

PENAEOPSIS JERRYI, NEW SPECIES FROM THE INDIAN OCEAN (CRUSTACEA: PENAEOIDEA)

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Abstract.—*Penaeopsis jerryi*, new species, is described and illustrated. This penaeid shrimp occurs throughout the Indian Ocean, from the Bay of Bengal to Mozambique and Madagascar, at depths between 183 and 677 m. It is distinguished from its close relative *P. rectacuta*, occurring eastward of the Strait of Malacca, by the relative position of the antennal and hepatic spines, the length of the branchiocardiac carina, and thelycal features.

In my studies of the genus *Penaeopsis* it became obvious that soon after Bate (1881, 1888) described the first two members of the genus from the Indo-West Pacific [*P. rectacuta* from the Philippines, and *P. serrata* (= *P. challengerii* de Man 1911) from the Fiji Islands] specimens of another species, occurring only in the Indian Ocean, had been repeatedly misidentified as *P. rectacuta*. The confusion in the identity of this third species has persisted for almost a century, beginning in 1891 when Wood-Mason assigned to *P. rectacuta* specimens from the Andaman Sea.

This formerly misidentified species, herein designated *Penaeopsis jerryi*, occurs in the Indian Ocean, where *P. balssi* Ivanov and Hassan, 1976, is also present. Three other members of the genus, *P. challengerii* de Man, 1911, *P. eduardoi* Pérez Farfante, 1977, and *P. rectacuta* (Bate, 1881) are found in the Indo-West Pacific, east of the Strait of Malacca (*P. eduardoi* was mistakenly recorded from the Indian Ocean in the original description). The remaining species assigned to the genus, *P. serrata* Bate 1881, is restricted to the Atlantic. *Penaeopsis jerryi* is widely distributed throughout the Indian Ocean and fairly abundant in certain areas (for example, off the southwestern coast of India where exploratory fishing has indicated commercial potentiality), but few locality records are known and only a single one has been reported along the east coast of Africa. Fortunately, most of the references to this shrimp include descriptions of its diagnostic features and/or clear illustrations and these have been very helpful in this study.

The account below is based on the examination of 85 specimens, which represent populations from three widely distant regions of the Indian Ocean: the Gulf of Aden, off the southwestern coast of India, and north of the Andaman Islands in the Bay of Bengal. The material examined is in the collections of the British Museum (Natural History), National Museum of Natural History (USNM), and Zoological Survey of India (ZSI).

