

RECORDS OF MUD-PRAWNS (GENUS *CALLIANASSA*)
FROM SOUTH AFRICA AND MAURITIUS
(CRUSTACEA, DECAPODA, THALASSINIDEA)

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(With 5 figures)

[MS. accepted 17 June 1975]

ABSTRACT

A new species of *Callianassa* is described from Port Alfred, South Africa. Three species from Mauritius, viz. *C. mauritiana*, *C. armata*, and *C. indica* are figured and earlier descriptions are supplemented. The latter two species are new records for Mauritius. *C. kraussi* is recorded as a Pleistocene fossil from Table Bay and Port Elizabeth.

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INTRODUCTION

When two specimens of a large *Callianassa* from the Kowie River at Port Alfred were submitted to the South African Museum for identification, it was found that they belonged to none of the six species previously recorded from South Africa (Kensley 1974). Use of Barnard's key (1950: 505) ran the species down to *C. martensi* Miers. In an attempt to solve this problem of identification, two species of mud-prawn were obtained on loan from the Mauritius Institute, a few specimens were collected in Mauritius by D. Hatton and given to the South African Museum, and the type specimens of the two species of *Callianassa* previously recorded from Mauritius were obtained on loan from the British Museum.

As a result, the specimens from the Kowie River were found to be undescribed. The specimens from Mauritius were found to be new records for the island, and it was thought useful to figure them and to supply brief descriptions. Also, it was thought desirable to supplement the description of *Callianassa mauritiana*. The other species from Mauritius, viz. *C. martensi* Miers, has recently been very thoroughly redescribed (Tirmizi 1974).

In the accompanying figures, all dimensions are in millimetres.

SYSTEMATIC ACCOUNT

Callianassa armata A. M. Edwards

Fig. 1A-H

Callianassa armata A. M. Edwards, 1870: 90, pl. 1. De Man, 1902: 754; 1928a: 109.*Description*

♂ Carapace with spinose acutely triangular rostrum reaching to distal end of cornea; well-defined antero-lateral spine present.

Eyestalks reaching to end of basal peduncular segment of antennule, distally slightly curved away from midline; cornea situated dorso-laterally at about midpoint of outer eyestalk margin; outer proximal part of eyestalk bearing three or four tiny spinules.

Antennular peduncle three-segmented, second segment about half length of third. Two distal antennal peduncular segments slender, subequal, basal segment bearing distal spine.

Third maxilliped with propodus, carpus, merus, and ischium moderately expanded; propodus with notch on antero-distal margin; ischium bearing on inner surface a marked distal crest armed with about twelve teeth of varying sizes, proximal portion bearing three separated spines.

Larger cheliped with dactylus strongly curved, cutting edge uneven, with no well-marked teeth or tubercles; propodus with upper margin bearing three strong spines; cutting edge of thumb with single blunt proximal tubercle, ventral margin proximally slightly dentate; carpus shorter than propodal palm, ventral margin bearing nine spines; merus with two spines on dorsal margin, seven on ventral margin; ischium armed with row of ten spines, increasing in size distally.

Finger and thumb of smaller chela gaping, cutting edge of finger unarmed, that of thumb with blunt tubercle at about midpoint; upper margin of palm bearing three spines; carpus armed with four spines on ventral margin; merus bearing three spines on dorsal margin, four on ventral margin; ischium with row of fourteen spines, distal four longer than more proximal spines.

Propodus of third pereopod with posterior lobe not very marked, evenly rounded. Telson broader than long, with semicircular seta-bearing ridge in proximal third, and two very faint radiating rounded ridges not quite reaching distal margin.

Uropodal exopod markedly bipartite, anterior portion about half length of posterior, two portions separated by a curved ridge bearing a sharp spine proximally; endopod lanceolate with rounded tubercle at base.

Material

1 ♂, Mauritius Institute 956. Carapace length (including rostrum) 28.4 mm. Total length 98 mm.

