

Revision of *Storthyngura* Vanhoeffen, 1914 (Crustacea: Isopoda: Munnopsididae) with descriptions of three new genera and four new species from the deep South Atlantic

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Abstract

The deep-sea genus *Storthyngura* (family Munnopsididae) is revised. Three new genera (*Rectisura*, *Sursumura* and *Vanhoeffenella*) and four new species (*Rectisura richardsoniae*, *Sursumura aberrata*, *Vanhoeffenella georgei*, and *V. moskalevi*) are described from deep-sea basins and trenches of the South Atlantic Ocean. Thirty-three previously described species are placed in new combinations with one of the new genera. Diagnoses are presented for the subfamily Storthyngurinae Kussakin (2003), the genus *Storthyngura* Vanhoeffen, and all new taxa. The accompanying Electronic Supplement offers a key to the six genera in the subfamily, and keys to species in *Storthyngura* and the three new genera.

Key words: deep sea, South Atlantic, Crustacea, Asellota, Munnopsididae, new taxa

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Taxonomy

All type material is deposited in the Zoological Museum of Moscow University (ZMMU), Moscow, Russia.

Suborder Asellota

Family Munnopsididae Sars, 1869

Subfamily Storthyngurinae Kussakin, 2003

Diagnosis: Body with dorsal and lateral spine-like projections. Pereopod 1 with 1 and pereopods 2–4 with 2 coxal projections visible from above. Antenna 1 basal article elongate, with distolateral lobe. Squama on article 3 of antenna 2 not articulated. Mandible with proximolateral projection for articulation with head in elongate slot. Male pleopod 1 elongate, often narrowing in

the middle part. Female pleopod 2 medial keel low. Uropod elongate, tubular protopod and rami subequal in length.

Included genera (Fig. 1): *Storthyngura* Vanhoeffen, 1914; *Microprotus* Richardson, 1910; *Storthyngurella* Malyutina, 1999; *Vanhoeffenella* gen. n.; *Rectisura* gen. n.; *Sursumura* gen. n.

Remarks: The members of Storthyngurinae differ from those of Acanthocopinae in the shapes of male pleopods 1 and 2 and of the uropods, in morphology of the mandibular palp and of the dactyli of pereopods 5–7. Storthyngurinae differ from Eurycopinae in having body spines, squama on article 3 of antenna 2 not separated, in the absence of a head rostrum and a medial lobe of antenna 1 article 1, and in the presence of a narrow slot for the mandibular articulation with the head.

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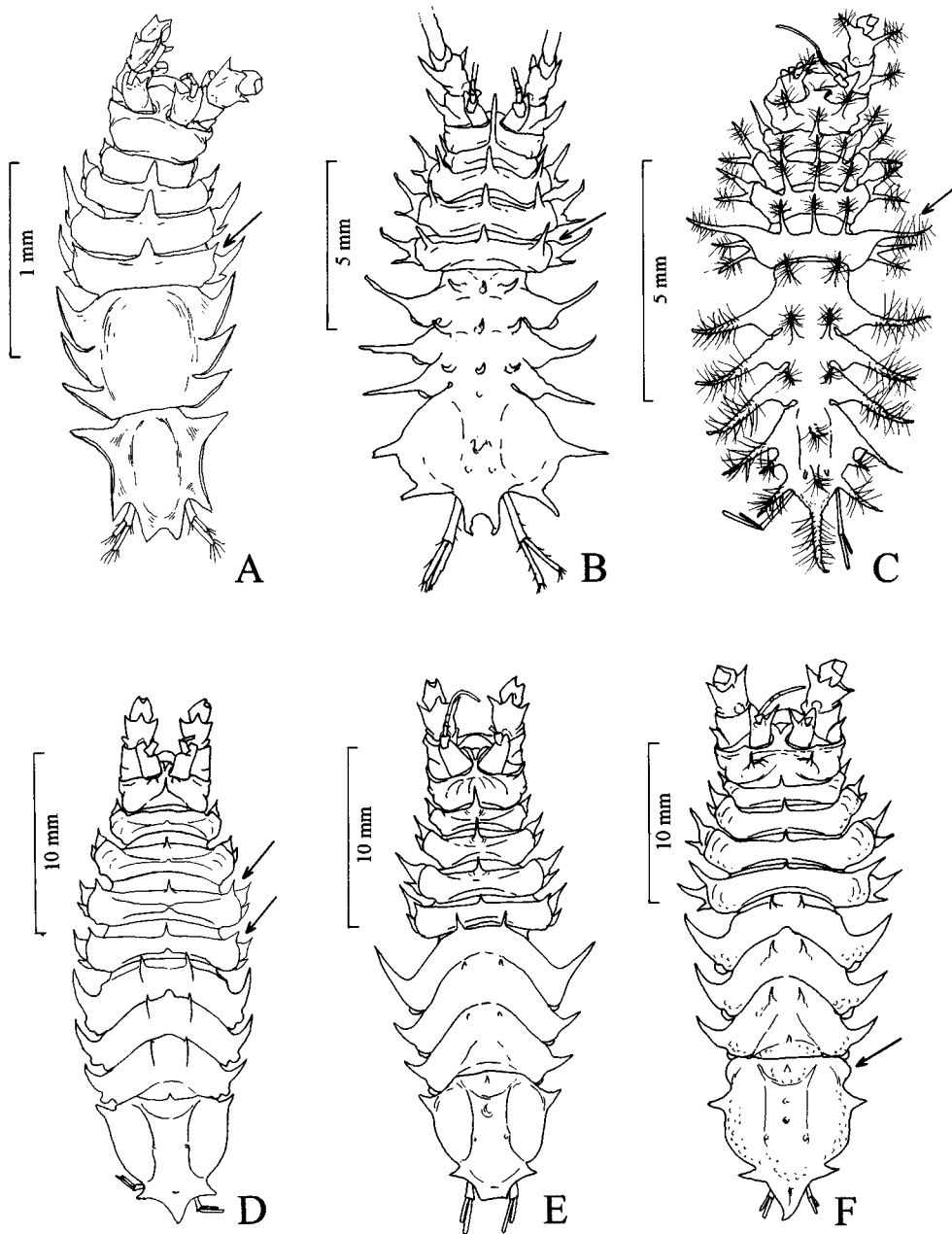


