateral lobes a pair of short, small and hooked processes pointing caudoventrally (fig. 28); the anteromedian concavity with a median notch. Head and pleotelson of the same width. Pereonite 1 the shortest of all pereonites.

Pereonites 1-4 in female increasing in length and breadth; in male of similar width. All pleonites fused; only pleonite 1 laterally perceptible by short suture; apex of subrectangular pleotelson tapering abruptly (fig. 24) forming protruding point.

Coxal plates coalesced completely with tergites, vaulted over the insertions of pereopods; oostegites rising directly from the coxal area (fig. 28).

Antennule (Fig. 25) with three subequal peduncular articles; first article twice as long as second and third article, proximally with deep groove into which the proximal part of antenna 2 fits; articles 2 and 3 distolaterally with feather-like bristles; first flagellar article forming short ring, visible only dorsally, with three feather-like bristles; second flagellar article shorter and narrower than first peduncular article, with three groups of two aesthetascs each and one or two single setae, a distal group of five aesthetascs, one of these very long (fig. 25).

Antenna of the same length as antennule. Peduncle of five articles; second very short, forming a ring; third as long as fourth; fourth and fifth peduncular article on ventromedian surface with a row of strong scales and distolaterally with feather-like bristles; fifth peduncular article very large, rectangular, forming a flattened broadened plate, on the ventro-

