

REDESCRIPTION OF *PARABATHYNOMUS NATALENSIS* BARNARD (CRUSTACEA, ISOPODA, CIROLANIDAE)

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(With 3 figures)

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ABSTRACT

The cirolanid *Parabathynomus natalensis*, described by Barnard in 1924 and since overlooked, is redescribed. The validity of the genus is confirmed, and the genus compared with the closely related *Bathynomus*. The species, known from two specimens, is recorded from Natal and southern Mozambique.

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INTRODUCTION

Interest in the giant isopod genus *Bathynomus* Milne Edwards is stirred each time a specimen is caught. Holthuis & Mikulka (1972) provided an excellent résumé of taxonomic and biological work which has been published on the (then) four species of *Bathynomus*. Shih (1972) and Griffin (1975) each describe a new species and provide notes on the genus. Nowhere, however, is mention made of the closely related genus *Parabathynomus* Barnard. This is not surprising, considering the relatively obscure journal in which it was published (Barnard 1924) and that *Parabathynomus* has been mentioned only once in passing (Barnard 1940) since its description.

The author, in developing a catalogue of southern African marine isopods, thought it necessary to re-examine the type of *Parabathynomus* and felt that redescription would be useful.

The holotype of *Parabathynomus natalensis* was caught by the Fisheries Research vessel *Pickle* in 1920, off the coast of Natal. After description it was deposited in the British Museum (Natural History). A second specimen was found amongst the isopods collected in 1964 on the eighth cruise of the *Anton Bruun* during the International Indian Ocean Expedition.

SYSTEMATIC DISCUSSION

Parabathynomus natalensis Barnard

Figs 1-3

Parabathynomus natalensis Barnard, 1924: 2, figs 1-4; 1940: 491.*Description*

Male. Body parallel-sided, dorsally strongly convex, three and one-eighth times longer than wide; dorsal surface closely and minutely pitted, pits almost coalescing to form short striae on lateral portion of pleonites.

Cephalon somewhat sunken into pereonite* 1; frontal margin between eyes straight, faint impressed line present; faint line running along upper margin of eye, continuous across front. Antennular bases almost completely visible dorsally. Frontal lamina elongate-pentagonal, narrow, completely separating antennal bases. Clypeus wider than upper lip, lateral margins sinuous, anteriorly bifid at lamina base. Upper lip broadly bilobed. Eyes narrowly oblong, hardly visible in dorsal view, occupying most of anterolateral margin of cephalon. Pereonite 1 posterolateral angle rounded. Faint ridge on posterior half of lateral pereonite, with oblique continuous ridge ventral to former ridge. Coxae articulated on pereonites 2 to 7. Posterolateral angle of pereonite 2 rounded, 3 quadrate, 4 to 7 becoming progressively more acute; curved ridge present on all coxae.

Pleon consisting of five free pleonites plus pleotelson. Pleonite 1 narrow, lateral margin hardly visible beneath coxa of pereonite 7. Pleonites 2 to 4 subequal in length. Pleonite 2 laterally narrowly acute, pleonites 3 and 4 laterally acute but with posterior subapical margin convex; pleonite 5 medially longer than preceding segments, lateral margin not extending as far as preceding segments, overlapped by pleonite 4. Pleonite 2 with ventrolateral part of segment expanded into strong, flattened spinose process. Pleotelson with median length equal to basal width, distal margin evenly convex, with few irregular, low crenulations; very faint mid-dorsal impressed line just visible. Antennular peduncle three-segmented, terminal segment with distal oblique constriction, flagellum of about forty articles.

Antennal flagellum reaching to pereonite 6; peduncle five-segmented, two distal segments subequal in length, flagellum of about seventy articles. Mandibles with incisor process strongly sclerotized, tridentate, innermost tooth of left mandible acute, with median edge folded on itself; lacinia oval, with short, curved teeth on raised rim on margin; molar process blade-like, apically acute, with strong denticles on median margin; palp three-segmented, second segment longest, with distal patch of fine, dense setae; terminal segment curved, with row of fine setae and few elongate distal setae.