Fig. 1. Representatives of six genera in the subfamily Storthyngurinae. A. *Storthyngura elegans* Vanhöffen (from Malyutina & Wägele 2001). B. *Microprotus caecus* Richardson (from Wilson et al. 1989). C. *Storthyngurella hirsuta* Malyutina (from Malyutina 1999). D. *Vanhoeffenella pulchra* (Hansen) (after photographs in Wolff 1962). E. *Rectisura richardsonae* sp. n. F. *Sursumura praegrans* (George & Menzies) (specimen from St. 927 (Kurchatov-11)).

***Vanhoeffenella* gen. n.**

Diagnosis: Frontal margin of head with shallow, roughly rectangular notches for antenna 1 insertion, a pair of dorsal anterior tubercles behind these notches. Anterolateral corners of pereonite 3 with acute projections, shorter than coxae. Pleotelson terminal process bent downwards. Body with ventromedial keel of rather long spines. Antenna 1 article 1 without medial spine, distolateral lobe subrectangular, truncated distally; article 2 longer than the lobe, with proximolateral process.

Mandibular palp sturdy. Medial margin of maxillipedal palp article 2 straight, shorter than that of article 3. Pereopods 3 and 4 considerably longer than pereopod 2; pereopods 5–7 carpi and propodi broad, oval, propodi longer than carpi. Pleopod 2 stylet nearly half of protopod length. Pleopod 3 endopod with numerous distomedial plumose setae, exopod basal article broader than distal article. Pleopod 4 exopod with many plumose setae distally.

Type species: *Vanhoeffenella pulchra* (Hansen, 1897) comb. n., by present designation.