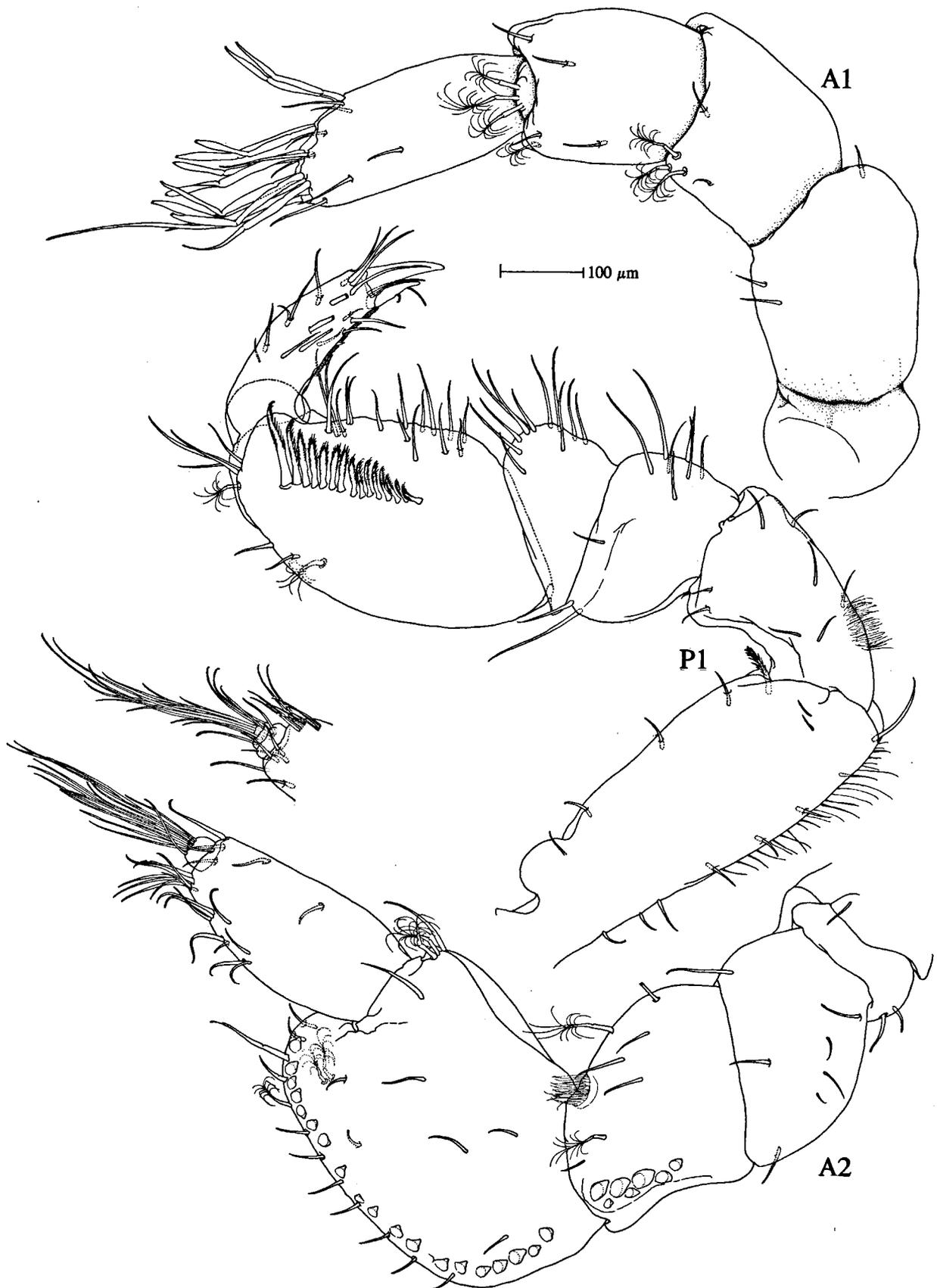


Fig. 25. *Platidotea magellanica* n. sp., holotype, male, 8.8 mm: A1 and P1; A2 of male paratype.

