

## NOTES AND NEWS

### A NORTHERN INDIAN OCEAN RECORD OF A BOPYRID, *PARAPENAEON JAPONICA* (THIELEMANN, 1910) PARASITIC ON SPECIES OF PENAEID PRAWNS (*PENAEUS*)

Quddusi B. Kazmi and Nasima M. Tirmizi

Marine Reference Collection and Resource Centre, University of Karachi,  
Karachi-75270, Pakistan.

A female of *Penaeus merguensis* de Man collected from Karachi Fish Harbour (8 May, 1993) was with a large specimen of bopyrid in its right gill chamber. Since this was the second record (see Tirmizi and Bashir, 1973) of a bopyrid from a species other than *Parapenaeopsis stylifera* H. Milne-Edwards (cf. Qazi, 1959; Ahmed and Hakeem, 1982), the specimen was examined out of curiosity.

It was immediately apparent that the specimen though resembling *Epipenaeon qadrii* Qazi, 1959 showed several differences. The infested *P. monodon* reported by Tirmizi and Bashir (1973), housed in the Marine Reference Collection and Resource Centre (MRC) had another and much larger bopyrid (32 mm in length). The prawn was at some stage treated for fungus, the parasite was thus dislodged, no male was retrieved.

Efforts for fresh collections were rewarding. Several parasites are now available from *P. merguensis*. The specimens show considerable individual variations, the matter was referred to J.C. Markham, USA who is of the opinion that the Pakistan specimens are referable to *Parapenaeon japonica* (Thielemann, 1910), though widely distributed is hitherto unknown from the Arabian Sea.

According to Markham (1982) *P. japonica* "has been described often and well enough". We are therefore giving only a brief description of *P. japonica* with a restricted synonymy. Differences from *Epipenaeon qadrii* are also mentioned. Material of *E. qadrii* was collected from *Parapenaeopsis sculptilis* (Heller) and *P. hardwickii* (Miers).

The abbreviations used are tl., for the total length, mw for the maximum width.

The material is deposited in the collections of the Marine Reference Collection and Resource Centre.

#### *Parapenaeon japonica* (Thielemann, 1910)

(Figs.1,2)

*Epipenaeon japonica* Thielemann, 1910: 7, 79,106,108, text figs. "*Penaeus* sp."; Nataraj, 1943:53.

*Epipenaeon japonicum* Barnard, 1925: 408.

*Parapenaeon japonicum* Bourdon, 1979a: 480, figs.6,7; 1979b: 432.

*Parapenaeon japonica* Markham, 1982: 366, (complete synonymy), figs. 23,24.