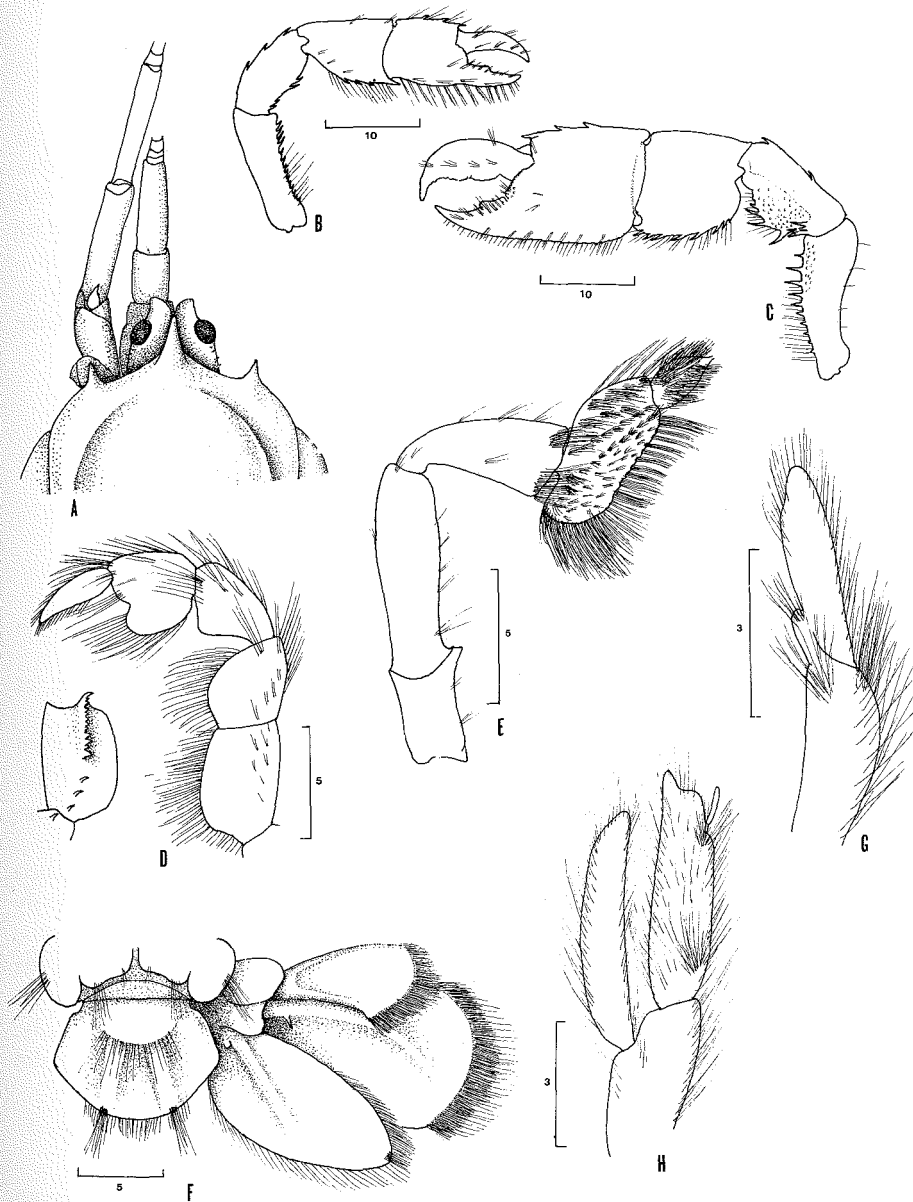


Fig. 1. *Callianassa armata* ♂

A. Anterior carapace, eyestalks, and antennae in dorsal view. B. Smaller cheliped. C. Larger cheliped. D. Third maxilliped, with inner view of ischium. E. Third pereiopod. F. Telson and uropod. G. First pleopod. H. Second pleopod.

Previous Records

Fiji Islands; Ternate, India.

Remarks

Callianassa armata was described from a female of 125 mm from the Fiji Islands, while the second specimen was a juvenile female from Ternate, India. The present specimen, being a male, may account for a few discrepancies with the original description. For example, De Man (1928a) in his key to the species of the subgenus *Callichirus* described the uropodal exopod as lacking a spine—this spine is obviously present in the male. In the latter, the sixth pleonal segment is two and a half times the length of the telson, while in the Fijian female this segment is three times the length of the telson.

Callianassa indica de Man

Fig. 2A–E

Callianassa indica de Man, 1905: 605; 1928a:100, 160, pl. 17 (fig. 26).

Description

♀ Rostrum very short, obtusely triangular, antero-lateral angles rounded, bearing tufts of setae.

Cornea dorso-lateral; eyestalks with rounded apex armed with three or four very small blunt tubercles.