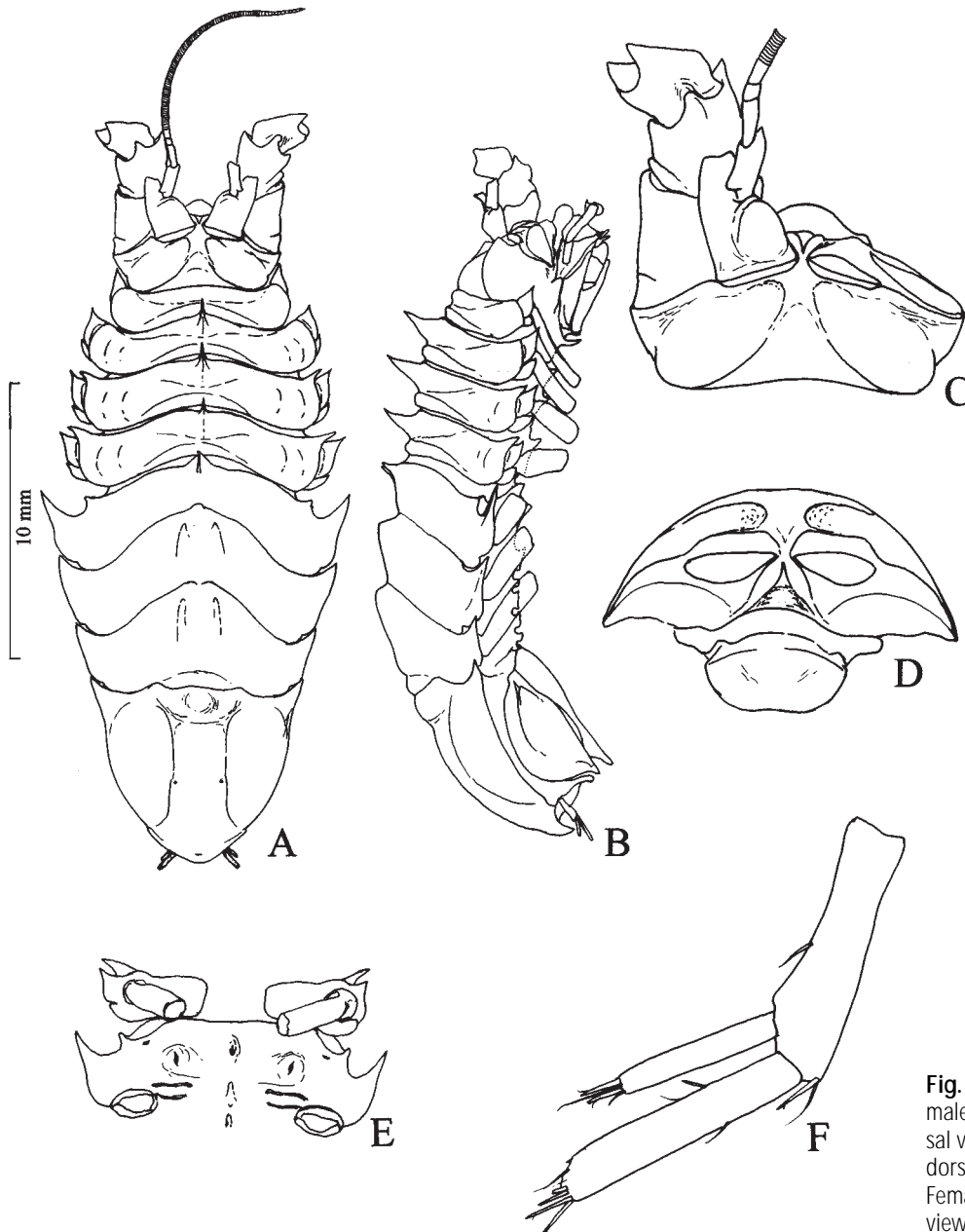


Fig. 2. *Vanhoeffenella georgei* sp. n., male holotype (except E). A. Total dorsal view. B. Total lateral view. C. Head, dorsal view. D. Head, frontal view. E. Female paratype: pereonite 5, ventral view. F. Uropod.

Species included: *V. bicornis* (Birstein, 1957) comb. n., *V. birsteini* (Menzies, 1962) comb. n., *V. caribbea* (Benedict, 1901) comb. n., *V. challengerii* (Wolff, 1962) comb. n., *V. chelata* (Birstein, 1957) comb. n., *V. eltaniae* (George & Menzies, 1968) comb. n., *V. fragilis* (Beddard, 1885) comb. n., *V. georgei* sp. n., *V. gordonae* (Wolff, 1962) comb. n., *V. kermadecensis* (Wolff, 1962) comb. n., *V. moskalevi* sp. n., *V. myriamae* (George & Hinton, 1982) comb. n., *V. novaezelandiae* (Beddard, 1885) comb. n., *V. pulchra* (Hansen, 1897) comb. n., *V. scotia* (George & Menzies, 1968) comb. n., *V. symmetrica* (Menzies, 1962)

comb. n., *V. torbeni* (George, 1987) comb. n., *V. unicornalis* (Menzies & George, 1972) comb. n.

***Vanhoeffenella georgei* sp. n.** (Fig. 2)

Material examined: Holotype male 24.2 mm (ZMMU Mc 1379): RV Dmitriy Mendeleev, cruise 43, 12.4.1989, St. 4107, 41°45.7'S, 41°35.6'W, depth 5180–5190 m. Paratypes: 2 males 18.2 mm and 16.2 mm, 1 female 25 mm from type locality (ZMMU Mc 1380); 1 male 21.3 mm, 2 females 22.5 mm and 16.2 mm long, 4 juve-