First maxilla with inner ramus short, bearing one slender and three stout spines, with distal halves bearing fine hairs; outer ramus broad, with strongly sclerotized curved spines.

* The author prefers this spelling.—Ed.

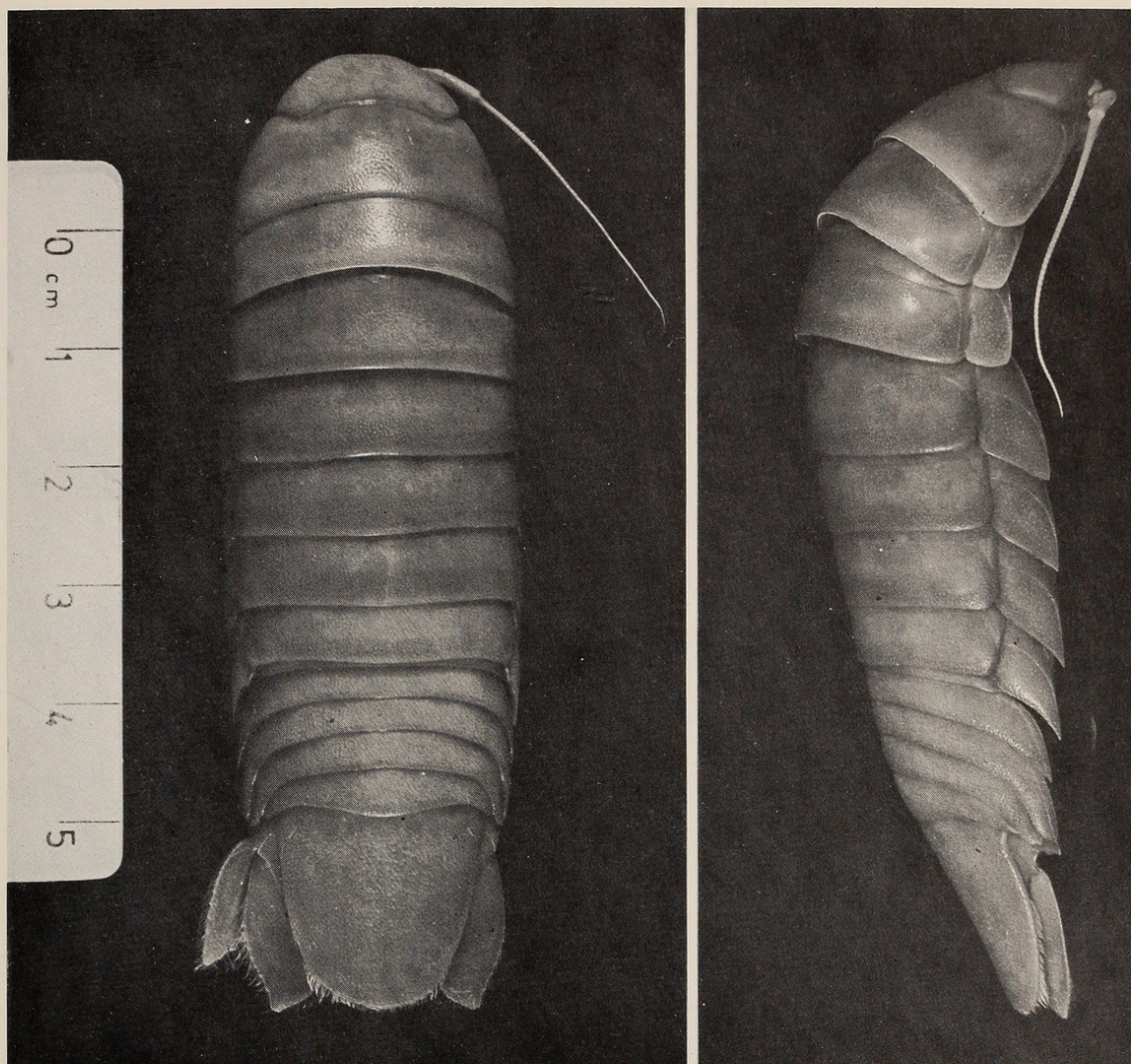


Fig. 1. *Parabathynomus natalensis*. Holotype in dorsal and lateral view.