Propodus of third maxilliped as long as broad, inner face of ischium bearing curved row of spines, those of distal part of row closely packed, unequal, longer spines alternating with three or four short spines, more proximal spines separate and subequal.

Larger cheliped with dactylus strongly curved, cutting edge bearing two strong tubercles at about midpoint, thumb of propodus proximally finely denticulate; palm of propodus one and a half times longer than dactylus, ventral margin bearing about nine small serrations; ventral margin of carpus evenly convex; ventral margin of merus armed with ten small teeth; ventral margin of ischium bearing about twelve small teeth, increasing in size distally.

Smaller cheliped with finger and thumb gaping, equal in length to palm of propodus; carpus and merus subequal in length, unarmed.

Material

1 ♀. Mauritius Institute 948, Black River, Mauritius. Carapace length (including rostrum) 22,5 mm. Total length 84 mm.

Previous Records

Kangeang Reef, Bay of Kankamaraän, East Indies.

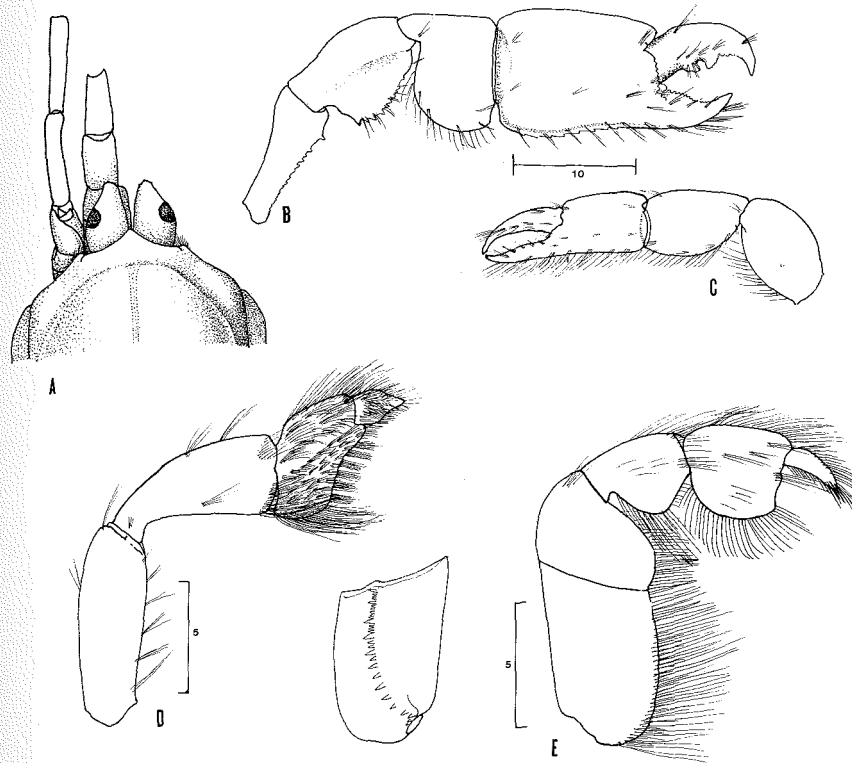


Fig. 2. *Callianassa indica* ♀

A. Anterior carapace, eyestalks, and antennae in dorsal view. B. Larger cheliped. C. Smaller cheliped. D. Third pereopod. E. Third maxilliped, with inner view of ischium.

Remarks

This is the second record of a species that was described from a single male, total length 90 mm, which lacked the larger cheliped. The above figures and description, although of a mature female, supplement De Man's description.

Callianassa mauritiana Miers

Fig. 3A-H

Callianassa mauritiana Miers, 1882: 341; 1884: 15, pl. 1 (fig. 2). Nobili, 1906: 106, figs 5, 6. De Man, 1928a: 99; 1928b: 10, pl. 2 (fig. 4). Michel, 1974: 256.

Description

In spite of the descriptions given by Miers, Nobili, and De Man, it was felt that additional figures of this rarely recorded species would be useful. The figures were done from the male and female syntypes from the British Museum (Natural History) collection.