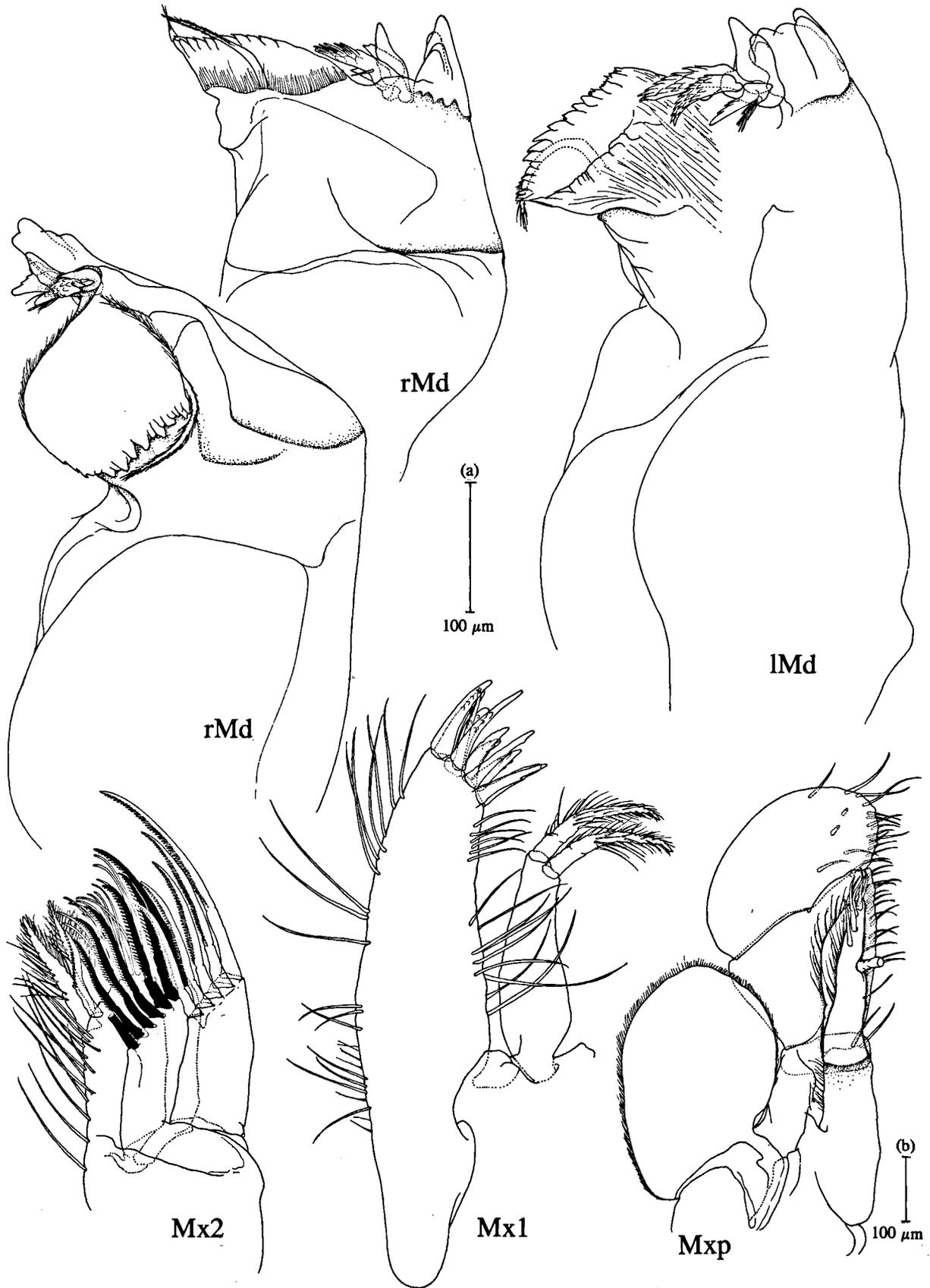


Fig. 26. *Platidotea magellanica* n. sp., holotype, male, 8.8 mm: (a) for rMd, lMd, Mx1 and Mx2; (b) for Mxp.

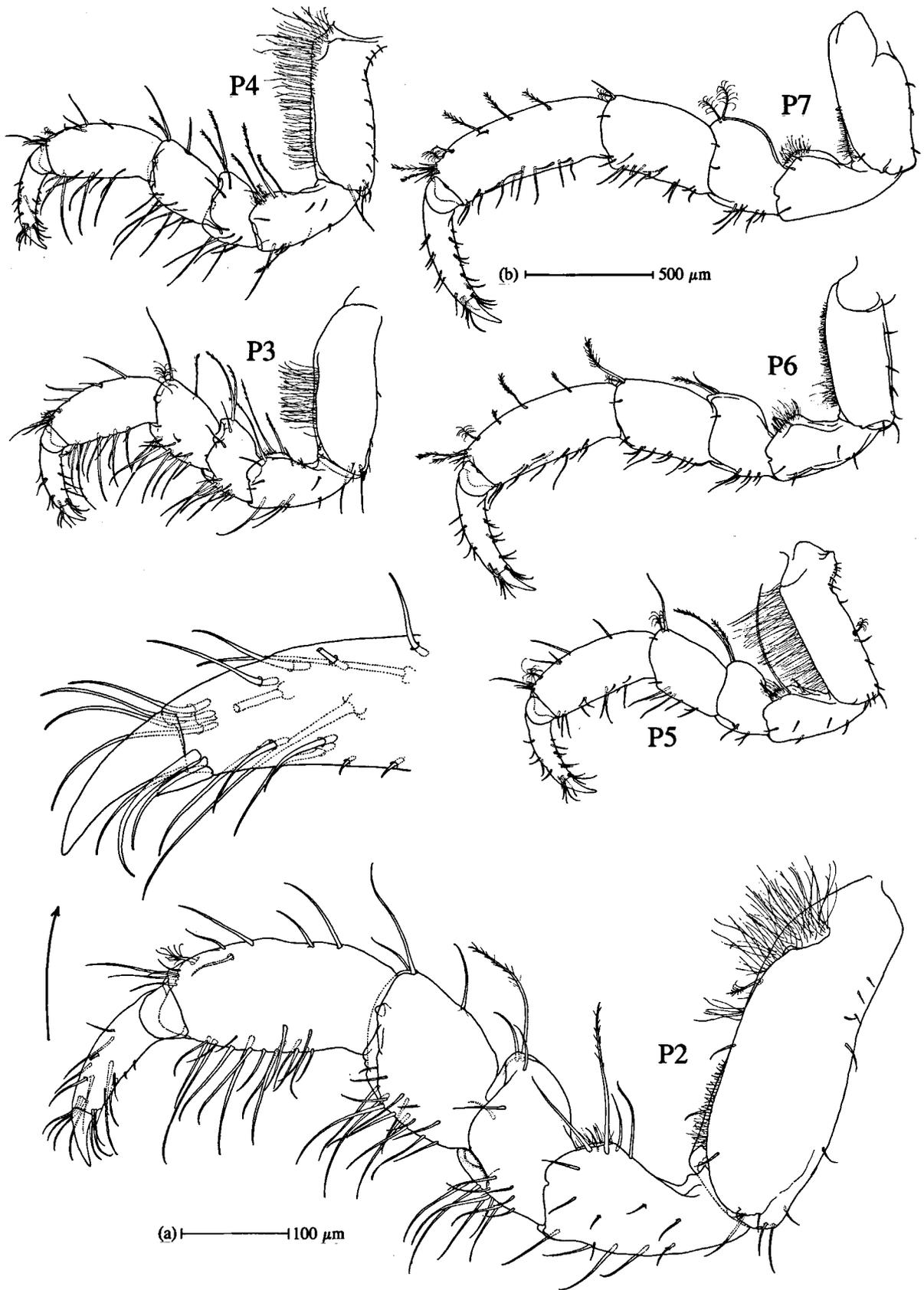


Fig. 27. *Platidotea magellanica* n. sp., holotype, male, 8.8 mm: (a) for P2; (b) for P3-7.

