

REDESCRIPTION OF *HALIOPHASMA BARNARDI*
(MONOD) FROM WEST AFRICA (CRUSTACEA:
ISOPODA: ANTHURIDAE)

Brian Kensley

Abstract.—*Haliophasma barnardi* (formerly in the genus *Notanthura* Monod) is recorded from a mesohaline creek in the Niger delta, Nigeria. The female is redescribed and figured, and its position within *Haliophasma* briefly discussed.

Three anthurids were collected during 1978-79 in the Niger delta by Dr. C. B. Powell of the School of Biological Sciences, University of Port Harcourt, Nigeria, and submitted to the Smithsonian for identification. The specimens proved to be a species first described in 1927 and not recorded since. This is also the first time the whole animal has been seen, the original material having come from fish stomach contents.

The present paper is one of a series of short contributions dealing with the taxonomy of the anthurid isopods, preliminary to a major generic revision of the group.

Family Anthuridae
Haliophasma barnardi (Monod)
Figs. 1-3

Notanthura barnardi Monod, 1927:202, figs. 1-9.—Nierstrasz, 1941:239.—Poore, 1975:532.

Description.—♀. Integument hardly indurate. Body proportions: $C < 1 > 2 > 3 < 4 = 5 > 6 > 7$. Cephalon with low rostrum, not reaching beyond anterolateral corners; eyes lacking. Pereonites 3-6 with shallow middorsal pit. Pleonites 1-5 fused, indicated laterally by short slits; pleonite 6 free, with middorsal notch in posterior margin. Telson dorsally gently convex, widest at midlength, tapering to broadly rounded apex; with 2 proximal statocysts.

Antennular peduncle with basal segment equal to 3 distal segments together; segment 3 with 3 elongate simple setae; segment 4 short, with single simple seta and sensory seta; flagellum of 4 articles, 3 distal articles very short, basal article elongate, with 2 distal aesthetascs, 3 distal articles each with single aesthetasc. Antennal peduncle 5-segmented, segment 2 grooved to accommodate antennule, with hair-like setae on medial margin; segments 3 and 4 subequal; segment 5 slightly longer; flagellum of 4 articles, each