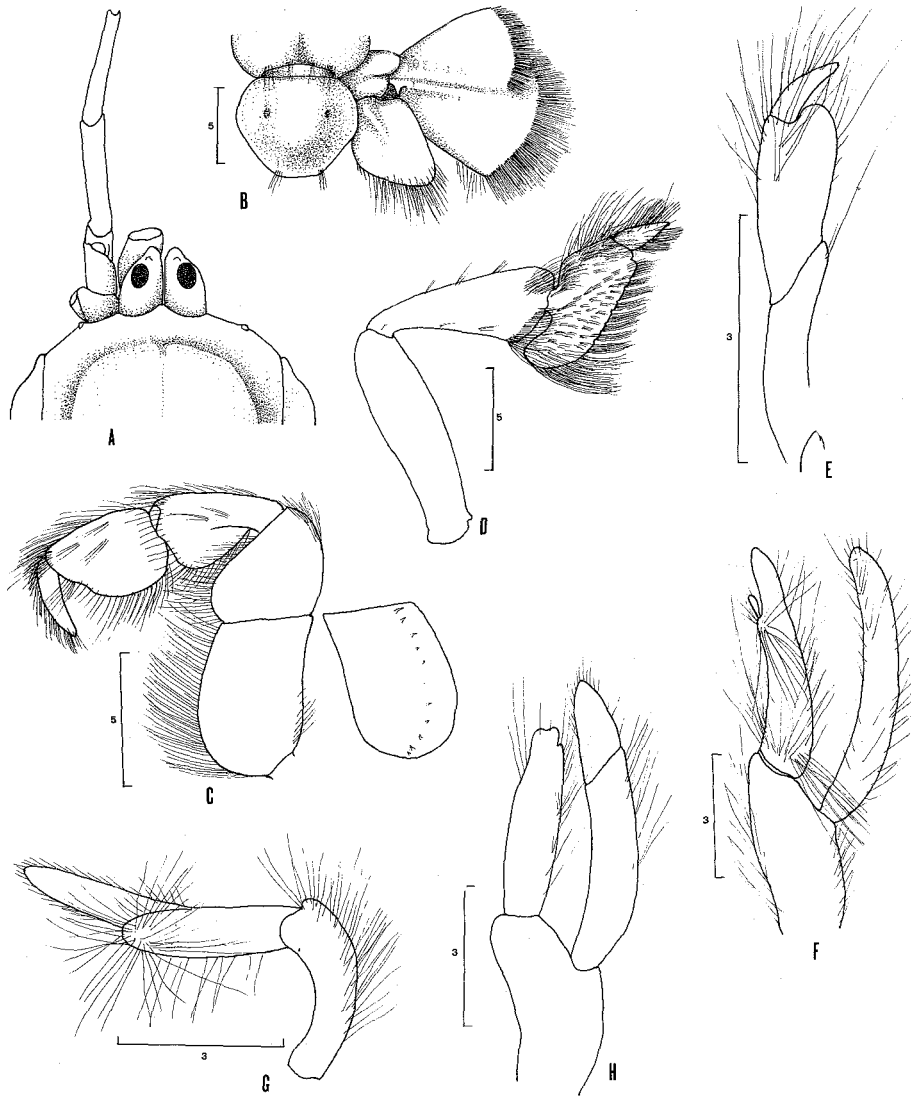


Fig. 3. *Callianassa mauritiana*

A. Anterior carapace, eystalks, and antennae in dorsal view. B. Telson and uropod.
 C. Third maxilliped, with inner view of ischium. D. Third pereiopod. E. First pleopod ♂.
 F. Second pleopod ♂. G. First pleopod ♀. H. Second pleopod ♀.

Eyestalk with cornea situated dorsally, slightly distal to midpoint, with tiny but distinct rounded tubercle distal to cornea.

Third pereopod with propodus having a curved posterior lobe.

Uropodal exopod bipartite, anterior portion only slightly shorter than posterior, with spine at base. This spine only developed in adult.

Material

Mauritius, SAM-A13636	♂	carapace length 12,0 mm	total length —
	♀	11,3 mm	43 mm
	♀	9,0 mm	31 mm

Previous Records

Mauritius; Red Sea.

Remarks

Miers (1882: 341) expressed the opinion that the detached large chela in the container with the two syntypes probably did not belong to either of the specimens, but to a distinct and larger individual. This need not necessarily be so, as the species seems to be characterized by a disproportionately massive larger cheliped. In an immature male with a carapace length of 12,0 mm the larger cheliped has a length of 40 mm.

Callianassa pixii sp. n.

