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THE AFRICAN SHRIMP GENUS *POTAMALPHEOPS*  
IN MEXICO (DECAPODA, ALPHEIDAE)

BY

HORTON H. HOBBS, JR.

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

The genus *Potamalpheops* was erected by Powell (1979: 117) to receive a previously undescribed species from Nigeria that was designated *P. pylorus* (p. 120) and two other African freshwater shrimps that originally had been assigned to the genus *Alpheopsis* (*A. haugi* Coutière, 1906: 378, and *A. monodi* Sollaud, 1932: 377). Six years earlier, Hobbs (1973: 73), in describing a troglobitic shrimp, *Alpheopsis stygicola*, from Oaxaca, Mexico, failed to mention three characteristics that, had they been noted, would have induced Powell (personal communication) to include the species in his new genus. The features that were not mentioned are (1) setae on the anteromesial surface of the eyes, (2) movable spines on the merus of one or more of the third through fifth pereopods, and (3) a "toothed lamella" along the diaeresis of the lateral ramus of the uropod.

The few, very fine, inconspicuous setae that protrude from the eyes of some of the specimens of the type-series of *A. stygicola* (perhaps abraded in others in which they are not evident) were not recognized as being significant. The spines that sometimes, perhaps usually but not consistently, are present on the lateral postaxial surface of the merus of the third, fourth, and fifth pereopods

were overlooked; all of them in the holotype were adducted in pits, and they and the comparatively few that were in an abducted position in the paratypes escaped notice. These appendages from one side of the holotype have now been treated with lactic acid, which resulted in their being abducted, and stained with acid fuchsin. Two spines are present on the merus of the third pereiopod, one on that of the fourth, and none of the fifth (fig. 1*b, c, d*). Upon reexamination of the pereiopods (many of which were detached and could not be associated with the specimens of which they were a part) of the types, as many

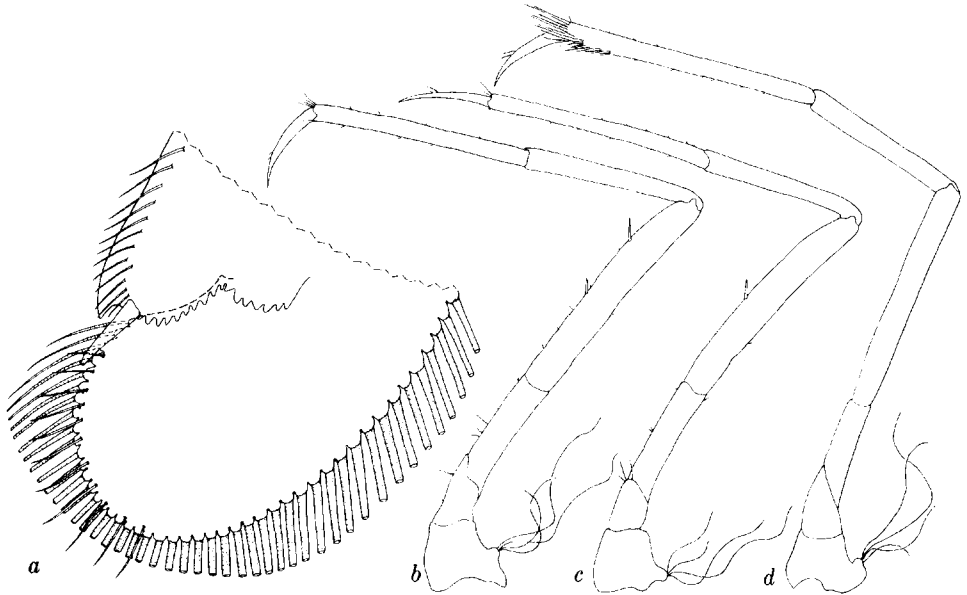


Fig. 1. *Potamalpheops stygicola* (Hobbs), holotype, male. *a*, distal part of lateral ramus of left uropod; *b, c, d*, third, fourth, and fifth pereiopods, respectively.

as two spines were observed on the merus of the third and fourth pereiopods and one on the merus of a single detached fifth pereiopod. Apparently there is little uniformity in the presence or absence of these spines, and on some of the third and fourth legs, like the fifth, no spines are present. The toothed, very weak lamella on the proximal side of the diaeresis of the lateral ramus of the uropod (fig. 1*a*) was not perceived as being of unusual occurrence, and hence neither mentioned nor illustrated.

Although this shrimp does not exhibit all of the features that Powell included in his definition of the genus *Potamalpheops*, it appears to have more in common with the three members assigned to it than with those species currently placed in the genus *Alpheopsis*. The features that do not comply completely with Powell's definition of *Potamalpheops* are as follows: the second segment of the antennular peduncle is very little longer than the third; movable spines may or

may not be present on the merus of one or more of the third through fifth pereopods; and the lateral spine of the scaphocerite is short, not reaching the distal margin of the lamella which is exceeded by the spine in *P. haugi*, *P. monodi*, and *P. pylorus*. The proximal margin of the diaeresis on the lateral ramus of the uropod, while clearly toothed, is not so strikingly lamelliform as it is in these three species, and instead of the teeth forming a nearly straight line, a broad median incision in the row results in their being arranged in a double scallop (fig. 1a).

*Potamalpheops stygicola* (new combination) may be included in the key to the species belonging to the genus provided by Powell (1979: 119) by inserting the following as the first couplet.

- A. Albinistic, eyes reduced with pigmented area occupying less than two-thirds lateral diameter of eye, cornea lacking facets; distal podomere of antennular peduncle distinctly more than half as long as penultimate podomere; spine on scaphocerite not reaching distal margin of lamella; teeth on proximal margin of diaeresis of lateral ramus of uropod arranged in distinctly curved row ..... *P. stygicola*
- Pigmented, eyes well developed with pigmented area occupying entire lateral surface of eye, cornea with facets; distal podomere of antennular peduncle usually no more than half as long as penultimate podomere; spine on scaphocerite overreaching distal margin of lamella; teeth on proximal margin of diaeresis of lateral ramus of uropod in almost straight line ..... 1

Powell (1979: 119) stated that "it is tempting to suppose that the aberrant *Alpheopsis stygicola* from Mexico is related to *Potamalpheops*, for its degenerated eyes are more-or-less exposed dorsally and its antennular peduncle is long," but lacking information concerning the three characters discussed above, he refrained from proposing the new combination used herein. Powell suggested further that whereas members of the genus were not known to occur other than in West Africa, "it would not be surprising if, like other West African genera with planktonic larvae, it is eventually found to occur also in tropical America." Indeed it has been! Being represented, however, by a single species inhabiting a spelean environment suggests that *P. stygicola* is a relict of an epigeal fauna that, insofar as is known, no longer exists in the Americas. The presence of this shrimp in Mexico lends a bit more evidence to the conviction of the existence of a previous proximity of the African and American continents.

My appreciation is extended to C. B. Powell for discussing the affinities of this shrimp with me and for pointing out the presence of spines on the merus of the pereopods, and to Fenner A. Chace, Jr., for his criticisms of the manuscript.

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