

A NEW GENUS AND SPECIES OF AXIID (DECAPODA,  
THALASSINIDEA) FROM THE LEVANTINE BASIN OF THE  
MEDITERRANEAN

BY

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ABSTRACT

A new axiid, collected in the Levantine Basin of the Mediterranean, from a depth of 1400 m, is described and illustrated. This is the third axiid known from the Mediterranean and represents a new genus.

RÉSUMÉ

Description et illustration d'un nouvel axiide recueilli dans le bassin levantin de la Méditerranée, à 1400 mètres de profondeur. C'est le troisième axiide connu de Méditerranée et il représente un genre nouveau.

INTRODUCTION

In December 1991, the R.V. "Shikmona" of the Israel Oceanographic and Limnological Research Institute, undertook a survey of the Levantine Basin benthic fauna. In the material collected was an axiid that differed from known Mediterranean and North Sea members of the thalassinidean family Axiidae. It differed from *Axius stirhynchus* Leach in having unpigmented eyes and lacking setal tufts on abdominal pleurae 3 to 5, from *Calocaris macandrae* Bell in having the cheliped fingers as long as the palm and in lacking a postcervical carina and from *Calocarides coronatus* (Trybom) in lacking close tuberculation on the chela and prominently dentate on the carapace. Comparison of the levantine specimen with other axiids in the collections of The Natural History Museum (NHM) revealed it to be quite distinct and belonging to a new genus and species.

SYSTEMATIC ACCOUNT

**Levantocaris** gen. n.

Diagnosis. — Suture on uropod exopod. Maxillipeds 1 and 2 with podobranch, but no arthrobranch. Pereiopod 4 without podobranch; per-

ciopods 2-4 with pleurobranches. First male pleopod biarticulate, distal article spatulate; pleopods 3-5 with free appendix interna.

Description. — Body subcylindrical, feebly compressed, smooth. Cervical groove present on carapace; postcervical carina absent. Rostral margins armed; median carina entire; lateral carina entire, apart from supraocular spine. Eye with reduced pigmentation, anteriorly flattened; eyestalk rounded. Antennal acicle a well developed spike. Maxillipeds with epipod and exopod, second and third with reduced podobranch; third maxilliped with two arthrobranches. Pereiopods lacking exopods; epipod and podobranch on 1-3; epipod only on 4; two arthrobranches on 1-4; one pleurobranch on 2-4. First pereiopods robust, chelae asymmetrical. Second pereiopods slender, chelate. Ambulatory pereiopods with simple dactyli. First male pleopod biarticulate, distal article spatulate, with proximomesial clump of small hooks. Second male pleopod with large exopod and endopod, appendix masculina and appendix interna both articulating proximally on endopod. Pleopods 3-5 with free appendix interna. Outer ramus of uropod with dentate transverse suture. Telson with non-articulating dorsal spines and single posterolateral articulating spine.

Type species — *Levantocaris hornungae* gen. et sp. n.

Discussion. — The systematics of the axiid taxa have undergone major revision recently (Sakai & de Saint Laurent, 1989; Kensley, 1989). Both revisions cite *Axiopsis brucei* (Sakai, 1986) as the type species for a new genus which Sakai & de Saint Laurent named *Spongiaxius* and Kensley, *Sakiocaris*. *Sakiocaris* is a junior objective synonym of *Spongiaxius* because Kensley's (1989) paper was published in December whereas that by Sakai & de Saint Laurent appeared in October of the same year.

*Levantocaris* closely resembles *Spongiaxius* in having the distal article of the first male pleopod spatulate and bearing a cluster of hooks proximomesially, and in having the exopod and endopod of the second male pleopod coequal, with appendix interna and appendix masculina articulating proximally on the endopod. It differs from *Spongiaxius* by its entire median and lateral carinae, absence of serrated submedian carina and anteriorly flattened eyes.

