

NEW RECORDS OF FOUR ALPHEID SHRIMPS FROM THE INDIAN WATERS

ABSTRACT

Brief descriptions of four species of alpheid shrimps, namely, *Alpheus rapax* Fabricius, *A. euprosyne* de Man, *A. distinguendus* de Man and *A. malabaricus songkla* Banner and Banner that form new records to the Indian waters are presented in this report.

AS PART of the investigations on the taxonomy of the Indian decapod crustaceans intensive collections of alpheid shrimps were made from the southeast and southwest coasts of India. In addition to the field collections from the shallow waters, catches of the trawl nets landed along the coasts were also examined for the purpose. Of the several species of alpheids represented in the collections, four were not reported before from these areas. So, they are briefly described and the important taxonomic characters are discussed.

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Alpheus rapax Fabricius, 1798

Alpheus rapax Banner and Banner, 1966 : 121-123 (with synonymy).

Material: 2 specimens. Rameswaram : 1 male, carapace length 17.9 mm ; Mandapam Camp, Palk Bay : 1 male, 7.8 mm. Collected from burrows shared by gobiid fish. Depth 1-2 m.

Remarks: The compressed large chela roughly quadrangular in cross section 2.5 times as long as broad, unlike the material collected from Thailand by Banner and Banner (1966). Finger with thickly set rows of setae on the opposing edges. Merus only twice as long as broad. Inferior internal margins with six movable spines and ending in a strong tooth. An excavation present near the lower rounded portion of the palm, proximally on the outer aspect.

Small chela compressed, 3.8 times as long as wide, opposing flattened faces of fingers with thick rows of bristles, tip hooked. Merus 2.5 times as long as wide, with 7 movable spines in internal-inferior margin.

Telson twice as long as posterior rounded margin.

Colour: Black and white transverse bands across the cephalothorax and abdomen. Large chela with similar transverse markings, clearly visible on the inner side also. Tips of fingers white. In living condition the white band very clearly marked on first abdominal segment, dorsally, on the anterior end.

Behaviour: These alpheidids were found to occur in burrows shared by a gobiid fish, living in slightly muddy areas with dead coral pieces. They were quick in retreating into their burrows on slightest disturbance. But, when once the burrow was blocked leaving them in open, they became very passive and could be easily collected by a hand net.

A pair of these animals (alpheidids and gobiid fish) were collected from Palk Bay and kept in the laboratory for observation, in glass trough with sand bottom. Although, they were put away from each other, within a few minutes the alpheid was found digging the sand near the margin of the trough with the gobiid fish by its side as a passive observer. The alpheid collected sand grains between its chelae and pushed forward and after a few minutes turned backwards and started fanning with its pleopods, blowing the sand off, thus deepening the depression already formed. When some pieces of stones and shells were put as cover they hid beneath them. The shrimp was observed to plug the opening of the burrow by dragging an algal filament put in the trough earlier.

Distribution: Red Sea, East Africa and Mergui Archipelago. The present report extends its distribution to the Indian waters.

Alpheus euphrosyne de Man, 1897

Alpheus euphrosyne Banner and Banner, 1966 : 130-133 (with synonymy).

Material: 7 specimens. Mandapam, Gulf of Mannar : 2 males, carapace length 16.5, 22.6 mm ; 2 females, 19.5, 18.1 mm ; Rameswaram, Palk Bay ; 2 males, 19.0, 18.5 mm ; Pamban, Palk Bay : 1 male, 21.2 mm. Collected from trawl catches. Depth 10-15 m.

Remarks: The specimens agree well with the descriptions given by Banner and Banner (1966). Large chela very massive in comparison with the carpus and merus. But, the small chela in male bearing *balaeniceps dactylus* only about 3.5 times its breadth, unlike the Thailand specimens. *Dactylus* longer and the sharp

tip cross over the tip of fixed finger. Merus only 2.3 times as long as broad. In female, chela more slender, about 4 times long as broad. Ischia of 3rd and 4th legs of females with movable spines situated in the depression on the ventral aspect near the proximal part. The unarmed merus only less than 5 times as long as wide, being not much elongated as in Thailand specimens. Carpus of 4th leg bears 5 spinules extending along 2/3 of its length besides the distal one. Telson with sides almost straight and a rounded posterior margin. Paired short and stout dorsal spine situated on the mid-dorsal groove. Telson 1.6 times its breadth at the posterior end.

