

A NOTE ON THE OCCURRENCE OF POSTLARVAE OF
PENAEUS PENICILLATUS ALCOCK NEAR BOMBAY

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ABSTRACT

A collection of postlarvae belonging to the genus *Penaeus* that are closely resembling *Penaeus indicus* on one hand and *P. merguensis* on the other in most of the characters, but differing from them in certain other, obtained from near Bombay are assigned to *P. penicillatus*, a closely allied species, on the strength of the distinctive characters and as the adults of this species occur considerably throughout the year in the area of collection.

While exploring the possibilities of setting up a prawn farm at Ucheli-Dandi, about 100 km north of Bombay, a 3-m-long organdie net (mesh 256/m²) was used for making a series of 10-min. drags in the small sea inlets in the area during the low tides for a number of days during July-August 1980. Certain days, a large number (114/haul) of postlarval penaeids, ranging in size from 5 to 20 mm, were collected. The collections consisted of the postlarvae of *Metapenaeus monoceros* and *M. brevicornis* and, in addition, a considerable number of a yet unidentified postlarva of a *Penaeus* species. The salinity of the inlets at the time of collections was between 3.83 ‰ and 18.17 ‰.

The unidentified postlarvae, on close examination, are found to be in rather advanced stages, ranging in size from 9 mm to 17 mm total length. These have slender body; long rostrum with 4 to 5 dorsal teeth; telson with the typical 8 + 8 setae; scaphocerite long and narrow and broader distally; mandibular palp with the distal segments smaller than but as wide as the proximal segment; posteriodorsal spines on 5th and 6th abdominal segments; all conforming with the description of the postlarvae of the genus *Penaeus* (Muthu et al 1980).

These postlarvae, on comparison with the morphological characters of the postlarvae of the different species of *Penaeus* as described by Muthu (1980) as well as with those of *P. indicus* and *P. merguensis* as described by Mohamed et al (1968), Raje and Ranade (1972) and Muthu et al (1980), show great similarities with these two species. But, at the same time, they show difference in that they are in rather advanced stages. Attempts to collect the early postlarval stages of these during many months in the following year having failed,

TABLE 1. *Distinctive features of the postlarvae (TL 13 mm) of 3 species of Penaeus*

Morphological character	<i>P. indicus</i>	<i>P. merguensis</i>	<i>P. penicillatus</i>
Posteromedian dorsal spine on the 5th abdominal segment	Absent after rostral spine stage	Present upto 5 rostral spine stage	Present even in 6 rostral spine stage
No. of dorsal rostral teeth behind anterior margin of cornea	6	5	5
Ratio: Length of dorsal unarmed portion of rostrum/distance between anterior-most dorsal tooth and the penultimate tooth.	2	2	2
Position of anteriormost dorsal tooth	Posterior to the third lower tooth	Anterior to the third lower tooth	Posterior to the fourth lower tooth.
Shape of midventral prominence between the first two pairs of pleopods.	With blunt apex	With pointed apex	With blunt apex but with fewer setae
Position of the anterior most dorsal tooth in relation to the antennular peduncle.	Posterior to the tip of peduncle	Anterior to the tip of peduncle	Anterior to the tip of peduncle.
Colouration:			
General body colour	Cream	Whitish	Whitish
Antennal flagella	White distally	Red throughout	Red distally but with white bands at proximal end.
Basis of pleopod	Without blue spots	With conspicuous blue spots	With bluish spots
Chromatophores on:			
Telson	Present in distal half only	Present from base to distal end	Present at the base in 11 mm sized post larvae but in two distinct groups at either ends.
Outer uropod	Absent	Absent	4 distinct ones along the inner edge.

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the postlarvae at hand could be compared only with the postlarval stages and early juveniles of *P. indicus* and *P. merguensis* as described by Muthu and Rao (1973) and Muthu (1980).

The important characters of the larvae, such as the posterior position of the anteriormost dorsal tooth in relation to the fourth ventral tooth, the blunt shape of the midventral prominence between the first two pairs of pleopods bearing fewer but long setae, and the presence of posteromedian dorsal spine on the 5th abdominal segment even in the 7-rostral-spine stage, are too distinctive for the larvae to be considered to be those of *P. indicus* or *P. merguensis* (Table 1).

Subramanyam and Rao (1970), Prawirodihardjo et al (1975) and Muthu (1980) have used the number and position of chromatophores on ventral body, especially on 6th abdominal segment, on antennular peduncle, uropods and telson, for distinguishing the postlarvae of penaeid species. Comparison of the chromatophores of the present postlarvae with those described by Muthu (1980) for *P. indicus* and *P. merguensis* reveals that the chromatophore patterns too are distinctly different (Fig. 1). The present postlarvae have their antennal flagella coloured red at the distal end and with white bands at the proximal end. The

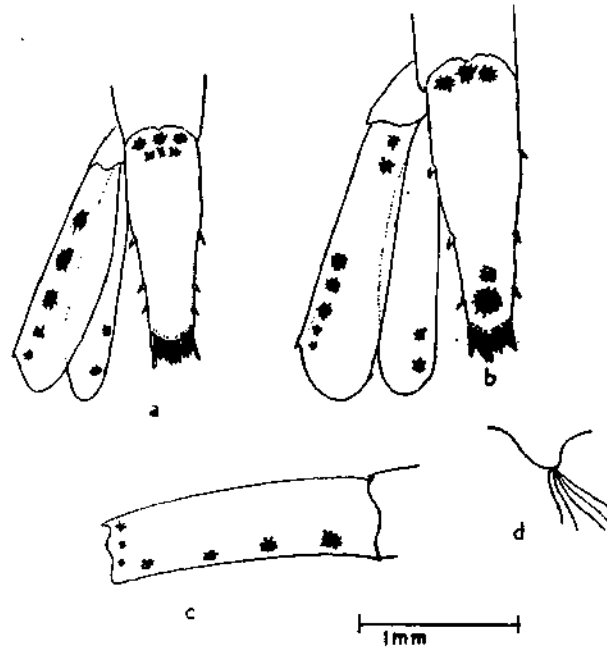


FIG. 1. *Penaeus penicillatus* Alcock; a. chromatophore pattern on uropod and telson TL 11 mm, b. chromatophore pattern on uropod and telson TL 17, c. sixth abdominal segment showing chromatophore pattern, d. Midventral prominence between first pair of pleopods with setae.

chromatophores on telson are present at the base in 11-mm-sized individual, but are found in two separate groups at either ends in 17-mm-sized individuals. The outer rami of the uropods of both *P. indicus* and *P. merguensis* are devoid of any chromatophores, but here the ramus has three distinct chromatophores (11.0 mm TL), and, in addition, there are 5 chromatophores (17.0 mm TL) along the inner margin of the outer uropod.

P. pencillatus is the other penaeid prawn occurring in this area (Kunju 1967). This and the distinctive characters of the larvae together lead us to infer that the larva belongs to *P. penicillatus*. However, detailed studies, possibly by rearing them in the laboratory, are necessary not only to confirm the present identification but also to bring to light the various developmental stages of *P. penicillatus*, which holds good prospects as a culturable species in this region.

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* Not referred to in original.