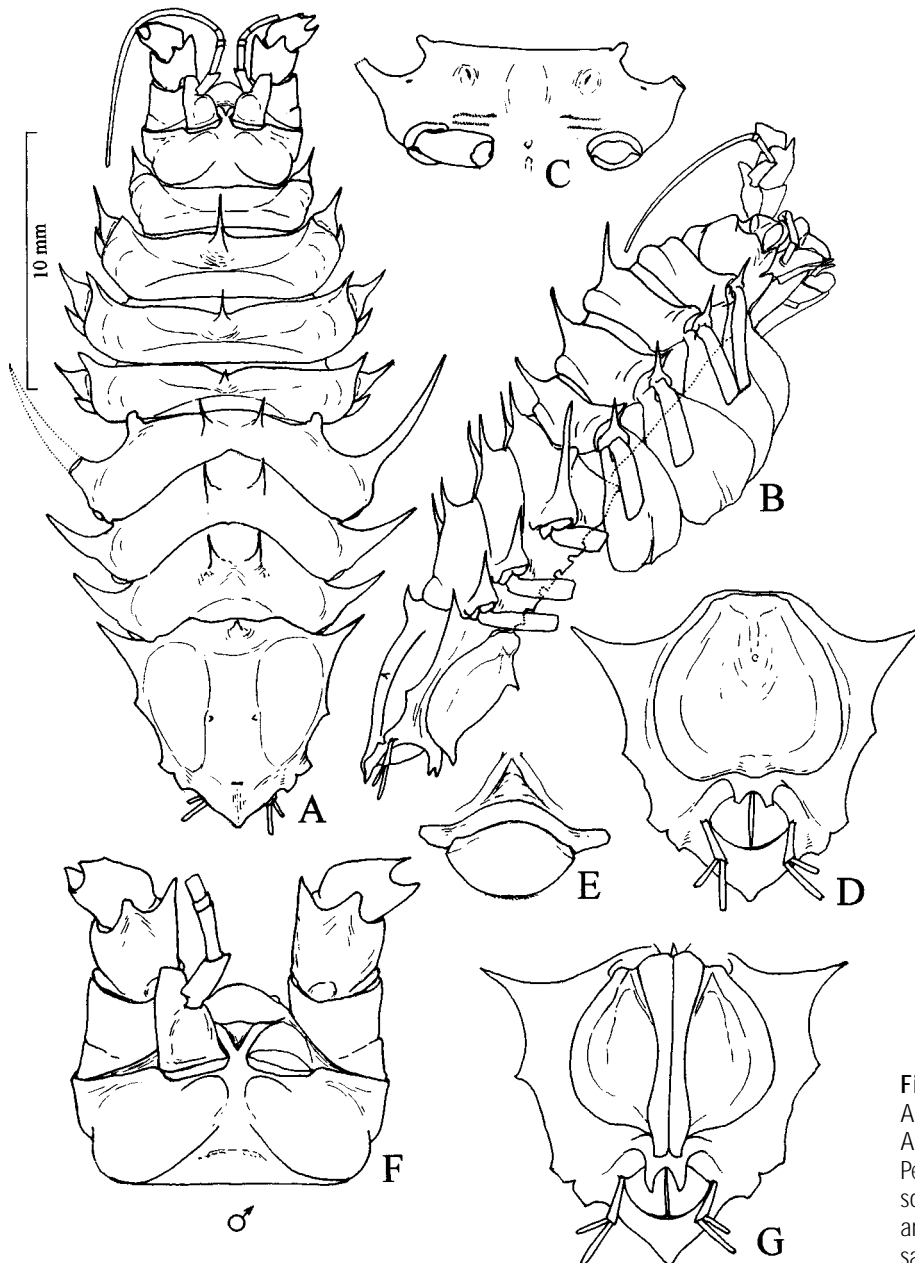


Fig. 3. *Vanhoeffenella moskalevi* sp. n.; A–E female holotype, F–G male paratype. A. Total dorsal view. B. Total lateral view. C. Pereonite 5, ventral view. D. Female pleotelson, ventral view. E. Frontal arch, clypeus and labrum, frontal view. F. Male head, dorsal view. G. Male pleotelson, ventral view.

nile specimens from St. 4109, 38°40' S, 48°10' W, depth 5225 m (ZMMU Mc 1381).

Diagnosis: Pleotelson rounded posteriorly, posterolateral and terminal spines substituted by angular short processes invisible in dorsal view. Dorsal pairs of spines short, situated close to each other, lateral spines of pereonites 5–7 short. Interantennular distance of head very small. Coxae of pereopod 1 long. The new species belongs to a group including *V. novaezelandiae* (Beddard, 1885) comb. n., *V. torbeni* (George, 1987) comb. n., and *V. eltaniae* (George & Menzies, 1968) comb. n. The group is characterized by the rounded triangular shape of

the pleotelson. These three species have a natasoma outline similar to the one seen in species of *Eurycope*. The species most similar to *V. georgei* sp. n. is *V. torbeni* from the Puerto Rico Trench.

