

CRUSTACEANA
SMITHSONIAN INSTITUTION
RETURN TO W-123

Reprinted from: CRUSTACEANA, Vol. 32, Part 2, 1977



LEIDEN
E. J. BRILL

ALPHEOPSIS SHEARMII (ALCOCK & ANDERSON):
A NEW COMBINATION WITH A REDESCRIPTION OF THE HOLOTYPE
(DECAPODA, ALPHEIDAE)¹

BY

ALBERT H. and DORA M. BANNER

Department of Zoology, University of Hawaii, Honolulu, Hawaii, U.S.A.

In April, 1899, Alcock & Anderson described a new species of alpheid shrimp to which they gave the name *Alpheus Shearmii*; in the same year they figured it (with plate dated July, 1899) and in 1901 Alcock alone offered an additional description, both references under the name *Alpheus Shearmei*. The descriptions were short and the figures did not reveal much detail on the critical points of morphology. At the Indian Museum, Calcutta, we have been given the opportunity to examine the holotype of this species through the courtesy of Dr. K. K. Tiwari of the Zoological Survey of India and Dr. Mammen Koshy of the museum. Dr. Koshy also reexamined the specimen for us after our return to Hawaii to confirm our notes about the eyes and mouthparts. We discovered that the specimen is a typical member of the genus *Alpheopsis* not of the genus *Alpheus*, so we propose a change in the generic designation and to offer a new description as a supplement to the earlier work. As the holotype is the only specimen known and as it is in rather poor condition we did not dissect the mouthparts nor examine the branchial formula.

Alpheopsis shearmii (Alcock & Anderson)

Alpheus Shearmii Alcock & Anderson, 1899: 283.

Alpheus Shearmei Alcock & Anderson, 1899a: pl. 41 fig. 4; Alcock, 1901: 141.

Holotype and only specimen: Specimen with torn abdomen and bearing only the large chela and one second leg of the pereopods. Non-ovigerous female, reported by Alcock & Anderson to be 18 mm long (our measurement gave 16 mm, but this may be the result of the torn abdomen), captured in the "Arabian Sea, off the Travancore coast, 430 fathoms". Indian Museum registration number 2133/10.

Specimen deep-bodied, with carapace two-thirds as high as long. Rostrum triangular, acute, reaching about one-fourth length of visible portion of first antennular article and slightly longer than adjacent acute orbital teeth. In lateral view margin of carapace posterior to rostrum sharply rounded with rostrum arising from lower frontal margin (fig. 1a); anterior surface of orbital hoods less abruptly rounded and orbital teeth more tapering. Eyes small and with pigmented portion reduced, only partially visible from anterior view; concealed in lateral view. Pterygostomial "angle" rounded, not protrudent. Carapace lacking grooves or carinae.

¹) Contribution number 511 Hawaii Institute of Marine Biology.

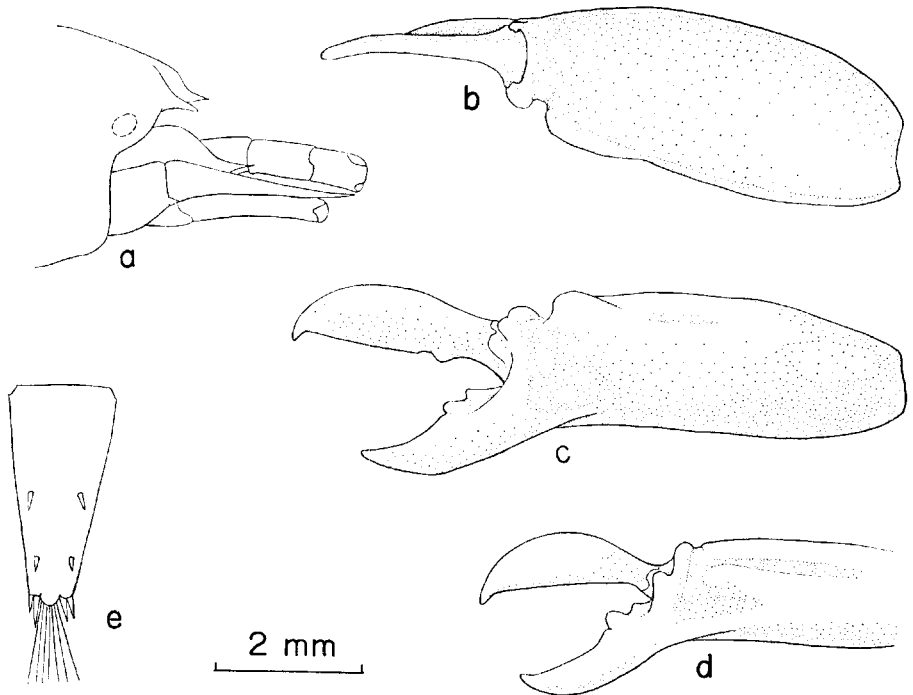


Fig. 1. *Alpheopsis shearmii* (Alcock & Anderson, 1899), holotype ♀. a, anterior region, lateral view; b, large chela, superior face; c, large chela, lateral face; d, large chela, superomedial face; e, telson. All figures same scale.

