

BOPYRID ISOPODA FROM SOUTHERN AFRICA

BY

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INTRODUCTION

During the course of identifying decapod crustaceans collected during the seventh cruise of the R/V "Anton Bruun", as part of the International Indian Ocean Expedition, several specimens of bopyrid isopods were encountered. These are here described, along with a specimen from Inhaca Island, Moçambique. All are branchial parasites either of brachyurous or macrurous decapods.

Argeiopsis n. gen.

Diagnosis. — Female. Body only slightly asymmetrical. Cephalon broader than long. No obvious anterior lamina, posterior lamina with two strongly curved hook-like processes. Pereion of seven free segments, with seven pairs of well-developed pereopods. Pleon of six free segments. Coxal plates entirely absent. Five pairs of biramous pleopods, rami unequal. Uropods uniramous, lamellar. Brood pouch open, only bordered by oostegites.

Type species of the genus *Argeiopsis inhacae* n. sp.

Argeiopsis inhacae n. sp. (fig. 1a-h)

Material. — 1 ovigerous female, holotype, S.A.M. A10979, length 6.0 mm, breadth 5.0 mm, taken from right branchial chamber of *Stenopus hispidus* (Olivier), collected at Inhaca Island, Moçambique.

Description. — Female. Body longer than broad, left side bulging slightly more than right, asymmetry not very noticeable. Cephalon broader than long, anterior lamina hardly developed, two faint eye-spots present. Posterior lamina with two strong hook-like processes situated laterally. First antenna short, 3-segmented, second antenna about twice length of first, 4-segmented, two distal segments indistinctly indicated. Maxilliped with setose medio-distal corner, posterior portion with slender digitiform median process.

Pereion consisting of seven free segments, first two segments more or less horizontal, rest strongly curved, third and fourth segments broadest. Anterior four segments laterally bilobed. Ovarian bosses present but indistinct. Coxal plates absent. Seven pairs of pereopods present, last two on right side close together, all

