

New records of *Storthyngura* (Crustacea, Isopoda, Asellota) from the Antarctic deep sea with descriptions of two new species

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With 20 figures and 2 tables

Abstract

Storthyngura longispina sp. nov. and *S. antarctica* sp. nov. are described from the deep sea of the West-Atlantic part of Antarctica. The new species are most similar to *S. elegans* Vanhöffen, 1914 and *S. parka* Malyutina & Wägele, 2001, forming a group of closely related species. New data on three known species from the region: *S. elegans* Vanhöffen, 1914, *S. kussakini* Brandt & Malyutina, 2002 and *S. phyllosoma* (Just, 2001) comb. nov., and redescription of *S. snanoi* Menzies, 1962 from the north-western Atlantic are also presented. The genus *Storthyngura* is re-evaluated, and the recently described genus *Platyprotus* Just, 2001 is reduced to a junior synonym of *Storthyngura*.

Key words: Deep sea, Antarctica, taxonomy, Munnopsididae, *Storthyngura*, new species.

Introduction

The heterogeneity of the large genus *Storthyngura* has been mentioned by many authors (Wolff 1962, George & Menzies 1968, Birstein 1969, Wilson et al. 1989, Malyutina 1999), but since most of the descriptions of the species were not enough informative, any detailed taxonomic assessment of diversity within the genus was difficult. Recent and more detailed descriptions have been given for redescrining the type species of *Storthyngura*, *S. elegans* Vanhöffen, 1914 (Malyutina & Wägele 2000), *S. parka* Malyutina & Wägele, 2000 and *S. kussakini* Brandt & Malyutina, 2002. The new data from those species and data from some other species of *Storthyngura* provided the basis for redefining *Storthyngura* (Malyutina, 2003) with the establishment of three new genera. Nine species are retained in *Storthyngura*, namely *S. elegans*, *S. parka*, *S. kussakini*, *S. intermedia* (Beddard, 1885), *S. magnispinis* (Richardson, 1908), *S. octospinosalis* Menzies & George, 1972, *S. snanoi* Menzies, 1962, *S. truncata* (Richardson, 1908), and *S. vema* Menzies, 1962. The diagnosis and description of the redefined genus *Storthyngura* was based mainly on the data from *S. elegans*,

S. parka and *S. kussakini*, because all other species were unavailable for study and their original descriptions do not contain enough information.

Two Antarctic expeditions (ANT XV-3 in 1998 and ANDEEP in 2002) off the South Shetland Islands and in the Weddell Sea yielded a small collection of *Storthyngura* from depths between 938–3640 m. The new material presented here includes two new species, *S. longispina* sp. nov. and *S. antarctica* sp. nov. and three known species *S. elegans*, *S. kussakini* and *S. phyllosoma* (Just, 2001). For comparison the holotype of *S. snanoi* was also examined. The new data allowed to corroborate and specify the *Storthyngura* diagnosis and to reappraise the genus. The recently described genus *Platyprotus* Just, 2001 was consequently recognised as a junior synonym of *Storthyngura*.

Methods

Specimens were collected during the expeditions ANT XV-3 in February 1998 in the Weddell Sea and ANT XIX-3, ANDEEP I (Antarctic benthic DEEP-sea biodiversity: colonisation history and recent community patterns) in February 2002 onboard the RV *Polarstern* in the Antarctic deep sea off the South Shetland Is. and in the Weddell Sea. Collections were made means of an epibenthic sledge (Brandt & Barthel

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1995). The material was fixed in precooled 80% ethanol. In the laboratory, the material was sorted and determined using a Wild M5 dissecting microscope and illustrated using a Leitz Dialux microscope, equipped with a camera lucida.

Terminology and measurements were made following Wilson (1989). Total body length was measured medially from the anterior edge of the head to the posterior tip of the pleotelson. Length of segments was measured medially or laterally from the anterior margin without spine to the posterior margin. Spines were measured from the tip to the basis along the anterolateral margin. If an animal could be completely straightened, we used the dorsal view for the measuring, like for measuring any width. However, when body was curled, the lengths of its segments and dorsal spines were measured in lateral view.

Scale bars of dorsal views are 1 mm, those of appendages 0.5 mm unless otherwise noted in figure captions.

The types of the new species are deposited in the Zoological Museum, Hamburg.

The following abbreviations are used in the text and figures: ZMH = Zoological Museum, Hamburg, AMNH = American Museum of Natural History; E = epinet, S = supranet; A1 = antenna 1, A2 = antenna 2, F = female, Hy = hypopharynx, lMd = left mandible, rMd = right mandible, M = male, Mx1 = maxilla 1, Mx2 = maxilla 2, Mxp = maxilliped, P1–7 = pereopod 1–7, Plp 1–5 = pleopod 1–5, Urp = uropod.

Taxonomy

Munnopsididae Sars, 1869

Storothyngurinae Kussakin, 2003

Storothyngura Vanhöffen, 1914

Storothyngura Vanhöffen, 1914: 583; Hansen 1916: 132; Birstein 1957: 962; Menzies 1962: 145; Wolff 1962: 118; George & Menzies 1968: 277–279; Kussakin in press; Malyutina 2003 (new combination).

Platyprotus Just, 2001: 336 (new synonymy).

Type species. *S. elegans* Vanhöffen, 1914

Species included. See Table 1.

Diagnosis. Body relatively small (2–10 mm), flattened. Head without dorsal spines. Pleotelson terminal projection rather broad, about one third as wide as pleotelson, not pointed apically; margin between posterolateral and terminal projections with rounded notches for uropods; preanal ridge weakly prominent, rounded. Antenna 1 article 1 with medial spine; article 2 narrow, without distomedial process. Pereopods 3 and 4 insignificantly longer than pereopod 2, with stout carpus, bearing several spine-like setae on distal third of ventral margin. The other characters of *Storothyngura* are listed in Table 2, most representatives are presented in Fig. 20 (compare also with diagnosis and description of the genus in Malyutina, in press).

Remarks. Just (2001) had erected the new monotypic genus *Platyprotus* for *P. phyllosoma*. Comparing *Platyprotus* with *Microprotus* Richardson, 1910, *Storothyngurella* Malyutina, 1999 and *Storothyngura* Just identified (p. 335) the fol-

lowing autapomorphies for the genus: flattened body; absence of marginal spines on pereonites 5–7 and pleotelson; absence of preanal ridge of pleotelson, and uniquely spatulate setae on article 3 of the mandibular palp.

We present the comparative characters for *Platyprotus* and *Storothyngura* in Table 2. Because of the long list of the characters of *Storothyngura* defines also *Platyprotus* and the diagnosis of *Platyprotus* (Just, 2001: 336) is comprised in the diagnosis of *Storothyngura* as well, we have reduced the genus *Platyprotus* to a synonym of *Storothyngura*. Unique characters of *Platyprotus*, mentioned by the author are the specific characters of *Storothyngura phyllosoma*.

The flattened natasoma of *S. phyllosoma*, almost without lateral projections, has the general morphological characteristics of *Storothyngura* species. It is broader than the ambuloma; pereonites 5–7 are fused without dorsal sutures, pleotelson is free; anterolateral angles of pereonites 5–7 are more or less acute, posterolateral margins are rounded or straight; two lateral angles of pleotelson vary from rounded and smooth to acute and prominent; terminal projection is about one-third as wide as pleotelson, not pointed apically; margin between posterolateral and terminal projections has rounded notches for uropods. The preanal ridge is weakly developed and hardly produced what is also common for *Storothyngura*. Unusual marginal setae on article 3 of mandibular palp is a specific character for this species. The same type of distally broadening setae, but with more complicated structure is found in some other species of *Storothyngurinae* (Malyutina, 2003).

S. phyllosoma has narrow carpus of pereopods 5–7 and *S. kussakini* is the only species among *Storothyngura*, which shares this character. Although carpi and propodi 5–7 of *S. phyllosoma* are narrow and without natatory setae, they are lamellar rather than tubular articles, probably developed from formerly broad swimming articles. This can be assumed because *S. phyllosoma*, like all *Storothyngura* species has completely fused pereonites 5–7. This character, one of the most important for the specialized family Munnopsididae, is linked with swimming or digging capability. *S. phyllosoma* has the most flattened body and the narrowest posterior legs among the species of *Storothyngura*. Probably, these are secondary adaptations related to the change from a more swimming to a more creeping lifestyle, which are displayed to different degrees among the species of *Storothyngura*.

Table 1
List of species of *Storthyngura*.

		depth (m)
The <i>elegans</i>-group:		
<i>S. antarctica</i> sp. nov.	Antarctica: 59–65° S, 53–60° W	1019–2894
<i>S. elegans</i> Vanhöffen, 1914	Antarctica: 65°15' S, 80°19' E 71°19' S, 87°37' W 59°52' S, 59°03' W	3423 400 3640–3622
<i>S. longispina</i> sp. nov.	Antarctica: 60°38' S, 53–54° W	2893
<i>S. parka</i> Malyutina & Wägele, 2001	E. Pacific, off Peru: 07°08' S, 88°27' W	4173
The <i>magnispinis</i>-group:		
<i>S.?</i> <i>intermedia</i> (Beddard, 1885)	N. Pacific: 37°52' N, 160°17' W	5011
<i>S. kussakini</i> Brandt & Malyutina, 2002	Antarctica, Weddell Sea: 71°19' S, 12°24' W 65°S, 54°W	181–182 1021
<i>S. magnispinis</i> (Richardson, 1908)	NW. Atlantic: 39°49' N, 68°30' W 63°06' N, 56°00' W 61°50' N, 56°21' W	2683 2258 2702
<i>S. octospinosalis</i> Menzies & George, 1972	E. Pacific Peru-Chile Trench: 08°54' S, 80°41' W	4823–4923
<i>S. phyllosoma</i> (Just, 2001)	Antarctica: 65°50' S, 50°34' E 72°34' S, 22°38' W	540 938
<i>S. snanoi</i> Menzies, 1962	W. Atlantic, Caribbean Sea: 14°05' N, 75°25' W	4071
<i>S. truncata</i> (Richardson, 1908)	NW. Atlantic, Martha's Vineyard: 40°29' N, 66° W	2788–3235
<i>S. vema</i> Menzies, 1962	NW. Atlantic: 31°43' N, 68°08' W	5166

The genus *Storthyngura* can be split into two groups of species (Tables 1 and 2). One is the *elegans*-group comprising *S. elegans*, *S. parka*, *S. antarctica* sp. nov., and *S. longispina* sp. nov. This group has a terminal projection of the pleotelson with a medial notch; pereonite 1 without a dorsomedial projection; short coxa on pereopod 1; and pereonite 3 without anterolateral projections.

The remaining eight species, included *S. phyllosoma*, we designate as the *magnispinis*-group. These have a terminal projection on the pleotelson without a medial notch; pereonite 1 with a dorsomedial projection; long pereopod 1 coxa; and pereonite 3 with anterolateral spines. *S. intermedia* was not examined and its position within *Storthyngura* is uncertain. Although it shows most characters of *magnispinis*-group, the pleotelson shape is still unusual for *Storthyngura*.

Distribution. Five species of the genus *Storthyngura* have been found in the northern

hemisphere including: *S. intermedia* from the North Pacific and four similar species: *S. magnispinis*, *S. snanoi*, *S. truncata*, and *S. vema* from the West Atlantic (from 14° to 63° N). All remaining species occur in the southern hemisphere: *S. parka*, and *S. octospinosalis* in the East Pacific off Peru and 5 other ones in the Antarctica. The depth range is between 181–5166 m. The shallowest localities were recorded for three southern-most species from the Antarctic continental shelf: *S. elegans*, *S. kussakini* and *S. phyllosoma*. *S. antarctica* occurs between 1019–2894 m, all other species were found deeper than 2000 m.

Storthyngura longispina sp. nov.

Figs 1–4

Holotype: female 4.3 mm long (ZMH, K-40207), 46-7-E, 30.1.2002, northeast of Elephant Island, South Shetland Islands, 60°38.33 S, 53°57.38 W–60°38.17 S, 53°57.47 W, 2893–2894 m, epibenthic net.

Table 2

Comparison of some significant morphological characters between *Platyprotus* and *Storthyngura*, including characters, used by Just (2001) for the definition of *Platyprotus* (lines in bold refer to characters different in the groups of *Storthyngura*).

Character	<i>Platyprotus</i>	<i>Storthyngura</i>	
		<i>magnispinis</i> -group	<i>elegans</i> -group
Body shape	flat	flat (not clear for <i>S. octospinosalis</i>)	flat
Body broadest part	Natasoma (pereonites 5–7 and pleotelson subequal in width)	Natasoma (pereonite 5)	Natasoma (pereonite 5)
Dorsal spine on head	absent	absent	absent
Dorsomedial spine on pereonite 1	present	present	absent
Coxae of pereopod 1	As long as pereonite laterally	As long as pereonite laterally	Shorter than pereonite laterally
Anterolateral spine on pereonite 3	present	present	absent
Pereonites 5–7 articulation	Fused without sutures	Fused without sutures	Fused without sutures
Anterolateral angles on pereonites 5–7	slight protruded	protruded	protruded in different degree (very weakly in <i>S. antarctica</i>)
Posterolateral margin on pereonites 5–7	rounded	rounded	rounded
Pleotelson articulation	free	free	free
Pleotelson lateral projections	Not protruded	Protruded	Protruded in different degree (very weakly in <i>S. antarctica</i>)
Pleotelson terminal projection	Broad, about one third as wide as pleotelson, not pointed	Broad, about one third as wide as pleotelson, not pointed	Broad, about one third as wide as pleotelson, not pointed
Apex of pleotelson	rounded	rounded	with medial notch
Notches for uropods between posterolateral and terminal projections of pleotelson	present	present	present
Pleotelson preanal ridge	Weakly developed	Weakly developed to different degrees	Weakly developed to different degrees
Article 1 antenna 1 medial spine	present	present	present
Article 1 antenna 1 distomedial projection	absent	absent	absent
Article 1 antenna 2 articulation	Well separated from article 2	Well separated from article 2	Well separated from article 2
Article 1 antenna 2 lateral spine	present	present	present
Mandible <i>pars incisive</i> in dorsoventral view	narrow	narrow	narrow
Mandible lacinia mobilis	stout	stout	stout
Mandible spine row	8–11 stout setae	8–11 stout setae	8–11 stout setae
Mandible molar process distally	narrow	narrow	narrow
Mandible palp article 3 setae	Long spatulate	Short simple	Short simple
Maxilliped endite	with few slender coupling hooks	with few slender coupling hooks	with few slender coupling hooks
Maxilliped palp article 2 medial margin	Somewhat concave, longer than article 3	Somewhat concave, longer than article 3 (subequal in <i>S. kussakini</i>)	Somewhat concave, longer than article 3
Maxilliped epipod lateral margin	smooth	Smooth (angular in <i>S. kussakini</i>)	smooth
Pereopods 3–4	Insignificantly longer than pereopod 2	Insignificantly longer than pereopod 2	Insignificantly longer than pereopod 2
Carpi of pereopods 3–4	Stout, with spine-like ventral setae on distal third	Stout, with spine-like ventral setae on distal third	Stout, with spine-like ventral setae on distal third

Table 2
Continued

Character	<i>Platyprotus</i>	<i>Storthyngura</i>	
		<i>magnispinis</i> -group	<i>elegans</i> -group
Carpi of pereopods 5–7	Elongate, not broader than basis, without natatory setae	broader than basis, crescent-shaped (in <i>S. kussakini</i> elongate, not broader than basis, natatory setae tend to reduction on ventral margin)	broader than basis, crescent-shaped
Propodi of pereopods 5–7	Elongate, smaller than carpus	Elongate, smaller than carpus	Elongate, smaller than carpus
Male pleopod 1	?	Broadest basally, tapering distally	Broadest basally, tapering distally
Male/female pleopod 2 setae	Long plumose	Long plumose	Long plumose
Male pleopod 2 protopod	Medial margin concave	Medial margin concave	Medial margin concave
Male pleopod 2 stylet	More than two-thirds as long as protopod	More than two-thirds as long as protopod	More than two-thirds as long as protopod
Plumose distal setae on pleopod 3 endopod	3–4	3–4 (8 in <i>S. kussakini</i>)	3
Pleopod 3 exopod	Broad distally, with 7–9 plumose setae	Broad distally, with 5–8 plumose setae	Broad distally, with 5–9 plumose setae
Pleopod 4 exopod	Elongate, not reaching apical margin of endopod, with 1 distal seta	Elongate, not reaching apical margin of endopod, with 1–2 distal seta	Elongate, not reaching apical margin of endopod, with 1 distal setae

Paratype: female (ZMH, K-40208), 46-7-S, same locality, suprabenthic net.