Maxilliped endite triangular in cross-section, with two coupling hooks and about six plumose setae distally; palp five-segmented, third segment longest and broadest, all segments fringed with setae.

Pereopod 1 ambulatory, dactylus curved, shorter than propodus; latter curved, with three short spines on ventral margin; carpus about half length of propodus, with two strong ventrodistal spines; merus with margin bilobed, distal lobe carrying two spines, proximal lobe with three spines, dorsal margin distally produced beyond carpus, with row of six spines; ischium with strong spine on distodorsal corner.

Pereopods 2 and 3 similar to pereopod 1.

Pereopods 4 to 7 similar, dactylus about half length of propodus, latter narrow, with strong spine at mid ventral point; carpus, merus, and ischium bearing several spines and setae on distally expanded margins.

Penial rami widely separated on sternite of pereonite 7, flattened, oval in outline.

Pleopod 1 peduncle with eight coupling hooks on inner margin, and rounded membranous epipodite; endopod longer than exopod, median margin straight, outer margin curved; exopod with median margin convex, with single branchial tuft near base.

Pleopods 2 to 5 similar, with large branchial tuft on peduncle next to insertion of the appendage, plus smaller tuft on outer margin, hidden by longer peduncular tuft; tiny epipodite present; endopod with slender stylet attached



Fig. 2. *Parabathynomus natalensis*. A. Left mandible. B. Right mandible. C. First maxilla. D. Second maxilla. E. Maxilliped.