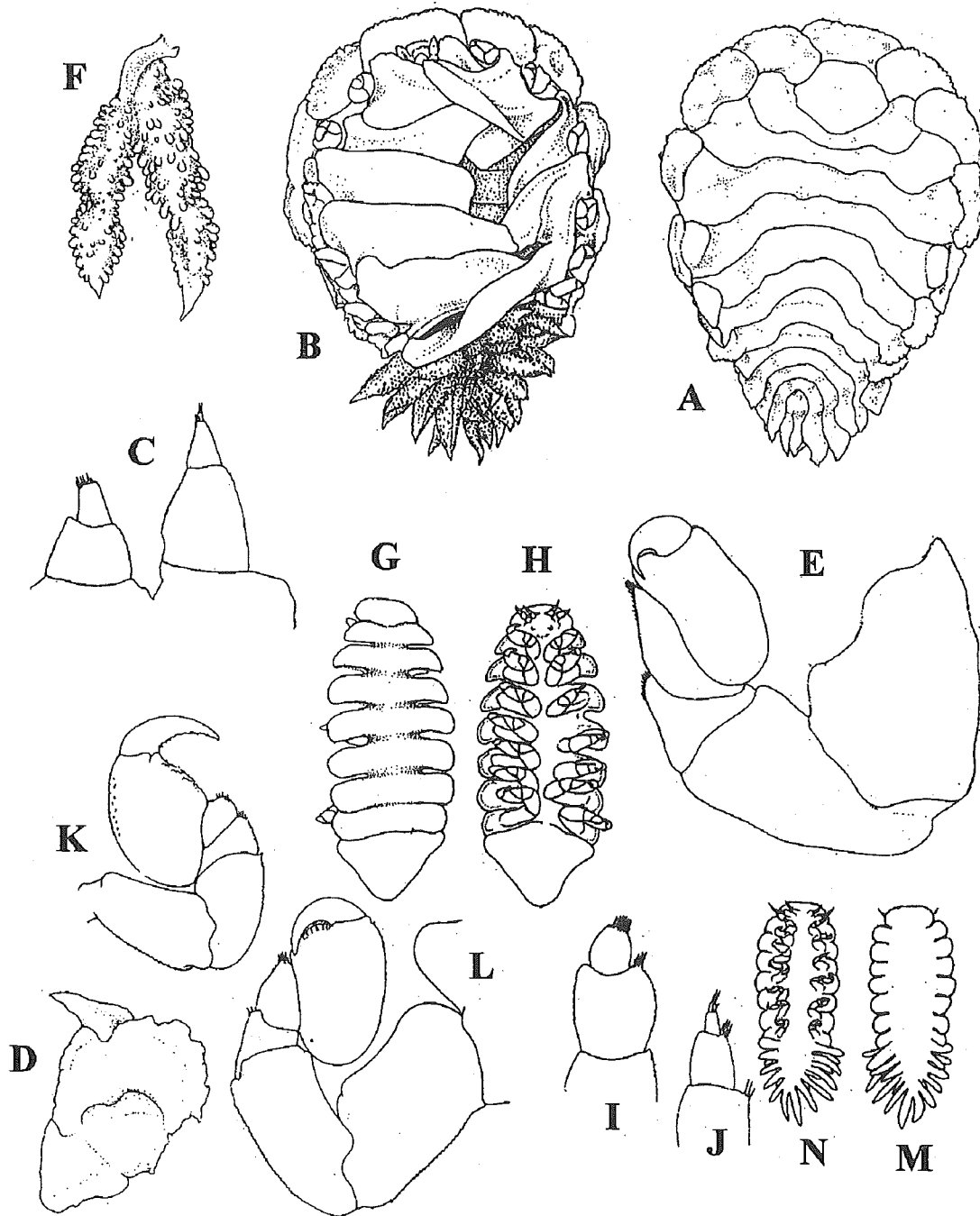


Fig.1. *Parapenaeon japonica* (Theilemann). A-F female (tl. 21 mm); G-K male (tl. 6 mm). A, entire specimen, dorsal view; B, same, ventral view; C, antennae; D, third maxilliped; E, fifth pereopod; F, pleopod; G, entire specimen, dorsal view; H, same, ventral view; I and J, antennae; K and L, first and last pereopods respectively; M and N, developmental stage.