***Vanhoeffenella moskalevi* sp. n.** (Fig. 3)

Material examined: Holotype female 28.2 mm (ZMMU Mc 1382): RV Akademik Kurchatov, cruise 11, 5.12.1971, St. 896, 56°52'S, 24°59'W, depth 5600–5670 m, trawl Sigsby. Paratypes (ZMMU Mc 1383): 1 damaged male about 33 mm, 1 natasoma of a female 14 mm,

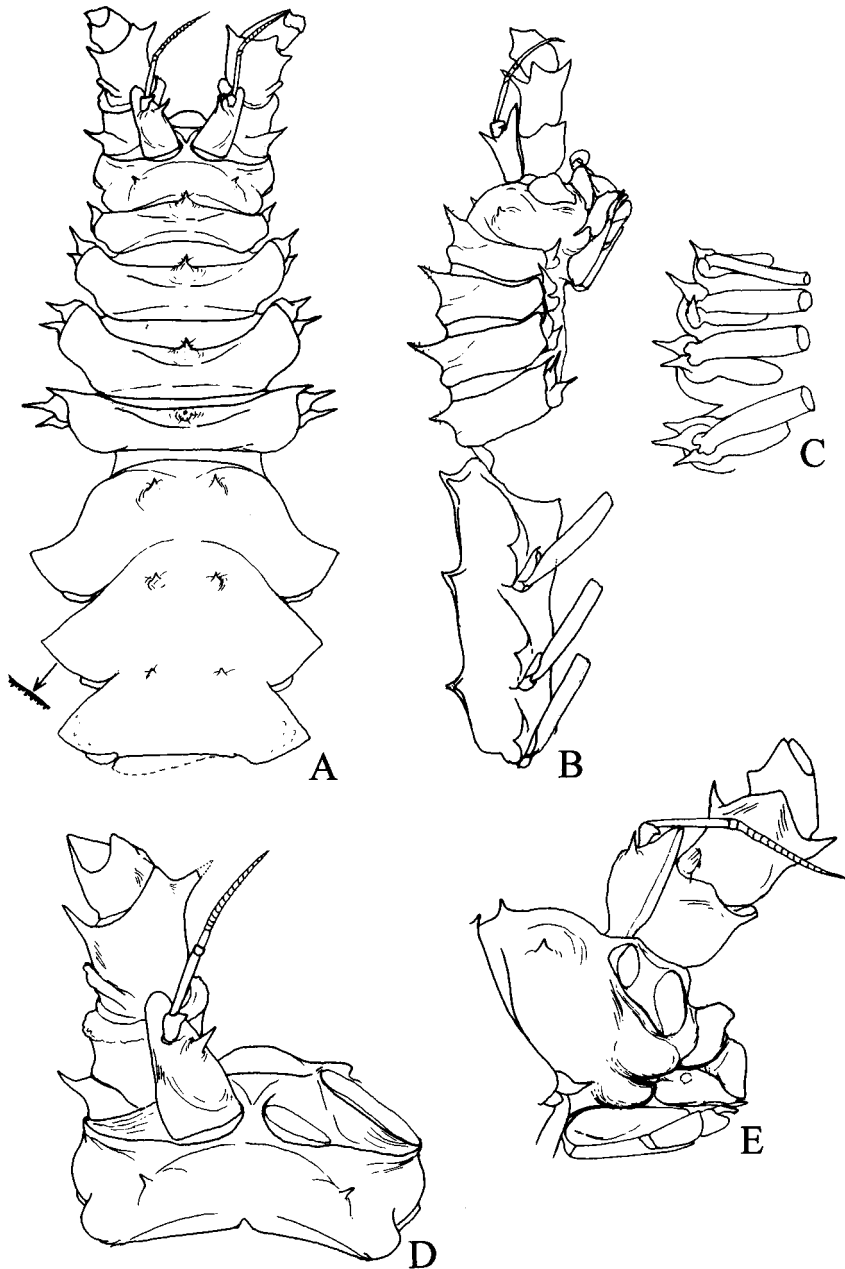


Fig. 4. *Sursumura aberrata* sp. n., female holotype. A. Total dorsal view. B. Total lateral view. C. Lateral parts of pereonites 1–4, coxae and bases of pereopods 1–4, ventral view. D. Head, dorsal view. E. Head, lateral view.

1 female 17 mm without head and pleotelson, all from type locality.

Diagnosis: Pleotelson lateral margin with minute triangular process in anterior third, and with two acute projections with incision inbetween in posterior third, preanal process with deep notch. Dorsal pairs of spines of pereonites 5–7 long, distances between each pair subequal. Anterolateral spines of pereonites 5–7 as long as half of pereonite 5 width, frontal margin of pereonite 5 laterally limited by thick protuberances. In spite of the long anterolateral spines of pereonite 5 the new species can be placed in the *V. novaezealandiae* group because its

pleotelson has a smooth outline. *V. moskalevi* sp. n. is most similar to *V. eltaniae* (George & Menzies, 1968) from the South Sandwich Trench.

