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DESCRIPTION OF *BYTHOCARIDES MENSHTUKINAE* GEN. NOV., SP. NOV.
(DECAPODA, HIPPOLYTIDAE)

BY

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ABSTRACT

A collection of shrimps obtained from trawl catches of the German R/V "Polarstern" in the Laptev Sea in 1995 and deposited in the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, was studied. A specimen of the family Hippolytidae collected from 945 m depth is described as a new species and a new genus, *Bythocarides menshtukinae*. The diagnostic characters of the new genus, which distinguish it from the closely related genus *Bythocaris*, are discussed.

ZUSAMMENFASSUNG

Die vom F. S. "Polarstern" aus 1995 in der Laptev-See gesammelten Garnelen, die sich in der Sammlung des Zoologischen Instituts in St. Petersburg befinden, wurden untersucht. Ein aus einer Tiefe von 945 m stammendes Exemplar der Familie Hippolytidae wird als neue Art und neue Gattung, *Bythocarides menshtukinae*, beschrieben. Diagnostische Merkmale der neuen Gattung, die sie von der verwandten Gattung *Bythocaris* unterscheiden, werden diskutiert.

INTRODUCTION

In 1995 the R/V "Polarstern" carried out a survey in the Arctic Laptev Sea region. A collection of shrimps originating from trawl catches of this survey, which were kindly placed at my disposal by the curators of the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Drs. S. V. Vassilenko and V. V. Petryashov, was investigated. There was an unidentified specimen of a new genus of hippolytid shrimp in the collection, which is described herein as a new species and genus, *Bythocarides menshtukinae* gen. nov., sp. nov.

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Genus **Bythocarides** gen. nov.

Type species: *Bythocarides menshutkinae* sp. nov. by monotypy and original designation.

Diagnosis. — Rostrum unarmed, transversally rounded, apex sharp. Well-developed supraorbital tooth, small antennal spine, and hepatic spine present on either side of carapace.

Pleura of first to fifth abdominal somites with one or two ventral teeth. Uropod distinctly shorter than telson, exopod of uropod with disto-lateral spine overreaching distal margin of lamina.

Eyes well developed and without dark pigment.

Stylocerite of antennular peduncle well developed; basal segment with distal spine at inner margin. Basal antennular segment longer than penultimate, penultimate longer than ultimate. Scaphocerite of antenna well developed and distinctly overreaching antennular peduncle.

Mandible simple, lacking incisor process and palp. First maxilla with broad upper endite and narrow lower endite; palp truncate anteriorly. Second maxilla with upper endite distinctly bilobed; lower endite reduced to single lobe; palp unsegmented; scaphognathite well developed. First maxilliped with distal and basal endites well developed, palp long, exopod and epipod distinct. Second maxilliped with endopod composed of five segments; exopod slender; epipod absent. Third maxilliped well developed; ultimate segment longer than penultimate segment with strong spines along distoventral border; basal segment longer than ultimate segment; exopod distinct.

First pereopod short, stout, chelate. Second pereopod long, slender, chelate, with subdivided carpus. Third through fifth pereopods long and slender; dactyli each armed with a few slender spinules on flexor margin; propodi with a few small spines on ventral margin; meri with distal immovable spine on outer margin.

Remarks. — The new genus resembles *Bythocaris* by having an unarmed rostrum, a low median carina on the carapace, a strong supraorbital tooth on each side of the base of the rostrum, and antennal and hepatic spines. Furthermore, the new genus is similar to *Bythocaris* in the following characters: (1) stylocerite of the antennular peduncle well developed, the basal antennular segment being longer than all distal segments together; (2) the scaphocerite well developed and overreaching the antennular peduncle; (3) a similar morphology of the mouth appendages; (4) first pereopods short, robust, equal, and chelate; (5) second pereopods long and slender, chelate, with subdivided carpi. All these characters are typical for the genus *Bythocaris* (cf. Sars, 1912; Abele & Martin, 1989). The new genus differs from *Bythocaris* in the following characters: (1) The new species has two well developed teeth on the pleura of the first two abdominal somites,

whereas *Bythocaris* has the pleura of the third to fifth abdominal somites rounded or at most with one tooth or spine (Holthuis, 1993). (2) The new genus has a rounded rostrum in transversal section, extending beyond the basal segment of the antennular peduncle, whereas in *Bythocaris* the rostrum is usually reduced, and broadly triangular in dorsal view, excluding *B. grumandti* Burukovsky, 1966, which has a compressed rostrum (Burukovsky, 1966). (3) In the new genus, the merus of the third through fifth pereopods has a distal immovable spine on the outer margin, whereas in *Bythocaris* the meri either are ventrally armed at about their distal third with a movable spine, or are unarmed (Sokolov, 2000). (4) The new genus has uropodal exopods with a disto-lateral spine overreaching the distal margin of the lamina, whereas in *Bythocaris* the exopods of the uropods have a disto-lateral spine not extending to the distal margin of the lamina.