Type locality: northeast of Elephant Island, South Shetland Islands, Antarctica.

Description of holotype. Body (Fig. 1) 1.8 times as long as pereonite 5, height 0.2 of length. Head (Figs 1, 2) midline from point between antennae 1 to posterior margin 0.4 times as long as wide; interantennular distance 0.15 times as wide as head, 0.6 times as wide as antenna 1 basally; frontal arch triangular, with low lateral ridges; clypeus 1.5 times as broad and 0.3 as long as labrum.

Pereonite 1 almost half as long as each of subequal pereonites 2–4. Posterolateral corners of all ambulosomal pereonites rounded, rough in pereonite 3 and 4; anterolateral corners of pereonites 1–3 angular in dorsal view, without projections, pereonite 4 with narrow anterolateral spines. Pereonite 1 without dorsal spine, anterior margin of pereonites 2–4 each with anteriorly directed pointed median spine; spines on pereonites 2 and 3 subequal in length, 1.5 times as long as pereonite length, spine on pereonite 4 shorter and narrower than those on pereonites 2 and 3. Coxae of pereopod 1 shortest, shorter than pereonite; anterior coxal spine of pereopod

2 subequal in length to pereonite; posterior coxal projection almost invisible in dorsal view; anterior spines of coxae 3 and 4 subequal in length to dorsomedial spines of pereonites 2 and 3, curved, basally narrow, with lateral spine-like stout seta in midlength; posterior coxal spines slender, half as long as anterior ones.

Natasoma about 1.2 times as long as anterior body part (ambulosome + head). Pereonite 5 very short medially, with 1 slender dorsomedial spine anteriorly, half as long as that of pereonite 4; pereonites 6 and 7 with pair of low indistinct submedian dorsal tubercles; anterolateral projections pointed, directed almost perpendicular to body axis, slightly frontally, twice as long as pereonites laterally.

Pleotelson (Fig. 1) 0.3 times as long as body, 0.7 times as long as wide together with anterior spines and 1.2 as long as wide across middle part. Anterolateral spines directed perpendicular to body axis; posterolateral spines slightly shorter than anterolateral spines, pointed, directed posteriorly; terminal projection 0.4 times as long as pleotelson, 1.4 times as long as wide apically, apex with deep angular median notch; lateral spines and terminal projection bent dorsally; dorsal surface of pleotelson with small acute tubercles posterior to rounded elevation on anterior

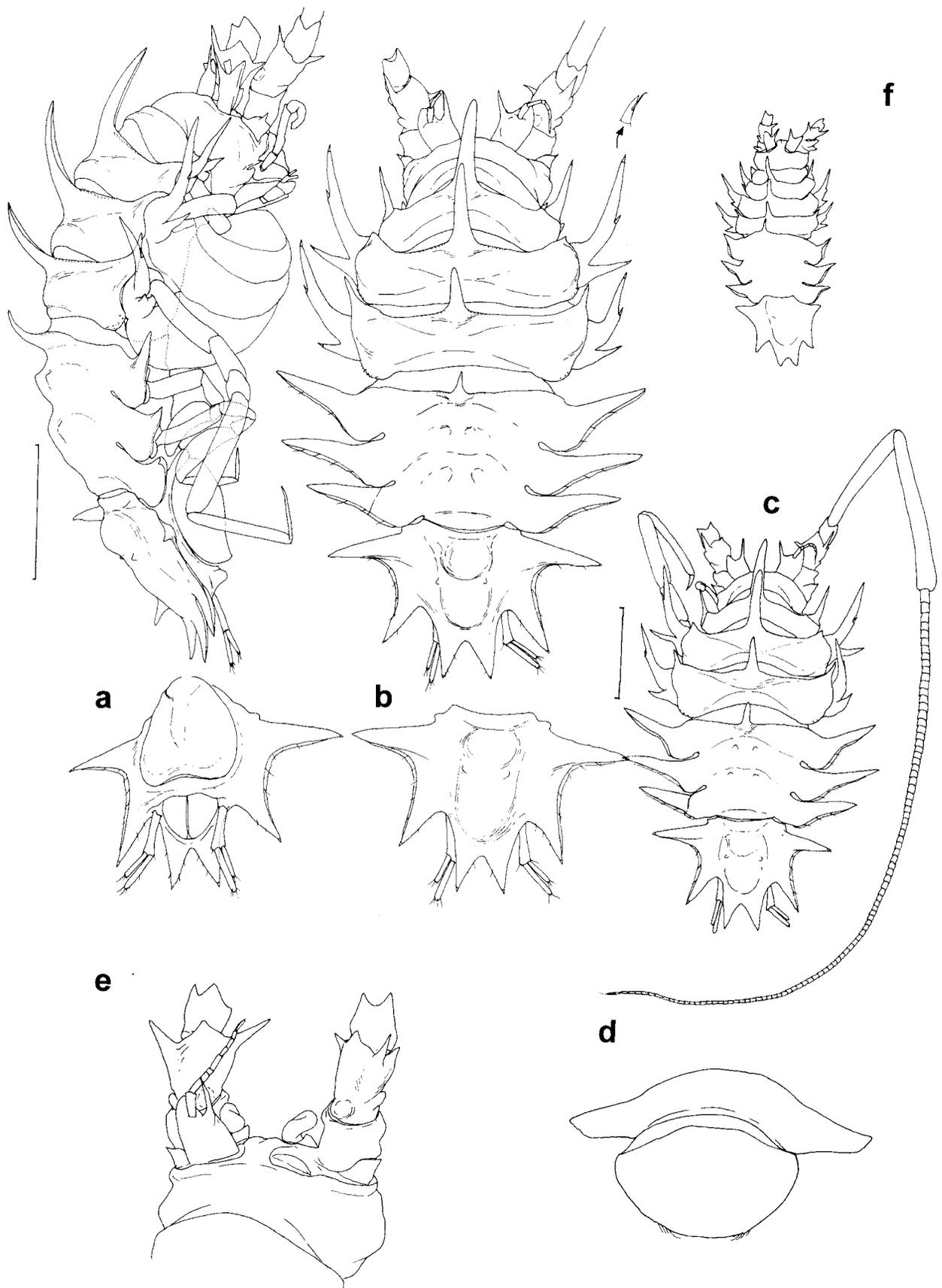


Fig. 1. *Storhyngura longispina* sp. nov., female, holotype: dorsal and lateral total body views; **a**, **b**, pleotelson: **a**, ventral and **b**, dorsal view; **c**, total body with antenna 2; **d**, labrum and clypeus; **e** juvenile, total dorsal view.

part; preanal ventral ridge very short, rounded, not bent posteriorly.

Antenna 1 (Fig. 2) about 0.2 times as long as body, 8 articles; article 1 1.8 times as long as wide, medial spine half as long as article; article 2 subequal to distolateral lobe of article 1; articles 3–8 0.8, 0.2, 0.7, 0.4, 0.4, 0.4 times as long as article 2 respectively, only slightly narrower than article 2; article 2 with 3 and article 4 with 2 distal broom setae; terminal article with 2 aesthetascs and 3 small simple setae.

Antenna 2 (Fig. 1) 2.8 times as long as body. Peduncle article 1 with distolateral minute spine-like projection; article 3 almost twice as long as article 2 dorsally, with subequal lateral and medial distal spines, both ending with stout spine-like seta; article 5 1.5 times as long as articles 1–4 combined; article 6 1.4 times as long as article 5; flagellum of about 100 articles.

Mandibles (Fig. 2): pars incisiva with 1 large tooth and 1 weak cusp proximally (indistinct on right mandible); lacinia mobilis of left mandible stout, 0.8 times as long as pars incisiva, with 4 teeth; spine row with 8 and 10 members on left and right mandibles respectively; molar process tapering distally, ventral margin of triturative surface with row of denticles and 5 setulose setae; condyle 0.2 times as long as mandibular body; palp slightly longer (1.1) than mandibular body, article 2 3.3 times as long as article 1, with 2 short distal setae, article 3 relatively narrow, with row of rather short marginal setulose setae.

Maxilla 1 (Fig. 3) lateral endite 1.5 times as wide as mesial endite.

Maxilla 2 (Fig. 3) mesial endite longest, with dense tuft of setae distally, 5 of which are comb-like, middle endite shortest, additional small distomedial seta stout; lateral endite with thin distomesial seta.

Maxilliped (Fig. 2) endite with 4 coupling hooks, distal margin with 4 large fan setae and numerous simple slender setae, lateral margin and dorsal ridge with long setae, basis lateral margin with dense row of hair-like setae; palp article 2 lateral margin 1.2 times as long as medial margin, which slightly concave; article 3 medial margin 0.7 as long as article 2, moderately convex, with short setulose setae; article 4 longer laterally than articles 3 and 5, medial lobe longer than article 5, with 4 distal setae, article 5 with 4 distal setae. Epipod 2.6 times as long as wide, distal angle rounded, lateral margin convex, with transparent fringe.

Basis of pereopods 2–7 subequal in size, basis of pereopod 1 shortest, about 0.7 times as long

as each following basis. All bases with numerous small simple setae and a few small broom setae.

Pereopod 1 (Fig. 3) 0.3 times as long as body, ischium 0.4 and merus 0.2 times as long as basis, with sparse small setae; carpus longest, 1.2 times as long as basis, slightly curved; propodus 0.6 as long and about as wide as carpus, both articles with small marginal setae; dactylus half as long as propodus.

Pereopod 2 (Fig. 3) ischium 0.6 and merus 0.3 times as long as basis, with sparse small setae; carpus slightly longer than basis, propodus longest, 1.1 times as long as carpus, both articles about twice as wide as the same articles in pereopod 1; carpus with ventral fringe, including 3 or 4 simple small setae and 6 dorsal simple setae; propodus with small 10 dorsal, 1 broom and 2 or 3 distodorsal whip setae and 7 ventral spine-like setae; dactylus more than half as long as propodus.

Pereopods 3 and 4 (Fig. 3, 4) robust, subequal in length. Pereopod 3 carpus 1.4 as long as basis, 3 stout setae on distal third of ventral margin; propodus 1.2 as long as carpus, with simple short marginal setae; dactylus half as long as propodus. Pereopod 4 basis somewhat shorter than that in pereopod 3; carpus and propodus slightly longer and carpus slightly broader than that of pereopod 3; carpus with 4 stout setae on distal third ventrally; dactylus less than twice as long as propodus.

Pereopods 5–7 (Fig. 3, 4) of similar shape, about 0.8 times as long as pereopod 2. Pereopod 5 basis and ischium somewhat stouter than those of pereopods 6 and 7. Ischium 5–7 slightly more than half as long as corresponding basis. All carpi of the same shape, about 2.5 times as long as wide; carpus 5 and 6 subequal in length to basis; carpus 7 slightly shorter than basis (0.85); propodi 5–7 shorter than carpi (0.9), both articles with plumose marginal setae, distodorsal margin of propodi serrated; dactyli 0.7–0.8 times as long as corresponding propodi.

Operculum (Fig. 1) as long as wide; keel rather high, narrow, rounded ventrally, distal margin with many plumose setae.

Pleopod 3 (Fig. 4) endopod 1.7 times as long as wide, 3 plumose setae distally. Exopod 1.1 times as long as endopod, basal article 0.25 times as wide as endopod, articles subequal in length, apical one with 8 distal plumose setae and dense rows of long hair-like lateral setae.

Pleopod 4 (Fig. 4) endopod slightly larger than that of pleopod 3, 1.4 times as long as wide. Exopod 0.2 times as wide and 0.8 as long as endopod.

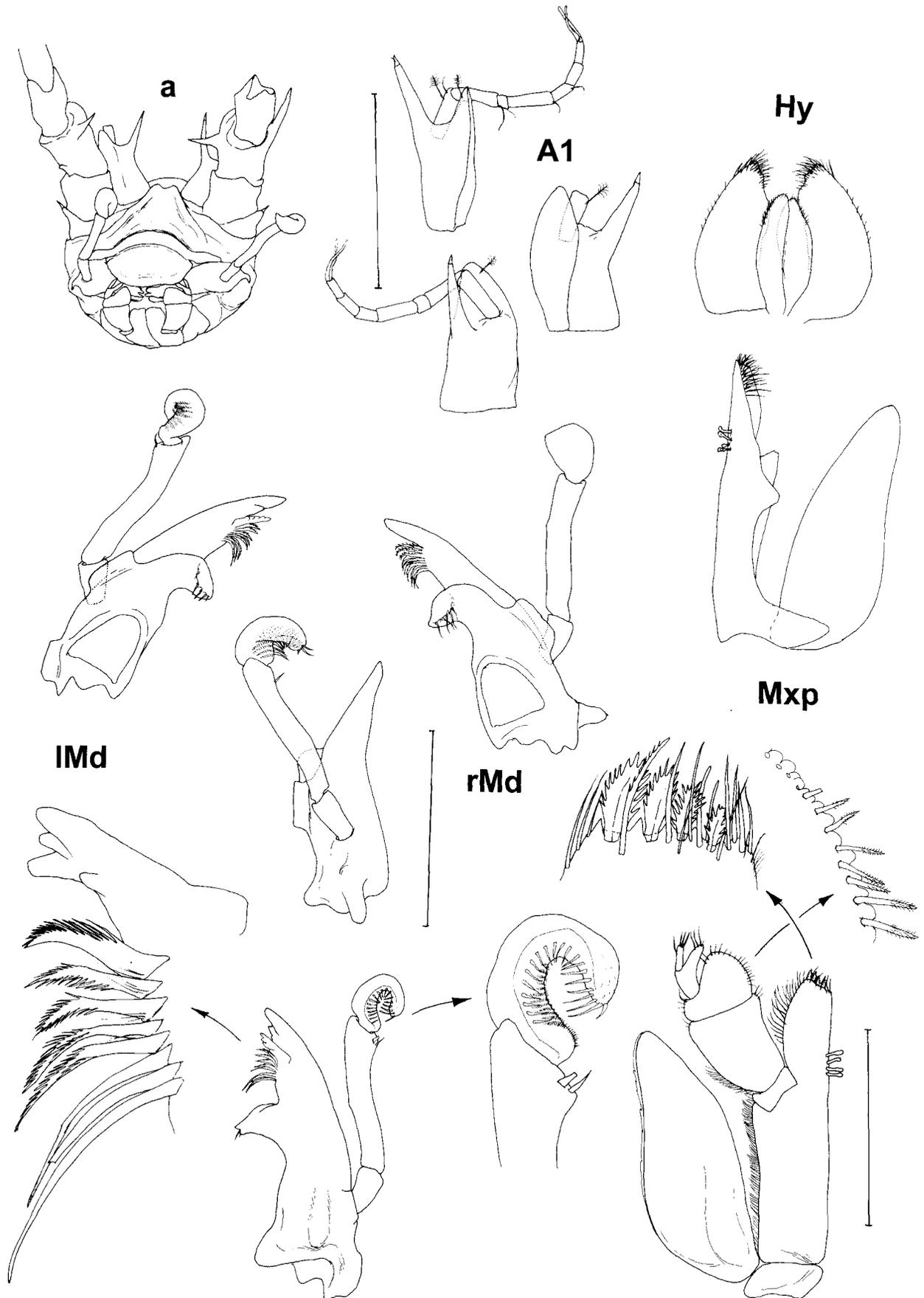


Fig. 2. *Storthyngura longispina* sp. nov., female, holotype: **a**, head, frontal view; antenna 1, mandibles, and maxilliped.