median margin a row of short bristles; first flagellar article long, distomedially with some setae; remaining four minute flagellar articles with many setae of various length; on the fourth flagellar article many long setae, by which the last (fifth) flagellar article is surrounded (fig. 25).

Mandibles (fig. 26) asymmetrical, without palp. Pars incisiva of right mandible smaller and narrower than left, with four teeth; right lacinia mobilis a little smaller than pars incisiva with two large and two small teeth and two bristle-like proximal structures and few fine setae; pars molaris stout, broad grinding surface with caudal margin indented; a long feather-like seta on proximal side directed caudally. Pars incisiva of left mandible with four large teeth; left lacinia mobilis larger than right one, with a small and two large teeth, three stout bristle-like proximal structures and a bundle of few fine setae; pars molaris as in right mandible (fig. 26).

Medial endite of maxillula (fig. 26) bearing two strong apically setulated bristles; lateral endite larger, with ten strong, sparsely indented and medially curved spines (fig. 26).

Maxilla of three endites (fig. 26); medial endite apically with two large and strongly setulated setae, a finely indented seta and thirteen long simple setae; long setae on the medial margin of medial endite; middle endite with seven, lateral endite with five medially curved setae, two-thirds of which finely indented (fig. 26).

Endite of maxilliped hidden behind palp and projecting dorsally, not visible in ventral view, apical margin with a row of six short, hirsute setae; a short, thickened columnar retinaculum medially on endite. Epipod round-oval, bordered with short fine setae, reaching to second palpal article. Palp of three articles, first shortest, second longest, third wider, oval; simple setae on medial margins (fig. 26), only two setae on first article.

Pereopod 1 (fig. 25) not smaller than pereopods 2-7, with long basis as long as ischium, merus and carpus together, distally with a setose short bristle, dactylus shorter than propodus, with a large apical and a short subapical claw, between them three setae, ventrally a row of very small cuticular scales; dactylus and propodus form a subchela; articles

medioventrally sparsely setose. On the medial side of propodus a row of fifteen thick, on both margins densely setulated bristles, the more distal ones larger; dorsal margin nearly bare except two feather-like bristles and a few setae (fig. 25).

Pereopods 2-4 (fig. 27) with basis of same length; medioventrally with many long hair-like setae, on pereopod 2 shortest; distodorsally on ischium and merus long setae and single feather-like bristles on carpus and propodus; carpus rectangular, propodus long-oval, dactylus with large apical and short subapical claw (fig. 27).

Pereopods 5-7 longer than anterior pereopods, ventrally with shorter setae; pereopod 7 with the shortest and widest basis; propodus cylindrical; dactylus with a large apical and a short spine-like subapical claw, inbetween three simple setae. Anterior pereopods (P2-4) insert lateroventrally, posterior ones ventrally (fig. 24).

Pleopods hidden in respiratory chamber formed by pleotelson and uropods. Protopod of pleopod 1 in male twice as long as in pleopod 2, in female of the same length as in pleopod 2, medially six coupling setae with hooked tips. Exo- and endopod of pleopod 1 of the same size; exopod in male with few long apical and shorter medial and lateral swimming setae, endopod also with a few long apical setae and only medially short swimming setae; in female only a few long apical setae on exo- and endopod (fig. 28).

Protopod of pleopod 2 in male medially with four coupling setae, in female with five; exopod of pleopod 2 on medial margin with more swimming setae than on pleopod 1; endopod only apically with swimming setae; appendix masculina longer than endopod in the form of a robust rod (fig. 28).

Rami of pleopods 3-5 leaf-shaped; endopod somewhat longer than exopod; on surface some long fine setae, especially on apical margin; a single apical long seta only on exopod of pleopod 3, laterally a row of short setae (fig. 28).