Abdominal pleura broad. Pleura of sixth abdominal segment articulated. Telson 2.8 mm long and 1.3 mm broad at base, 0.6 mm broad at tip, lateral margins almost straight. Tip divided into three portions, all almost equal in breadth; lateral portions almost straight at right angles to axis of body and bearing the normal two spines, with length of medial pair being 0.8 breadth of tip, outer about half length of inner; middle portion of tip somewhat protrudent and rounded, bearing the usual setiferous bristles. Superior spines of telson slightly shorter than postero-lateral spines, anterior pair located slightly posterior to middle of telson. (Anal tubercles not examined.)

Antennular peduncles with visible portion of first article 1.5 mm long, second article 0.9 mm long and 0.6 mm broad, third article 0.7 mm long. Stylocerite with acute tooth reaching slightly beyond end of first article. Lateral spine of scaphocerite reaching slightly beyond end of antennular peduncle, squamous portion broad and somewhat shorter than lateral spine. Carpocerite reaching to middle of third antennular article. Lateral spine of basicerite broad at base but reaching an acute angle.

Chela carried in advance, almost 8 mm long, proximal portion laterally compressed and flattened, with palm 0.45 as high as long, viewed laterally. Fingers one-third length of entire chela, opening laterally and at almost 90° to proximal

flattening. Palm with well-demarcated and deep groove running along superior surface from near middle of palm to near dactylar articulation where it merges with a transverse groove. Transverse groove deep and well demarcated on lateral face, but short; on medial face extending as a shallow depression reaching over much of medial face, but ill-defined at margins. Superior margin of longitudinal groove developed as a keel which terminates distally as strong and somewhat protrudent shoulder at transverse groove. (Proximal portion of palm bearing crest and groove as a continuation of superior crest and groove and a flattened area on medial face; these appear to be artifacts from distortion of soft chitin). Dactylus blade-like, almost 3 times as broad as thick in middle, and 3 times as long as broad; free surface somewhat rounded, curved towards tip, oppositional margin proximally somewhat concave, then bearing a low, rounded tooth with more distal portion straight and knife-like; tip with small hooked tooth. Pollex distally similarly flattened and blade-like, curved; oppositional margin proximally bearing 2 rounded teeth between which fit tooth of dactylus, and with distal margin a knife-like concave cutting edge opposite straight cutting edge of dactylus; tip acute but not hooked, and surpassed in length by dactylus. Carpus cup-shaped. Merus triangular in section, but with margins rounded; unarmed.

Lengths of carpal articles of second legs: 0.24, 0.03, 0.03, 0.03, 0.06 mm.

[Following thoracic legs now lost, but Alcock depicted them as relatively long and slender with a simple dactylus and no apparent spines or teeth on any article].

Discussion. — The articulation of the pleura of the sixth abdominal segment shows plainly that this species does not belong to the genus *Alpheus* to which it was assigned by Alcock & Anderson. Within the group of genera with articulated pleura, this species cannot be associated with *Athanas*, which has the eyes exposed, with *Athanopsis* which has a ventral keel beneath the rostrum, with *Betaeus*, *Metabetaeus*, and *Leptalpheus* which have no rostrums, with *Prionalpheus* for this specimen obviously (without dissection) has not the great modification of the mouthparts.

The species is more closely related to *Neopalpheopsis*, especially in the protrudent middle section of the telson tip, but in *Neopalpheopsis* this is prolonged into a longer and acute tooth and more important, the chela is carried folded back against the merus. However, the form and sculpturing of the large chela in this species is almost identical with those of *Alpheopsis trispinosus* (Stimpson), *A. chilensis* Coutière and *A. garricki* Yaldwyn (cf. Coutière, 1899, figs. 228-230, 232; Banner & Banner, 1973, fig. 14) — it should be noted that the teeth of the dactylus and pollex in this species are more like those shown by Coutière as "*A. trispinosus*" than they are like the neotype we established (Banner & Banner, 1973). This species, of course, differs from the cited species in the development of the orbital hoods. To those species of *Alpheopsis* with smooth chelae this species shows less affinity.

The depth of capture of this species makes it the deepest record for any alpheid.

REFERENCES

- ALCOCK, A., 1901. A descriptive catalogue of the Indian deep-sea Crustacea, Decapoda, Macrura, and Anomala, in the Indian Museum. Being a revised account of the deep-sea species collected by the Royal Indian Marine Survey Ship Investigator: i-iv, 1-286, pls. 1-3.
- ALCOCK, A. & A. R. S. ANDERSON, 1899. An account of the deep-sea Crustacea dredged during the surveying-season of 1897-98. XLIII. Natural history notes from H.M. Royal Indian Marine Survey Ship "Investigator", Commander T. H. Heming, R. N. commanding. Series III, No. 2. *Ann. Mag. nat. Hist.*, (7), **3** (16): 278-292.
- & —, 1899a. Illustrations of the zoology of the Royal Indian Marine Survey Ship Investigator, under the command of Commander T. H. Heming, R. N. *Crustacea*, (7): pls. 36-45.
- BANNER, D. M. & A. H. BANNER, 1973. The alpheid shrimp of Australia. Part I. The lower genera. *Rec. Aust. Mus.*, **28** (15): 291-382, figs. 1-19.
- COUTIÈRE, H., 1899. Les Alpheidae: morphologie externe et interne, formes larvaires, bionomie. Thèse Fac. Sci. Paris, (A) **321** (980): 1-559, textfigs. 1-409, pls. 1-6 (Masson, Paris). [Also in: *Ann. Sci. nat.*, **8** (Zool. 9): 1-560].

Received for publication 25 November 1976.