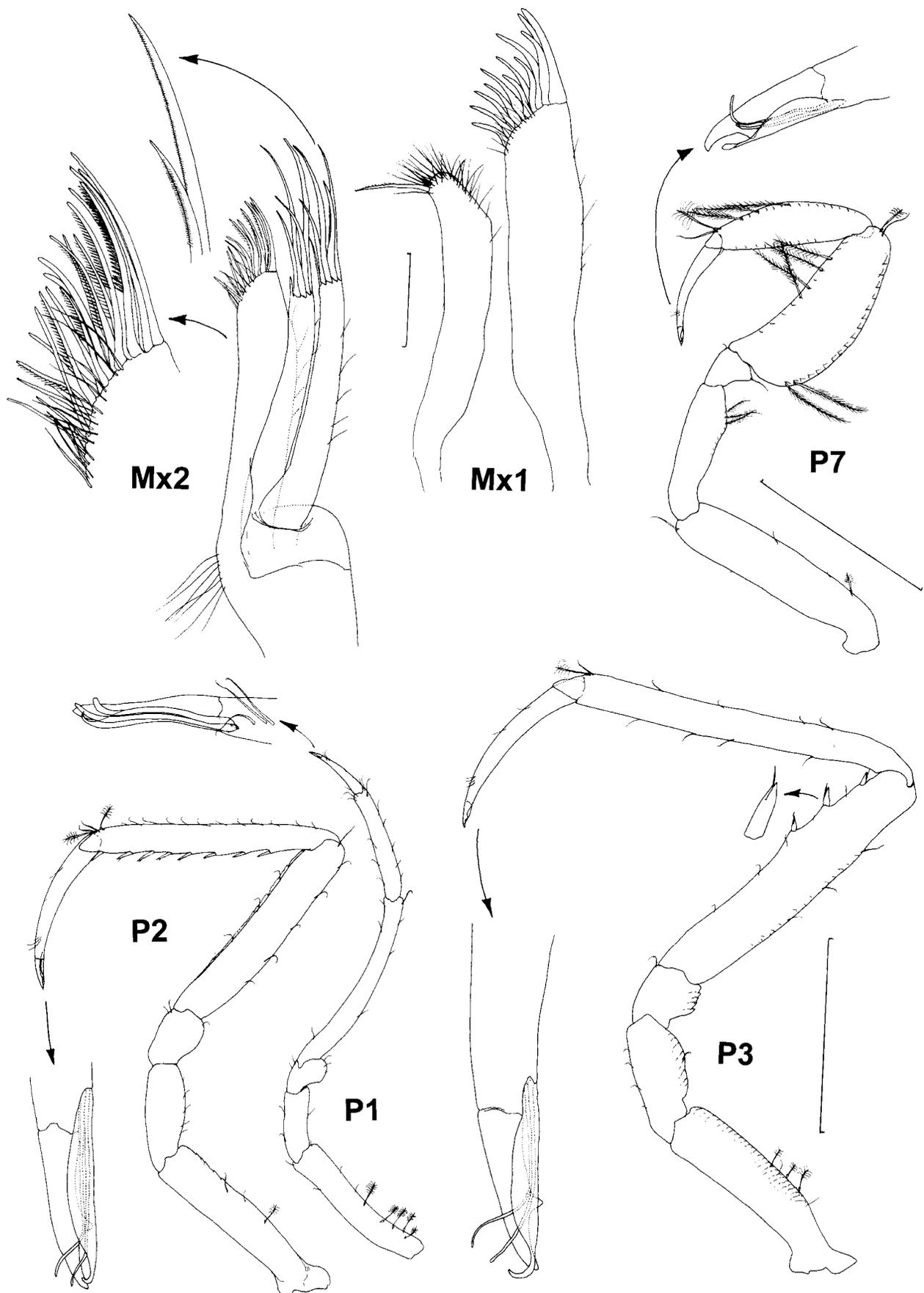


Fig. 3. *Storthyngura longispina* sp. nov., female, holotype: maxillae, pereopods 1–3 and 7.

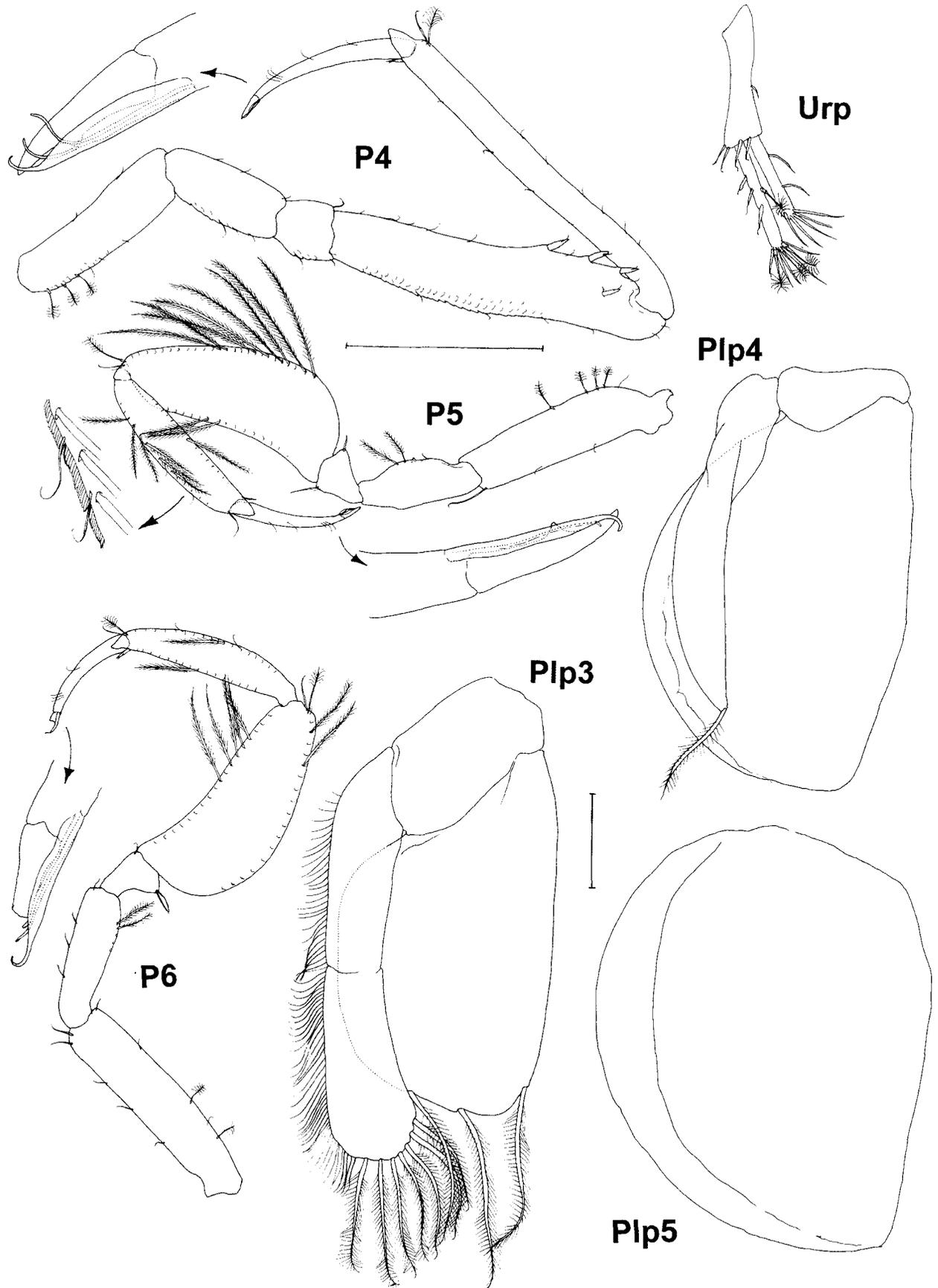


Fig. 4. *Storthyngura longispina* sp. nov., female, holotype: pereopods 4–6, pleopods 3–5 and uropod.

Pleopod 5 (Fig. 4) endopod 1 1.2 times as long as wide.

Uropod (Fig. 4) 0.5 times as long as pleotelson. Protopod 2.6 times as long as wide, conspicuously broadening distally, with 2 distomedial and 2 distolateral long whip setae. Endopod less than half as wide as protopod, subequal to protopod in length, with 1 medial bifid seta, 4 lateral whip setae, 3 distal broom and 5 simple setae. Exopod 0.7 times as long and as wide as endopod, with 2 whip and 5 simple setae distally.

Male. Unknown.

Etymology. From the Latin *longus* in combination with *spina* (thorn) referring to the long dorsal and lateral spine-like projections of the body and coxae of pereopods 3–4.

Distribution. Antarctica: Drake Passage off South Shetland Islands; at a depth 2893–2894 m.

Remarks. *Storthyngura longispina* sp. nov. differs from all species of the genus in having a single dorsomedial spine on pereonite 5, long dorsal spines on pereonites 2–4 and long spines on coxae 3–4, with spine-like seta on the middle of lateral margins. The shape of the pleotelson of the new species is similar to that of *S. elegans* Vanhöffen, 1914, but *Storthyngura longispina* sp. nov. can be easily distinguished from *S. elegans* by having all spines on the body and coxae and medial spine on article 1 of antenna 1 longer than in *S. elegans*.

Storthyngura antarctica sp. nov.

Figs 5–10

Holotype: male 4.1 mm long (ZMH, K-40209), 46-7-S, 30. 1. 2002, northeast of Elephant Island, South Shetland Islands 60°38.33 S, 53°57.38 W–60°38.17 S, 53°57.47 W, 2893–2894 m, suprabenthic net.

Paratypes: (paratypes ZMH, K-40210), 1 female, 1 male, 1 male on IV stage, 46-7-E, the same locality as holotype, epibenthic net; (paratype ZMH, K-40211), 1 male, 41-3-E, 26. 1. 2002, 59°22.24 S, 60°04.06 W–59°22.39 S, 60°04.00 W, 2368–2370 m; (paratype ZMH, K-40212), 1 female, 133-3-E, 7. 3. 2002, 65°20.17 S, 54°14.30 W–65°20.05 S, 54°14.46 W, 1021–1019 m.

Type locality: northeast of Elephant Island, South Shetland Islands, Antarctica.

Description. Body of the holotype (Fig. 5), paratype male and female (Fig. 6), twice as long as pereonite 5. Head 0.5 times as long as wide; interantennular distance 0.1 times as wide as head and 0.5 as antenna 1; frons concave medi-

ally, frontal arch triangular, with thick lateral ridges; clypeus 1.5 times as broad and 0.4 as long as labrum.

Pereonites 1–4 subequal in length medially, posterolateral corners of all of them rounded, anterolateral corners of pereonites 1–3 rounded, without projections, pereonite 4 with anterolateral spines; pereonite 1 without dorsal spine, anterior margin of pereonites 2–4 with dorsomedial projection, rounded distally on pereonites 2 and 3, and pointed on pereonite 4; spines subequal in length, curled, longer than pereonite. Anterior coxal spine of pereonite 1 smallest, about 0.25 as long as following ones, which are triangular, pointed, longer than pereonites; anterior coxal spines 3 and 4 subequal in length to dorsomedial spines of pereonites 2 and 3, posterior coxal projections small, in pereopod 2 almost not produced.

Natasoma 1.5 as long as anterior part of body; pereonite 5 without dorsomedial spines, anterior margin slightly raised; pereonites 6 and 7 with pair of dorsal low elevations; anterolateral projections weakly produced, lateral margins of natasoma almost in one line.

Pleotelson 0.3 times as long as body, 0.7 times as long as wide anteriorly (with spines) and 0.9 as wide in middle part; anterolateral processes broad, rounded distally; posterolateral projections narrower than anterolateral ones, more acute, posteriorly directed; lateral margins almost straight, weakly concave; terminal projection short and broad, 0.3 times as long as pleotelson, 0.7 times as long as wide apically, with shallow angular medial notch; lateral and terminal projections somewhat bent dorsally; dorsal surface with central elevation, pair of small acute tubercles on anterior half of pleotelson; preanal ventral ridge short, rounded, slightly produced posteriorly.

Antenna 1 of male (Fig. 7) about half as long as body. Article 1 1.8 times as long as wide, medial spine small, narrow, 0.2 times as long as article; article 2 half as long as article 1, visibly longer than distolateral lobe of article 1; articles 3–7 conspicuously narrower than article 2, 0.7, 0.2, 0.9, 0.2, 0.1 times as long as article 2 respectively; following 53 flagellar articles as long as article 7, terminal half of flagellum with aesthetascs.

