

Onycocaris zanzibarica sp. nov., a new pontoniid shrimp from East Africa

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In the course of collecting specimens of pontoniid shrimps in East Africa, two were obtained from a sponge collected in shallow coastal waters off Zanzibar Island. The specimens were unfortunately subsequently desiccated and damaged during transportation and the male was virtually destroyed. The female, however, was preserved almost intact, although rather severely distorted. After treatment with sodium phosphate most of the features of taxonomic importance of the shrimp could be adequately determined and a satisfactory description could be compiled. On examination the specimen proved to be a species of the genus *Onycocaris* Nobili, 1904, which is limited to the Indo-West-Pacific region and contains at present only three species, *O. aualitica* (Nobili, 1904), *O. quadratophthalmus* (Balss, 1921) and *O. stenolepis* Holthuis, (1952). The present specimens, despite their poor state, could be readily separated from the three species previously reported and are now described as new. Like the species *O. quadratophthalmus*, which has been reported to live in association with sponges (Holthuis, 1952; Miyake & Fujino, 1967), the specimens were also obtained from a sponge.

Onycocaris zanzibarica sp. nov.

(Figs. 1 and 2)

MATERIAL : 1 ♂, 1 ♀ from channel between Chumbe Island and mainland of Zanzibar Island. 6° 16·0' S, 39° 12·6' E. Trawl, 10 fms, sandy bottom. 5 March 1962. Coll. A. J. Bruce.

DESCRIPTION : Small shrimps of slightly compressed appearance. The male lacks all pereopods except first pereopod. The female lacks the third pereopod on right side.

The carapace is smooth with a short, acutely pointed rostrum. The dorsal rostral margin with two (male) to three (female) small, acute teeth, all situated on the anterior half of the rostrum. The ventral margin is almost straight and without teeth. The midrib is distinctly expanded posteriorly. The orbit is well developed and the inferior orbital angle is produced and very acutely pointed. The supraorbital, hepatic and antennal spines are absent. The anterolateral angle is slightly produced anteriorly and rounded.

The abdominal segments are smooth. The third abdominal segment is not produced posterodorsally. The sixth segment is about twice as broad as long and is slightly flattened with the posterior angles acutely produced and the posterior ventral angles also acute. The pleura of the first five abdominal segments are bluntly rounded. The telson is about twice the length of the sixth abdominal segment, broad anteriorly and strongly tapered, with a sinuous lateral border, convex anteriorly and concave posteriorly. Dorsal