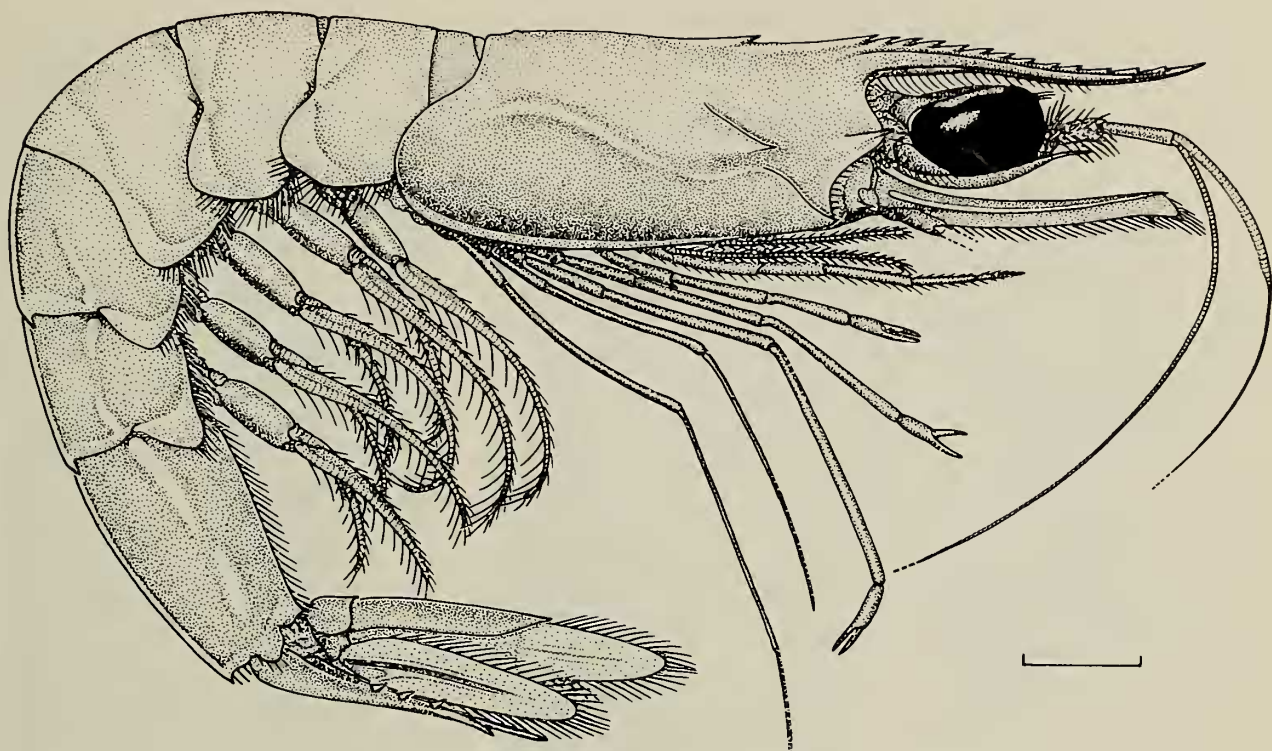


Fig. 1. *Penaeopsis jerryi* n. sp., paratype ♀ 17.5 mm cl, off Berbera, Gulf of Aden, Somalia. Lateral view. Scale = 5 mm.

Penaeopsis jerryi, new species

Figures 1–3

Metapenaeus rectacutus. Wood-Mason 1891:274.—Alcock 1901b:50.

Peneus rectacutus. Alcock 1898:73.

Penaeus rectacutus. Alcock and Anderson 1899:278.

Peneus (Parapeneus) rectacutus. Alcock 1901a:17.—Alcock and McArdle 1901, pl. 49, fig. 5.

Parapeneus rectacutus. Alcock 1902:268, fig. 62; 1905:520 [part]; 1906:33, pl. 6, fig. 19, 19a–b.—Kemp and Sewell 1912:16.

Penaeopsis rectacutus. Ramadan 1938:67, fig. 12a–b.—Sewell 1955:202.—Kurian 1964:216.

Penaeopsis rectacuta. Holthuis and Rosa 1965:3 [part].—George 1966:342; 1969:27.—Longhurst 1971:224.—Starobogatov 1972:390 [key without illustrations].—Crosnier and Jouannic 1973:12, pl. 3, fig. 3.—Ivanov and Hassan 1976:5, fig. 3.

Not *Penaeus rectacutus* Bate 1881.

Material.—Holotype: ♀, 20.5 mm carapace length, 18.5 mm rostrum length, about 104 mm total length; type-locality: off Berbera, Somalia, Gulf of Aden, 10°29'48"N; 45°01'48"E, 186 m, 21 September 1933, John Murray Expedition stn 16, BMNH 1978:325.

Paratypes: 20 ♂ 49 ♀, BMNH 1978:326, collected with holotype; 2 ♂ 2 ♀, USNM 171430, off Saihut, Yemen, 15°10'N; 50°58'E, 240–239 m, 16 May