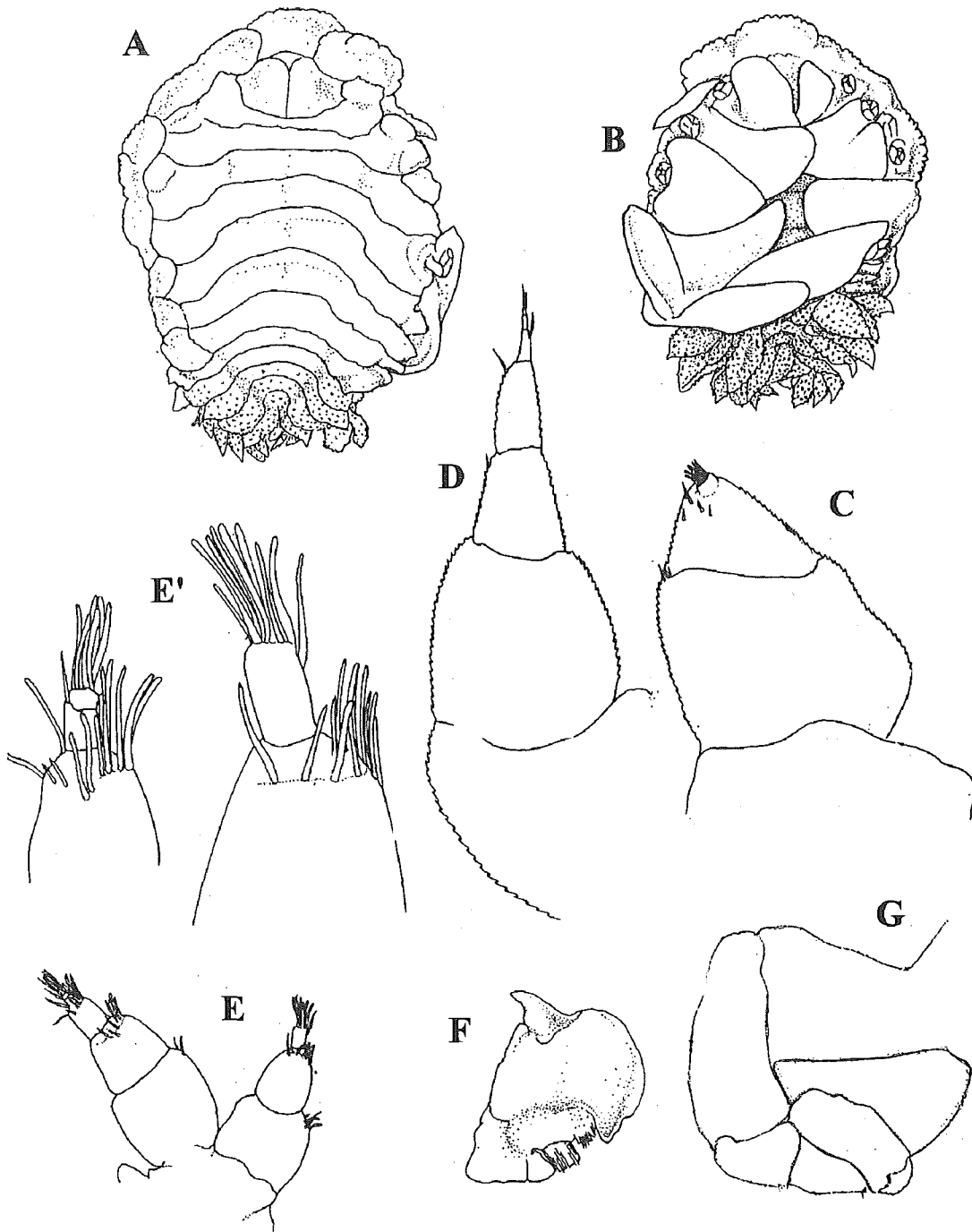


Fig.2. *Epipenaeon qadrii* Qazi. A-D female (tl. 17 mm); E-G male (tl. 4 mm). A, female in dorsal view; B, same in ventral view; C and D, antennae; E, antennae; E', same, tips enlarged; F, third maxilliped; G, first pereopod.

**MATERIAL AND MEASUREMENTS**

Infesting *Penaeus merguensis* 1 female, tl.21 mm, mw 17 mm; 1 male, tl. 6 mm; mw 2 mm, 8 May, 1993, MRC Cat No. ISOP 4.

Infesting *Penaeus merguensis* 1 female, tl. 17 mm, mw 12 mm; 1 male, tl. 4 mm, mw 2 mm (hyperparasitized), 26 July, 1966; 1 female, tl. 15 mm, mw 12 mm; 1 male, tl. 5 mm, mw 2.5 mm, 8 July, 1993; 1 female, tl. 19 mm, mw 19 mm, 1 male, tl. 7 mm, mw 4 mm, 15 July, 1993.

Infesting *Penaeus monodon* 1 female, tl.32 mm, mw 23 mm, 1966.

**DESCRIPTIVE REMARKS**

**Female:** *Parapenaeon japonica* (Figs.1A and B) is a large sized species. It appears to be more elongated and narrower posteriorly than *E. qadrii* (Figs.2A and B). The frontal lamina is large and more strongly crenulated than in *E. qadrii*. The pereomeres are well-defined, all bearing distinct plates which are crenulated at their margins.