Fig. 4A-H, 5A-K

Description

♀ Carapace with oval shield well defined; rostrum short, acute, triangular, with median keel running on to carapace; front tridentate, lateral teeth only slightly shorter than rostrum, also slightly keeled. Eyestalks contiguous for whole length, tapering from about mid-length to acute apex; cornea situated dorsally in distal half, hardly visible. Eyestalks reaching to end of first antennular peduncle segment.

Third peduncular segment of antennule slightly more than twice length of second. Antennular peduncle not quite reaching distal end of antennular peduncle, two distal segments subequal.

Mandibular palp three-segmented, distal segment set with numerous setae, equal in length to two proximal segments together; incisor portion weakly chitinized, with about thirteen small teeth on cutting edge; molar portion a blunt flattened structure set with plumose setae.

First maxilla, palp slender, distal portion flexed, median edges of lobes densely fringed with setae.

Second maxilla also densely fringed with setae.

Epipod of first maxilliped with posterior portion longer and broader than anterior part.

Second maxilliped pediform, exopod slender, leaf-like, endopod with apical segment bearing cluster of short, stiff setae, rest of appendage fringed with long setae.

Third maxilliped pediform, lacking exopod, three distal segments together slightly shorter than two proximal segments; merus and ischium fringed with long setae, together four and a half times longer than wide; inner face bearing another fringe of setae; propodus and carpus each with dense bristle pad on inner face.

First pereopods subequal, finger and thumb slightly shorter than palm of propodus, dactylus curved only at tip, cutting edge entire, thumb of propodus

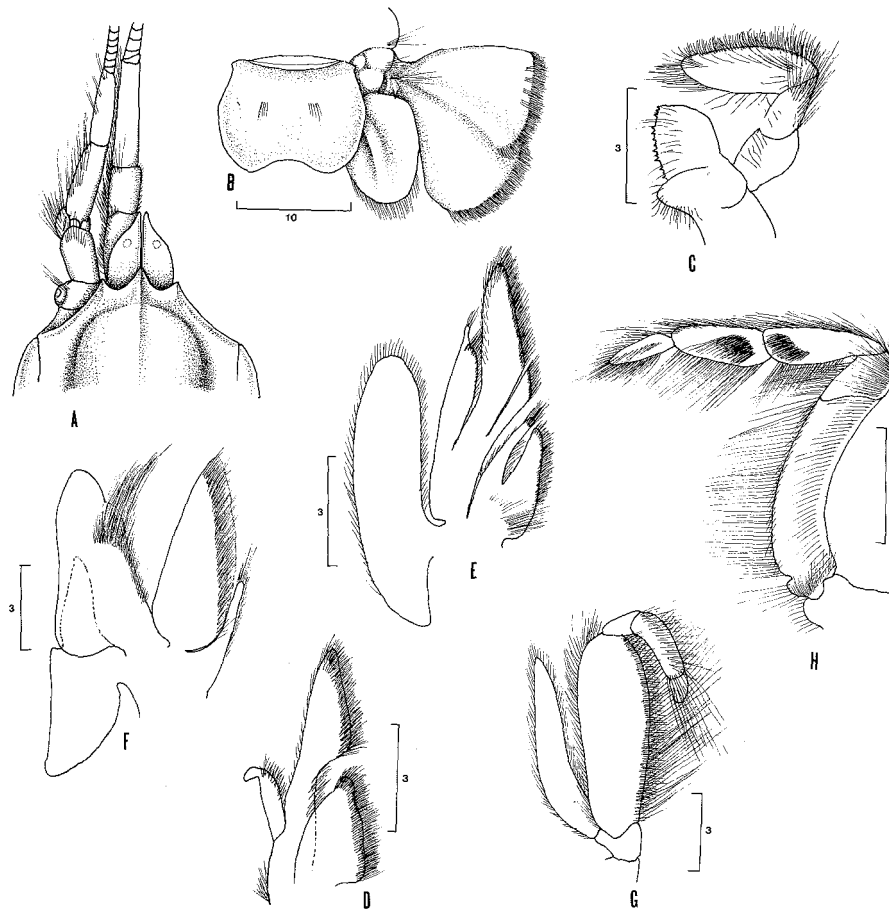


Fig. 4. *Callianassa pixii* sp. n.