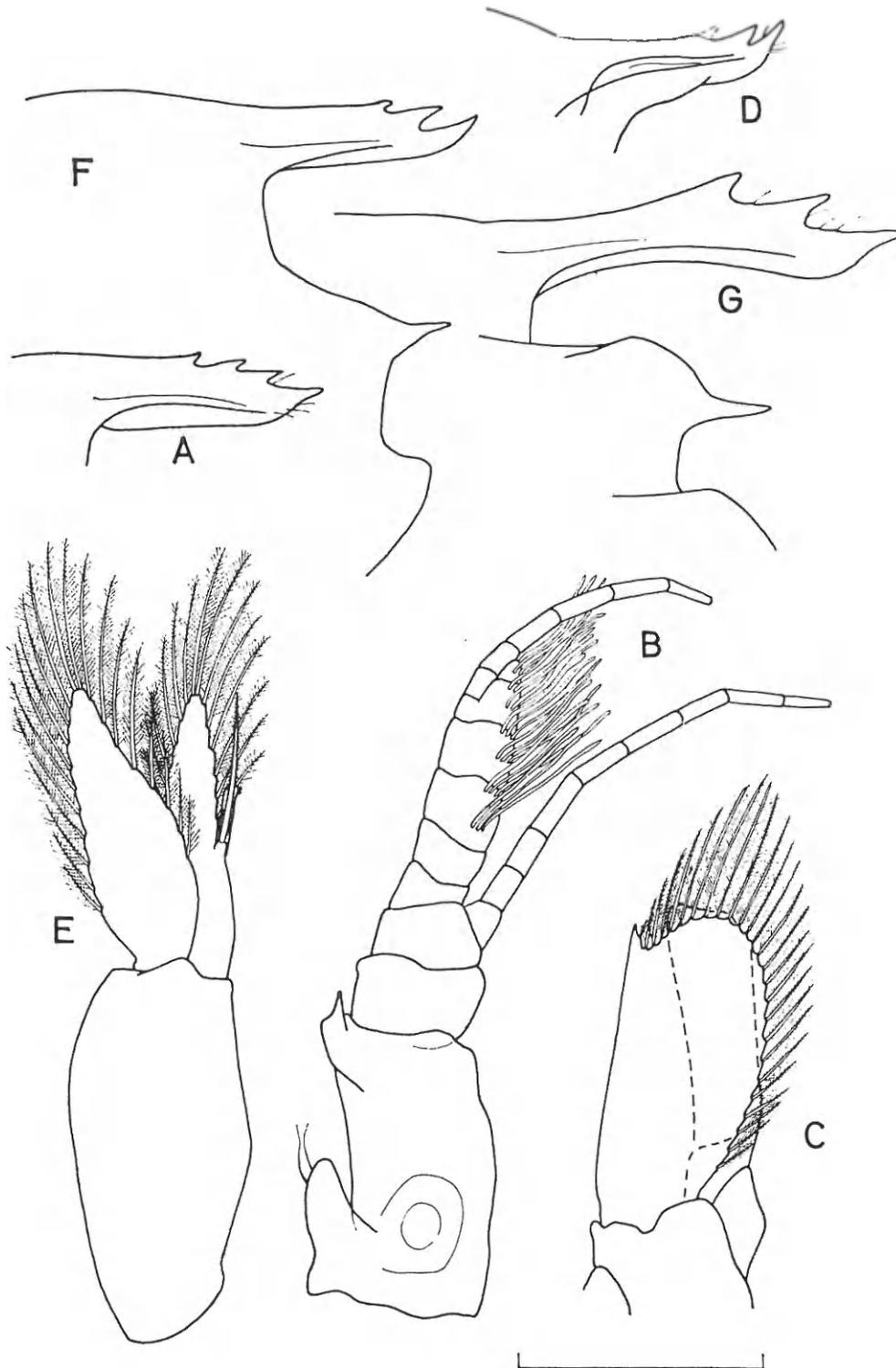


FIG. 1. *Onyccaris zanzibarica* sp. nov. Holotype. (A) rostrum; (B) antennule; (C) antennal peduncle. Allotype. (D) rostrum; (E) second pleopod. *Onyccaris* sp., (F) rostrum of female; (G) rostrum of male. Scales represent 0.5 mm.

telson spines minute, marginal, situated at 0.3 and 0.6 of the telson length. Three pairs of posterior spines are present. The lateral spines are larger than the dorsal spines and about 0.4 of the length of the stout intermediate spines. The submedian spines are slender, about 0.8 of the length of the intermediate spines, and setose.

The antennules are short. The peduncle has a narrow basal segment with a blunt stylocerite, reaching the middle of its length, and an acute distolateral spine. The intermediate and distal segments are short and broad, and together subequal to half the length of the basal segment. The flagella are short. The

upper flagellum is stout, biramous, with the first five segments of each ramus fused. The shorter free ramus consists of a single stout segment and the longer free ramus of six slender segments. Seven groups of aesthetascs are present. The lower flagellum consists of eight slender segments.

The antennae are normally developed. The basicerite is unarmed. The carpocerite is long and slender, subcylindrical, exceeding the lamina of the scaphocerite. The flagellum is shorter than the body length. The scaphocerite