Distribution. — Recorded from Arctic region only.

Etymology. — The generic name *Bythocarides* is derived from the generic name *Bythocaris*, and the suffix *-ides* (Gr.), meaning “son of”, in reference to the supposedly close relationship between the two genera.

***Bythocarides menshtukinae* sp. nov. (figs. 1-3)**

Material examined. — Holotype: non-ovigerous female, cl. 8.1 mm; Laptev Sea; 945 m depth; 25 August 1995, R/V “Polarstern” sta. no. 36/053, 81°10.8'N 141°47.1'E; No. 1/88365 ZIN.

Description of holotype (figs. 1-3). — Carapace smooth, with dorsal depression at midlength. Rostrum unarmed (fig. 1a-c), 0.62 times as long as carapace, transversally rounded, slightly overreaching basal segment of antennular peduncle, apex sharp. A strong supraorbital tooth present on each side of base of rostrum (fig. 1c); distance between apices of these spines about 0.39 times carapace width. Low dorsal median carina present from base of supraorbital teeth, extending posteriorly to about middle of carapace, armed with small knob. Lower orbital angle rounded. Antennal spine present just below orbital angle. Strong cavity present below antennal spine. Hepatic spine situated at posterior ridge of cavity.

Abdomen smooth. Pleura of first two abdominal somites with two ventral teeth, pleura of third through fifth somites armed with one ventral tooth (fig. 1a). Telson (fig. 1d) 1.9 times as long as sixth abdominal somite; dorsal surface of telson with 14 pairs of minute spines situated close to lateral margin. Posterior tip of telson slightly convex. Uropod shorter than telson; exopod with disto-lateral spine overreaching distal margin of lamina.

Eyes rather small, 0.1 times as long as carapace, not reaching to base of antennula; eye-stalk with basal part broader than distal part, cornea rounded, without any dark pigment.

Antennular peduncle with basal segment 2.1 times longer than penultimate segment; penultimate segment 2.2 times as long as distal segment. Basal segment