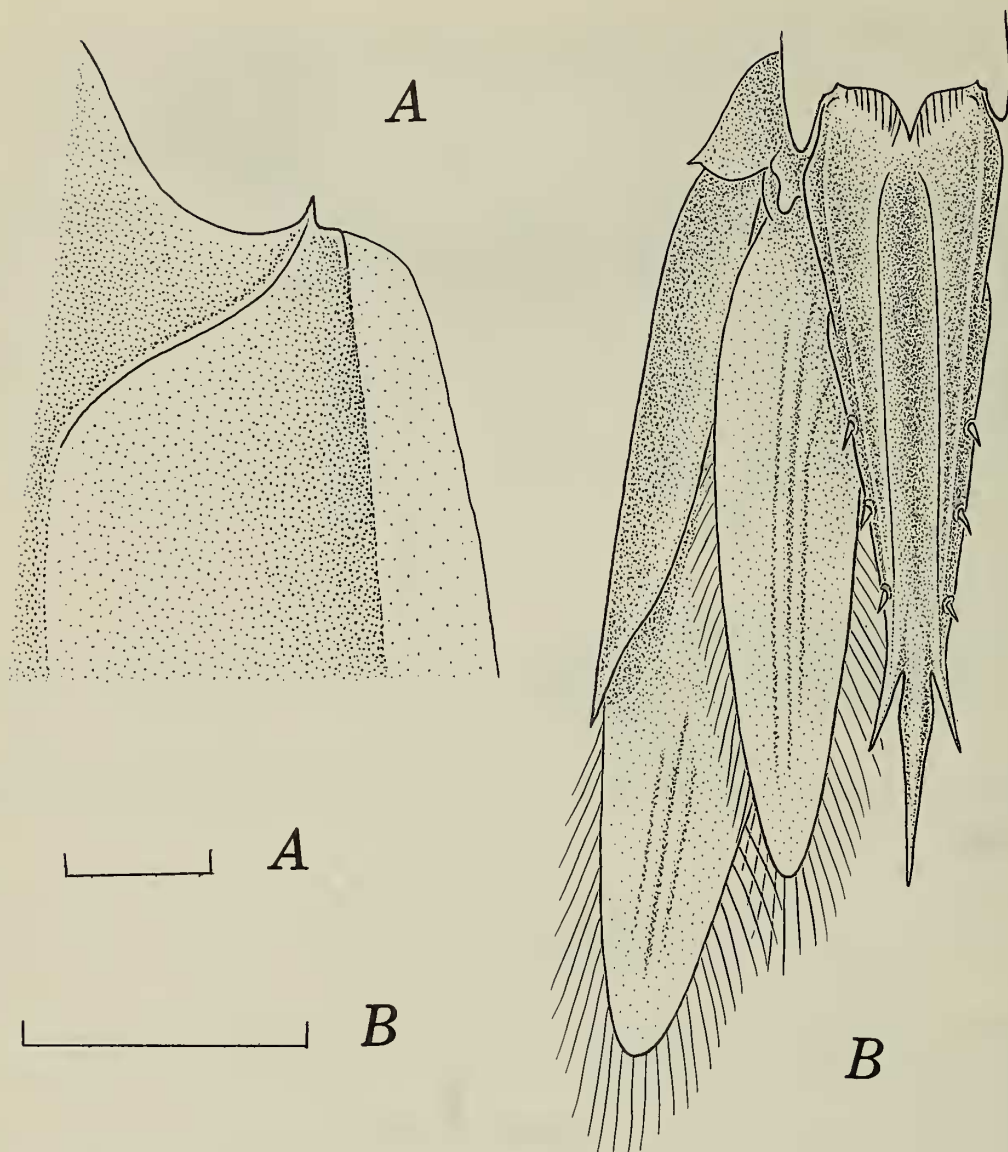


Fig. 2. *Penaeopsis jerryi* n.sp., holotype ♀ 20.5 mm cl, off Berbera, Gulf of Aden, Somalia. A, Anteroventral part of carapace; B, Telson and left uropod, dorsal view. Scales A = 2 mm, B = 5 mm.

1971, A. D. Druzhinin. 2 ♂ 2 ♀, USNM 171431, off Cochin, India, summer 1978, Staff Depart. Mar. Sci. Univ. Cochin. 1 ♀, USNM 42755, off False Divi Point, India, 15°56'50"N; 81°30'30"E, 439–505 m, 24 December 1890, *Investigator* stn 120. 2 ♂ 1 ♀, ZSI 2589-95/10, N of North Andaman I, 14°13'N; 93°40'E, 677–766 m, 8 April 1898, *Investigator* stn 235.