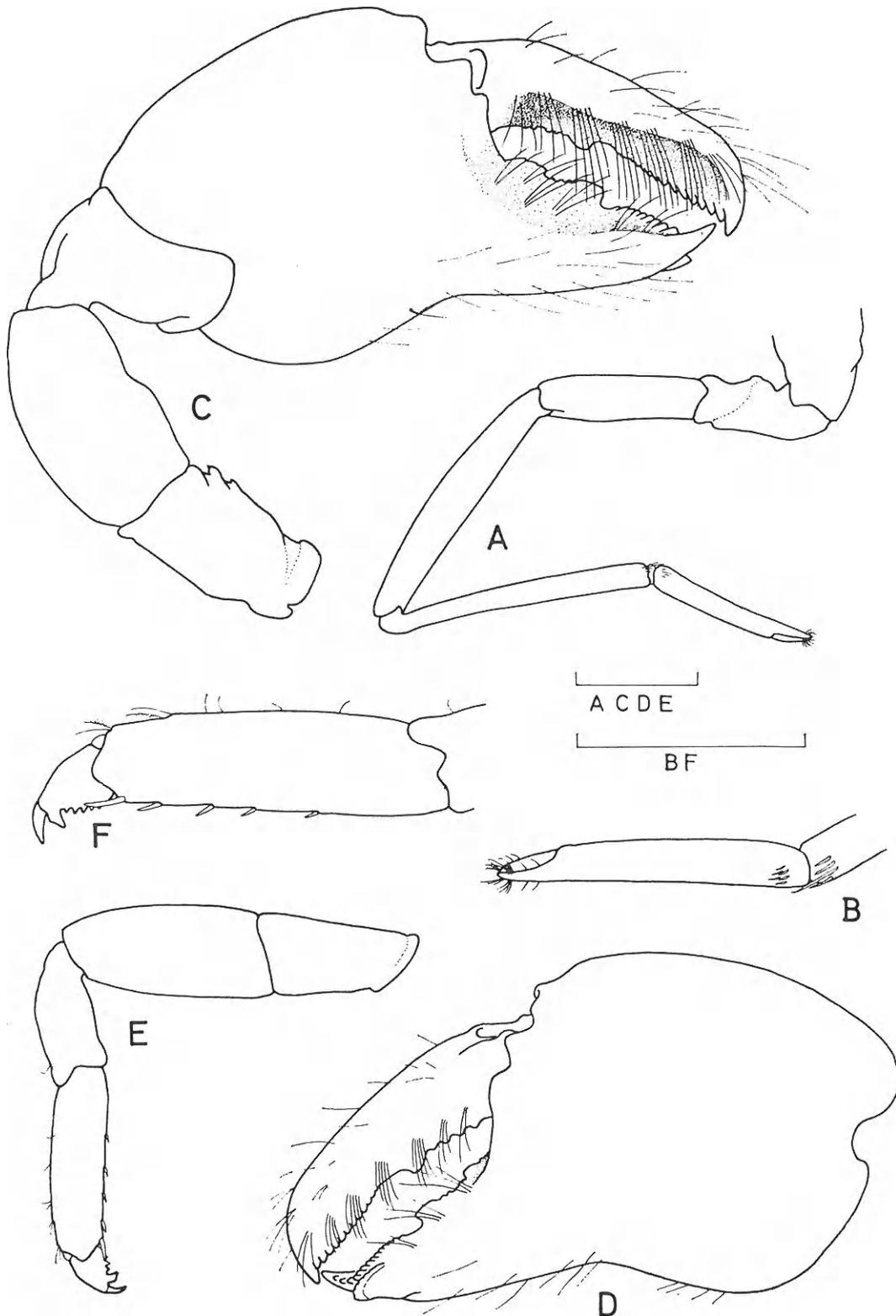


FIG. 2. *Onycocaris zanzibarica* sp. nov. Holotype. (A) first pereopod; (B) chela of first pereopod; (C) left second pereopod, median aspect; (D) chela of left second pereopod, lateral aspect; (E) third pereopod; (F) propodus and dactylus of third pereopod. Scale represents 0.5 mm.

is well developed with a straight lateral border and an acute distolateral tooth which is distinctly exceeded by the slightly angulated anterior border of the lamina.

The eyes are very short and stout and largely concealed by the carapace. The cornea is hemispherical and of much greater diameter than the length of the stalk.

The mouthparts have not been dissected.

The first pereopod is long and slender and exceeds the carapocerate by two-thirds of the length of the merus. The chela is slender, with a subcylindrical palm, nearly four times the length of the short simple fingers, which have entire cutting edges. The carpus is also slender and subcylindrical, about 1.2 times the length of the chela. The merus is subequal to the length of the carpus but distinctly more robust. The ischium is stout, about 0.6 of the length of the merus.