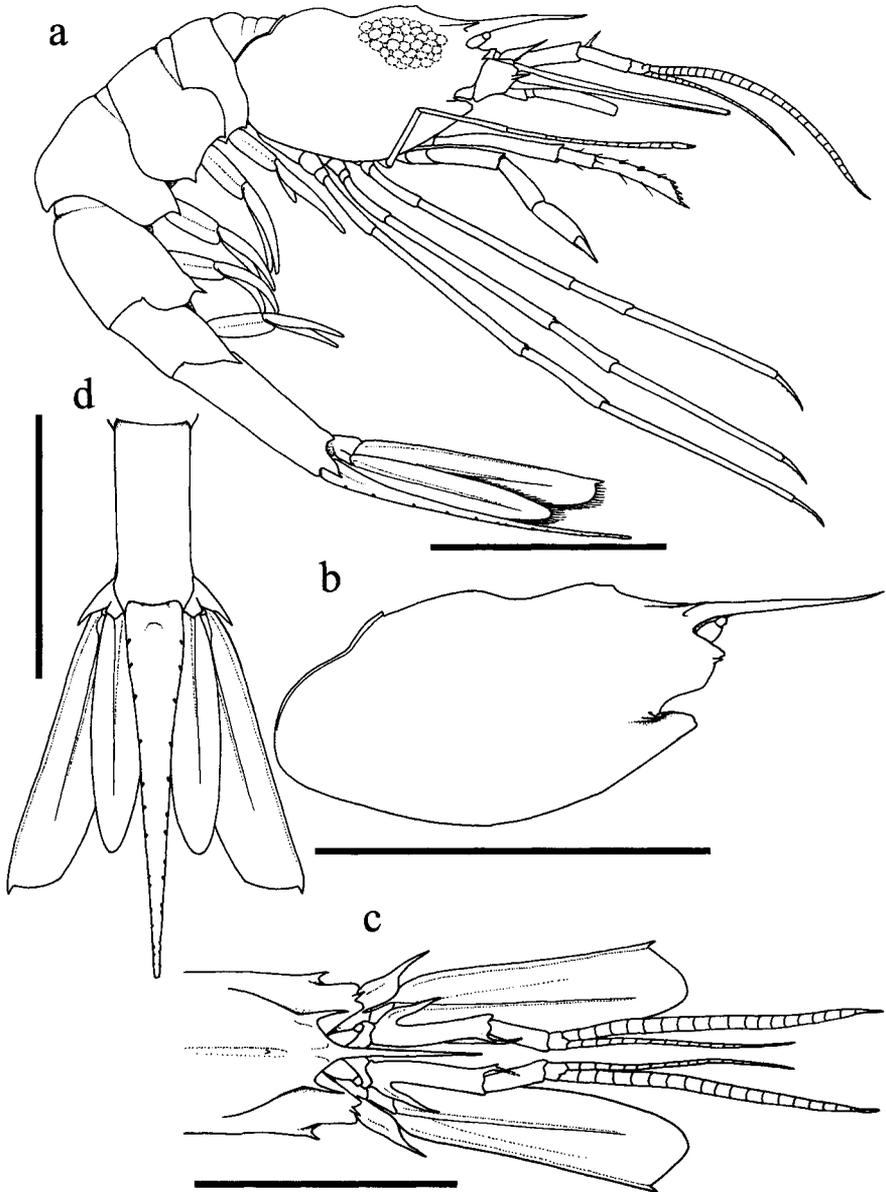


Fig. 1. *Bythocarides menshutkiniae* gen. nov., sp. nov., holotype, female, cl. 8.1 mm. a, lateral view; b, lateral view of carapace; c, dorsal view of anterior region; d, telson in dorsal view. Scale = 1 cm.

with rather long distal spine present at inner margin. Stylocerite produced laterally, extending to about midlength of basal segment (fig. 1c). Outer antennular flagellum overreaching anterior margin of scaphocerite by half its length, composed of 29 articles, inner flagellum shorter than outer flagellum, composed of 21 articles.

Scaphocerite 1.2 times carapace length, 1.6 times longer than antennular peduncle and 3.3 times as long as its greatest width; anterior margin rounded, projecting well beyond small distolateral tooth. Basal segment of antennal peduncle with strong distolateral spine almost reaching to about midlength of basal segment of antennular peduncle.

Mandible (fig. 2a) simple, incisor process and palp absent.

First maxilla (fig. 2b) with broad upper endite with a lot of stout median setae and a few long setae at upper margin; lower endite turned towards upper one, with 5 slender setae. Palp truncate anteriorly, with 4 long, slender, distal setae.

Second maxilla (fig. 2c) with well developed bilobate upper endite; distal and proximal lobes subequal, with many setae. Lower endite reduced to single lobe with 7 long setae. Unsegmented palp with 3 long setae. Scaphognathite well developed.

First maxilliped (fig. 2d) with well-developed distal endite; mesial margin almost straight, with many slender short setae. Basal endite rounded with 3 setae. Unsegmented palp long, with 4 distal setae. Exopod normally developed, with caridean lobe. Epipod rather broad.

Second maxilliped (fig. 2e) of usual shape. Exopod slender, with 3 distal long setae. No distinct epipod at base.

Third maxilliped (fig. 3a, b) not reaching to anterior margin of scaphocerite and extending beyond antennular peduncle with distal half of ultimate segment. Ultimate segment 2.3 times as long as penultimate segment, armed with 5 strong spines along distoventral border, with few transverse rows of setae on mesial surface. Basal segment 3.2 times as long as penultimate segment, slightly curved, with few setae on distal margin. Exopod short, 0.4 times as long as basal segment, with few distal setae.

First pereopod (fig. 3c) short, reaching to midlength of ultimate segment of third maxilliped. Chela simple with entire cutting edges; fingers and palm almost subequal; merus slightly longer than carpus and about 3.5 times as long as ischium.

Second pereopod (fig. 3d) long and slender, overreaching anterior margin of scaphocerite with chela length. Fingers of chela with entire cutting edges, about 0.5 times palm length. Carpus as long as merus and ischium together, subdivided into 13 articles; merus 0.57 times carpus length and 1.3 times as long as ischium.