Uropod uniramous; sympod distally with a long plumose seta on lateral margin; surface without tubercles; rows of fine setae medially on medial margin; ramus with few apical setae of diverse sizes and with setae on margin (fig. 28).

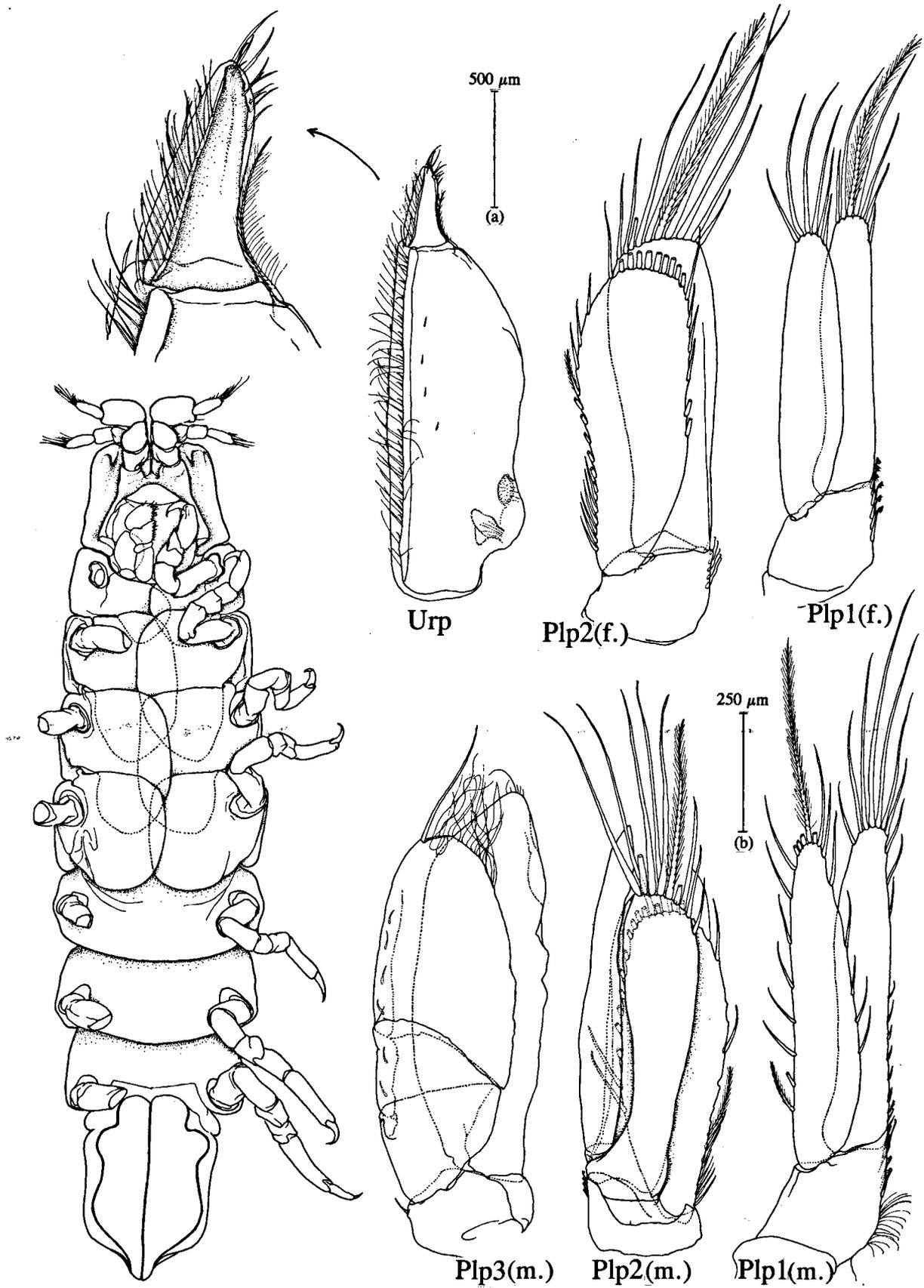


Fig. 28. *Platidotea magellanica* n. sp., holotype, male, 8.8 mm; Plp1 and 2 of male paratype; (a) for Urp; (b) for Plp1-Plp3; ventral view of

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