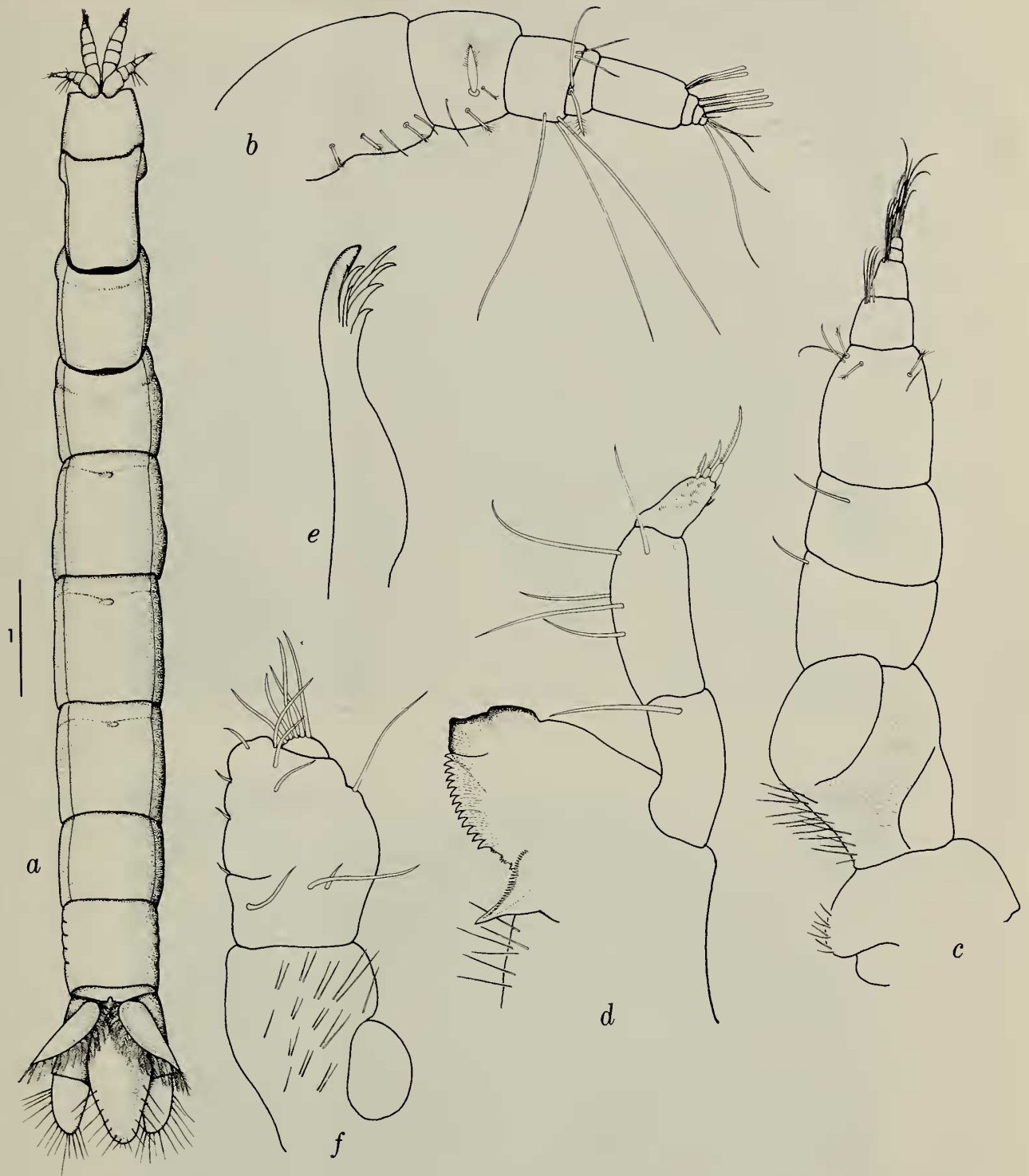


Fig. 1. *Haliophasma barnardi*: a, Female in dorsal view; b, Antennule; c, Antenna; d, Mandible; e, Maxilla; f, Maxilliped.

with distal cluster of simple setae. Mandibular palp 3-segmented, middle segment somewhat longer than basal segment; basal segment with single elongate simple seta; segment 2 with 5 elongate setae; terminal segment with 3 distal fringed spines and clusters of short setules; incisor broad, strongly sclerotized, indistinctly cusped; lacinia with 13 marginal teeth; molar acutely triangular, with row of spines on upper surface. Maxilla with 1 strong sclerotized spine and 7 smaller distal spines. Maxilliped 4-segmented,