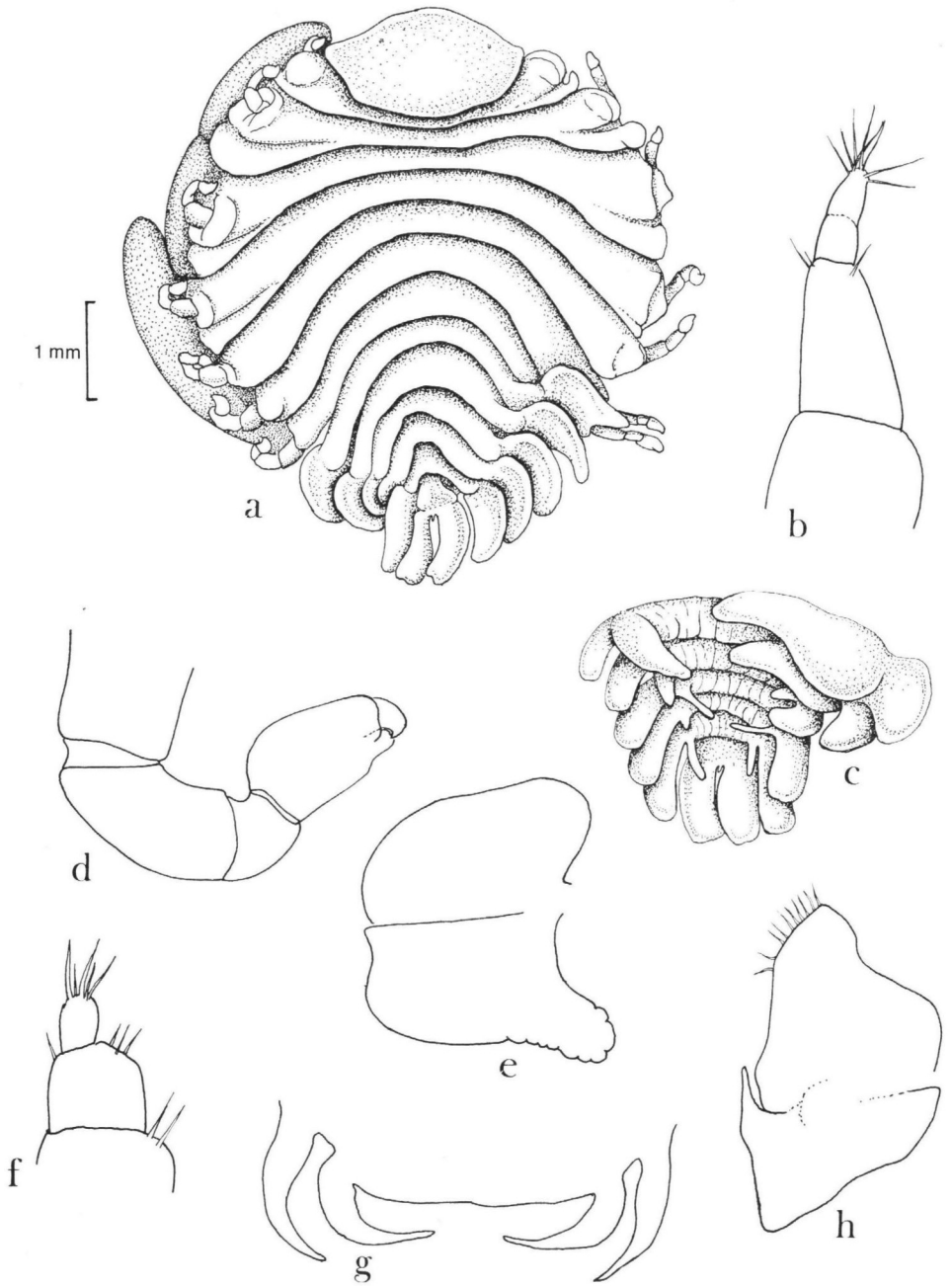


Fig. 1. *Argeiopsis imbaciae* n. sp. a, female, dorsal view; b, 2nd antenna; c, pleon, ventral view; d, 7th pereiopod; e, 1st oostegite; f, 1st antenna; g, posterior lamina of cephalon; h, maxilliped.

similar, dactyl short and strongly hooked. First oostegite with posterior portion medially produced into crenulate lobe.

Pleon consisting of six free segments, coxal plates indicated only by a slight bulge at fusion of the pleopod. Five pairs of biramous pleopods present, first two pairs of left side with rounded lamellar exopods and broad endopods, third pleopod with small rounded exopod and smaller lobe-like endopod. Fourth and fifth pleopods with lamellar elongate exopods, endopods slender, digitiform. First to fifth pleopods of right side with exopods lamellar and elongate, endopod of first pleopod expanded, second lobe-like, third and fifth slender, digitiform, fourth reduced. Sixth segment slightly bilobed in dorsal view. Uropods uniramous, elongate and lamellar in form, with tiny papilla between them.

Remarks. — A combination of several characters places the present genus close to the genera *Argeia* and *Parargeia*. These characters include the possession of seven free pereion and six free pleon segments, the reduced coxal plates, five pairs of biramous pleopods, and uniramous uropods. Several differences prevent the present material from inclusion in either of the aforementioned genera. The females of the genus *Argeia* are more obviously asymmetrical than the present material, possess reduced coxal plates, and small rounded inner rami of the pleopods. The maxilliped of *Argeia* has a notch at the medio-distal angle of the anterior plate, while *Argeiopsis* has an unnotched maxilliped. The hooklike processes of the posterior lamina of the cephalon are similar in shape, *Argeia nierstraszi* and *Argeia lowisi* both possessing three, while two are present in *Argeiopsis*. The brood pouch in the present material, as in *Argeia*, is open, while in *Parargeia* the oostegites completely cover the eggs. Some of the pereion segments are laterally bilobed, with the posterior lobe of each segment more or less produced in *Argeia*, but not at all produced in *Parargeia* and the present genus. Although the pleopod rami of *Parargeia* are unequal, they do not resemble the situation in *Argeiopsis*. A new genus must thus be erected to accommodate this female.

Regrettably, a male was not found, thus limiting the generic diagnosis considerably.

***Bopyrella hodgarti* Chopra, 1923**

Bopyrella hodgarti Chopra, 1923: 473, pl. 14 figs. 7-12.