A. Anterior carapace, eyestalks, and antennae in dorsal view. B. Felson and uropod. C. Mandible. D. First maxilla. E. Second maxilla. F. First maxilliped. G. Second maxilliped. H. Third maxilliped, inner view.

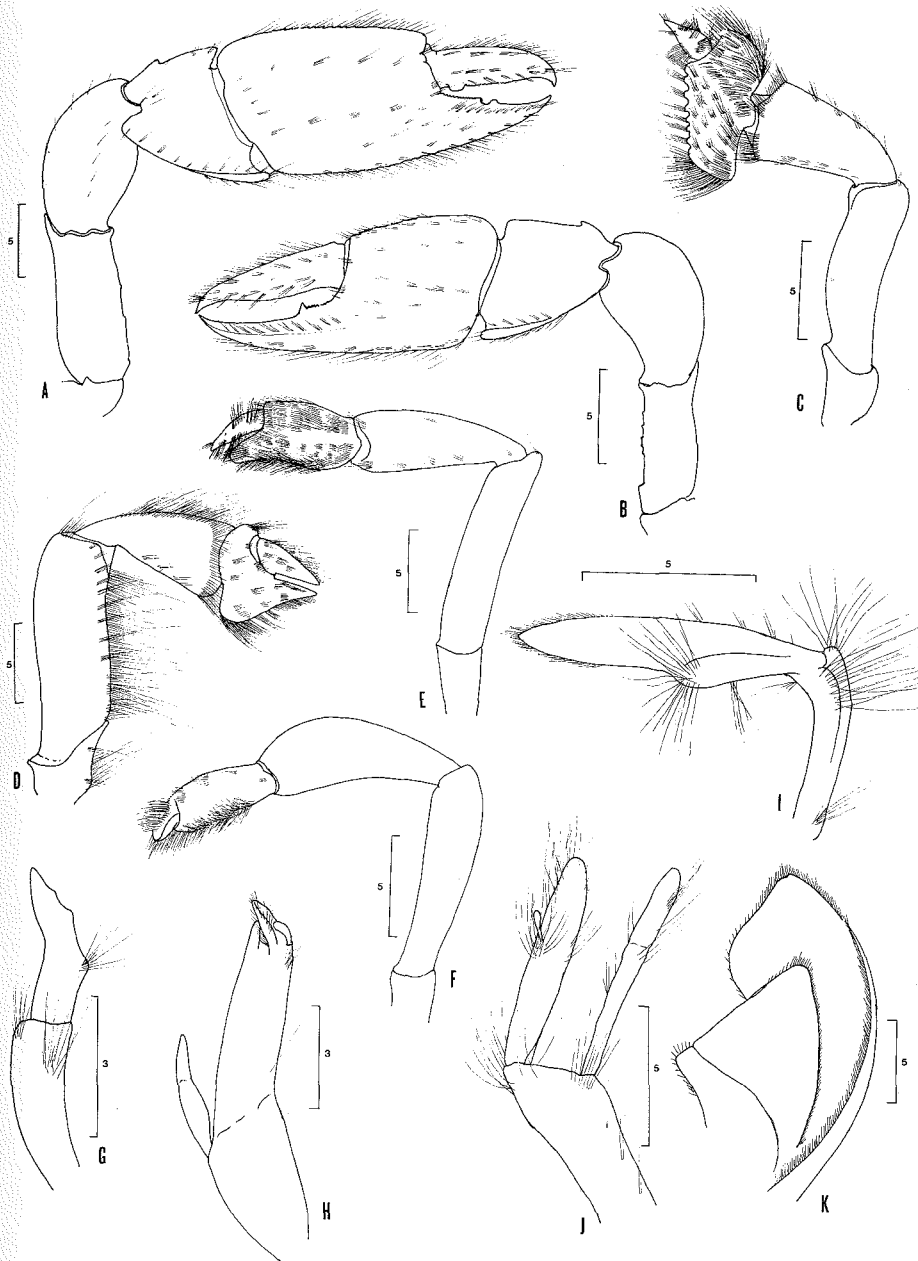


Fig. 5. *Callianassa pixii* sp. n.

A. Larger cheliped ♂. B. Smaller cheliped ♂. C. Third pereiopod. D. Second pereiopod.
 E. Fourth pereiopod. F. Fifth pereiopod. G. First pleopod ♂. H. Second pleopod ♂.
 I. First pleopod ♀. J. Second pleopod ♀. K. Third pleopod ♂.

with large triangular tooth at midpoint of cutting edge, followed proximally by fine denticulations; carpus about half length of palm of propodus, upper margin entire; merus longer than carpus; ischium with about six tiny denticulations on lower margin.