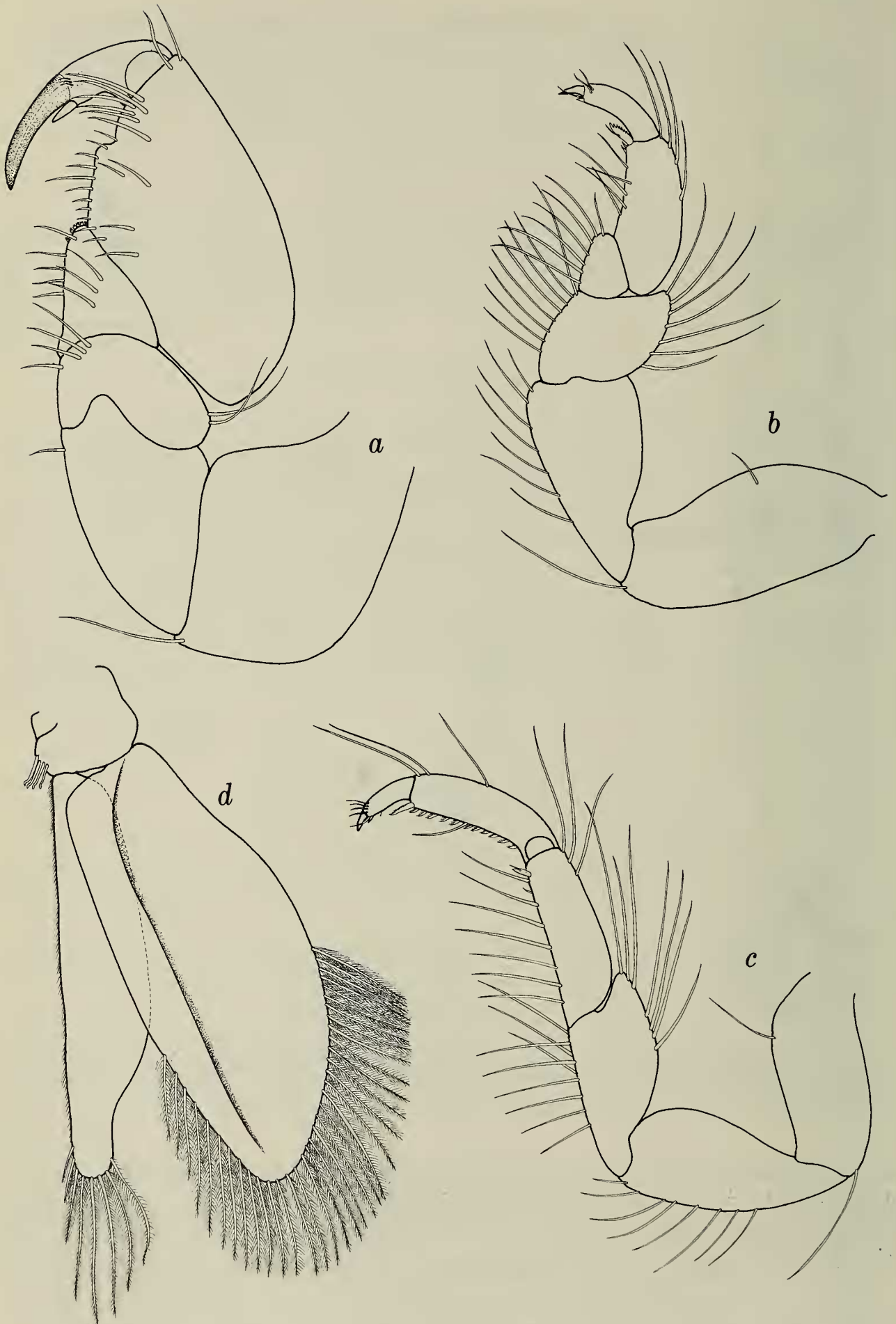


Fig. 2. *Haliophasma barnardi*: a, Pereopod 1; b, Pereopod 2; c, Pereopod 7; d, Pleopod 1.



a



b

Fig. 3. *Haliophasma barnardi*: a, Pleon in lateral view; b, Telson and uropods in dorsal view.

with possible trace of incomplete suture on segment 3; segment 2 with fine hair-like setae on outer surface; segment 3 with 4 short setae on medial margin, few scattered and more elongate setae on outer surface; segment 4 short, semicircular, with 5 setae. Pereopod 1 subchelate, robust; strongly sclerotized unguis about half length of dactylus, with short stout basal accessory spine; propodus proximally expanded, palm with slight lobe/notch at about midpoint and several marginal setae, 6 more elongate setae on inner surface near dactylar articulation; carpus triangular, with several simple setae on posterior margin and inner surface, few fringed scales at rounded apex. Pereopods 2 and 3 less robust than pereopod 1, not subchelate; unguis about one-third length of dactylus; propodus proximally only slightly wider than distally, with elongate simple setae on anterior and posterior margins; strong serrate spine at posterodistal corner; carpus short, triangular, distally broadly rounded, with elongate simple setae on posterior margin; merus with elongate simple setae on both margins; ischium with elongate simple setae on posterior margin only. Pereopods 4–7 unguis about one-third length of dactylus; propodus parallel-sided, narrow, with row of fringed scales on posterior margin, strong serrate spine at posterodistal corner; carpus elongate rectangular, with row of elongate simple setae on posterior margin, sensory spine at posterodistal corner, 3 elongate setae on anterodistal margin; merus with elongate simple setae on both margins. Pleopod 1 exopod operculiform, with strong groove on outer surface, numerous plumose setae on distal margin; endopod about half width of and slightly shorter than exopod, distal quarter constricted, apically rounded, with 8 plumose setae; basis with 4 retinaculae. Uropodal exopod not quite reaching endopod base, roughly oval, outer margin sinuous, with dense fringe of plumose setae, apically acute; endopod triangular, apically rounded, reaching telsonic apex.

Material examined.—Paris Museum, Syntypic material: numerous fragments and appendages, including 7 more or less complete heads and varying numbers of attached pereonites; taken from stomach of *Trygon margarita*, Souelaba, Cameroun, West Africa, Nov. 25, 1925.

British Museum, BM.1928.9.25.1–2. Syntypic material: 3 heads with varying numbers of pereonites and appendages; Souelaba, Cameroun, West Africa.