Material. — 4 ovigerous females, length 4.8-7.0 mm, 4 males, length 1.1-1.6 mm, from branchial chambers of *Alpheus* sp. from off Natal, 29°37'S, 31°33'E, 200 metres depth.

Previous records. — From *Alpheus crassimanus* Heller from the Bay of Bengal.

***Epipenaeon fissurae* n. sp. (fig. 2a-j)**

Material. — 1 ovigerous female, holotype S.A.M. A13175, length 10.4 mm; 1 male, allotype, S.A.M. A13175, length 3.0 mm, from branchial chamber of *Parapenaeus fissurus* Bate, taken in 70 metres depth off Natal.

Description. — Female. Body longer than broad, almost symmetrical. Cephalon broader than long, anterior lamina narrow, tiny eye-spots present. Posterior lamina consisting of three lobes on each side, bearing digitiform and papilliform outgrowths. First antenna 3-segmented, basal segment enormous compared with two

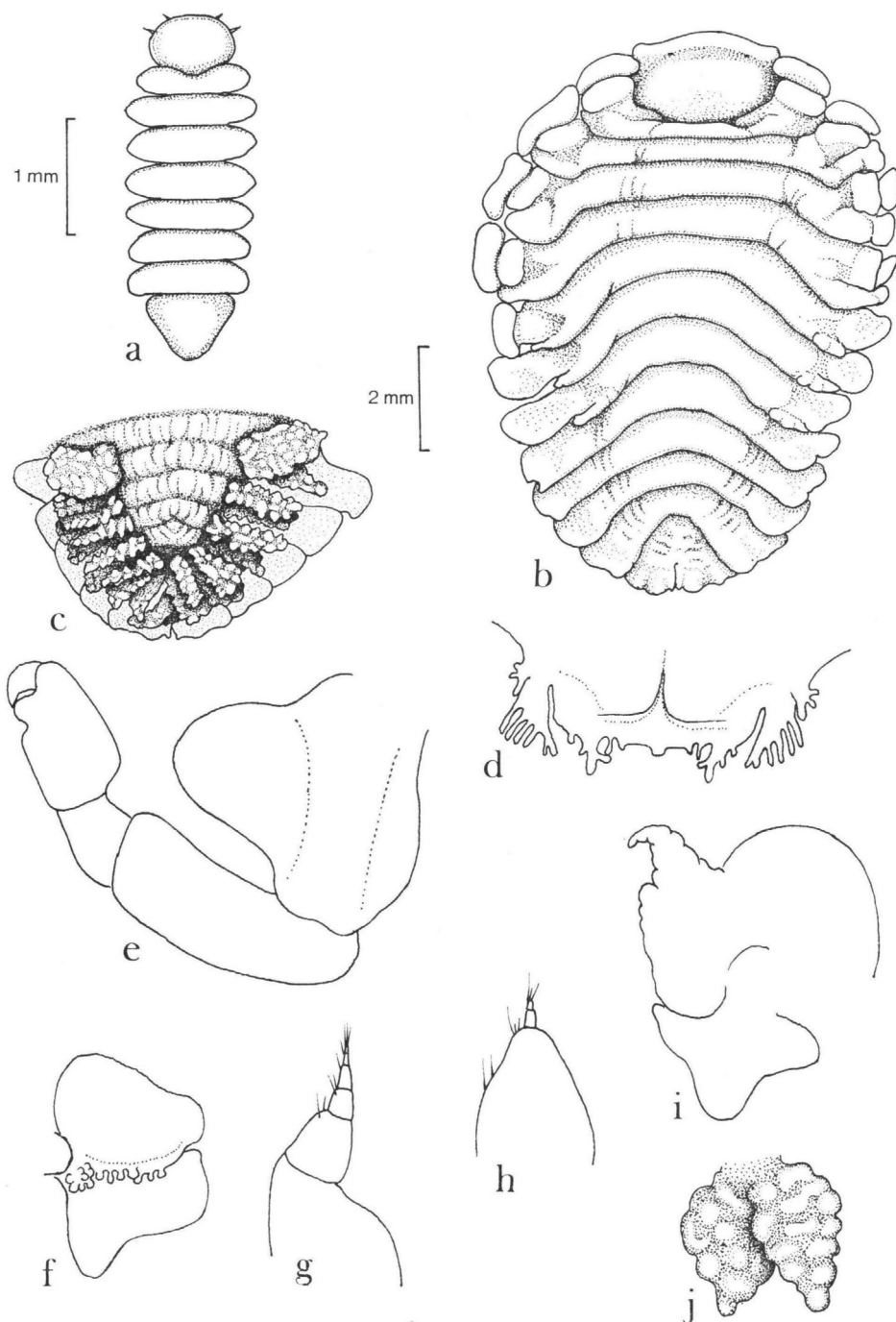


Fig. 2. *Epipenaeon fissurae* n. sp. a, male, dorsal view; b, female, dorsal view; c, female, pleon, ventral view; d, posterior lamina of cephalon; e, female, 7th pereiopod; f, 1st oostegite, inner face; g, 2nd antenna; h, 1st antenna; i, maxilliped; j, uropod.

tiny distal segments. Second antenna 6-segmented, two distal segments very small. Maxilliped bearing a hooked lobe at mediiodistal corner.

Pereion consisting of seven free segments, each with well-developed coxal plate, those of anterior four segments on right side, and anterior five segments on left side being somewhat elongate, rest of coxal plates broadly lamellar. First segment laterally undivided, second to seventh segments laterally bilobed, posterior lobe of second to fourth segments fairly broad, of segments five to seven much smaller than anterior lobe. Ovarian bosses present on first four segments. Brood pouch completely closed by oostegites. Seven pairs of well-developed pereopods on each side, basal segment of each with large dorsal expansion.

Pleon consisting of five free segments, dorsally ridged at bases of coxal plates, latter well-developed, lamellar. Five pairs of biramous tuberculate pleopods present, first pair largest, rami subequal, roughly circular in outline. Uropods biramous, rami subequal, leaf-shaped. Neither pleopods nor uropods dorsally visible.