The male specimen measuring 22.6 mm in carapace length (71 mm total length) from Mandapam is the largest so far reported.

Colour: Ground colour of fresh specimens cream to pale yellow, with black cross bands on the posterior margins of carapace and abdominal segments. Chela with violet patches on the depressions and tips. Antennal and antennular flagella also violet in colour. Legs and setae whitish.

Distribution: Thailand and West Indies. The present report of the species from the southwest coast of India extends its distribution considerably.

Alpheus distinguendus de Man, 1909

Alpheus distinguendus Banner and Smalley, 1969 : 47-50 (with synonymy).

Material: 31 specimens. Vedalai, Gulf of Mannar : 2 females, carapace length 20.2, 22.5 mm ; Rameswaram, Gulf of Mannar. 12 males, 20.5-23.0 mm ; 1 female, 22.6 mm ; Mandapam, Palk Bay ; 9 males, 16.1-25.8 mm ; 4 females, 17.5-23.3 mm ; Cuddalore : 3 males, 23.1-24.3 mm. Collected from shore seine and trawl net catches. Depth 2-15 m.

Remarks: Larger chela without transverse groove near the base of the dactylus ; dactylus of smaller chela of male not balaeniceps-shaped. Palm of smaller chela of male not longer than high, without transverse groove ; fingers in adult specimens 2.5 times long. Telson elongated posteriorly, 2.5 times as long as broad.

The species is most common in the shrimp trawl catches from the Gulf of Mannar and Palk Bay.

Distribution: Japan, East Indies and Australia. This is the first record of the species from Indian region, extending the distribution to the western part of the Indo-Pacific.

Alpheus malabaricus songkla Banner and Banner, 1966

Alpheus malabaricus songkla Banner and Banner, 1966 : 147-149.

Material: 6 specimens. Korapuzha Estuary, Malabar Coast : 2 males, carapace length 15.5, 16.6 mm ; 2 females, 14.2, 17.0 mm ; Mandapam, Palk Bay : 2 females (1 berried), 18.6, 20.0 mm. Collected from stake nets and trawl catches. Depth 3-10 m.

Remarks: The characters of the specimens collected conforms to those described by Banner and Banner (1966). Second antennular article 2.2 as long as broad, visible portion of 1st segment 1.3 times as long as 3rd segment ; 0.7 as long as 2nd segment. Tip of stylocerite not reaching tip of second segment of antennular peduncle.

Large chela 2.4 times as long as broad, finger 0.3 length of entire chela. The proximal margin of the shallow transverse groove of the upper margin perpendicular to the long axis of the chela, the distal margins being inclined and rounded. Merus twice as long as broad.

Small chela with crossing fingers, length 4.4 times its breadth, fingers 1.5 times length of palm. Upper distal margin of palm slightly projecting. Outer margin of fingers with dense setae. Ischium of 3rd leg with movable spinule ; merus 4.4 as long as broad, unarmed ; carpus 0.6 as long as merus ; propodus 0.9 times length of merus. Long setae present near upper margin of propodus in addition to three spinules, near the proximal end, placed distally.

Colour : In fresh specimens general body colour cream with dark brown cross bands along the posterior margins of abdominal segments and carapace. Tips of uropods and anterior border of carapace between orbital hood and lateral angle dark brown. Antennal flagella bluish violet while antennular flagella with brownish tinge. Chelipeds grey with violet inner depression of large chela. Remaining portion of the chela and legs being pinkish. Exopods and endopods of chelipeds bright red with paler bases. Undersurface of abdomen and chela white.

Distribution : Thailand. This is the first report of the species from outside the type locality and thus extending its geographical distribution to west and east coasts of India.

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REFERENCES

- BANNER, A. H. AND D. M. BANNER 1966. *Siam Soc. Mon.*, ser., 3 : 1-168.
BANNER, D. M. AND C. R. SMALLEY 1969. *Proc. R. Soc. Qd.*, 81 (3) : 43-50.