The second pereopods are large and robust, subequal and similar. The palm of the chela is smooth, high and strongly compressed. The fingers are almost equal to the length of the palm. The fixed finger and the dactylus are subspatulate with the cutting edges situated along the lateral borders. The tips of the fingers are acute and strongly hooked, with a series of smaller teeth of decreasing size, situated along the distal part of the cutting edge. The central part of the cutting edge of the fixed finger bears an isolated truncated tooth and that of the dactylus bears a small blunt tooth, with further irregular blunt teeth proximally. The tip of the dactylus closes over the lateral aspect of the tip of the fixed finger where it fits into a deep narrow groove formed by a laminar outgrowth, with a crenulated free border, from the distolateral aspect of the fixed finger. The lateral aspect of the dactylus bears six transverse rows of short setae and five almost longitudinal groups of long setae are arranged along the upper part of the inner surface. Numerous long setae are scattered over the dorsal and ventral borders of the fingers. The carpus is short and stout, excavated anteriorly, about half the length of the palm, and unarmed. The merus is robust, about twice as long as wide and one and a half times the length of the carpus, with the ventral border entire. The ischium is about two-thirds of the length of the merus and with a large acute subterminal ventral tubercle.

The ambulatory pereopods are present except for the left third and fifth pereopods. The third pereopod is robust with the merus reaching to the base of the carapocerate. The dactylus short and stout and strongly curved with a slender tip. A large obliquely truncated accessory tooth is present on the distal ventral border with a series of six small, acute teeth in a row along the proximal ventral border. The propodus is about five times longer than wide, with a pair of stout spines distally and four isolated spines along the ventral border. The carpus is shorter and stouter and unarmed. The merus is broad, about half as wide as long and without spines. The segments propodus to ischium are in the ratio 17 : 12 : 18 : 13. The fourth and fifth pereopods are similar to the third pereopod but with fewer spines on the propodus.

The male second pleopod bears a normally developed appendix interna, with only two concinni distally, and extends to about one-third of the length of the endopod. The appendix masculina is extremely short and stout, about

as long as wide and about one-fifth of the length of the appendix interna. Distally it bears a single long slender spinulate seta that reaches to the tip of the endopod.

The uropods are normal. The basipod is short and unarmed posterolaterally. The lateral border of the exopod is straight and entire with an acute tooth and a mobile spine distally.

MEASUREMENTS: The estimated post-orbital carapace lengths are: female, 1.8 mm; male, 1.3 mm.

COLOUR: Transparent, with green ovary in the female, heavily spotted all over body and caudal fan with minute white dots. Reddish patches on abdomen beneath pleura, around mouthparts and coxae of pereopods.

TYPE: The larger specimen, the female, dissected, is selected as the holotype and is deposited in the collection of the British Museum (Natural History), registration number 1969-31.

Discussion

The new species *Onycocaris zanzibarica* may be readily distinguished from the previously described species of the genus by the presence of distinct teeth on the dorsal margin of the rostral lamina. The genus *Onycocaris* was first described by Nobili (1904) as a subgenus of *Coralliocaris* Stimpson, but was elevated to the rank of genus by Holthuis (1952), who pointed out that the genus was closely related to *Periclimenaeus* Borradaile, 1915, but could be readily distinguished by the presence of a very short unarmed rostrum and the high, subequal chela of the second pereopods. In *Onycocaris zanzibarica* the rostrum is much longer than in the other species of the genus and is also longer than the rostrum of some species of *Periclimenaeus*, such as *P. bouvieri* (Nobili). The rostrum of *O. zanzibarica* also resembles the rostra of species of *Periclimenaeus* in the presence of dorsal rostral teeth, which are generally present in the latter genus. The definition of the genus *Onycocaris* should therefore be emended to include species with the rostrum short and feebly armed or unarmed.

The form of the second pereopods in *O. zanzibarica* is also distinctive and separates this species from the other members of the genus. The hollowed form of the fingers with laterally situated cutting edges, giving a markedly subspatulate appearance, and the fringe of long setae along the upper inner edge and the groups of short setae along the upper outer edge of the dactylus are characteristic.