Description.—Rostrum (Fig. 1) almost horizontal, straight or slightly sinuous (occasionally convex basally, straight anteriorly), falling short of to overreaching distal margin of antennular peduncle, its length 0.8 to 0.9 that of carapace. Rostral plus epigastric teeth 12 to 16, second rostral tooth (sometimes apex to, at most, midlength of first) situated in line with orbital margin. Postrostral carina extending posteriorly to about level of dorsal extremity of cervical sulcus; minute dorsal tubercle located near posterior mar-

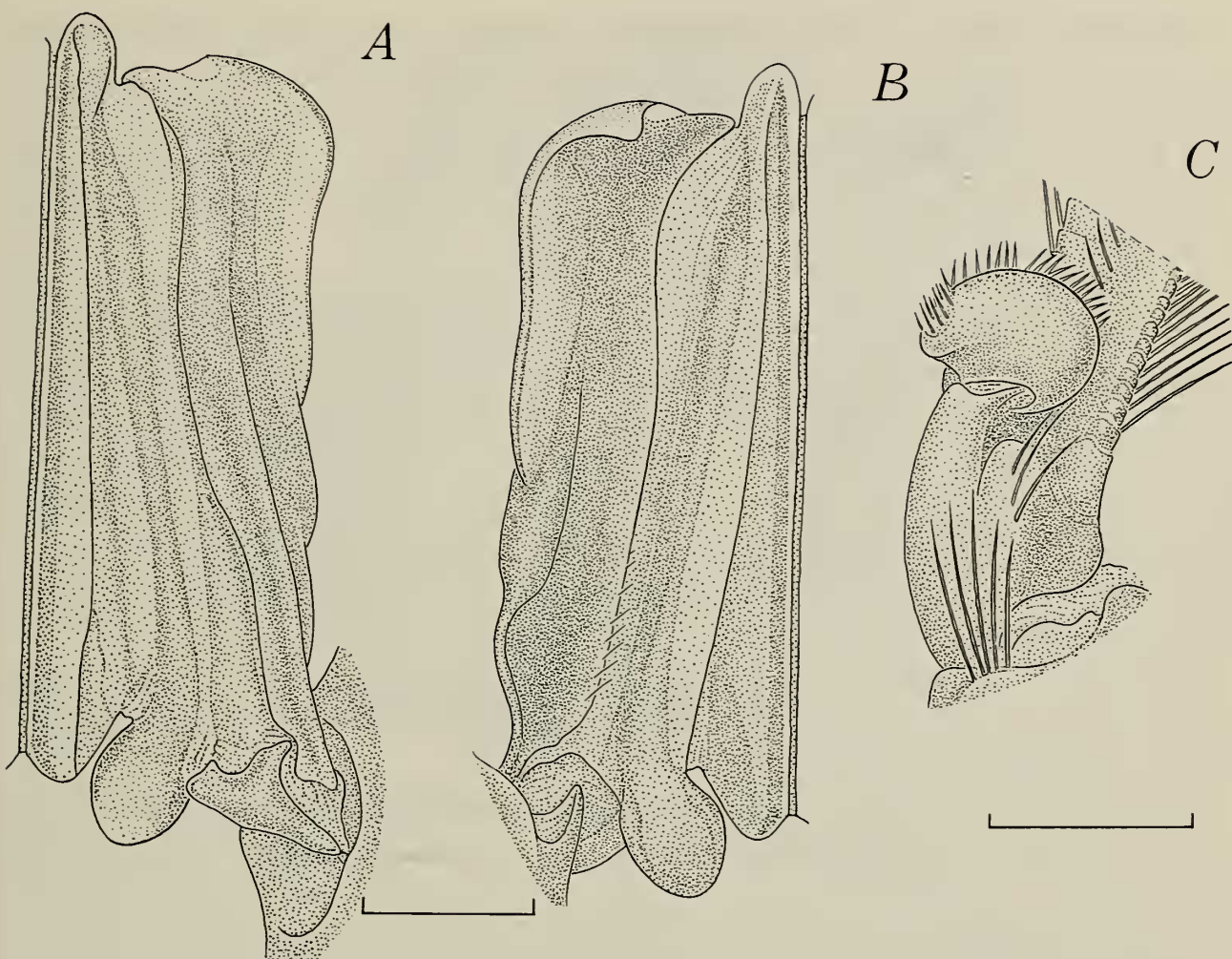


Fig. 3. *Penaeopsis jerryi* n.sp., paratype ♂ 21 mm cl, off Cochin, India. A, Right half of petasma, dorsal view; B, Ventral view; C, Appendix masculina, dorsolateral view. Scales = 1 mm.