Male. Body consisting of rounded cephalon, seven free pereion segments not markedly separated laterally, and triangular completely fused pleotelson.

Remarks. — The presence of a well-developed anterior lamina, coxal plates on the pereion and pleon, five pleon segments in the female, a fused pleotelson in the male, five pairs of biramous pleopods, and biramous uropods, places this species in the genus *Epipenaeon*. Seven species have been described in this genus, all of which, together with the present species are very similar, and are separated on rather slender characters. The females of *E. pestai* Nierstrasz & Brender à Brandis, 1931, *E. grande* Nierstrasz & Brender à Brandis, 1931, and *E. ovalis* Pillai, 1954, all possess a 5th pleon segment consisting of a single dorsal plate, showing no indication of coxal plates. *E. elegans* Chopra, 1923, differs markedly from *E. fissurae* in the almost circular outline of the female, while the uropods and distal portions of the pleopods are not as tuberculate. *E. oviforme* Nierstrasz & Brender à Brandis, 1931, like the previous species, is also almost circular in outline, but the pleopods and uropods, from the figures (Nierstrasz & Brender à Brandis, 1931, figs. 19-21) are elongate and not tuberculate. The female of *E. nobilii* Nierstrasz & Brender à Brandis, 1929, although oval in outline, is not as elongate as *E. fissurae*, while the uropods and pleopods are dorsally visible and more elongate. The pleotelson of the male, with its underfolded margins, is very different from the solid pleotelson of the present species. The pereion segments of the male are also widely spaced laterally. *E. ingens* Nobili, 1906, the type species for the genus, most closely approaches the present species, but unlike the latter, possesses poorly developed coxal plates on the pleon, the dorsal surface of which is smooth.

***Gigantione sagamiensis* Shiino, 1958**

Gigantione sagamiensis Shiino, 1958: 45, fig. 9.

Material. — 1 ovigerous female, S.A.M. A13176, length 5.0 mm, 1 male, length 1.8 mm, from right branchial chamber of a female xanthid crab *Paratargatis longimanus* Sakai, from off Moçambique, 25°57'S, 33°02'E, 42 metres depth.