Sursumura gen. n.

Diagnosis: Head dorsally with pair of spines at midlength, behind lateral margins of antennae 1. Anterolateral corners of pereonite 3 rounded; body without ventromedial spines, pleotelson tip acute, bent upwards. Antenna 1 article 1 with medial spine, distolateral lobe long, tongue-like; article 2 shorter than article 1 lobe,

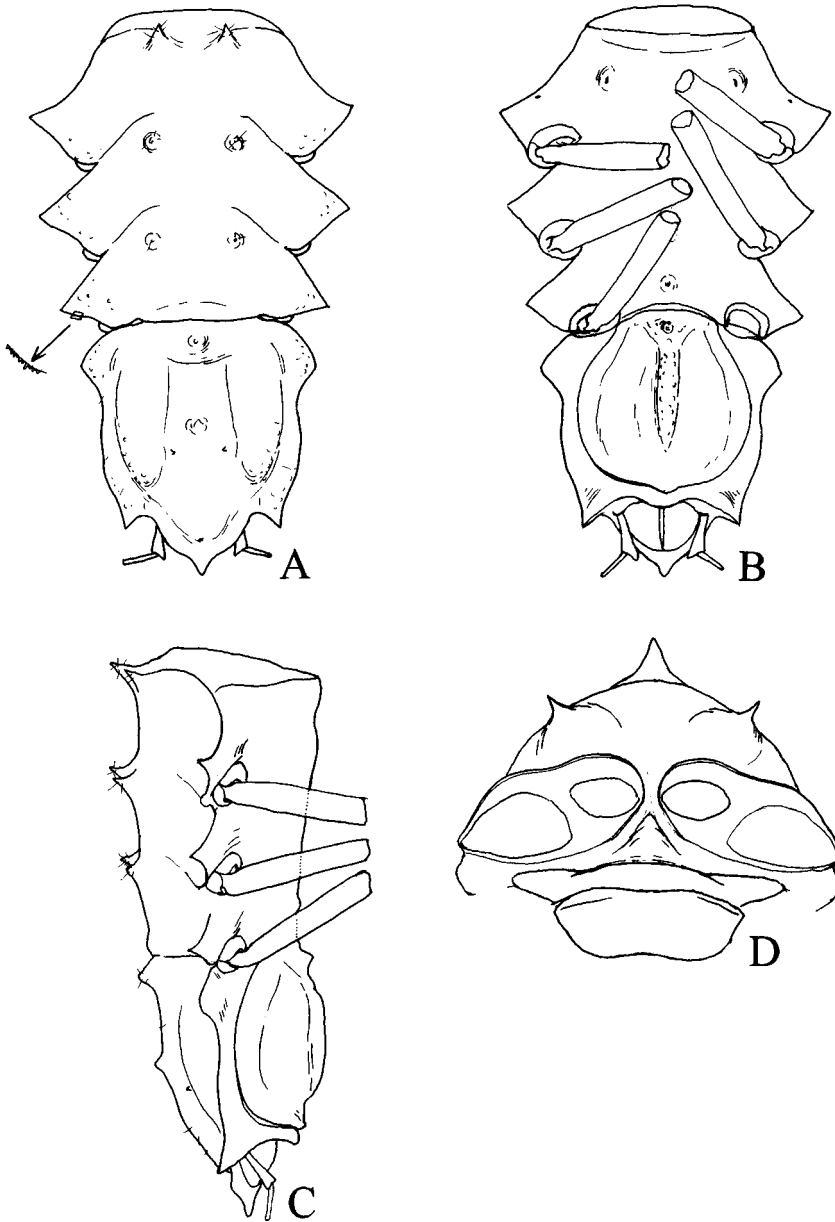


Fig. 5. *Sursumura aberrata* sp. n., female (A–C paratype, D holotype). A. Natasoma, dorsal view. B. Natasoma, ventral view. C. Natasoma, lateral view. D. Head, frontal view.

with distomedial projection. Antenna 2 article 1 well separated from article 2, with lateral spine. Mandible palp narrow. Maxilliped palp article 2 medial margin longer than article 3, epipod lateral margin without acute projection. Pereopods 5–7 carpi and especially propodi relatively narrow, more than three times as long as wide. Male pleopod 1 with definite waist at midlength, male pleopod 2 stylet about half of protopod length, exopod short. Pleopod 4 exopod with one or a few plumose setae.