Antenna 1 of female (Fig. 7) about 0.2 times as long as body, 13 articles. Article 1 1.7 times as long as wide, medial spine of the same length, but broader than that in male; article 2 slightly longer than distolateral lobe of article 1; articles

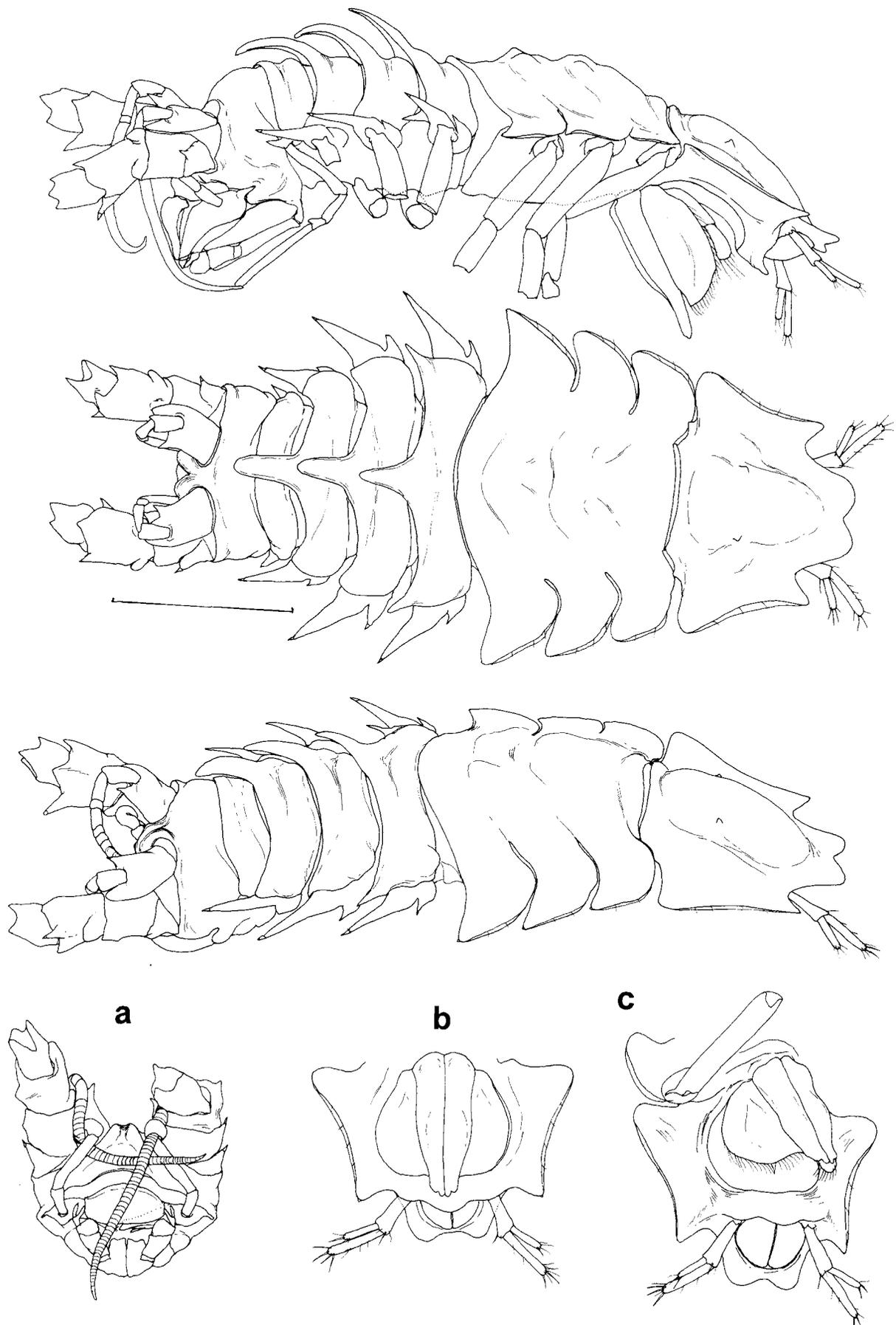


Fig. 5. *Storhyngura antarctica* sp. nov., male, holotype: dorsal and lateral body views; a, head, frontal view; b, pleotelson, ventral view; c, pleotelson, ventral oblique view.

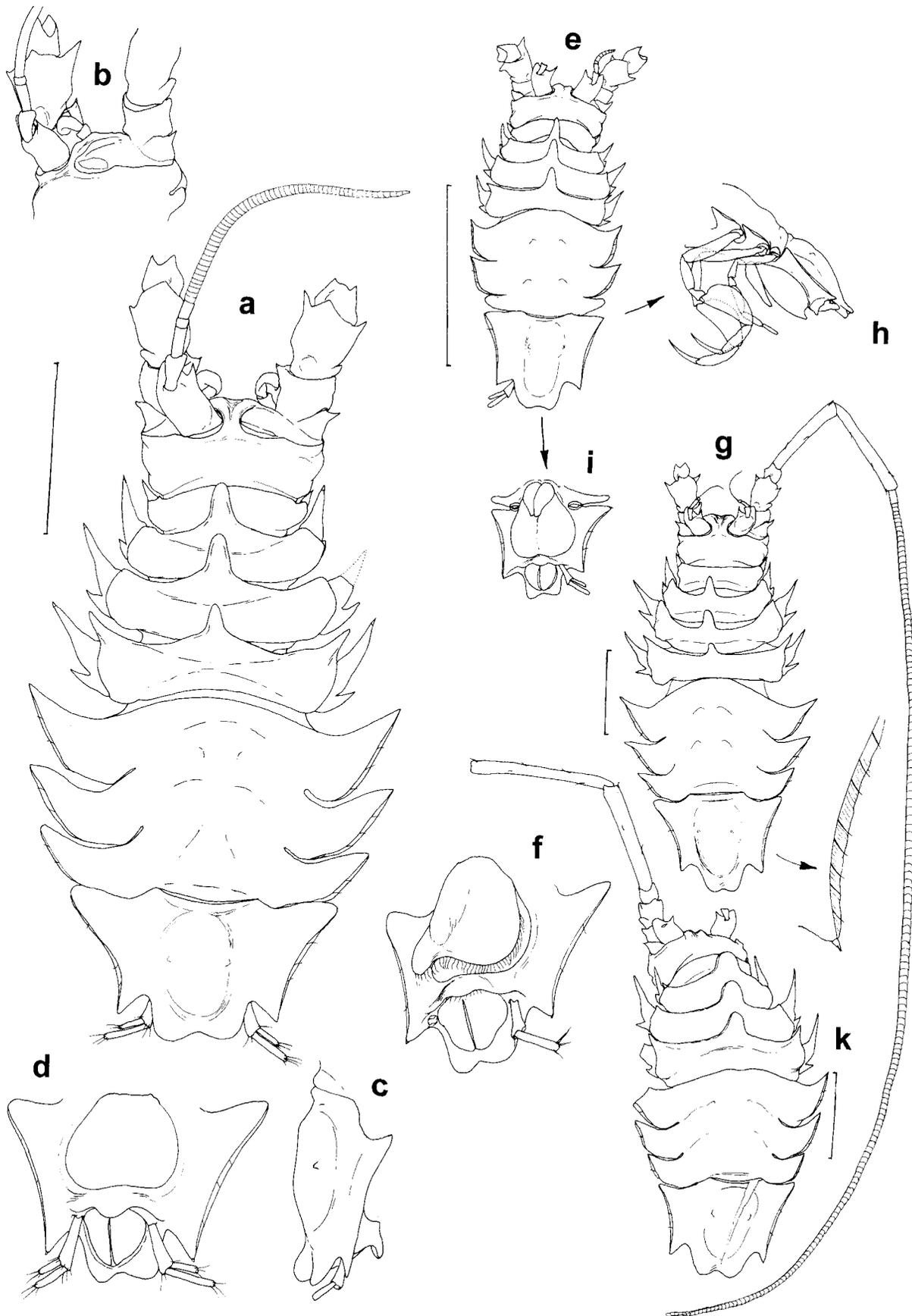


Fig. 6. *Storthyngura antarctica* sp. nov., male, paratype: **a**, dorsal body view; **b**, head without right antenna 1, oblique lateral view; **c**, pleotelson, lateral view; **d**, pleotelson, ventral view; **g**, female, paratype: **g**, dorsal total view and **f**, pleotelson, ventral view; **e**, **h**, **i** male on IV stage: **e**, total dorsal view, **h**, natasoma, lateral view and **i**, pleotelson ventral view; **k**, female, paratype, dorsal total view.

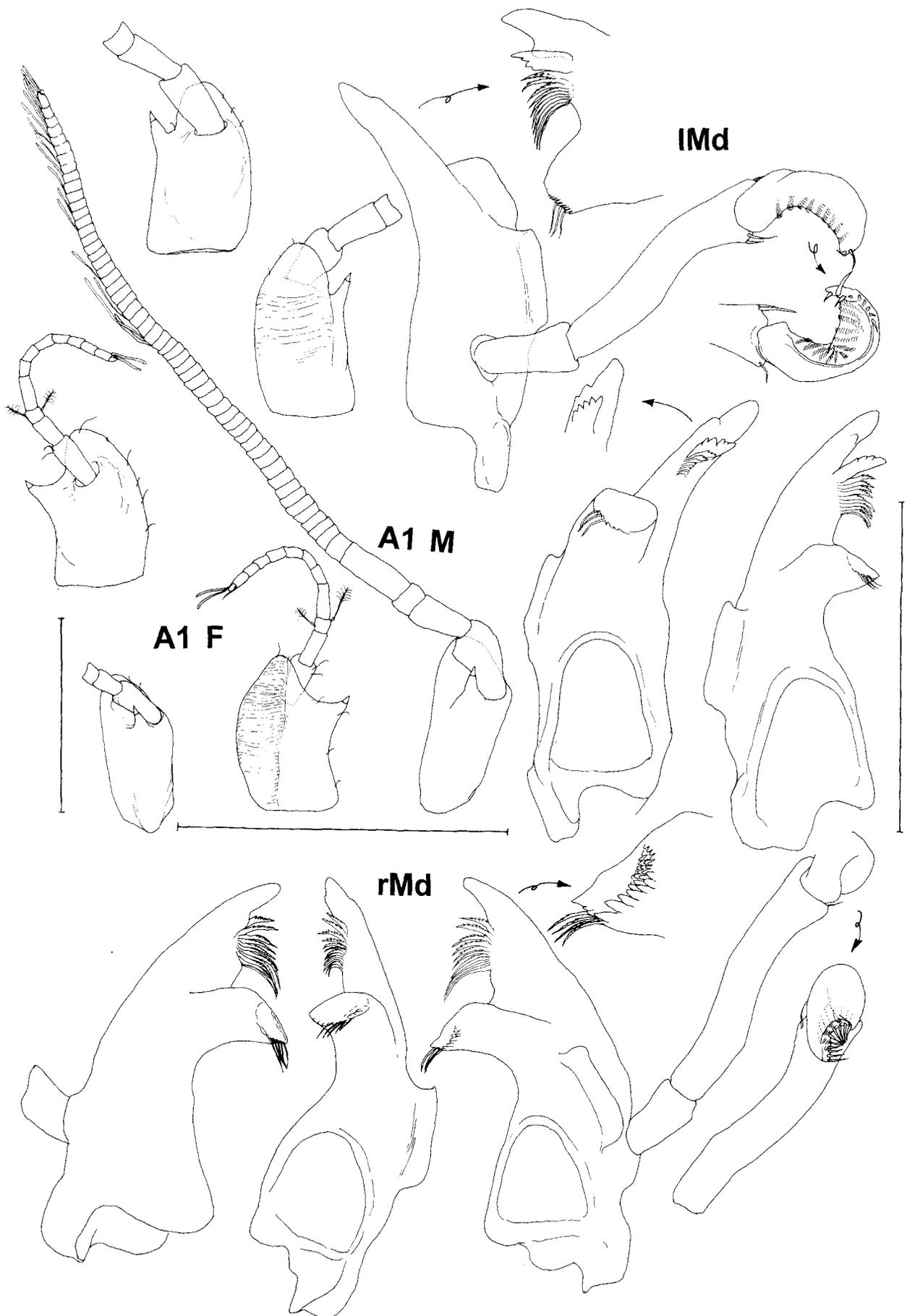


Fig. 7. *Storhyngura antarctica* sp. nov., male and female, paratypes: antenna 1; male, paratype: mandibles.

3–6 0.7, 0.2, 0.7, 0.35 times as long as article 2 respectively; following 6 flagellar articles as long as article 6, terminal article smallest, with two aesthetascs and small simple seta; all articles excepting basal one half as wide as those in male.

Antenna 2 of male (Fig. 7) broken, four basal articles preserved only. Distolateral minute spine-like projection of article 1 subequal to distomedial projection of article 2; article 3 almost twice as long as article 2 dorsally, with subequal lateral and medial spines distally, both ending with stout spine-like seta.

Antenna 2 of female (Fig. 6) 2.9 times as long as body. Articles 1–4 as those in male, article 5 slightly longer than articles 1–4 combined, article 6 1.2 times as long as article 5, both of them with sparse setae along, flagellum of about 180 articles.

Mandibles (Fig. 7). Pars incisiva with one large tooth and one weak cusp proximally; lacinia mobilis of left mandible 0.6 times as long as pars incisiva, with five teeth; spine row with 10 and 11 members in left and right mandibles respectively; molar process tapering distally, ventral margin of triturative surface with row of denticles and four or five setulose setae; condyle 0.2 times as long as mandibular body. Palp subequal in length to mandibular body, article 2 2.6 times as long as article 1, with two short distal setae, article 3 with row of rather short marginal setulose setae.

Maxilla 1 (Fig. 8) lateral endite 1.5 times as wide as mesial endite.

Maxilla 2 (Fig. 8) mesial endite longest, with dense tuft of setae distally, 5 of them comb-like; middle endite shortest, distal spine-like setae longer than those on lateral endite, additional small distomesial seta stout.

Maxilliped (Fig. 8) endite with 5 coupling hooks, distal margin with 4 broad fan setae and numerous thin setae, lateral margin and dorsal ridge with long setae; basis with dense row of hair-like lateral setae; palp article 2 medial margin 0.8 as long as lateral margin; article 3 0.2 times as long laterally and 0.7 medially as article 2, medial margin moderately convex, with short setae; article 4 longer than articles 3 and 5 laterally, medial lobe shorter than article 5, both with 5 distal setae; epipod 2.8 as long as wide, rounded distally.

Pereopod bases increasing in length from 1 to 7, with numerous small simple setae and a few small broom setae dorsally.

Pereopod 1 of male (Fig. 8) 0.3 times as long as body, ischium half and merus 0.2 times as

long as basis, with sparse thin setae; carpus longest, 1.1 as long as basis, almost straight; propodus 0.6 times as long and almost as wide as carpus, both articles with small setae along and tuft of distal setae; dactylus 1.2 as long as merus.

Pereopod 2 of male (Fig. 8) carpus 1.25 times as long as basis, 6 times as long as wide; propodus longest, 1.1 times as long as carpus, both articles twice as wide as the same articles in pereopod 1, with small setae, carpus with a stout seta on ventral third of ventral margin; dactylus broken in this specimen.

Pereopod 3 of male (Fig. 8) almost twice broader and about 1.5 times as long as pereopod 2; carpus 1.7 times as long as basis, 4.5 times as long as wide, narrowing distally, with two rows of 6 and 3 stout setae on distal third of ventral margin; propodus longest, 1.2 times as long as carpus, with sparse small setae; dactylus half as long as carpus, with thin simple setae along.

Pereopod 4 broken off in all specimens.

Pereopod 3 of female (Fig. 9) carpus 4.8 times as long as wide, with two rows of 4 and 2 setae on distal third of ventral margin and 8 dorsal small setae; propodus broken off.

Pereopod 4 of female (Fig. 9) carpus 5 times as long as wide, with two rows of 5 setae each on distal third of ventral margin and 1 seta in midlength; propodus 1.2 times as long as carpus; dactylus about half as long as carpus.

Pereopods 5–7 (Fig. 9) of similar shape. Ischia 5–7 slightly more than half as long as corresponding basis (0.57, 0.64, 0.61); carpi 6 and 7 subequal in length to bases 6, 7; carpus 5 1.2 times as long as basis, 2.5 times as long as wide; propodi 5–7 about 0.8 as long as carpi, both margins with plumose setae, distodorsal margin of propodi serrated, with whip setae; dactyli 5–7 half as long as carpi 5–7.