Remarks. — It is of interest to note that *G. sagamiensis* was first recorded from the xanthid crab *Carpilodes lophopus boninensis* Odhner, 1925, from Sagami Bay, Japan, and that the host of the present material, *Paratergatis longimanus* Sakai, 1965, was also first described from Sagami Bay.

Nikione n. gen.

Diagnosis. — Female. Body strongly asymmetrical. Cephalon broader than long. Anterior lamina well-developed. Posterior lamina with two pairs of lateral and one pair of median processes. Seven free pereion segments. Five free pleon segments. Coxal plates lamellar, present on all pereion and pleon segments, those of pleon tuberculate. Five pairs of biramous tuberculate pleopods. Uropods biramous, tuberculate. Brood pouch open. Male: Body elongate, cephalon rounded. Seven free pereion segments. Five free pleon segments, plus cordiform pleo-telson. Seven pairs well-developed pereopods. Pleopods absent.

Type species of the genus *Nikione natalensis* n. sp.

Nikione natalensis n. sp. (fig. 3a-j)

Material. — 1 ovigerous female, holotype, S.A.M. A13174, length 4.0 mm, breadth 5.2 mm; 1 male, allotype, S.A.M. A13174, length 1.1 mm from branchial chamber of processid shrimp *Nikoides danae* Paulson, 1875, from off Natal, 29°10'S, 31°51'E, 43 metres depth.

Description. — Female. Body broader than long, left side longer than right, latter somewhat compressed. Cephalon broader than long, with well-developed anterior lamina, produced into broadly rounded lamella at antero-lateral corners. Eyes absent. Posterior lamina bearing one pair leaf-like backwardly-directed processes laterally, plus one median pair. First antenna 3-segmented, segments short and squat, basal segment very broad. Second antenna 5-segmented, three basal segments bearing numerous squamae, two distal segments very short. Maxilliped with medio-distal corner bilobed, lobes short and bluntly rounded, bearing a few plumed setae. Pereion consisting of seven free segments, each with well-developed coxal plate. First four segments medio-dorsally very narrow. First segment with strong elongate ovarian boss, second to fifth segments on right side bilobed, posterior lobe small, with rounded distal lamella. Second to seventh segments on left side bilobed, posterior lobe of each segment decreasing in size posteriorly. Ovarian bosses present on first four segments. Brood pouch not closed by oostegites.

Pleon consisting of five free segments. Coxal plates well-developed, circular-oval in outline, margins slightly tuberculate. Five pairs biramous warty pleopods present, exopods, especially of last two pairs, fairly elongate, endopods of anterior three pairs irregular, of posterior two pairs circular. Uropods biramous, rami elongate, warty.

Male. Body elongate, cephalon anteriorly rounded. Seven free pereion and five free pleon segments distinct, pleo-telson cordiform with tiny median anal projection. Pleopods and uropods absent.

