

TAXONOMIC NOTES ON THE PENAEID PRAWN *METAPENAEOPSIS GALLENSIS* (PEARSON, 1905)

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ABSTRACT

Metapenaeopsis gallensis (Pearson) which was hitherto considered as a doubtful species appears to be a distinct species belonging to the *mogiensis*-group of non-stridulating *Metapenaeopsis*. The species which is recorded for the first time from Indian waters is redescribed and compared with the closely related species.

INTRODUCTION

PARAPENAEUS GALLENSIS Pearson, 1905, has been listed as a doubtful species of *Metapenaeopsis* by Dall (1957). Subsequently, Racek and Dall (1965) have not included this species in their revision of the genus *Metapenaeopsis* from the Indo-west Pacific region. However, while examining a collection of *Metapenaeopsis* spp. from the trawler catches at Madras, specimens closely resembling the figures and description of *Parapenaeus gallensis* given by Pearson (1905) were observed. A careful study of the morphological features of the specimens revealed that they represent a distinct species of non-stridulating *Metapenaeopsis* belonging to the *mogiensis*-group. Racek and Yaldwyn (1971) have stressed the need for a detailed re-examination of *Parapenaeus gallensis* Pearson, 1905. They state that '..... its specific status remains in obscurity. Its early re-examination would appear highly desirable in order to establish its affinities to both *M. assimilis* and *M. mannarensis* with which it apparently forms a distinct group within the genus'. In view of these circumstances a detailed description of the present specimens is given along with diagrams of the thelycal and petasmas structures which establish the identity of the species beyond doubt.

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***Metapenaeopsis gallensis* (Pearson, 1905)**

Synonym : *Parapenaeus gallensis* Pearson, 1905, 72-73.

Material :

7 females 54-65 mm (11-14 mm C.L.) and 2 males both 50.5 mm (10 mm C.L.) were collected on 18-8-1971 from the trawlers operating off Madras in 32-36 m depth.

Description :

Rostrum straight, slightly uptilted in some females, the upper profile curved downwards in males; reaching middle of 2nd antennular segment in females and fall-

ing short of end of basal segment in males; armed dorsally with 6 teeth and epigastric. Postrostral carina absent in both sexes; position of epigastric tooth at less than $\frac{1}{4}$ carapace. Carapace entirely covered with tomentum. Orbital spine small and blunt; orbito-antennal sulcus shallow; hepatic spine pointed with shallow cervical and hepatic sulci, antennal spine pointed, almost reaching cornea, carina absent, pterygostomial spine short but pointed. Stridulating ridges absent.

Antennular flagella subequal, the longer lower flagellum about $\frac{1}{4}$ carapace: denticle near base of lower flagellum in males does not project above upper margin. Prosartema falls short of anterior end of eye, stylocerite reaching tip of basal antennular segment.

3rd maxilliped almost reaching end of antennular peduncle; 1st pereopod reaching $\frac{2}{3}$ carapocerite, 2nd surpassing carapocerite by nearly entire chela, 3rd extending to middle of 2nd antennular segment, 4th extending just beyond carapocerite, 5th exceeding carapocerite by entire dactyl. Prominent ischial spine on 1st pereopod.

2nd abdominal somite with a feeble dorsal carina in its posterior half; 3rd to 6th strongly carinated, that of 3rd with a well defined sulcus which narrows down anteriorly. Anterior $\frac{1}{3}$ of carina of 4th, flat topped. No sub-carina on 4th somite. Postero-median margin of 4th and 5th somites excised, that of 6th with a prominent spine. Telson longer than 6th abdominal somite, not quite reaching tips of uropods, outer of which is slightly longer than inner, armed with three pairs of movable spines and a pair of fixed spines.

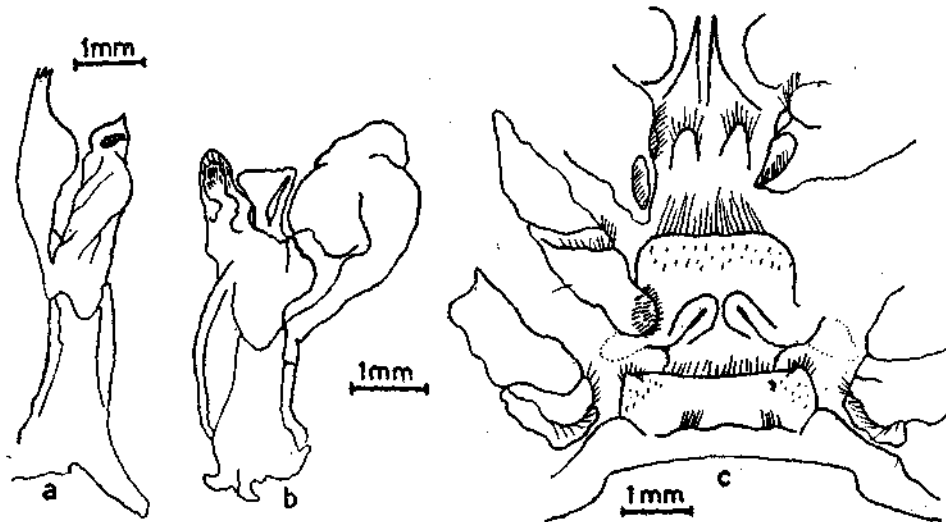


Fig. 1. External Genital organs of *Metapenaeopsis galleensis* (Pearson). (a) Dorsal view of left lobe of petasma. (b) Dorsal view of right lobe of petasma (Male 10 mm. C.L.). (c) Thelycum of Female 14 mm C.L. with the fourth pereopod on the left side dissected off.