Pleopod 1 of male (Fig. 10) straight, stout, without waist in midlength, 2.5 times as long as wide basally, tapering distally, distal margin 0.25 as wide as basal margin; distodorsal one-fourth with two rows of short, simple setae.

Pleopod 2 of male (Fig. 10) protopod 0.7 as long as pleopod 1 and twice as long as wide; medial margin concave, lateral margin rounded, distal third with long plumose setae; stylet 0.9 times as long as protopod, extending beyond distal margin of protopod; exopod slender, with long setules on posterior margin of bend.

Pleopod 2 of female (Fig. 6) as long as wide; keel rather high, narrow, rounded ventrally, distal margin with many plumose setae.

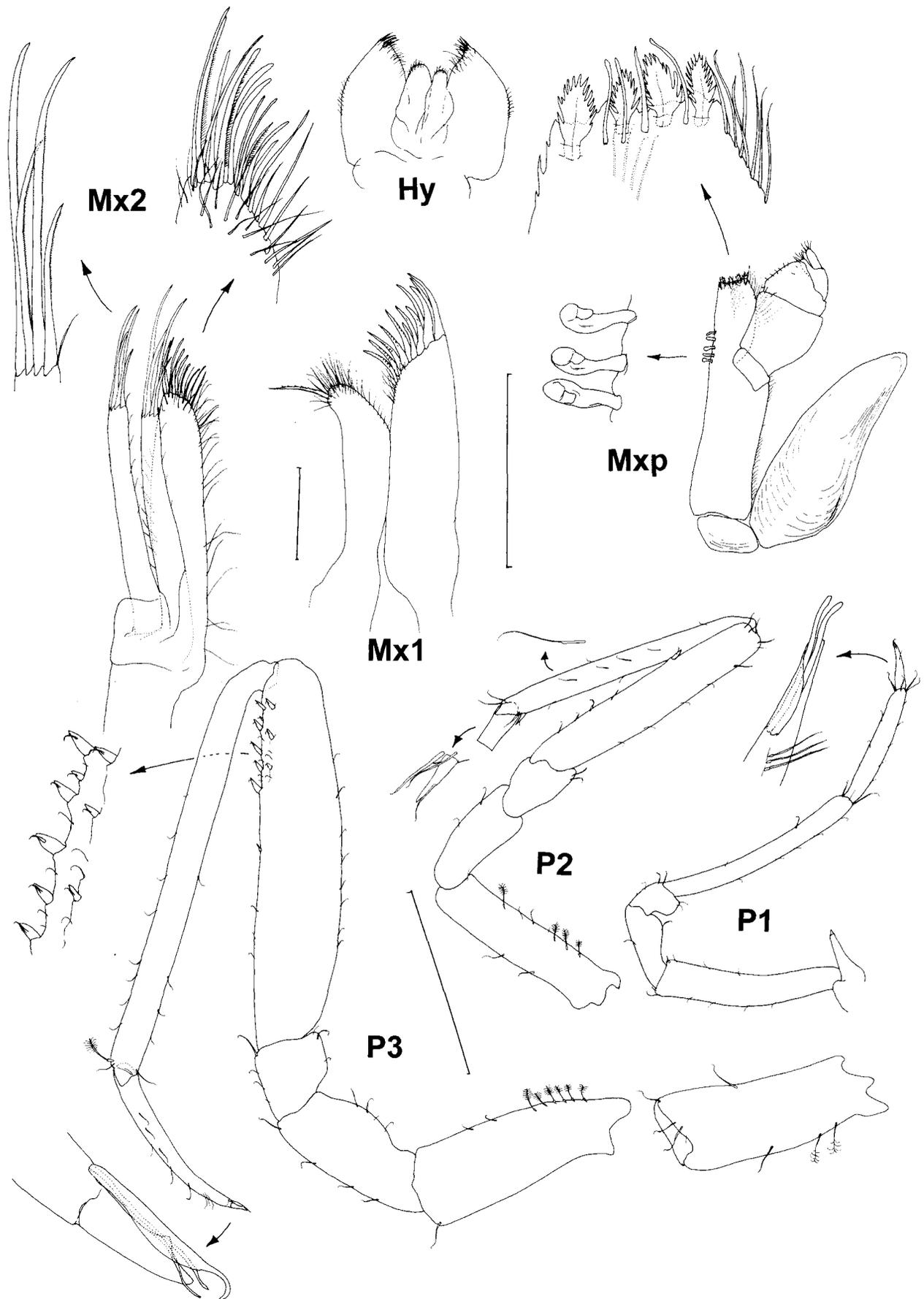


Fig. 8. *Storhyngura antarctica* sp. nov., male, paratype: mouthparts, pereopods 1–3, basis of pereopod 4.

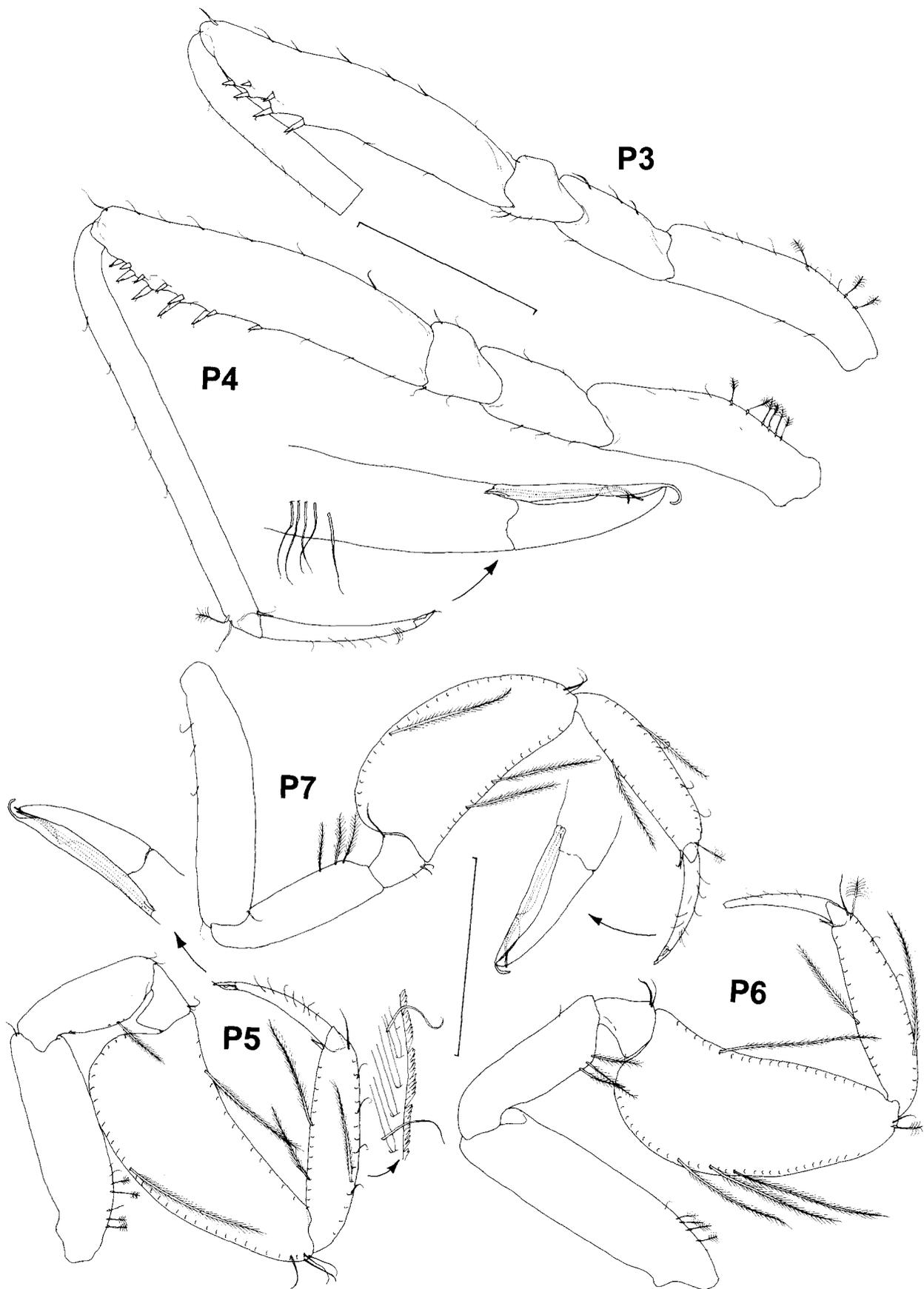


Fig. 9. *Storhyngura antarctica* sp. nov., female, paratype: pereopods 3–7.

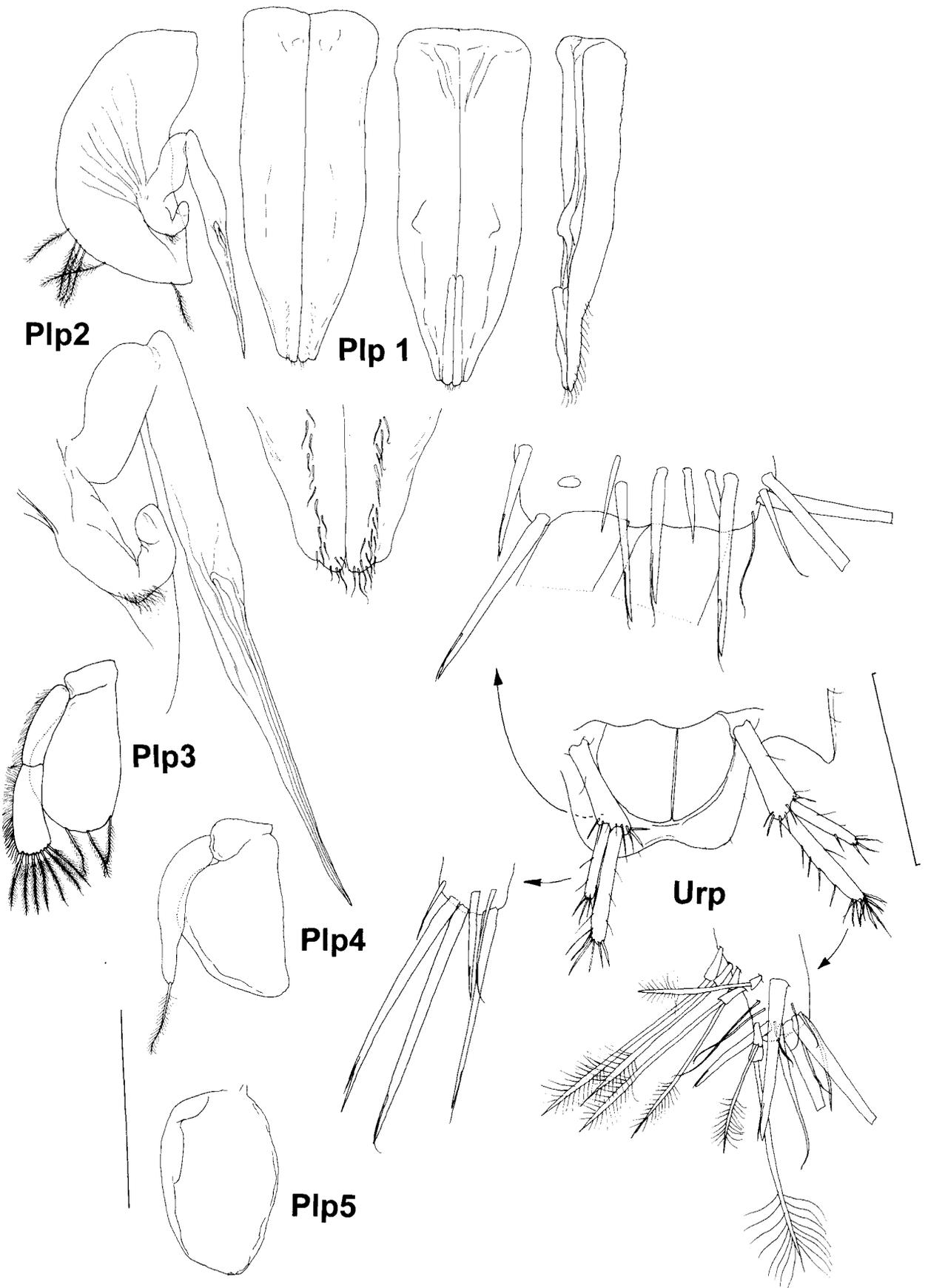


Fig. 10. *Storhyngura antarctica* sp. nov., male, paratype: pleopods 1–5; male, holotype: uropods.

Pleopod 3 (Fig. 10) endopod 1.5 times as long as wide, three plumose setae distally, exopod 1.2 times as long as endopod, of two articles subequal in length; basal article 0.25 as wide as endopod, apical article with 7 distal plumose setae and dense row of long hair-like lateral setae.

Pleopod 4 (Fig. 10) endopod 1.5 times as long as broad, exopod 0.2 as wide and 0.95 as long as endopod, with 1 distal plumose seta, margins with fine setae.

Pleopod 5 (Fig. 10) endopod 1.5 times as long as wide.

Uropod (Fig. 10) 0.5 as long as pleotelson. Protopod 3.1 as long as wide, slightly broadening distally, with 12 distal long stout setae. Endopod 6.2 as long as wide, about half as wide and 1.1 times as long as protopod, with 4 medial and 1 lateral small setae, 4 long, strong, unequally bifid setae, 7 long broom and 5 whip setae distally. Exopod 5.4 as long as wide, 0.7 as long as protopod and 0.7 as wide as endopod, with 3 whip and 3 long, strong, unequally bifid setae distally.

Etymology. The epithet refers to the geographic area from which this species was sampled (noun in apposition).

Distribution. Antarctica: Drake Passage off South Shetland Islands, Shackleton Fracture Zone, northwestern Weddell Sea, in a depth of 1019–2894 m.

Remarks. *Storothyngura antarctica* sp. nov. is similar to *S. parka* Malyutina & Wägele, 2001, *S. longispina* sp. nov. and *S. elegans* in the following characters: terminal projection of the pleotelson with a medial notch; pereonite 1 without a dorsomedial projection; short coxa on pereopod 1; and pereonite 3 without anterolateral projections. We named these species *elegans*-group in the Tables 1 and 2. *S. antarctica* sp. nov. differs from *S. parka*, the most similar species, in having more prominent dorsomedial spines on pereonites 2–4, longer coxal spines, absence of dorsal projections on anterior margin of pereonite 5, paired, not single like in *S. parka*, dorsal tubercles on pereonites 6 and 7, and broader pleotelson with less prominent projections.

In the male from station 41-3-E (Fig. 6) the natasoma is broader than that of the holotype and pereonites 5–7 have more acute and produced anterolateral angles. In the female from 46-7-E (Fig. 6) the distomedial projections of pereonites 2–4 are broad, almost blunt distally and the coxal anterior spines narrower than those in the male holotype.

Storothyngura elegans Vanhöffen, 1914

Fig. 11

Storothyngura elegans Vanhöffen, 1914: 584, Abb. 114; Monod, 1926: 17, Fig. 9A–G; Malyutina & Wägele, 2001: 277, Figs 1–6.

Material examined: 129-2-E, 22. 2. 2002, Drake Passage, 59°52.21 S, 59°58.75 W–59°52.15 S, 59°58.03 W, 3640–3622 m, female 3.1 mm long and damaged anterior part of specimen (ZMH, K-40214).