Third, fourth, and fifth pereopods similar; length proportions of pereopods 3, 4, and 5 are 0.8 : 0.91 : 1, respectively. Third (fig. 3e) and fourth pereopods overreaching scaphocerite with distal fourth of propodus. Fifth pereopod overreaching scaphocerite with distal third of propodus. Dactylus of third pereopod (fig. 3g) 0.2 times propodus length, with 8 spinules on flexor margin; merus 0.9 times as long as propodus, twice as long as carpus and 2.95 times as long as ischium, with distal immovable spine on outer margin (fig. 3g).

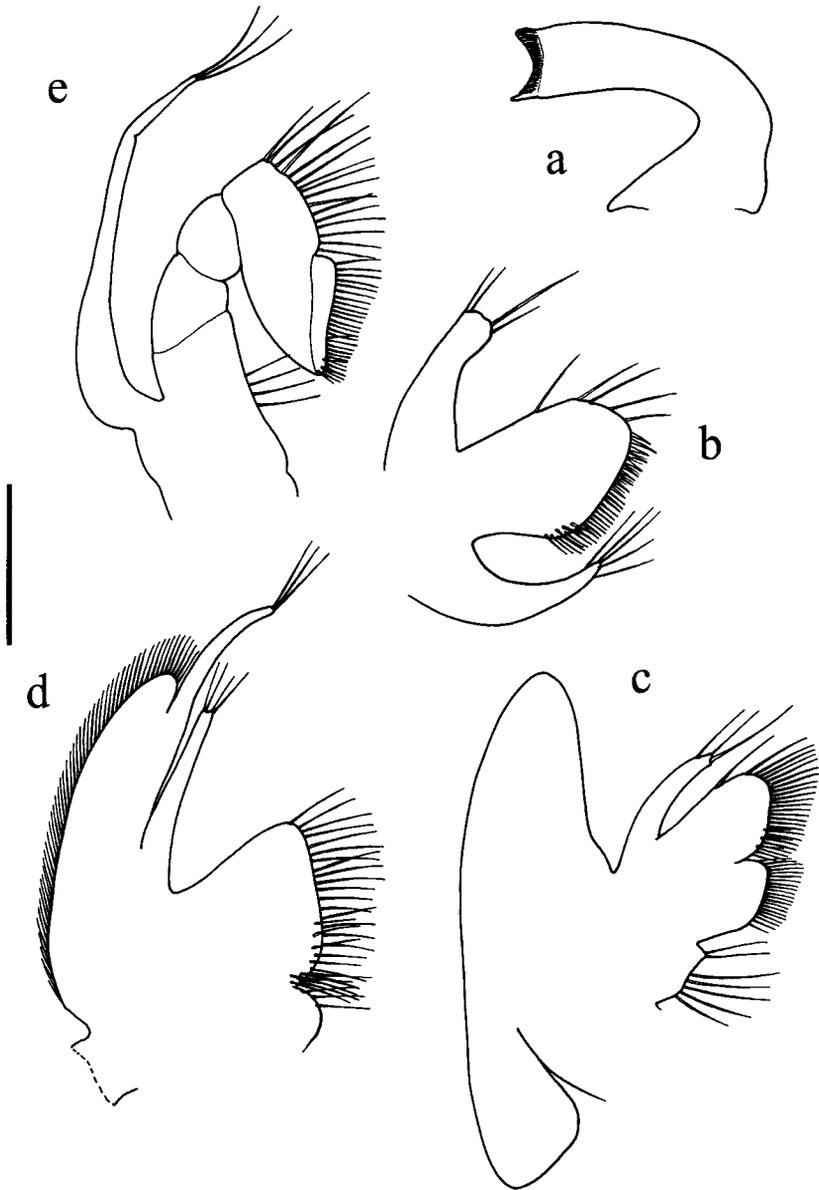


Fig. 2. *Bythocarides menshutkinae* gen. nov., sp. nov., holotype, female, cl. 8.1 mm. a, right mandible; b, left first maxilla; c, left second maxilla; d, left first maxilliped; e, left second maxilliped. Scale = 1 mm.

Endopod of first pleopod subovate. Appendix interna on pleopods 2-5.