gin of carapace. Antennal carina short but prominent. Hepatic spine slightly larger than, and situated at about same level as (rather than distinctly ventral to) that of, antennal spine; pterygostomial spine sharp. Anteroventral extremity of carapace (excluding ventral membrane) forming angle of about 90° (Fig. 2A). Cervical carina sharp, accompanying sulcus well marked; hepatic carina slanting sinuously from below hepatic spine to pterygostomial spine; branchiocardiac carina strong, with anterior extremity almost reaching posterior end of hepatic sulcus and extending posterodorsally to near margin of carapace.

Antennular flagella sexually dimorphic. In male, ventral flagellum shorter than dorsal, with proximal part forming rigid, flattened, semicircular loop bearing small basal scale and ending distally in conspicuous knob; distal part straight and somewhat compressed laterally. In female, ventral flagellum also bearing small basal scale, but straight along entire length and longer than dorsal.

Scaphocerite falling short of to overreaching distal end of antennular peduncle. Antennal flagellum more than twice length of animal (Kurian 1964).

Abdomen with sixth somite elongate, bearing long, strong, interrupted cicatrix on lateral surface; cicatrix also on fifth and fourth somites. Telson with lateral margins usually bearing 3 pairs of small, movable spines (Fig. 2B); fixed spines variable in length, reaching at most base of distal third of terminal portion; latter narrowly hastate or with lateral margins basally rounded, and dorsal surface moderately convex.

Petasma (Fig. 3A–B) with dorsomedian lobule produced into rather broad distomedian projection, and bearing elongate distal plate and broader, subtriangular proximal plate raised mesially in low crest; rib of dorsolateral lobule terminating proximally in semicircular to subcircular process. Ventrolateral lobule bearing distally rather flexible and translucent marginal region, reflexed inwardly; distal part of ventral costa curving gradually dorsomesially and ending in short, relatively narrow process reaching approximately to level of cincinnuli (description and illustrations based upon unfolded petasma).

Appendix masculina (Fig. 3C) transversely oval, about 1.7 as wide as long; bearing band of setae around free margin and tuft of slightly longer setae on dorsomesial extremity.

Thelycum (Fig. 4) with plate of sternite XIV subelliptical in outline, its anterior border strongly arcuate and inclined posterolaterally, and anterolateral and posterolateral corners arched, plate sloping gently toward submedian depressions variable in length, and bearing long marginal setae; median ridge broadest and most salient posteriorly, tapering anteriorly, sometimes reduced to posterior tubercle. Median plate of sternite XIII subsemicircular to roughly trilobed, sometimes with minute anteromedian spine, and covered with setae except for central depression; posteromedian projection broad, with posterior margin entire or very shallowly emarginate. Sternite XII bearing posteromedian, subconical tooth with apex directed anteroventrally.

Color: Red (Wood-Mason 1891), or dark brown with a reddish tint (Kurian 1964).

Maximum lengths: 160 mm tl (Crosnier and Jouannic 1973). Largest specimens examined by me: males 23 mm cl, about 107 mm tl; females 33 mm cl, about 138 mm (cl, carapace length; tl, total length).

Geographic and bathymetric ranges.—Indian Ocean, from the Bay of Bengal (Andaman Sea: Wood-Mason 1891, Alcock 1899, Alcock and Anderson 1899; off Madras: Alcock 1906), through the Arabian Sea (southwest of Cochin: Kemp and Sewell 1912) to the Gulf of Aden, (off Berbera: Ramadan 1938), and south to off Mozambique (Ivanov and Hassan 1976) and Madagascar (Crosnier and Jouannic 1973). It has been found at depths between 183 and 677 m.