Description of pereopod 3 (not presented in the description of the holotype): Basis with a few small ventral setae and a long dorsal broom seta; ischium more than half as long as basis, with simple small setae; carpus broadest, 1.6 as long as basis, with 3 stout setae on distal ventral third and a few small setae on both margins; propodus half as broad and 1.1 as long as carpus, with stout ventral seta near distal tip and the same distoventral setae; dactylus half as long as propodus, claws damaged.

Remarks. It is the third finding of the species after the records by Vanhöffen and Monod. The two specimens differ from the holotype in having more pronounced dorsal pairs of tubercles on pereonites 6 and 7 and pleotelson.

Distribution. Antarctica: Indian Ocean sector, off Princess Elisabeth Land in a depth of 3423 m; Pacific Ocean sector, in the Bellingshausen Sea in a depth of 400 m; Drake Passage, in a depth of 3622–3640 m.

Storothyngura phyllosoma (Just, 2001) comb. nov.

Figs 12–16

Platyprotus phyllosoma Just, 2001: 366, figs 1–8.

Material examined: ANT XV-3, 48-107-E, 06. 02. 1998, 73°34.77 S, 22°38.29 W–73°34.92 S, 22°38.89 W depth 938 m, female 4.1 mm long (ZMH, K-40215).

Remarks. We herewith present the drawings of the specimens examined for comparison (see generic remarks and Table 2).

S. phyllosoma differs from other *Storothyngura* species in having the broadest natasoma, where pleotelson is wider or subequal in width to pereonites 5–7, the narrowest pereopods 5–7 and long, distally widened marginal setae on terminal article of mandibular palp. *S. phyllosoma* belongs to the species of *magnispinis*-group (Tables 1 and 2) in bearing a rounded terminal projection of pleotelson without medial notch; pereonite 1 with dorsomedial projection; long coxa of pereopod 1; pereonite 3 with anterolateral spines. *S. phyllosoma* and *S. kussakini* from this group

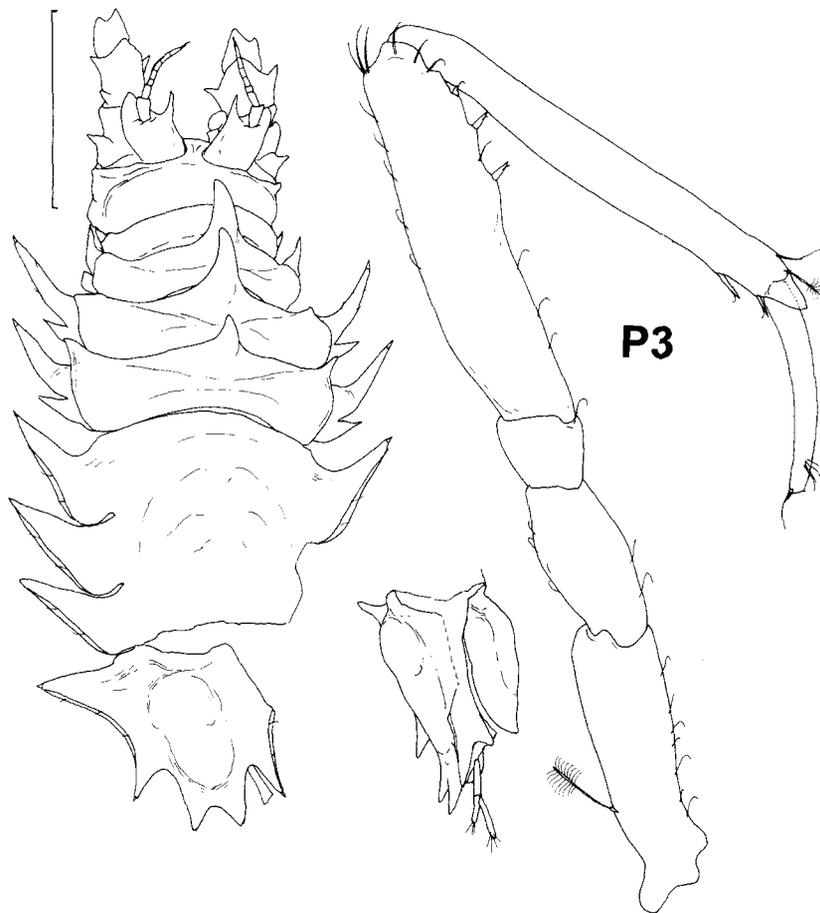


Fig. 11. *Storhyngura elegans* Vanhöffen, 1914, female: **a**, dorsal view; **b**, pleotelson, lateral view; pereopod 3.

share a narrow carpus of pereopods 5–7. The shape of natasoma of *S. phyllosoma*, almost without lateral projections resembles that of *S. antarctica* sp. nov. from the *elegans*-group (Fig. 20). The dorsal surface of the pleotelson of *S. phyllosoma* is similar to all other species of the *elegans*-group with a pair of tubercles in the middle behind a rounded anterior elevation.

Distribution. Antarctica: Indian Ocean sector, off Enderby Land, in a depth of 540 m; Atlantic sector, Weddell Sea, in a depth of 938 m.

Storhyngura kussakini Brandt & Malyutina, 2002

Figs 17–18

Storhyngura kussakini Brandt & Malyutina, 2002: 98, Figs 1–6.

Material examined. 133-3-E, 7. 3. 2002, Drake Passage off South Shetland Islands, 65°20.17 S, 54°14.30 W–65°20.05 S, 54°14.46 W, 1021–1019 m, female 10.8 mm long (ZMH, K-40215).

Because the type material included only males, we present differences of the female from the males.

Females are larger than males, body 1.8 times as long as wide. Anterolateral margins of pere-

onites 5–7 and pleotelson acute, dorsal spines on natasome more slender. Pleotelson preanal ridge short, weakly bent posteriorly.

Antenna 1 (Fig. 17) article 1 1.5 times as long as wide, lateral margin serrated, with plumose distal seta, medial spine small, 0.2 times as long as article, stout spine-like seta distally on spine and dorsally behind article 2 insertion, set of small dorsal plumose setae medially; article 2 shorter than distolateral lobe of article 1, with 2 plumose setae distally; article 3 1.5 times, article 4 0.3 times as long and half as wide as article 2; first flagellar article longest, following 21 articles decreasing in length distally, with aestetasc. Flagellum in female consists only slightly less articles and almost does not differ from that in male (Fig. 17).

Pereopod 3–4 (Fig. 18) more slender, than in male (Fig. 18), propodi with pair of dorsal strong setae, absent in male, ventral spine-like setae on propodus shorter, situated only on distal half.

Pereopod 5 (Fig. 18) with carpus and propodus slender, but carpus broader than that in male (Fig. 35, compare Brandt & Malyutina, 2002: Fig. 5), both margins with dense rows of plumose setae (in male sparse natatory setae are only on dorsal margin), dorsal margin of propodus serrated, with additional whip setae.

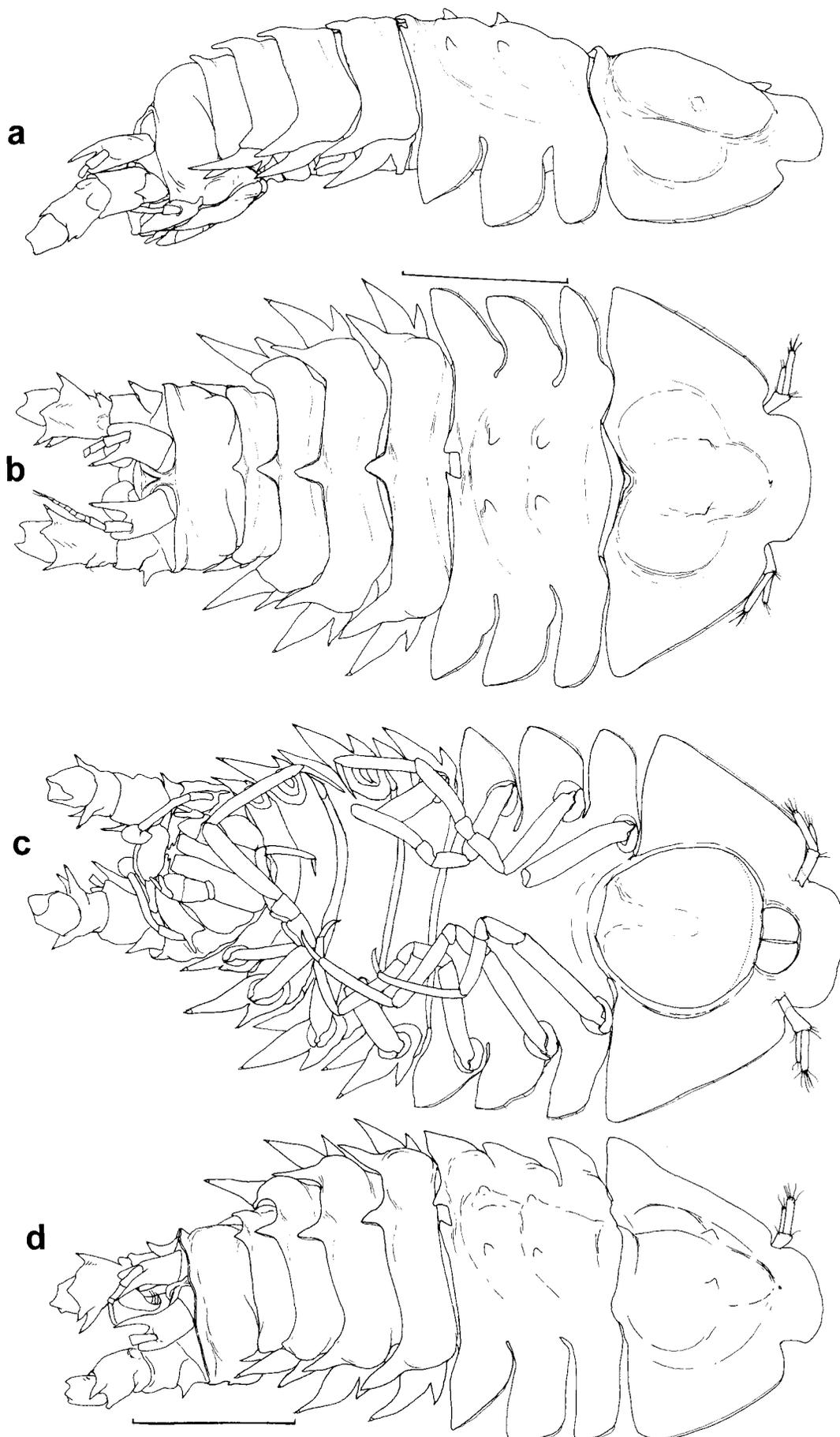


Fig. 12. *Storthyngura phyllosoma* (Just, 2001), female: **a**, lateral body view; **b**, dorsal view; **c** ventral view; **d**, oblique lateral view.

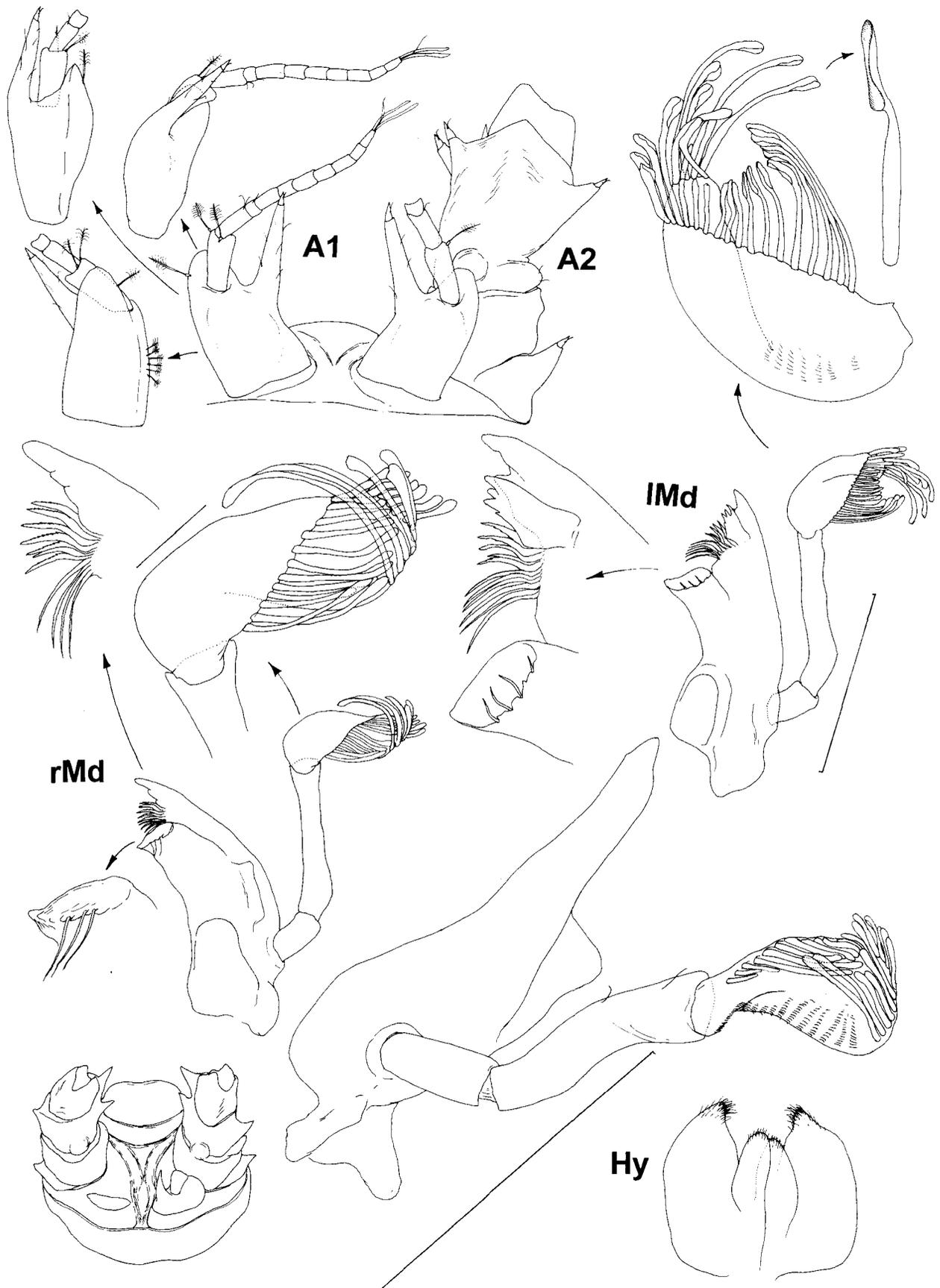


Fig. 13. *Storhyngura phyllosoma* (Just, 2001), female: a, head, frontal view; antennae and mouthparts.