In its general morphology *O. zanzibarica* is most closely related to *O. quadratophthalmus* and, like that species, has a long slender first pereopod, unlike *O. stenolepis*. The four species of the genus may be identified by reference to the key below, modified from Holthuis (1952).

A key to the species of *Onycocaris* Nobili, 1904

- 1 Scaphocerite without distolateral tooth. Lateral border of exopod of uropod denticulate
O. aulitica (Nobili)
- Scaphocerite with distinct distolateral tooth. Lateral border of exopod of uropod entire 2
- 2 Scaphocerite very narrow and elongate. First pereopods not very slender, fingers about
as long as palm *O. stenolepis* Holthuis

- Scaphocerite moderately broad. First pereopods extremely slender, palm greatly exceeding length of fingers 3
- 3 Rostrum short and toothless. Fingers of second pereopod not subspatulate
O. quadratophthalmus (Balss)
- Rostrum longer with one to three distinct acute dorsal teeth. Fingers of second pereopod subspatulate with fringe of long setae along upper inner border of dactylus.
O. zanzibarica sp. nov.

Like *O. quadratophthalmus*, which has been reported as occurring in sponges in Hawaii (Edmondson, 1946; Holthuis, 1952) and Amakusa Is., Kyushu, Japan (Miyake and Fujino, 1967), *O. zanzibarica* was also found in a sponge. The hosts of *O. aualitica* and *O. stenolepis* have not been recorded but it is probable that they are also commensally associated with sponges.

An additional pair of specimens belonging to the genus *Onyccaris* were also obtained from sponges collected from 6.5 fms at Fumba, Zanzibar Island on 23 February 1961. These specimens (carapace lengths, ♂ 1.9 mm, ♀ 2.6 mm) are also extensively damaged and have lost the second pereopods. The rostrum in male and female is distinctly dentate and generally similar to the rostrum of *O. zanzibarica*, although it is distinctly longer in the case of the female. I consider it probable that the Fumba specimens do not belong to the new species here described, and illustrations of the rostra are provided (fig. 1 f, g). The antennae, first and ambulatory pereopods appear indistinguishable from *O. zanzibarica* but the appendix masculina of the male second pleopod is twice as long as wide and bears two similar long, slender spinulate terminal setae.

Résumé

Des spécimens d'une nouvelle espèce de crevette pontoniide, qui a été trouvés dans une éponge à Zanzibar, sont décrits. L'espèce nouvelle *Onyccaris zanzibarica*, est comparée aux autres espèces du genre et une clé pour l'identification des espèces du genre *Onyccaris* Nobili, 1904, est présentée. *Onyccaris zanzibarica* se distingue des autres espèces par la présence de dents fortes sur la rostre et aussi par la forme de la pince du deuxième pereopode.

References

- BALSS, H. 1921. Stomatopoda, Macrura, Paguridea and Galatheidea. The Results of Dr. E. Mjöberg's Swedish Scientific Expeditions to Australia, 1910-1913. XXIX. *K. svenska Vetensk. Akad. Handl.* **61** (10) : 1-24, 12 figs.
- EDMONDSON, C. H. 1946. Reef and Shore Fauna of Hawaii. *Spec. Publ. Bishop Mus. Honolulu*, **22** : i-iii, 1-381, 223 figs.
- HOLTHUIS, L. B. 1952. The Decapoda of the Siboga Expedition, XI. The Palaemonidae collected by the Siboga and Snellius Expeditions with remarks on other species. II. Subfamily Pontoniinae. *Siboga Exped.* XXXIX a¹⁰, 1-253, 110 figs., tab. 1.
- MIYAKE, S., & FUJINO, T. 1967. On four species of Pontoniinae (Crustacea, Decapoda, Palaemonidae) found in Porifera inhabiting the coastal regions of Japan. *J. Fac. Agric., Kyushu Univ.* **14** (2) : 275-291, 7 figs., pl. 3.
- NOBILI, G. 1904. Diagnoses préliminaires de vingt-huit espèces nouvelles de Stomatopodes et Décapodes Macroures de la Mer Rouge. *Bull. Mus. Hist. nat. Paris.* **10** : 228-238.