USNM 172266–8, 3♀, TL 6.8 mm, 7.0 mm, 9.1 mm; from Niger delta near Port Harcourt, Nigeria; taken from bed of leaf fragments and sticks over anoxic mud in mesohaline mangrove creek; collected Aug. and Nov. 1978, Feb. 1979.

Remarks.—There is no doubt that the present material from the Niger delta is the same species which Monod described from Souelaba, Bay of Douala, Cameroun (about 300 kilometers to the southeast). Monod's material came from the stomach of the stingray *Trygon margarita* which is known to inhabit mangrove estuaries (D. Cohen, pers. comm.). The general

morphology of the body and appendages of the Nigerian and Cameroun material agree well. A few differences between Monod's figures and the present specimens may be noted. Monod shows a relatively broader and squatter maxilliped, 5 distal maxillar spines, and does not show a row of fine teeth on the acutely triangular molar. However, a mounted mandible, maxilla, and maxilliped taken from the Paris Museum material agree exactly with the Nigerian specimens. Further, the structure of the antennular flagellum agrees even to the number of aesthetascs per article.

Poore (1975) redefined the genus *Haliophasma* from which the present material differs on two points, viz. the lack of eyes, and a 4-articulate, rather than a 2-articulate antennular flagellum. Kensley (1975) described *Haliophasma caeca* from the west coast of South Africa, and noted the lack of eyes in that species. The figure of the maxilliped (Fig. 1G) shows a 3-segmented appendage; in fact, the suture of the terminal setose segment was not indicated, and the maxilliped of *H. caeca* is remarkably similar to that of *H. barnardi*. The overall similarity between *H. caeca* and *H. barnardi* is striking, especially in the setose pereopods 2–7. This, with the lack of eyes, is probably an adaptation to habitat; in both cases the animals seem to be part of the infauna of organically rich sandy or muddy substrates. The only feature of *H. barnardi* which gives pause is the dentate and acutely triangular mandibular molar. Acutely triangular molars are found in e.g. *H. cycneum* Poore, *H. cribensis* Poore, and *H. pinnatum* Poore, but the fine dentition of the present molar does not seem to have been noted previously. Whether this feature together with the lack of eyes and the 4-articulate antennular flagellum are sufficient to separate *Notanthura* from *Haliophasma* is a moot point. In view of the many points of agreement, however, the two blind species (*H. barnardi* and *H. caeca*) could perhaps be regarded as forming a subgenus within *Haliophasma*. The monotypic genus *Notanthura* Monod is thus synonymized with *Haliophasma* Haswell.

The only other known species of *Haliophasma* from West Africa is *H. dakarensis* Barnard, 1925. This is a much larger indurate species, possessing eyes and a distinctly keeled telson.

Acknowledgments

I am grateful to Dr. C. B. Powell of the School of Biological Sciences, University of Port Harcourt, Nigeria, for donating the three anthurid specimens to the Smithsonian Institution, and for supplying valuable collection data; and to Miss J. Ellis of the British Museum (Natural History) and Dr. J. Forest of the Paris Museum, for the loan of type-material. I wish to thank Miss Mary-Jacque Mann of the Smithsonian Scanning Electron Microscope Laboratory for assistance with the micrographs, and Dr. Thomas E. Bowman of the Smithsonian Institution, for his critical reading of the MS.

Literature Cited

- Barnard, K. H. 1925. A revision of the family Anthuridae (Crustacea Isopoda) with remarks on certain morphological peculiarities.—*Journal of the Linnaean Society, London (Zoology)* 36:109–160.
- Kensley, B. 1975. A new species of anthurid isopod from the Cape.—*Zoologica Africana* 10:209–213.
- Monod, T. 1927. Notes isopodologiques II. Sur un Anthuride nouveau du Cameroun *Notanthura barnardi* nov. gen., nov. sp.—*Bulletin de Société Zoologique de France* 52:200–211.
- Nierstrasz, H. F. 1941. Die Isopoden der Siboga-Expedition IV. Isopoda Genuina III. Gnathiidea, Anthuridea, Valvifera, Asellota, Phreatocoidea.—*Siboga Expedition monograph* 32d:235–306.
- Poore, G. C. B. 1975. Australian species of *Haliophasma* (Crustacea: Isopoda: Anthuridae).—*Records of the Australian Museum* 29:503–533.

Department of Invertebrate Zoology, Smithsonian Institution, Washington, D.C. 20560.