Second pereopod chelate, with dactylus, propodus, and carpus together subequal to merus in length, cutting margins of dactylus and propodus straight, all segments bearing numerous elongate setae.

Third pereopod with posterior lobe of propodus oblique-truncate.

Fourth pereopod with propodus having distal thumb-like lobe slightly shorter than dactylus, and therefore incompletely chelate; dactylus and propodus set with numerous short stiff setae.

Fifth pereopod chelate, dactylus and propodal thumb apically spooned, set with patches of short dense setae.

First pleopod uniramous, longer distal portion flexed at right angle to basal portion, bearing clumps of elongate setae.

Second pleopod biramous, rami subequal in length, inner ramus bearing small lobe on distal half.

Telson broader than long, distal margin concave.

Uropodal exopod bipartite, anterior portion only slightly shorter than posterior, with spine at base, both portions fringed with short setae; endopod oval, shorter than exopod, with rounded longitudinal ridge.

♂ Larger cheliped subequal in length to smaller cheliped, but propodus and carpus broader; finger and thumb shorter than palm of propodus; dactylus only distally hooked, with blunt tubercle near base of cutting edge; thumb of propodus with slight notch and fine denticulations proximal to blunt tubercle at about midpoint of cutting edge; upper margin of palm finely denticulate; carpus with single tooth on upper margin; lower margin of ischium with two or three barely discernible teeth.

Smaller cheliped similar to first pereopods of female, but possessing single tooth on upper margin of carpus.

First pleopod about half length of second pleopod, uniramous, two-segmented, distal segment with three slight tuberculations.

Second pleopod biramous, outer ramus half length of inner, latter with trilobed apex, middle lobe largest.

Material

Holotype ♀ SAM-A13637 carapace length 27,0 mm total length 85 mm.

Allotype ♂ SAM-A13637 carapace length 26,0 mm (posterior pleon and telson missing). Kowie River estuary, Cape Province, South Africa.

Remarks

Callianassa pixii belongs to that group of species of the subgenus *Callichirus* which is characterized by the possession of a pediform third maxilliped. Of this group, *C. pixii* most closely resembles *C. guineensis* de

Man, described from the Gold Coast (De Man 1928*b*). Several differences make the separation of these two species quite simple.

Although the third maxillipeds are very similar, in *Callianassa pixii* the merus and ischium have a more definite curvature than in the west African species. In the latter, the antennae are distinctly shorter and more slender than the antennules, eyestalks are not contiguous, and the cornea of the eyes are large and distinct. In *C. pixii* the antennae are only slightly shorter than the antennules and of similar thickness. The eyestalks are contiguous and the cornea small and hardly defined. The telson and uropodal endopods of the two species are similar, but the uropodal exopod in *C. guineensis* is unevenly bipartite, while in the Kowie species the two portions of the exopod are of similar length and breadth. De Man's specimen of *C. guineensis* was a juvenile, thus a comparison of the cheliped structure is of little value.

The species is named for Mr Pixie John, well-known local figure of Port Alfred.

Callianassa kraussi Stebbing

Callianassa kraussi Barnard, 1950: 506. Kensley, 1974: 277.

Remarks

Numerous dactyli and propodi of the larger chelipeds of this species have been collected from Pleistocene raised beaches at Swartkops, near Port Elizabeth, and at Milnerton, Table Bay. Several are larger and more robust than those of the largest known living specimens of the species.

ACKNOWLEDGEMENTS

My sincere thanks are due to the following for making material available for study: Dr R. W. Ingle, of the British Museum (Natural History) for the loan of type material of *Callianassa martensi* and *C. mauritiana*; Dr C. Miche of the Mauritius Institute, for the loan of specimens of *C. armata* and *C. indica*; Dr A. T. Forbes for donating the specimens of *C. pixii* to the South African Museum, and for useful information; and Mr D. Hatton, for the donation of specimens of *C. mauritiana* to the South African Museum.

I am grateful to Professor Nasima Tirmizi of the University of Karachi, and Dr R. W. Ingle, for reading the manuscript of this paper and for many useful comments and criticisms.

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