

## NOTES ON THREE CARIDEAN PRAWNS FROM KAKINADA

## ABSTRACT

Two caridean prawns belonging to the family Pandalidae, *Heterocarpoides levicarina* (Bate) and *Parapandalus longicauda* Rathbun are recorded for the first time from Indian waters. The crangonid prawn *Pontocaris pennata* Bate is also reported in the prawn fishery at Kakinada area.

IN THE COURSE of investigations on prawns of Kakinada Coast, 3 species of caridean prawns namely *Heterocarpoides levicarina* (Bate), *Parapandalus longicauda* Rathbun and *Pontocaris pennata* Bate belonging to 3 different genera were collected and identified. Of these, the first two are being recorded for the first time from Indian waters and are dealt with here with special reference to points of taxonomic interest. The third species, although previously recorded from this coast, along with the other two, forms a seasonal fishery and hence included in this account.

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Family : Pandalidae

***Heterocarpoides levicarina* (Bate, 1888)**

(Fig. 1)

*Heterocarpoides levicarina* Holthuis 1980, p. 134 (with synonymy).

*Heterocarpoide levicarina* de Man 1920, p. 178-180.

**Material:** Several adult and berried females of which detailed studies made on 18 specimens.

**Locality:** Off Kakinada, lat. 16° 57' and long. 82° 20-25' E; Depth 10-30 m.

**Colour in fresh condition:** Light pink with copper sulphate (greenish blue) coloured eggs.

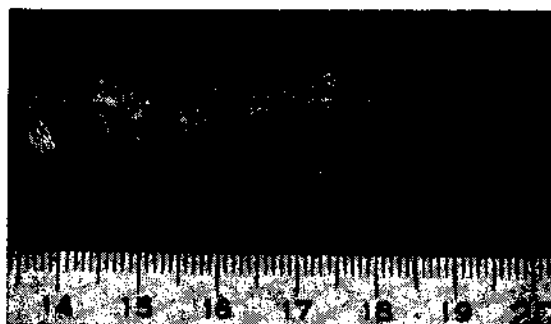


Fig. 1. *Heterocarpoides levicarina* (Bate): Ovigerous female.

**Remarks:** The description given by de Man (1920) fully agree with the present material. The length of the carapace (tip of rostrum to posterior part of carapace) varies from 25 mm to 31 mm; length of the rostrum 13 mm to 16 mm. Total length 54 mm to 68 mm. Upper border of rostrum with 11 to 14 and lower border with 5-6 teeth. Rostrum of many specimens (12 out of 18) has the dental formula 11/5. The lateral carina of the carapace distinct; 2nd pair of pereopods symmetrical, the spines on the 3rd, 4th and 5th abdominal terga decrease slightly in length from anterior to posterior region (Fig. 1). The scaphognathite is broadly rounded posteriorly. The external maxillipeds reach to the obtuse tip of the antennal scale, their

exopodite well developed and extends beyond the middle of the antepenultimate joint.

The description of the peraeopods given by de Man fully agree with the present observation. Epipodites on all the peraeopods well developed, except on the last pair. *Heterocarpoides levicarina* is monotypic and it differs from the species of allied genus *Heterocarpus* in features like the carination of the carapace, the symmetry of the 2nd pair of legs and the presence of spines on the 4th and 5th abdominal somites.

The species is known to occur in the Indian waters but according to Kemp (1925) no specimen from India was examined by Alcock. Gopala Menon (1976) came across the larvae of the species in abundance from the Indian Ocean, but no adult specimen has been recorded by him.

**Distribution:** Bay of Bima, Indo-West Pacific, Red Sea to Japan and Indonesia. The adults are recorded for the first time from Indian waters.

#### *Parapandalus longicauda* Rathbun 1901

(Fig. 2)

*Pandalus longicauda* Rathbun 1901, pp. 117, fig. 24.

*Parapandalus longicauda*, de Man 1920, p. 178-180.

**Material:** Several ovigerous females and males from Kakinada at a depth of 10-50 m. Of these, 15 females and 8 males were studied in detail.