Etymology. — The generic name is a combination of "Levant" for the region in which it was collected and the greek "karis" - a shrimp, *Levantocaris*. The gender is feminine.

#### ***Levantocaris hornungae* sp. n. (figs. 1-4)**

Diagnosis. — Rostrum elongate, triangular, dorsal surface concave, margins with 2 or 3 denticles. Gastric region with median carina entire, lacking postcervical carina. First pereiopod chelate, subequal, massive. Distal article of first male pleopod minutely setose proximomedially. Second male pleopod with appendix masculina and appendix interna articulating proximally on endopod.

Description. — The following description is based on the male holotype: NHM reg. 1992:608, 50 kms NW of Haifa, 33°00'N 34°35'E, Israel, 1400 m,

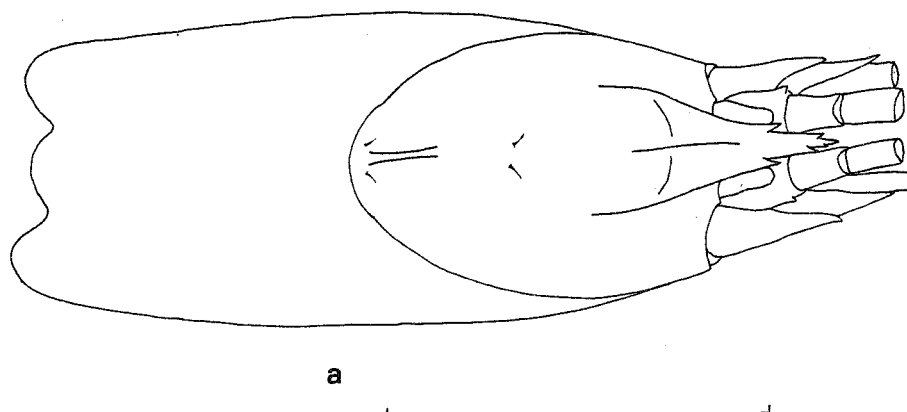


Fig. 1. *Levantocaris hornungae* sp. n., holotype. a, dorsal view of carapace and antennae. Scale bar 5 mm.

17 December 1991, coll. B. Galil. Carapace length, 11 mm. Length from rostral apex to telson, 25.3 mm.

Body form subcylindrical, slightly compressed, smooth, glabrous. Rostrum (fig. 1a, 2a) elongate, triangular, 1.5 times as long as broad at base; dorsal surface concave; tip acute, upturned, lateral margins with 2 or 3 widely-spaced spines. Gastric region with three longitudinal carinae; median carina entire, reaching base of rostrum; lateral carinae distinct anteriorly, entire. Cardiac region rounded, lacking postcervical carina. Posterior margin of carapace sinuous, medially convex.

Abdominal somites smooth. First somite half as long as second, dorsally with paired setal tufts. Second to fifth somites subequal in length medially, dorsally with two pairs of sparse setal tufts. Fifth and sixth somites bearing an additional pair of long setal tufts on posterior margin. Pleura smooth, margins rounded.

Cornea unpigmented, anteriorly flattened. Eyestalk less than half rostrum length, undifferentiated from cornea.

Antennular peduncle three-segmented, basal segment slightly shorter than rostrum; second segment less than half as long as first, slightly longer than third; flagellum 1.5 times as long as carapace excluding rostrum. Antennal peduncle five-segmented, second and third segments bearing acicles distally; flagellum more than 2.5 times as long as carapace excluding rostrum.

Mandible (fig. 2b-c) robust, incisor stout, concave. Mandibular palp three-segmented, two proximal segments subequal, third segment twice as long, paddle-shaped, margins edged with plumose setae.

Maxillule (fig. 2d) bilobed; lower endite triangular, margins edged with plumose setae; upper endite scapular, distal margin edged with spiniform, cornute setae, distodorsal margin edged with longer, feebly setulose setae.