Type species: *Sursumura praegrandis* (George & Menzies, 1968) comb. n., by present designation.

Species included: *S. aberrata* sp. n., *S. abyssalis* (Wolff, 1962) comb. n., *S. argentica* (George & Men-

zies, 1968) comb. n., *S. atlantica* (Beddard, 1885) comb. n., *S. falcata* (George & Menzies, 1968) comb. n., *S. magnifica* (Chardy, 1976) comb. n. (placement is tentative), *S. praegrandis* (George & Menzies, 1968) comb. n., *S. robustissima* (Monod, 1925) comb. n., *S. spinosissima* (Brandt, 2002) comb. n.

***Sursumura aberrata* sp. n.** (Figs 4, 5)

Material examined: Holotype female 24.2 mm (ZMMU Mc 1384): RV Akademik Kurchatov, cruise 11, St. 864, 41°45.7' S, 41°35.6' W, 7216–7200 m. Paratype female 25 mm (ZMMU Mc 1385), from type locality.

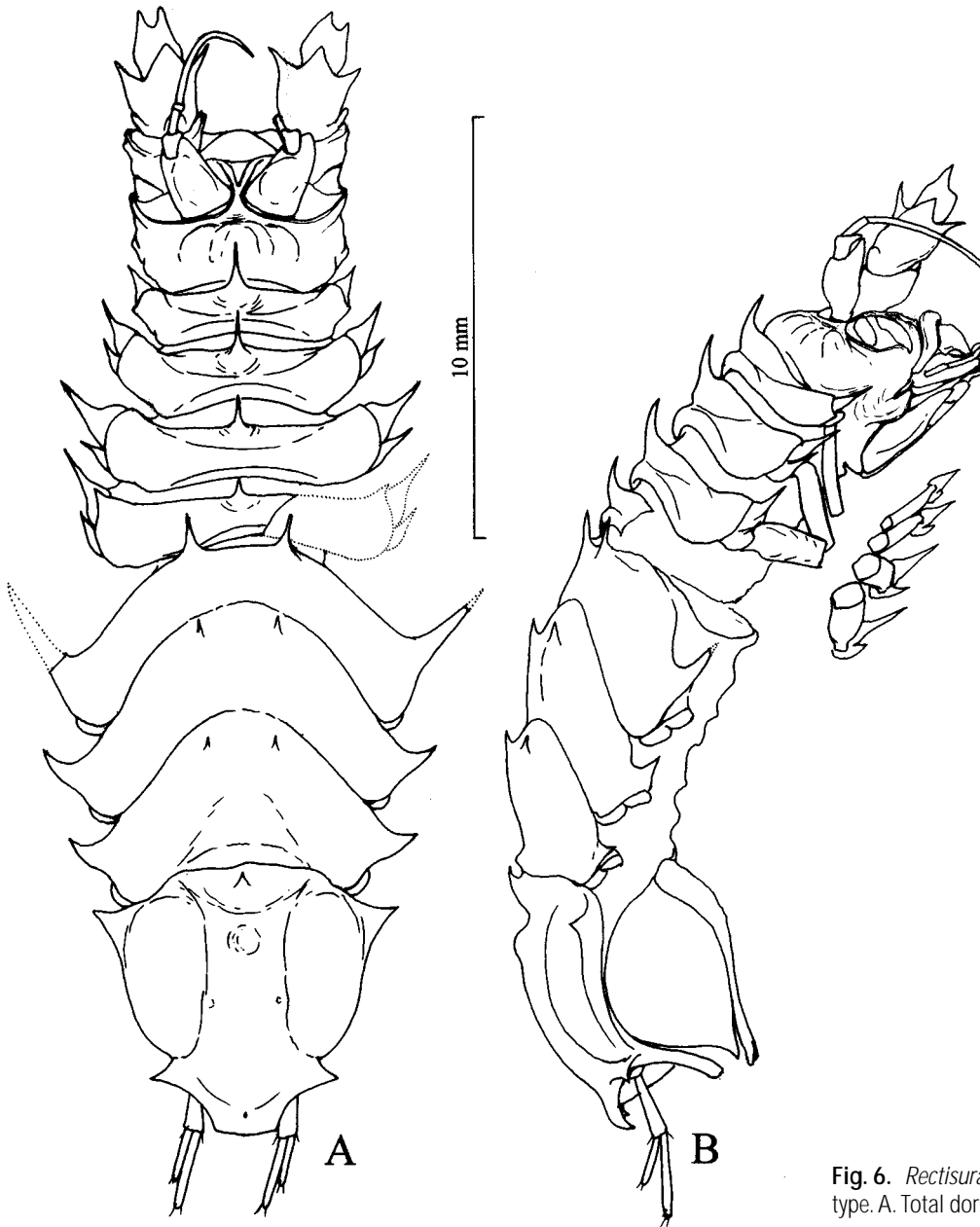


Fig. 6. *Rectisura richardsonae* sp. n., male holotype. A. Total dorsal view. B. Total lateral view.