**Locality:** Off Kakinada at a depth of 10-50 m. Colour in fresh condition; Reddish pink with greenish blue coloured eggs.

**Description:** The description given by Rathbun (1901) based on one male specimen of 44 mm agree with the present material except in the number of rostral teeth and the length of 6th abdominal somite.

Total length 55-69 mm (tip of the rostrum to the tip of telson); length of the rostrum (from tip of rostrum to the back of eye)—16 to 24 mm; carapace length 8 to 12 mm (excluding length of rostrum) (Fig. 2, 3).

Rostrum twice that of carapace in length, nearly horizontal with finely and evenly serrated closely paced imbricate teeth, slightly bigger in the posterior extremity. Upper margin of rostrum with 39-44 teeth and 26-28

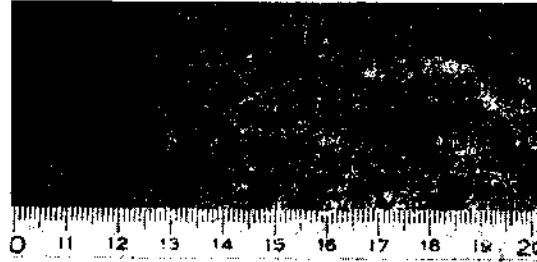


Fig. 2. *Parapandalus longicauda* Rathbun: Ovigerous female.

on the lower margin as against 40 and 30 respectively recorded by Rathbun (1901). Carapace with small blunt spine on the 6th part. The branchiocardiac groove distinct, almost touching the posterior edge of the carapace. Abdomen (telson included) equal or slightly longer to that of the carapace (rostrum included). The length of the 6th somite a little more than twice that of the fifth, differing from Rathbun's (1901) record of three times.

Telson a little longer than 6th somite, with 4 pairs of dorsolateral spinules besides a pair at the tip. The first pair is implanted at the middle of the telson, 4th pair almost in continuation with those at the tip.

Antennular flagellum as long as carapace, stylocerite oval, subacute; antennal scale as long as carapace; antennal spine long; flagellum 1.3 times that of the body length. Outer maxillipeds a little longer than antennal scale,

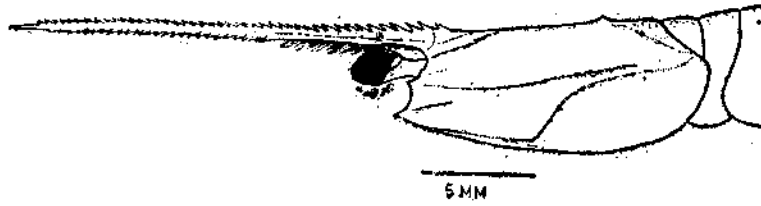


Fig. 3. *Parapandalus longicauda* Rathbun : Carapace of female.

terminal and penultimate joints of external maxillipeds sub equal.

**Distribution :** Porto Rico, Gulf of Mexico. This is the first record of this species from the Indian waters.

*P. longicauda* being recorded from the Atlantic region only it is strange that this has been found in Indian waters. It differs from *P. spinipes*, a closely allied species recorded in commercial quantities in the Arabian Sea, in the shape and armature of the rostrum. In *P. spinipes* rostrum is one and two thirds as long as carapace, running slightly downwards as far as the tip of antennular peduncle and then distinctly upwards. In addition the upper margin of rostrum with 45-48 serrations and lower margin with 22-27 denticles. In the case of *P. serratifrons* rostrum is two—two and a half times as long as the carapace, very slightly depressed as far as the tip of antennular peduncle, from where it is moderately curved upwards and running straight forward to the acute tip ; upper margin with 50-66 and lower margin with 32-44 teeth. *P. longicauda* differs from both *P. spinipes* and *P. serratifrons* in the length of the 2nd pair of pereopod as well as number of articles in the carpus of the 2nd leg.

Other species of *Parapandalus* are differentiated from *P. longicauda* in the lengths of maxillipeds, proportion of carpus, propodus and dactylus, the number of setae on the meri of the walking legs, the presence of a small blunt median spine at the posterior sixth part

of the carapace and the shape and armature of rostrum.