Maxilla (fig. 2e) well developed; endites bilobed, densely fringed with set-

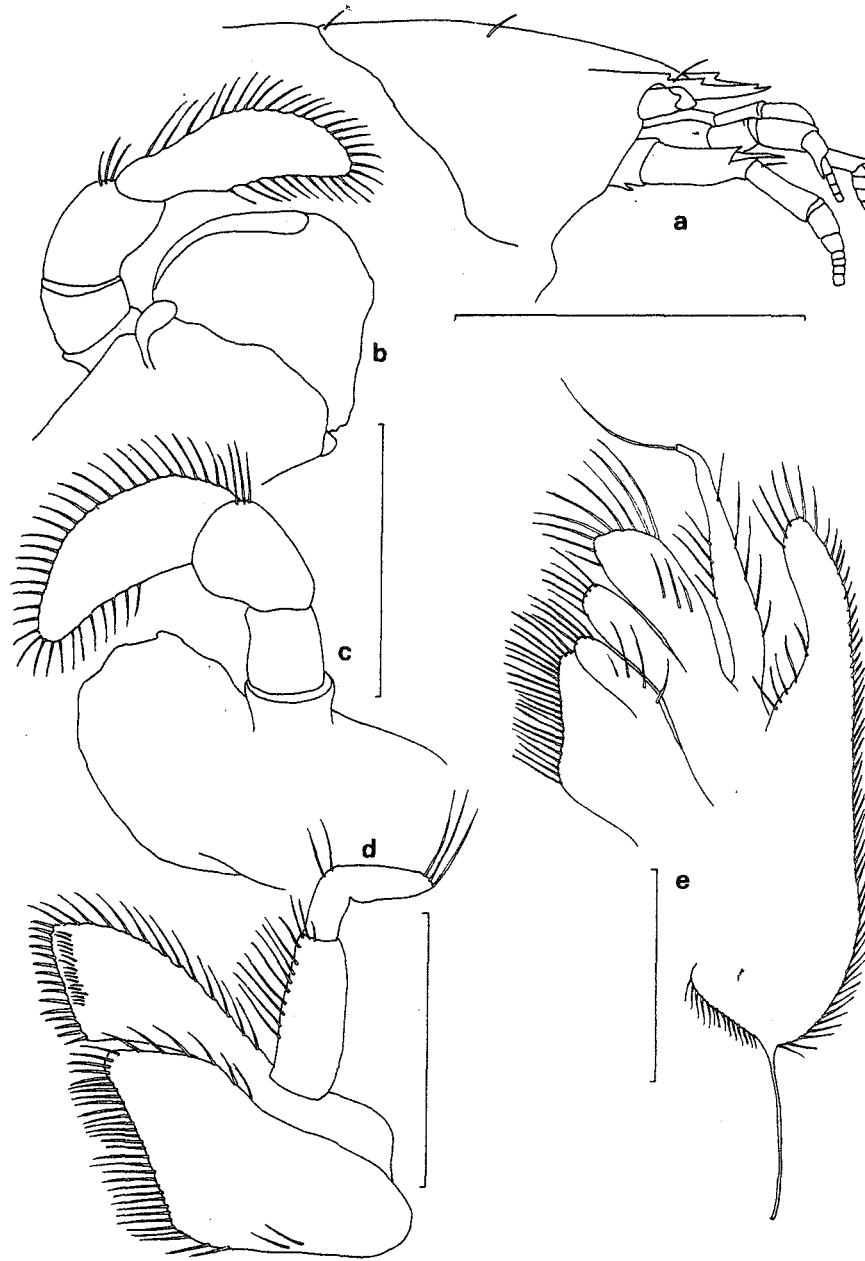


Fig. 2. *Levantocaris hornungae* sp. n., holotype. a, carapace and antennae; b, mandible, outer aspect; c, mandible, inner aspect; d, maxillule; e, maxilla (long seta not illustrated fully). a, scale bar 5 mm; b-e, scale bar 1 mm.