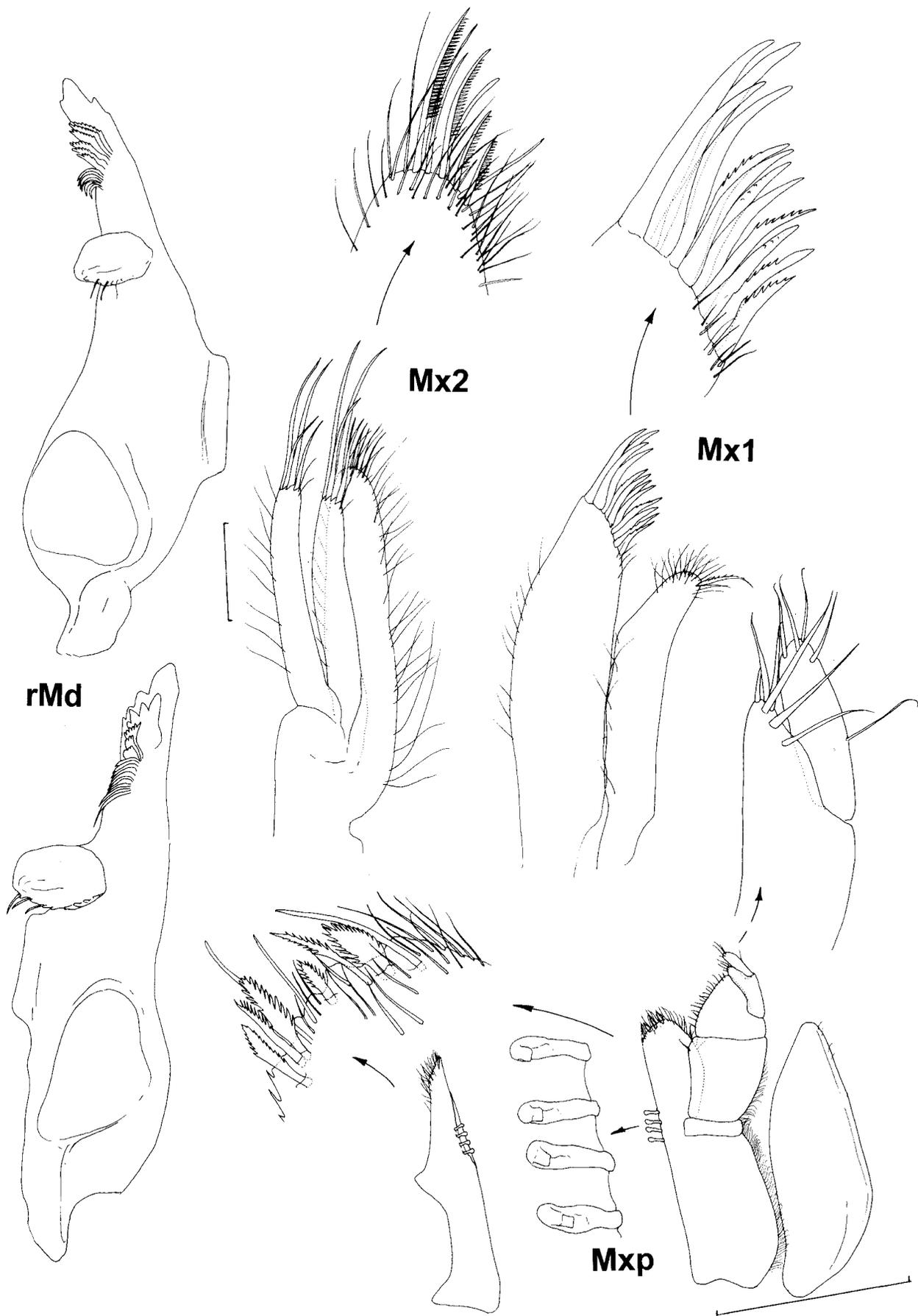


Fig. 14. *Storthyngura phyllosoma* (Just, 2001), female: mouthparts.

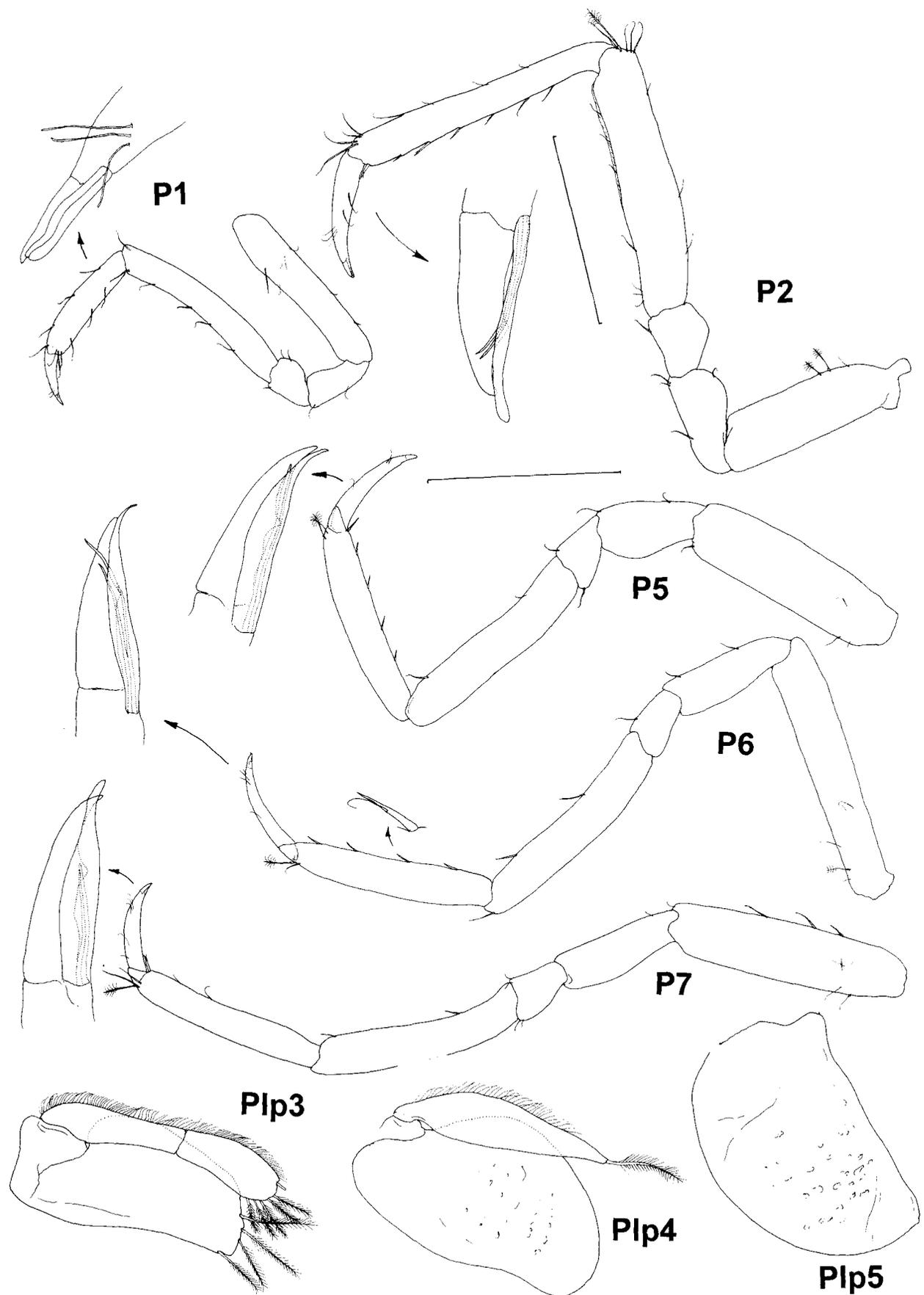


Fig. 15. *Storhyngura phyllosoma* (Just, 2001), female: pereopods 1, 2, 5–7 and pleopods 3–5.

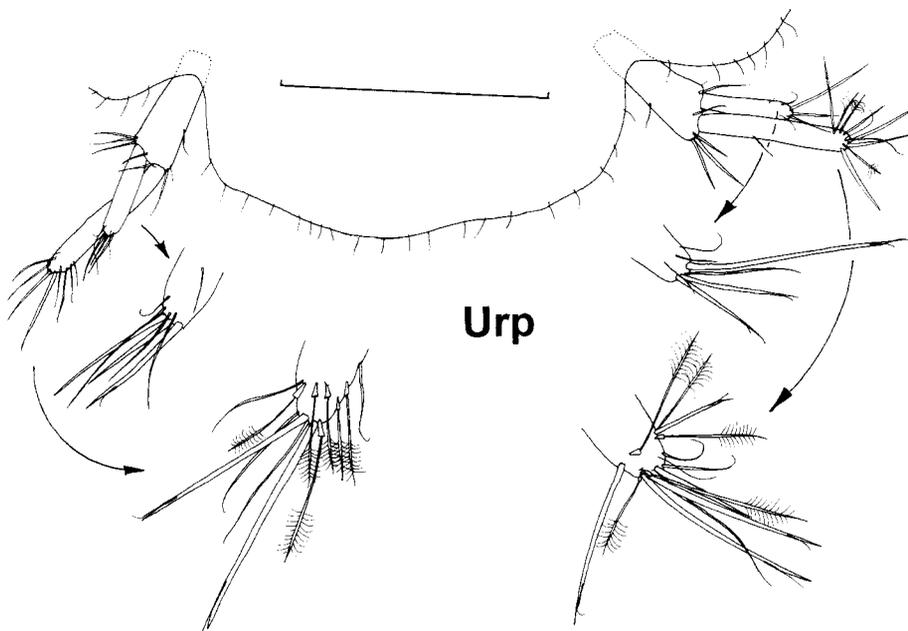


Fig. 16. *Storhyngura phyllosoma* (Just, 2001), female: posterior margin of pleotelson with uropods (scale bar 0.3 mm).

Male pleopod 1 (Fig. 18) bent ventrally, with thick, serrated longitudinal keels on ventral basal half.

Distribution. Antarctica: Atlantic sector, Weddell Sea, off Kapp Norwegia, in a depth of 181–182 m; Drake Passage off South Shetland Islands, in a depth of 1019–1021 m.

Storhyngura snanoi Menzies, 1962

Fig. 19

Storhyngura snanoi Menzies, 1962: 149, Fig. 40C–E.

Material examined. Female 3.2 mm long, holotype (AMNH, No I-145), L.G.O. Biotrawl N 85, Vema-15-10, 7 Nov. 1958, 4071 m, 14°05' N, 75°25' W, central part of Colombia Abyssal Plain, SBT.

Description of the holotype. Body (Fig. 19) 2.4 times as long as pereonite 5, height 0.2 of length. Head 0.6 times as long as wide; inter-antennular distance 0.2 times as wide as head and 0.7 as wide as antenna 1 basis; frons slightly concave medially, frontal arch low, with weak lateral ridges.

Pereonites 1–4 subequal in length, anterolateral corners of pereonite 1 rounded, pereonites 2–4 with anterolateral pointed projections, increasing in length from 2 to 4; anterior margin of pereonites 1–4 with frontally directed dorsomedial acute projection, about half as long as pereonite. Coxal anterior spine of pereopod 1 as long as those of pereopods 2–4; all coxal spines with distal spine-like stout seta and small thin setules around.

Natasoma 1.2 times as long as anterior part of body. Pereonite 5 longest, pereonite 7 not fully developed; anterolateral projections of pereonites tapering, directed anteriorly. Anterior margin of pereonite 5 with 2 small acute dorsomedial projections; pereonites 6 and 7 with pair of low dorsal elevations.

Pleotelson as long as wide anteriorly and 0.7 times as long as wide in middle part; lateral spine-like projections well pronounced, slender; anterolateral ones slightly larger than posterolateral, lateral margins in between convex, rounded; terminal apex rounded, twice as wide as long, 0.2 times as long as pleotelson; dorsal surface with 2 small tubercles on level of posterolateral projections; preanal ventral ridge slightly prominent.

All body margins with sparse minute setae.

Antenna 1 (Fig. 19) about 0.2 times as long as body, 8 articles; article 1 1.9 times as long as wide, medial spine 0.15 as long as article; article 2 slightly longer than distolateral lobe of article 1, 0.3 times as long as article 1; articles 3–6 1.2, 0.25, 0.9, 0.6 times as long as article 2 respectively; articles 3–8 almost half as wide as article 2, terminal article with 2 aesthetascs, 1 broom and 1 small simple setae.

Antenna 2 (Fig. 19) broken, only 4 basal articles present in this specimen. Article 1 with distolateral minute spine-like projection; article 3 almost twice as long as article 2 dorsally, medial projection at least twice as long as lateral spine, lateral margin with small setae.

Mandibles, maxilla 1 and maxilla 2 not studied.

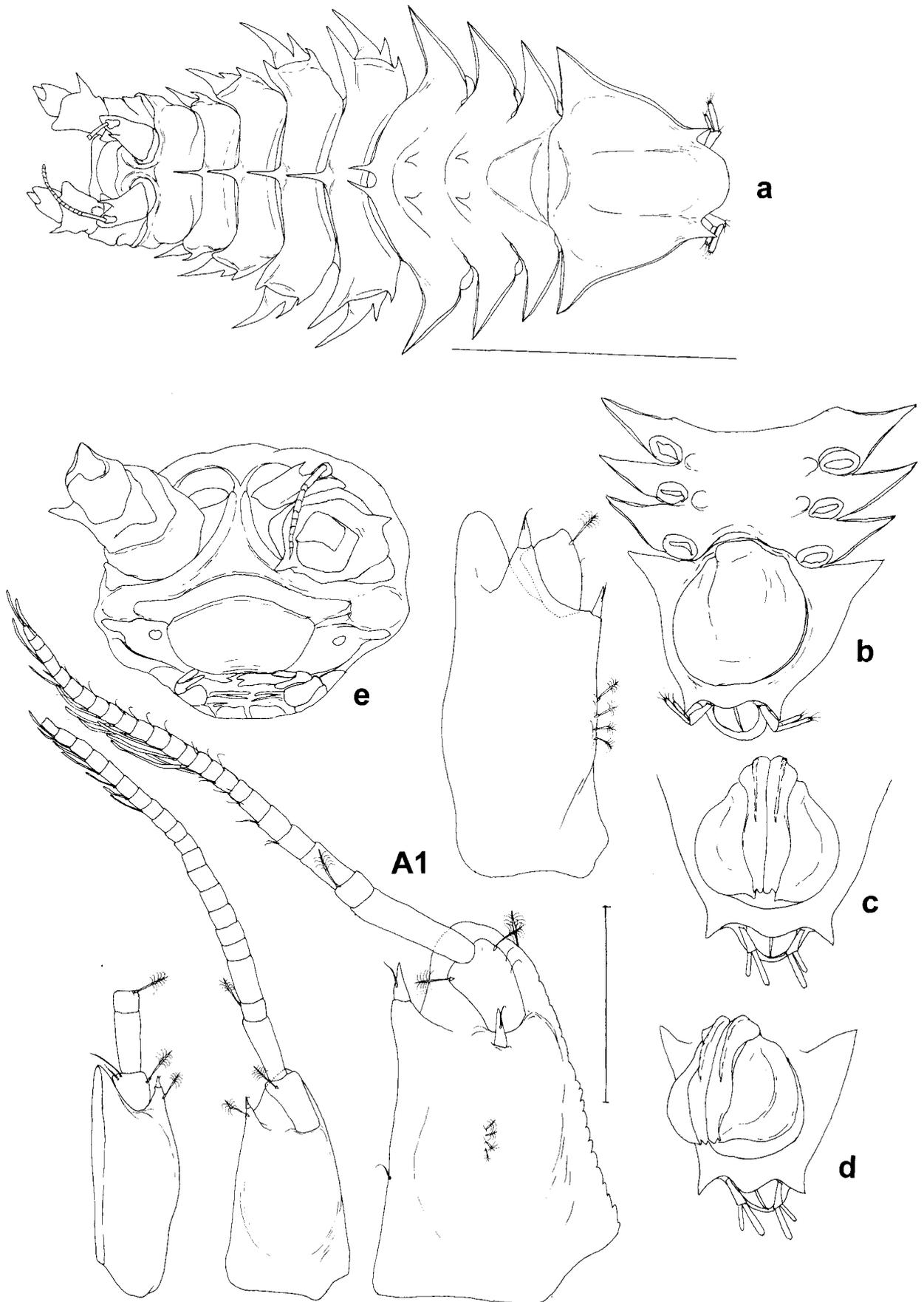


Fig. 17. *Storthingura kussakini* Brandt & Malyutina, 2002, female: **a**, dorsal total view, **b**, natasoma, ventral view; **c**, **d**, pleotelson of male, paratype: **c**, ventral view, **d**, oblique lateral view; **e**, head, frontal view; antenna 1 of female and male, paratype.