Diagnosis: Body spines relatively short, dorsal surface almost smooth (most species with granulated surface). Natasoma shape unique for the genus: anterolateral corners of pereonites 5–7 short, subrectangular; pleotelson anterolateral corners rounded, short, broad, directed outwards, pleotelson posterolateral processes not projecting laterally, directed backwards, terminal projection short, rounded, with short, acute tip only slightly bent upwards.

***Rectisura* gen. n.**

Diagnosis: Head domed dorsally, without spines, frons steep. Anterolateral corners of pereonite 3 without projections. Pereonites 5–7 with dorsal sutures, pleotelson tip rather broad, truncate or concave. Antenna 1 article 1 without medial spine, distolateral lobe rounded, weakly pronounced; article 2 length subequal to lobe or slightly longer, with distomedial process. Antenna 2 article 1

without lateral projection. Mandibular palp thin. Medial margin of maxilliped palp article 2 not shorter than that of article 3, article 3 conspicuously narrower than article 2, lateral margin of epipod with acute projection. Male pleopod 1 elongate, distal one-fourth bulbous. Male pleopod 2 exopod short, thick; stylet of endopod short, less than one third of protopod length. Pleopod 4 exopod with one or a few plumose setae.

Type species: *Rectisura herculea* (Birstein, 1957) comb. n., by present designation.

Species included: *R. brachycephala* (Birstein, 1957) comb. n., *R. distincta* (Birstein, 1970) comb. n., *R. furcata* (Wolff, 1956) comb. n., *R. herculea* (Birstein, 1957) comb. n., *R. kurilica* (Birstein, 1957) comb. n., *R. richardsonae* sp. n., *R. sepigia* (George & Menzies, 1968) comb. n., *R. serrata* (Wolff, 1962) comb. n., *R. tenuispinis* (Birstein, 1957) comb. n., *R. vitjazi* (Birstein, 1957) comb. n.

Rectisura richardsonae sp. n. (Fig. 6)

Material examined: Holotype male 19.5 mm (ZMMU Mc 1386): RV Akademik Kurchatov, cruise 11, St. 908, 60°13.5'S, 44°10.6'W, depth 5465–5474 m. Paratypes (ZMMU Mc 1387): 1 damaged female about 17 mm; 1 female about 20 mm, with oostegites, without pleotelson; fragments of 3 additional specimens; all from the type locality.

Diagnosis: Natasoma spines rather short. Distance between pair of dorsal spines on pereonite 5 longer than on following pereonites. Pleotelson dorsally only with a medial spine anteriorly and a pair of spines in the posterior half, posterolateral acute processes rather broad, apex straight, its angles not projecting laterally. The row of finger-like distal setae on article 2 of the mandibular palp is also expressed in *R. serrata* (Wolff, 1962) comb. n., *R. sepigia* (George & Menzies, 1968) comb. n., and *R. furcata* (Wolff, 1956) comb. n. The new species is most similar to *R. tenuispinis* (Birstein, 1957) comb. n. from the Aleutian Trench and *R. furcata* from the Kermadec Trench.

Storthingura Vanhöffen, 1914

Storthingura Vanhöffen, 1914: 583 – Hansen (1916: 132), Birstein (1957: 962), Menzies (1962: 145), Wolff (1962: 118), George & Menzies (1968: 277–279), Kussakin (2003: 290).

Diagnosis: Body relatively flattened, of small size (2–6 mm). Head without dorsal spines (pair of tubercles

in *S. vema* Menzies, 1962 and *S. magnispinis* (Richardson, 1908)). Antenna 1 article 1 with almost parallel lateral contours, distolateral lobe rounded, weakly pronounced, medial spine usually small; article 2 longer than the lobe, narrow, without distomedial process. Antenna 2 article 1 well separated from article 2, with small, spine-like lateral projection. Pleotelson not pointed.

Type species: *Storthingura elegans* Vanhöffen, 1914

Species included: *S. elegans* Vanhöffen, 1914; *S. intermedia* (Beddard, 1885) (placement is tentative); *S. kussakini* Brandt & Malyutina, 2002; *S. magnispinis* (Richardson, 1908); *S. octospinosalis* Menzies & George, 1972; *S. parka* Malyutina & Wägele, 2001; *S. snanoi* Menzies, 1962; *S. truncata* (Richardson, 1908); *S. vema* Menzies, 1962.

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