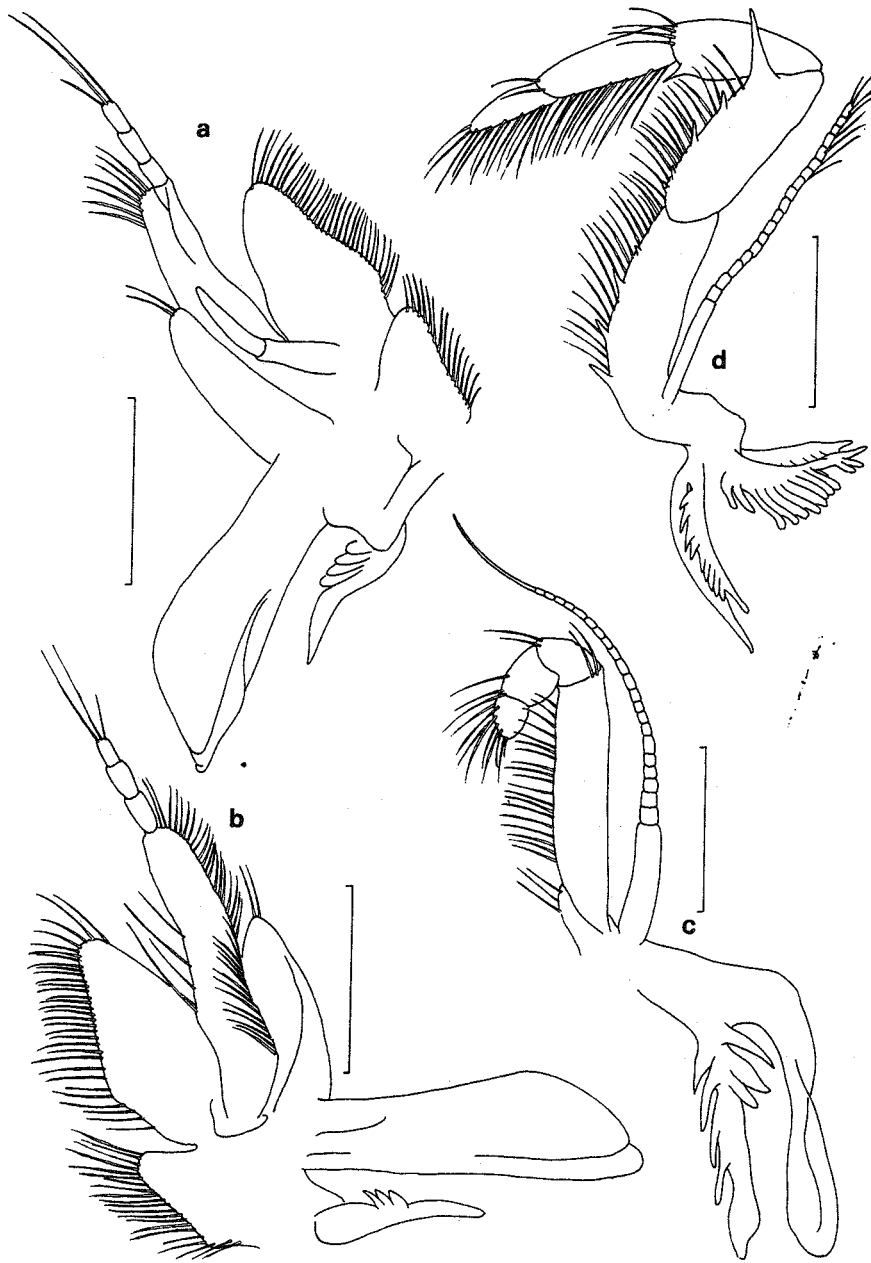


Fig. 3. *Levantocaris hornungae* sp. n., holotype. a, first maxilliped, inner aspect; b, idem, outer aspect; c, second maxilliped; d, third maxilliped. a-b, scale bar 1 mm; c-d, scale bar 2 mm.

ulose setae; endopod slender, tapering to long, twisted setulose seta. Scaphognathite well developed, anterior lobe as long as upper endite, posterior lobe bearing setulose seta nearly as long as scaphognathite.