Family : Crangonidae

**Pontocaris pennata** Bate, 1888 (Fig. 4)

*Pontocaris pennata* Bate, 1888. p. 499 ; Holthuis 1980, p. 152 (with synonymy).

*Aegeon pennata* de Man, 1920 ; p. 294.

*Aegeon pennata* var *affinis* Alcock, 1901 ; p. 118.

**Material :** Several young males and ovigerous females. Four males and 16 females studied in detail.

**Locality :** Off Kakinada at a depth of 10-40 m.

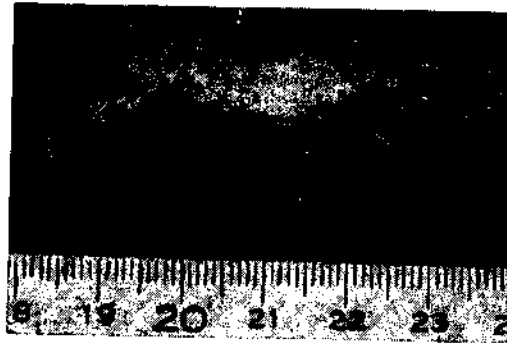


Fig. 4. *Pontocaris pennata* Bate : Ovigerous female.

**Colour in fresh condition :** Muddy brown with orange coloured eggs.

**Remarks :** The description of the species given by de Man (1920) and Alcock (1901)

agree with the material studied (Fig. 3). Rostrum triangular, bifid, not reaching half way along the eye stalk, with a minute spine on either side at base. Carapace length 7-12 mm and total length 24-41 mm. Carinae of the carapace salient. In the male, the last three thoracic sterna are sharply carinated in the middle line. As stated by Alcock there is a difference in the antennular flagella of the two sexes.

In the material studied the 2nd pair of legs do not differ in length amongst the sexes, reaching a little beyond the carpal articulation of the hand; body less broad in proportion to the length and the width of the 2nd abdominal somite in females is one fifth of the whole length and one sixth in the case of males. Based on these characters Holthuis (1980) synonymised the variety with the species.

De Man (1920) pointed out that the species recorded by Alcock (1901) off Bombay may be distinct local variety of *A. pennata* (Bate) as he observed differences in the size of 2nd legs amongst sexes, the body broader in proportion to that of the total length and also the width of the 2nd abdominal segment  $\frac{1}{4}$  of the total length in females and  $\frac{1}{5}$  in males.

The species has been reported from Bombay at a depth of 56 - 58 fathoms and from Bengal and Madras 12 - 93 fathoms. The preferred habitat of this species is sand and mud substratum and such conditions prevail in the mouth of Kakinada Bay and adjoining sea.

*Distribution:* Widely distributed from the

Red Sea, Persian Gulf, off Bombay, off the coast of Burma, Bengal and Madras.

*Occurrence in the trawl fishery:* The three caridean prawns form a seasonal fishery at Kakinada during July-March with the peak abundance in October. The catches of these prawns especially *P. longicauda* were substantial in certain months.

*Utilization:* While *P. longicauda* and *H. levicarina* are consumed in fresh condition along with other prawns, *P. pennata* is dried along with other non-penaeid prawns, trash fish and small sized crabs and used in the preparation of poultry feed.

*General remarks:* Due to the great demand for prawns in the export industry, most of the trawl fishing is oriented to catch prawns. In order to get increased catches the mesh size of the cod ends of the nets has been reduced over the years from 25 mm upto 7 mm during the last 10 years, (Sudhakara Rao *et al.*, 1980). The fishing is done mostly in the shallow waters from 5 m to a depth of 50 m. Most of the pandalid prawns are deep water forms, preferring a mud and sand substratum which is characteristic of the mouth of Kakinada Bay and the adjoining sea. However the existence of these prawns in Kakinada region has come to light only in recent years most probably due to the reduction in size of meshes of the commercial fishing gear.

It was observed that 60-90% of the prawns during the peak season October-November were in berried condition. It is possible that they were caught during their movement towards the shallow regions for spawning.

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