Etymology. — When sorting the “Polarstern” collection, Dr. T. V. Menshutkina supposed this specimen be a new species. Therefore, the specific name *menshutkinae* is derived from her surname as a noun in the genitive singular.

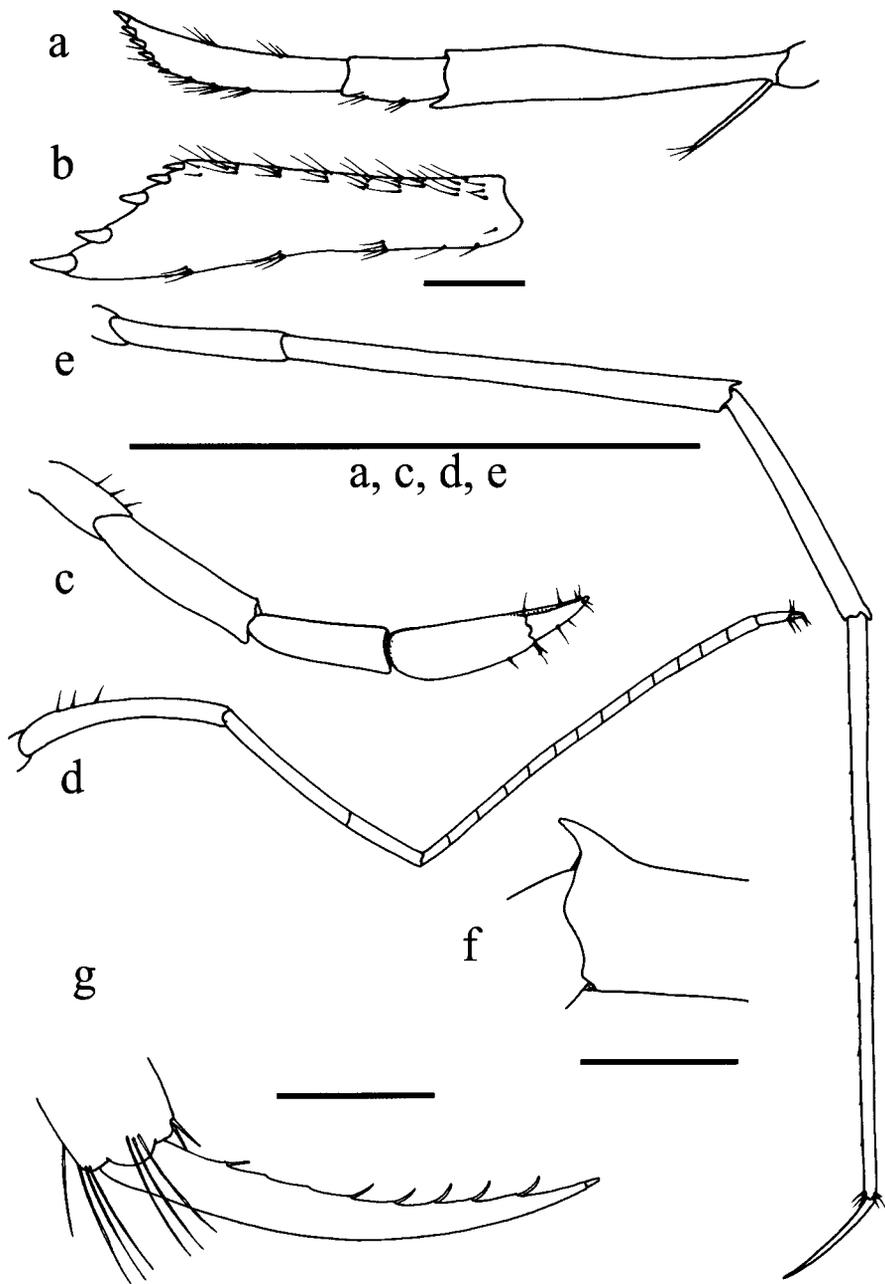


Fig. 3. *Bythocarides menshutkiniae* gen. nov., sp. nov., holotype, female, cl. 8.1 mm. a, third maxilliped; b, detail of ultimate segment of third maxilliped; c, first pereopod; d, second pereopod; e, third pereopod; f, distal part of merus of third pereopod; g, dactylus of third pereopod. Scale a, c, d, e = 1 cm; b, f, g = 1 mm.

Remarks. — The long appendages are supposed to be an evidence of dwelling on soft ground.

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