First maxilliped (figs. 3a-b) with large, oar-shaped epipod; exopod slender, bearing distally segmented process tipped with long, plumose setae; coxal and basal endites thickly fringed with setulose setae.

Second maxilliped (fig. 3c) with lingulate epipod bearing podobranch nearly as long as itself; exopod slender, curved, edged with long plumose setae; endopod with columnar merus, internally fringed with long setae, dactylar segment distally fringed with stout, spiniform setae.

Third maxilliped (fig. 3d) with lingulate epipod, podobranch, two arthrobranches. Endopod pediform, ischium with distinctly serrated crest on interior mesial margin, extending beyond ischiomeral joint; merus with interior margin spinose, distal spine largest; carpus distally spinose on interior margin; propodus, slightly longer than carpus, 1.5 times as long as thickly setose dactyl.

First pereopods (fig. 4a) massive, chelate, subequal. Ischium of cheliped spinose ventrally, subdistal spine largest; merus 2.2 times as long as broad, ventrally spinose; chela 2.7 times as long as broad, inner and outer surfaces near base of fixed finger tuberculate. Fingers with tufts of setae and crenulate cutting edges; dactyl slender, sickle-shaped.

Second pereopod chelate, slender, unarmed; merus, carpus, and propodus fringed with long setae; cutting edge of fingers closely serrate. Ventral margin of ambulatory propodus distally setose, terminating with transverse row of serrate spinules. Dactylus slender, curved, each tipped with cornute spine.

Branchial formula:

|              | mx1 | mx2 | mx3 | p1 | p2 | p3 | p4 | p5 |
|--------------|-----|-----|-----|----|----|----|----|----|
| epipod       | 1   | 1   | 1   | 1  | 1  | 1  | 1  | -  |
| podobranch   | 1   | 1   | 1   | 1  | 1  | 1  | -  | -  |
| arthrobranch | -   | -   | 2   | 2  | 2  | 2  | 2  | -  |
| pleurobranch | -   | -   | -   | -  | 1  | 1  | 1  | -  |

First male pleopod (fig. 4b) bi-segmented; basal segment slender, distal segment spatulate, triangular, minutely setose proximomesially.

Second male pleopod (fig. 4c) biramous, exopod and endopod equal, appendix masculina and appendix interna articulating proximally on endopod.

Third to fifth pleopods with free appendix interna.

Caudal fan (fig. 4d) spinose, fringed with long plumose setae. Uropod exopod distally spinose on lateral margin; transverse suture bearing minute spinules, distal lobe with spine. Uropod endopod with spine on outer margin; dorsal surface with spinose median ridge. Telson twice as long as broad; lateral margins with few spines; distal margin convex, medially spinose; proximally bearing two pairs of spines on dorsal surface.