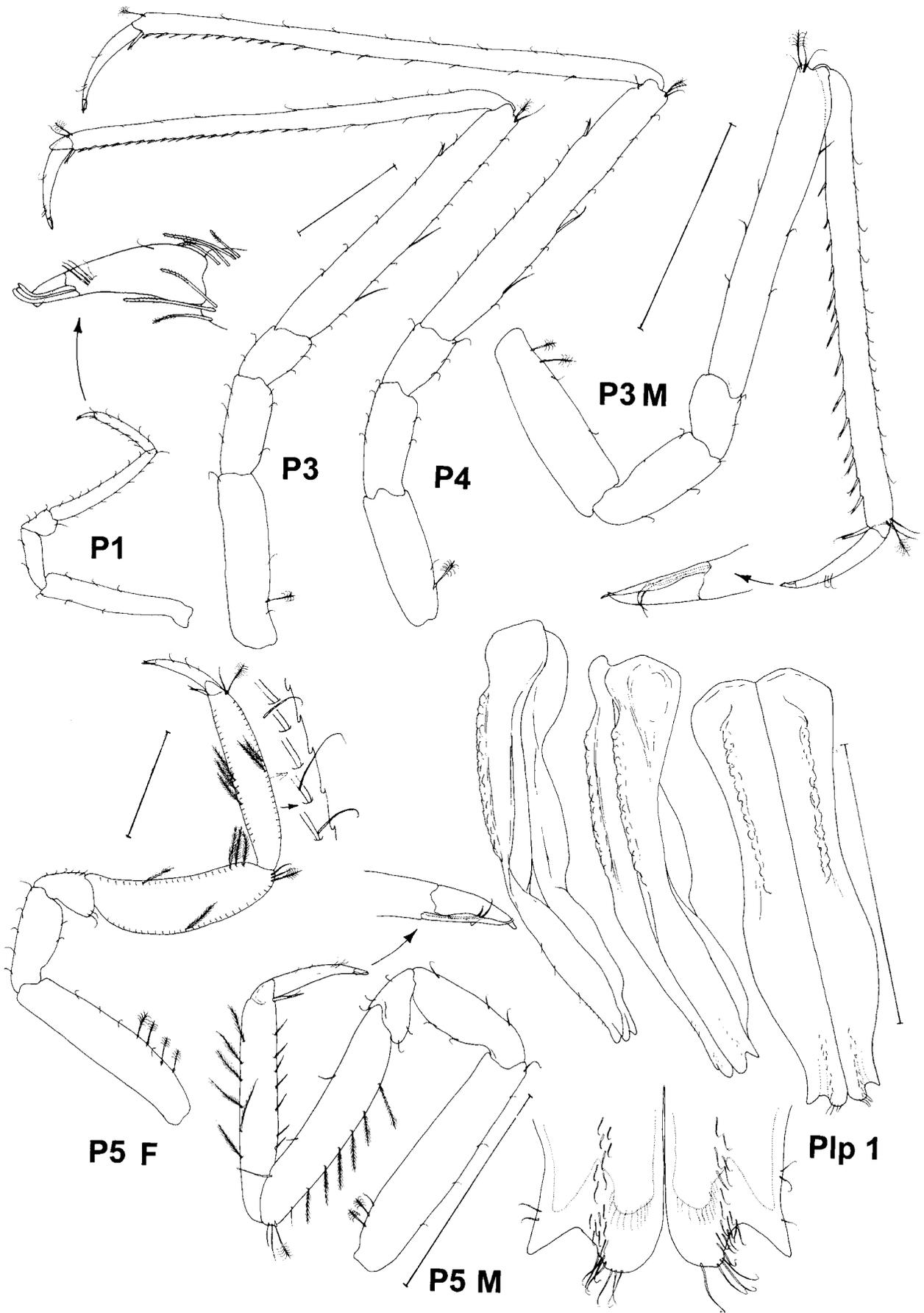


Fig. 18. *Storthyngura kussakini* Brandt & Malyutina, 2002, female: pereopods 1, 3–5 (scale bar 0.3 mm); male, paratype: pereopod 3, 5 and pleopod 1.

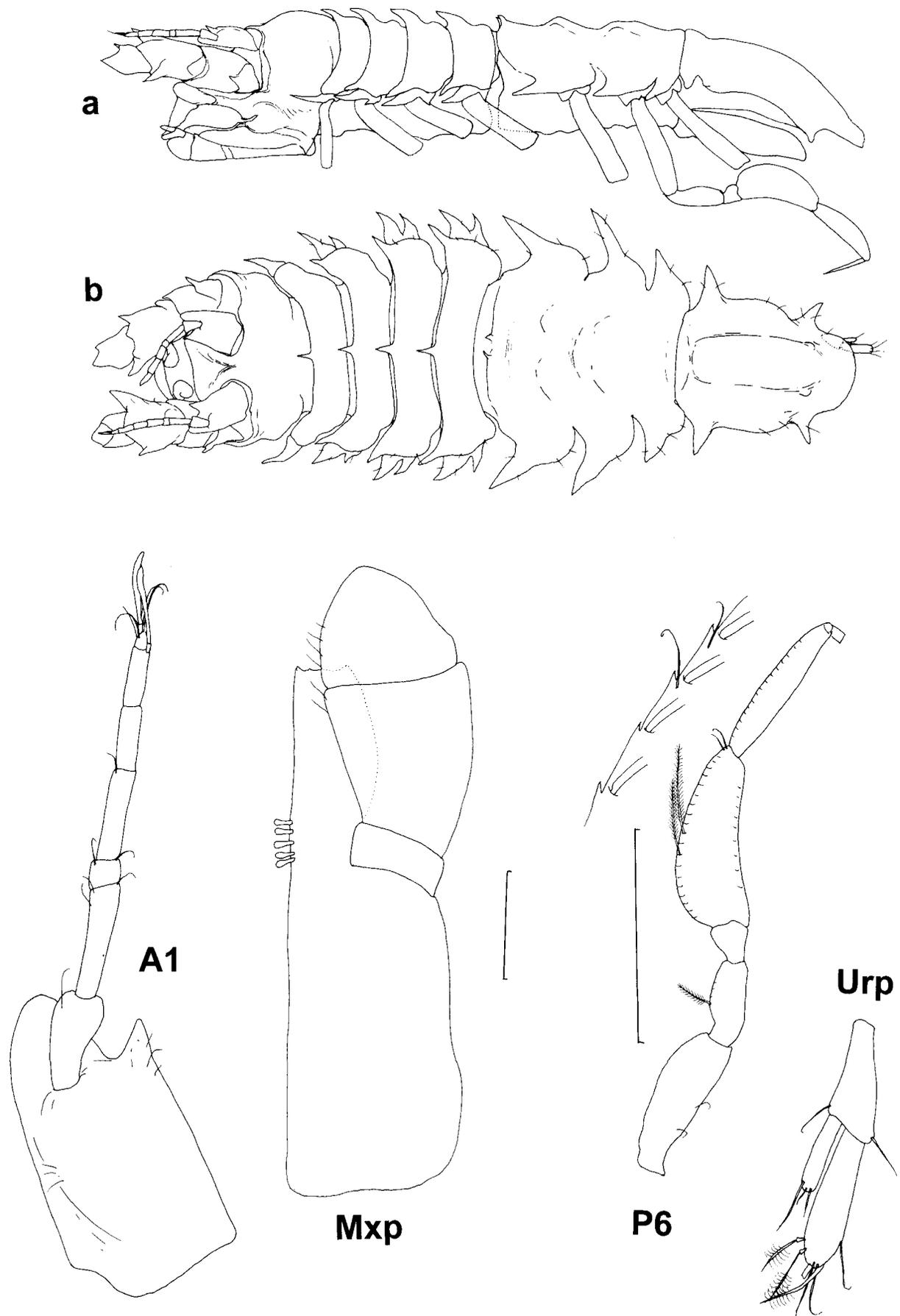


Fig. 19. *Storthingura snanoi* Menzies, 1962, female, holotype: **a**, total lateral view; **b**, dorsal view; antenna 1, maxilliped (scale bar 0.3 mm), pereopod 6, uropod.

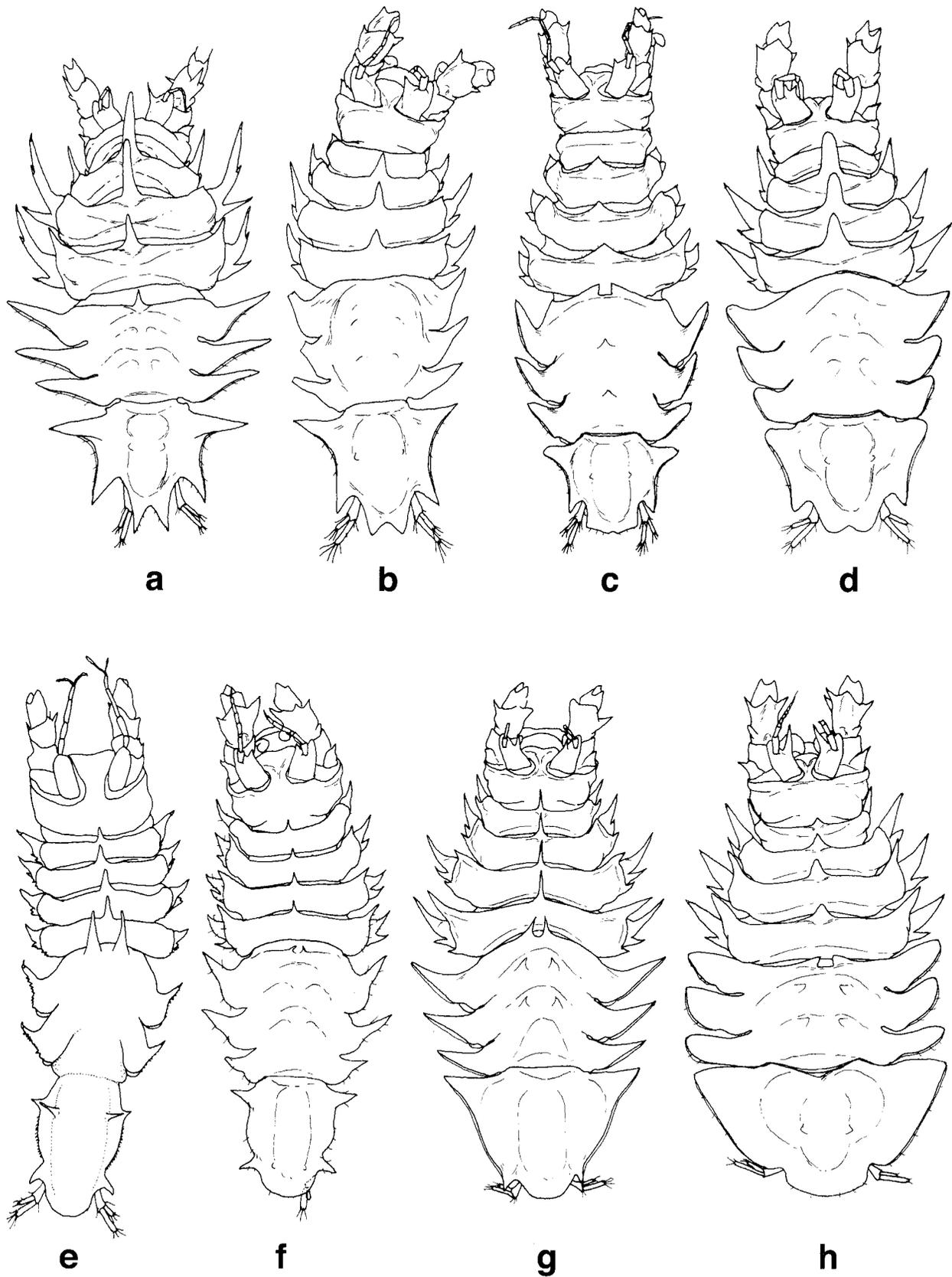


Fig. 20. Dorsal views of some species of *Storhyngura*: **a**, *S. longispina* sp. nov.; **b**, *S. elegans*; **c**, *S. parka*; **d**, *S. antarctic* sp. nov.; **e**, *S. octospinosalis*; **f**, *S. snanoi*; **g**, *S. kussakini*; and **h**, *S. phyllosoma*. (b, c, from Malyutina & Wägele, 2001; e, from Menzies & George, 1972).

Maxilliped (Fig. 19) endite half as wide as basis, with 5 coupling hooks; palp article 2 medial margin straight, 0.7 times as long as lateral margin; article 3 medial margin slightly convex; articles 4 and 5 and epipod broken off.

All pereopod bases subequal in length, slightly longer in pereopods 5–7.

Pereopod 6 (Fig. 19) carpus visible broader than and subequal in length to basis; propodus 0.9 times as long as carpus, both articles with plumose marginal setae; ischium half as long as basis; dactylus broken off.

Operculum rounded, slightly longer than wide; keel low, narrow, distal margin with plumose setae.

Pleopods 3–5 not studied.

Uropod (Fig. 19) 0.3 times as long as pleotelson. Protopod 2.5 times as long as wide, broadening distally, with 2 distal setae; endopod 3.6 as long as wide, more than half as wide and 1.2 as long as protopod, with 2 or 3 strong, unequally bifid setae, 3 or 4 broom and 3 whip setae distally; exopod 5.4 times as long as wide, 0.6 times as long and 0.7 as wide as endopod, exopod 2.8 times as wide as protopod, with 3 whip and 3 long, strong, unequally bifid setae distally.

Remarks. We classify *S. snanoi* to the *magnispinis*-group (Tables 1 and 2) because the terminal projection on the pleotelson is without a medial notch; pereonite 1 bears a dorsomedial projection; pereopod 1 coxa is long; and pereonite 3 bears anterolateral spines. *S. snanoi* is most similar to *S. vema* Menzies, 1962, *S. truncata* and *S. magnispinis* Richardson, 1908. In all these species the pleotelson is elongate, with protruding small lateral spines and convex margins in between these spines. *S. octospinosalis* Menzies & George, 1972 has similar shape of the pleotelson, but with a pair of long acute dorsal spines on pleotelson. Authors have illustrated rounded anterolateral angles of all ambulosomal pereonites, but we are not sure if this is correct.

Distribution. Western Atlantic: Caribbean Sea, in a depth of 4071 m.

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