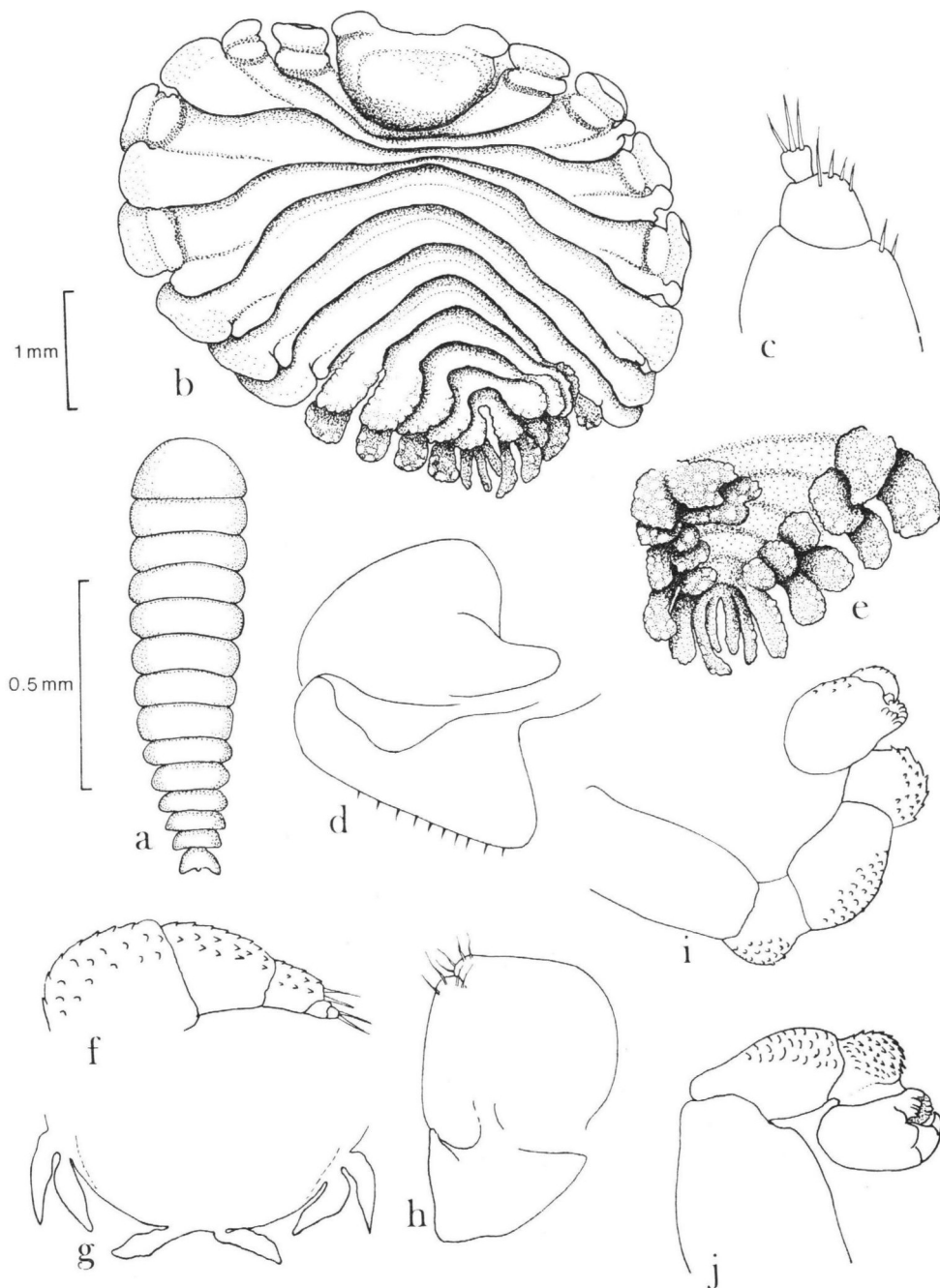


Fig. 3. *Nikione natalensis* n. sp. a, male, dorsal view; b, female, dorsal view; c, 1st antenna; d, 1st oostegite; e, female, pleon, ventral view; f, 2nd antenna; g, posterior lamina of cephalon; h, maxilliped; i, female, 7th pereiopod; j, male, 7th pereiopod.

Remarks. — The present material, which is characterised by the possession of a well-developed anterior lamina of the cephalon, lamellar coxal plates on all the pereion and pleon segments, and biramous pleopods and uropods, is obviously allied to the group of genera including *Epipenaeon*, *Orbiomorpha*, *Orbione*, *Parapenaeon*, *Gigantione*, and *Apopenaeon*. Of these, only the first two possess a 5-segmented pleon; the rest all have a sixth pleonal segment visible. *Orbiomorpha* is immediately separated from the present species by the possession of four coxal plates and four pairs of pleopods on the pleon.

Epipenaeon closely resembles the present material, particularly in the tuberculate biramous pleopods and uropods. The shape of the posterior pleopods and the uropods is, however, rather different in the two genera, *Epipenaeon* having subequal rami of the pleopods. A major difference lies in the nature of the pleon of the male. While in *Epipenaeon* the five pleon segments are fused to form a triangular structure, in the present species they are completely free and separate. As the present material cannot be satisfactorily placed in any of the existing genera, it is afforded separate generic status.

ZUSAMMENFASSUNG

Fünf Isopodenarten der Familie Bopyridae vom südlichen Afrika werden beschrieben. Sie wurden in den Kiemenkammern von Dekapoden gefunden. Die beschriebene Arten schliessen zwei neue Gattungen und drei neue Arten ein.

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