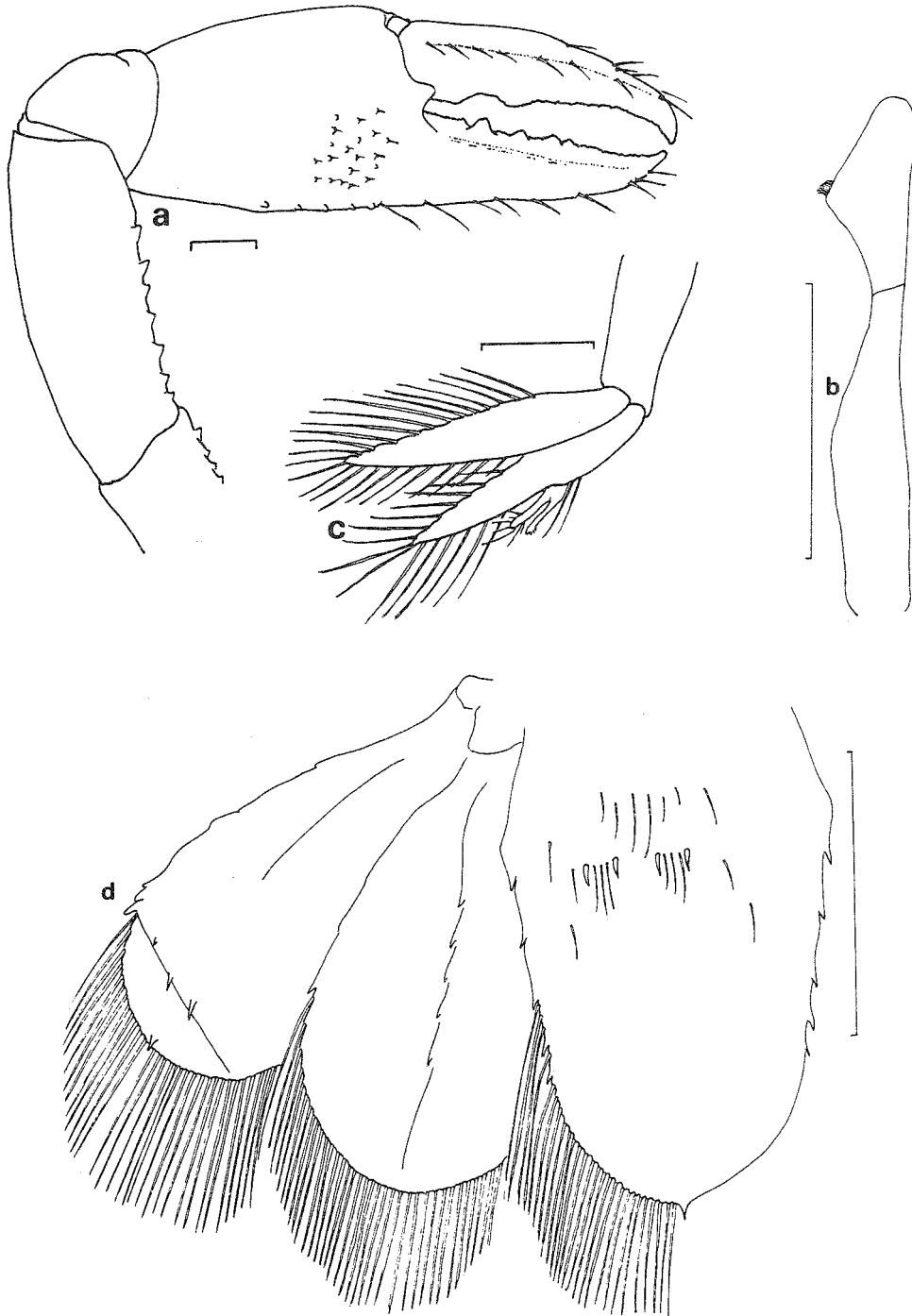


Fig. 4. *Levantocaris hornungae* sp. n., holotype. a, right cheliped; b, first male pleopod, posterior aspect; c, second male pleopod; d, caudal fan, dorsal aspect. a-c, scale bar 1 mm; d, scale bar 2 mm.

Colour: White.

Etymology. *L. hornungae* has been named for Ms. Hava Hornung, in appreciation for a lifetime of work on the Mediterranean fauna.

#### DISCUSSION

Kensley (1989) discussed the correlation between development of hermaphroditism, eye pigmentation and depth distribution among thalassinideans. *L. hornungae*, living at 1400 m, seems to fit the postulated pattern. With male pleopods identical to those of *Spongiaxius brucei* (Sakai, 1986) it presumably has some hermaphrodites in the population and its anteriorly flattened eyes lack pigment. Reduction of eye pigment, decreased differentiation between cornea and stalk and anterior flattening of the eye are found among several decapod families dwelling in caves or deep-sea habitats.

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