The antennae 1 and 2 (Fig.1C) are of three and four articles respectively; the antennae are each setose distally and with microscopically serrated margins, as illustrated, the articles in *E. qadrii* have more setae under high magnification (Figs. 2E and E') the surface appears to be reticulate, somewhat scaliform, more pronounced on the margins (Figs.2C and D).

The palp of the third maxilliped (Fig.1D) is quite similar to that of *E. qadrii* (Fig.2F), except being slightly elongated, the tips overlap.

The pereopods (Fig.1E) are unarmed and only with a few hairs on the merii and carpii; the pereopodal joints (Fig.2G), in *E. qadrii* have more serrations than seen in the present species.

The pleopods (Fig.1F) are slender, elongated and with numerous pronounced tubercles, those in *E. qadrii* are fewer and mostly rounded.

**Male:** The thoracic somites of the male are all very distinct (Figs.1G and H), quite similar to those of *E. qadrii*, however, the notches between somites appear to be rather deep when compared with those in *E. qadrii* (see Qazi, 1959, fig.5). The antenna 1 and 2 (Figs.1 I and J) have fewer setae than found in the antennae of *E. qadrii* (Figs.2E and E'). The pereopods (Figs.1K and L) have a slightly better armature.

**REMARKS**

The female illustrated is not berried, however, there is one late larval form (Fig.1M,N ) with it. Majority of the females bear eggs. Parasites are found infesting *P. merguensis* on the right side and *P. monodon* on the left side.

**ACKNOWLEDGEMENTS**

We are grateful to Dr. J.C. Markham, Arch Cape Marine Laboratory USA for kindly providing the necessary literature, answering our queries and for reading the MS. The work is funded by the Office of Naval Research (USA) through grant No.00014-86-G-0229.

## REFERENCES

- Ahmed, M. and Z. Hakeem, 1982. The incidence of males and eggs in the brood pouches of females of *Epipenaeon gadrii* Qazi, 1959 from the northern Arabian Sea. (Isopoda: Bopyridae). *Crustaceana* 42: 316-317.
- Barnard, K.H. 1925. Contribution to the crustacean fauna of south Africa No.9. Further additions to the list of Isopoda. *Annals of the South African Museum* 20: 381-412.
- Bourdon, R. 1979a. Epicarides de Madagascar. II, *Bulletin du Museum National de la Histoire naturelle de Paris* (4)1, Section A: 471-506.
- Bourdon, R. 1979b. Sur la taxonomie et l'ethologie de quelques Orbionines (Isopoda Epicaridea). *Internationale Revue der gesammelten Hydrobiologie* 64: 425-435.
- Markham, J.C. 1982. Bopyrid Isopods Parasitic on Decapod Crustaceans in Hong Kong and Southern China. In: *The Marine Flora and Fauna of Hong Kong and Southern China*, [Eds. Morton B.S. and Tseng C.K.]. Hong Kong University Press, Hong Kong. Pp. 325-391.
- Nataraj, S. 1943. On three species of bopyrid isopods from South India. *Proceedings of the Indian Science Congress, Calcutta* 30: 58. [Abstract]
- Qazi, M.H. 1959. Some bopyrid isopods of West Pakistan. *The Scientist (Scientific Society of Pakistan, Karachi)*. 3: 55-62.
- Thielemann, M. 1910. Beitrage zur Naturgeschichte Ostasiens. Herausgegeben von Dr. F. Doflein. Beitrge zur Kenntnis der Isopodenfauna Ostasiens. *Abhandlungen der mathematischen- physischen Klasse der Koniglichen Bayerischen Akademie der Wissenschaften, Nachtraglicher Band. 2 (Abhandlung 3)*: 1-109.
- Tirmizi, N.M. and Q. Bashir, 1973. *Shore and offshore penaeid prawns of northern Arabian Sea*. University of Karachi Publication, Karachi. Pp.1-71.

(Received: 13 December 1993)