Petasma is shown in Fig. 1a, b. Left distoventral projection more slender and slightly longer than right one, carrying four to five small processes distally; right distoventral projection swollen without any distal processes. Fused inner

and outer intermediate strip with a flat acutely pointed distal plate bearing an oval spine-covered swelling dorsally; distomedian lobule broad distally and shorter than distoventral flap. The appendix masculina belongs to group 07 of Kubo (1949).

Thelycum is shown in Fig. 1c. Sternum of 2nd pereopods with a pair of long spinous processes, that of 3rd with a pair of blunt but well developed projections. Thelycal plate broader than long with a slight median prominence along anterior edge and with rounded anterolateral corners. A pair of well developed auriculate platelets standing up from sternal surface behind thelycal plates, the concavity facing posteriorly; grooves from middle of concavity in platelets and from intermediate plate, leading into opening of seminal vesicle are shown in Fig. 1c. The anterior sternal plate between 5th pair of pereopods has a more or less straight anterior edge with a broad triangular spine at anterolateral corners, the posterior sternal plate with two rounded lateral projections and a low wavy median one. Coxa of fourth pereopods small, rounded and with a brush of setae facing platelets.

The body is covered with reddish brown mottlings.

Distribution :

So far recorded only from Ceylon off Galle in deep waters upto 100 fathoms (Pearson 1905). The present material represents the first record in Indian waters.

DISCUSSION

Pearson's figures of the thelycum (Fig. 3A) and petasma (Fig. 3B) serve to identify the species without much difficulty. But the detailed structure of the genital organs were not described by Pearson (1905) and this perhaps made the subsequent workers on the taxonomy of the genus omit Pearson's species from their purview. The rostrum (Fig. 5) shown by Pearson (1905) is that of a male. The female rostrum is longer and straight.

The presence of a pair of platelets behind the thelycal plate, the configuration of grooves leading into the seminal vesicle, the swollen right distoventral projection, the spiny oval patch on the distal end of the fused intermediate strip and the shape of the distomedian lobule, clearly place this species in the *mogiensis*-group which comprises of *M. mogiensis* (Rathbun) and *M. hilarulus* (de Man). A comparison of the figures given in this paper with those given for *M. mogiensis* and *M. hilarulus* by Muthu (1971) clearly brings out the similarities and differences among these three species (See table below).

	<i>M. gallensis</i>	<i>M. hilarulus</i>	<i>M. mogiensis</i>
Rostral teeth	6+1	7-8+1	7-8+1
Thelycal platelets	auriculate with rounded apex	large, lamellar, distolaterally pointed	small and more pointed distally
Coxal plates on fourth legs	small, rounded	plate-like and smoothly conical anteriorly	heart-shaped
Anterior sternal plate between fifth pair of legs in females	Anterior edge almost straight with flat triangular spine at anterolateral corners	anterior edge concave with well defined pointed spine at anterolateral corners	anterior edge with four rounded teeth, two median ones being incurved

Left distoventral projection of petasma	with 4-5 short processes distally	no terminal process	with 3-4 long processes distally
Distal plate of fused intermediate strip	acutely pointed	flat distally	smoothly conical
Distomedian lobule	broad distally, shorter than distoventral flap	broad distally, as long as distoventral flap	small, much shorter than distoventral flap

De Man (1920) states that his *Penaeopsis assimilis* is related to *P. gallensis* Pearson. Racek and Yaldwyn (1971) felt that both *M. assimilis* (de Man) and *M. mannarensis* De Bruin may be related to *P. gallensis* Pearson. It is clear from the present study, however, that *M. gallensis* (Pearson) differs from *M. mannarensis* in many respects. The petasma of the latter (Fig. 2b of De Bruin 1965) is markedly different from that of *M. gallensis* in having the left distoventral projection larger than the right distoventral projection, in lacking the terminal filaments on the left distoventral projection and in the shape of the fused intermediate strip and the distomedian lobule. De Bruin (1965) does not mention about the presence of median platelets in his description of *M. mannarensis* and in his Fig. 2a the anterior sternal plate between the 5th pair of pereopods is clearly different in shape; further the carina on the 3rd abdominal segment is said to be non-sulcate.

M. assimilis (de Man), however, appears to be more clearly related to the *mogiensis*-group of *Metapenaeopsis* in the possession of a petasma with swollen right distoventral projection which is much larger than the slender, left distoventral projection and in the possession of a pair of median spinous platelets at the base of the thelycal plate. But it differs from the *mogiensis*-group in the shape of the anterior margin of the thelycal plate and in the occurrence of two crenulated flaps at the tip of the fused intermediate plate (Figs. 8C & B of Racek and Dall, 1965).

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