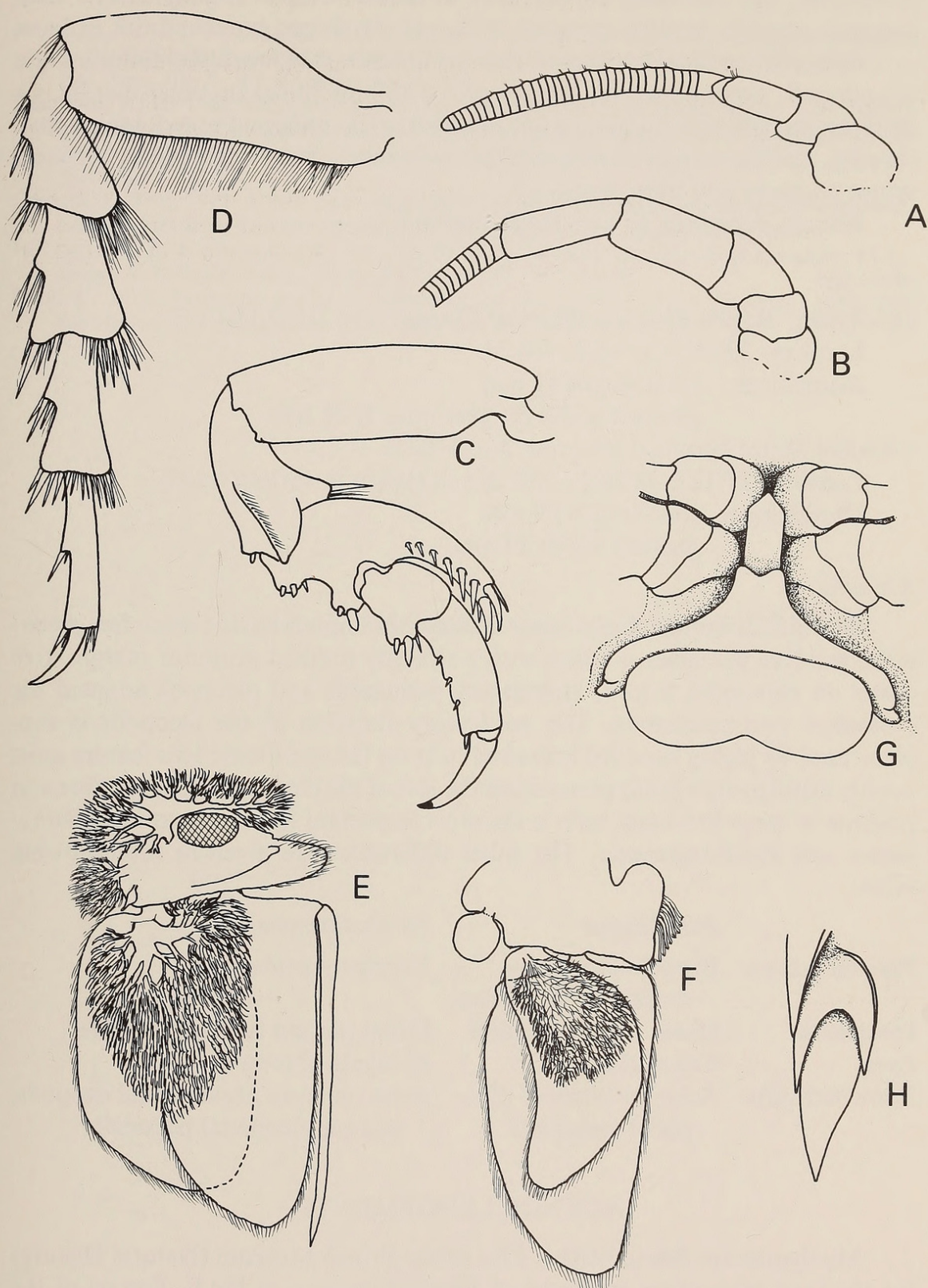


Fig. 3. *Parabathynomus natalensis*. A. Antennule. B. Antenna. C. Pereopod 1. D. Pereopod 7. E. Pleopod 2. F. Pleopod 1. G. Frontal lamina, clypeus, and upper lip. H. Ventrolateral view of pleonites 1-3.

proximally, just extending beyond apex of ramus; exopod slightly shorter than endopod, distally broadly rounded, with well-developed branchial tuft at base.

Uropodal peduncle produced into acute lobe extending along inner margin of endopod; exopod narrow, leaf-shaped, with nine spines on outer margin, six on inner margin, plus numerous fine plumose setae; endopod broad, longer than exopod, median margin distally curved, with outer distal angle blunt, six short spines on outer and inner margins.

Female. Agrees in all details with male.

Material

Holotype ♂ British Museum (Natural History) No. 1937.11.10.67.

Locality: 29°49'S 31°46'E, 766 m

Dimensions: total length 81 mm

greatest width (at pereonite 5) 26 mm

♀ United States National Museum No. 170251

Locality: 25°12'S 34°04'E, 230–295 m (taken in shrimp trawl)

Dimensions: total length 69 mm

greatest width 24 mm

Remarks

Shih (1972) defined *Bathynomus* as cirolanid isopods having seven free pereonites, five free pleonites, a telson with a strongly toothed posterior margin, free coxae on pereonites 2 to 7, ambulatory pereopods and pleopods adapted for swimming and respiration. The respiratory function of the pleopods is supplemented by highly ramified branchial tufts on the endopods. This feature most readily distinguishes *Bathynomus* from the rest of the cirolanids. The number and position of these branchial tufts is the most important feature separating *Bathynomus* and *Parabathynomus*. The other differences are given in the following table.

	<i>Bathynomus</i>	<i>Parabathynomus</i>
Frontal lamina	Broad, often pear-shaped or triangular	Narrowly pentagonal
Pleotelson.	Distal margin dentate	Distal margin faintly crenulate
Eyes	Triangular	Elongate-oblong
Branchial tufts	Arise on bases of pleopodal endopods	Arise on bases of pleopodal exopods, and on pleopodal peduncles

ACKNOWLEDGEMENTS

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