Affinities.—*Penaeopsis jerryi* differs from *P. rectacuta* mainly by the position of the hepatic spine, the length of the branchiocardiac carina, and

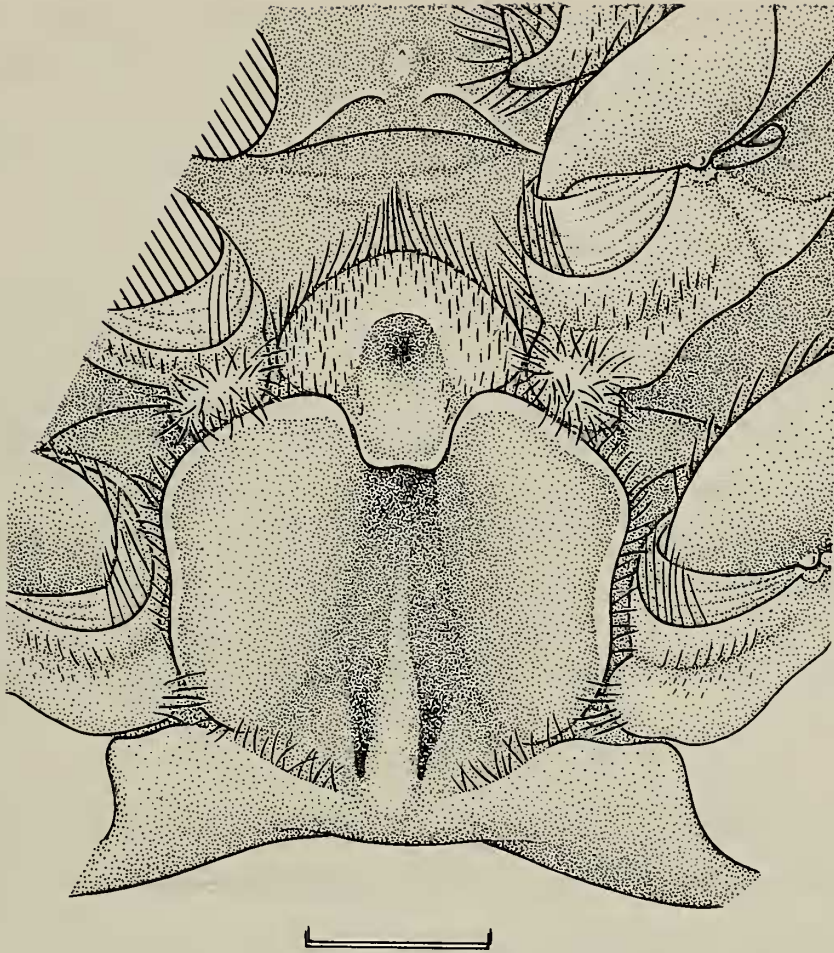


Fig. 4. *Penaeopsis jerryi* n.sp., holotype. Thelycum, ventral view. Scale = 1 mm.

features of the thelycum. The petasmata of the two species are virtually identical.

In *P. rectacuta* the hepatic spine is located at a level distinctly ventral to, instead of about the same level as that of, the antennal spine, and the branchiocardiac carina ends farther from the hepatic sulcus than it does in *P. jerryi*. The more dorsal position of the hepatic spine in the latter has been previously pointed out and/or depicted in illustrations presented by Alcock and McArdle (1901: pl. 49: fig. 5); Alcock (1902, fig. 62; 1906:34, pl. 6: fig. 19); Ramadan (1938:67, fig. 12a); and Ivanov and Hassan (1976:7); the longer branchiocardiac carina was pointed out by Alcock and McArdle (loc. cit.); Alcock (1906); and Ramadan (loc. cit.). None of these authors, however, recognized that these two features distinguish the western from the eastern species.

Regarding the thelycal features, in *P. rectacuta* the plate of sternite XIV is usually roughly trapezoidal, with the anterior border almost straight on each side of the posteromedian projection of sternite XIII, and the anterolateral corners forming angles, whereas in *P. jerryi* this plate is roughly oval, with the anterior border arcuate and the anterolateral and posterolateral corners arched. Furthermore, in *P. rectacuta* the median plate of

sternite XIII is cordiform (with acute apex) whereas in *P. jerryi* this plate is subsemicircular or occasionally weakly trilobed as in the specimen figured by Ramadan (1938, fig. 12b).

Etymology.—This species is named for my son, Gerardo (Jerry) Canet.

Acknowledgments

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