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First Record of Two Australian Species: One under *Metapenaeopsis* and Another under *Metapenaeus* from Indian Water, Their Diagnosis and Distribution

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ABSTRACT

Genus *Metapenaeopsis* was created by Bouvier (1905) ^[1] with *M. pubescens* as type from Cape Verde Islands. Wood-Mason (1891) ^[2] was the first to record this genus from Indian water as *Metapenaeus*. George (1979) ^[3] listed 9 species under *Metapenaeopsis* and 11 species under *Metapenaeus* from Indian coastal water. Subsequently Fischer & Bianchi (1983) ^[4] and Radhakrishnan *et al.* (2012) ^[5] added another species viz., *Metapenaeopsis toloensis* Hall, 1962 ^[6] and *Metapenaeopsis novaeguineae* (Haswell, 1879) ^[7] respectively to this list. In the present study *Metapenaeopsis palmensis* (Haswell, 1879) ^[7] and *Metapenaeus eboracensis* Dall, 1957 ^[8] have been recorded for the first time from India. Till now 12 species each belonging to these two genera have been reported from Indian water.

Keywords: *Metapenaeopsis*, *M. novaeguineae*, *M. palmensis*, *Metapenaeus*, *M. eboracensis*, Records, Indian, Coastal, Water.

1. Introduction

Among a variety of edible decapod crustaceans, prawns contribute largely to the fishery wealth of many nations. Exploitation of prawn resource from the seas around each country is playing increasingly significant role in furthering their national economy. In recent years, inspite of some ecological hazards, the demand for prawns and prawn products has increased so much that every country is making efforts to utilize hitherto unknown but usable stocks. Expansion of prawn fisheries and industries near coast line is rightly being given the maximum encouragement in the development programme of each nation. Present study reveals that Indian water represents a total of 12 species each of the genus *Metapenaeopsis* and *Metapenaeus*. As per our investigation *Metapenaeopsis palmensis* (Haswell, 1879) and *Metapenaeus eboracensis* (Dall, 1957) are the two new additions to the Indian list.

2. Materials and Methods

The present study is mainly based on the specimens collected from Andhra Pradesh Coast during 1995-1997 by the author and the specimens were preserved in rectified spirit (90%) in general collection of Zoological Survey of India Kolkata. They were studied under a stereoscopic binocular microscope. The detailed synonymies have been furnished to the genus and species and also their diagnosis, distribution, taxonomic remarks have been furnished. In addition an attempt has been made to include a comprehensive coverage of the references in the reference section. For all citations of taxon author's name and year of publication has been given. A brief history, diagnosis and distribution of three species are dealt separately in results and discussion section.

3. Results and Discussion

(I) *Metapenaeopsis palmensis* (Haswell, 1879)

M. palmensis was originally described as *Penaeus palmensis* by Haswell (1879) from N.E. Coast of Australia. A brief history of the species are given below.

- 1879 *Penaeus palmensis* Haswell, Proc. Linn. Soc. N.S.W. 4(1):38-44.
1911 *Penaeopsis palmensis* De Man, Siboga Exped. Monogr. No. 39a:1-131.
1955 *Penaeopsis (Metapenaeopsis) novaeguineae* Racek, Aust. J. Mar. Freshw. Res. 6(2): 209-241.
1965 *Metapenaeopsis palmensis* Racek and Dall, Verh. K. ned. Akad. Wet, 56:1-116.

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Type Species: *Penaeus palmensis* Haswell, 1879. Proc. Linn. Soc. N.S.W., 4(1):38-44.

Type Locality: N.E. Coast of Australia.

Material Examined

2 males (45-56 mm) and 14 female (49-68 mm), ZSI. Reg. No. C4860/2, Bhimapattnam, Andhra Pradesh, 25.3.1997, T. Roy and party; 2 males (40-42 mm) and 2 females (43-50 mm), ZSI. Reg. No. C4799/2, Pulicot Lake, Andhra Pradesh, 26.8.1995. A. Chanda.

Diagnosis of the species

Body pubescent, slender; rostrum straight, reaching upto third segment of antennular peduncle; armed dorsally with 7+1 teeth; epigastric tooth conspicuously separated from penultimate tooth; penultimate tooth situated at the level of orbital margin of carapace. Orbital spine very short, hepatic spine small, with a well defined short cervical sulcus; antennal carina short, spine strong and

prominent; hepatic sulcus deep and covered with dense setae; stridulating organ consisting of eight strong ridges in a curved band; parapenaeid spine on ventral surface of first segment of antennular peduncle vestigial; flagellum equal and shorter than peduncle; dorsal carina on abdominal somite extending from posterior half of second segment to posterior end of sixth segment; third segment with median sulcus on carina; fifth and sixth somite has a short posterodorsal spine; right distoventral projection shorter than left, with 3 dorsally bent processes; left distoventral projection, swollen, toe-shaped, with a semicircular arrangement of 12 blunt processes; dorsal intermediate lobule short, cylindrical; outer one broad, curved, conspicuously longer than inner lobule with numerous distal setae; distomedian lobule triangular, long; in female, two spines on sternite XI and two blunt spine on sternite XII; anterior thelycal plate on sternite XIII subrectangular, anteriorly convex; transverse plate on sternite XIV with laterally raised margin; posterior plate behind thelycal plate three lobed, median lobe broadly elevated, covered with setae; coxal plates small rounded, setose.

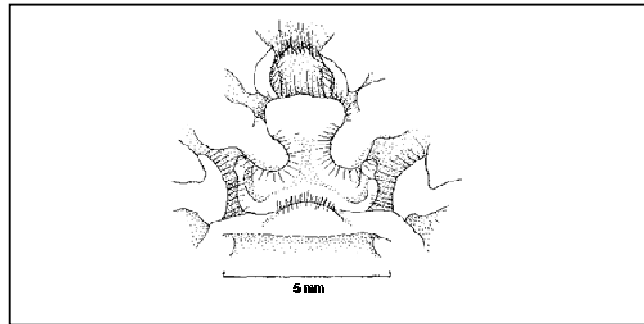


Fig 1: Female thelycum of *Metapenaeopsis palmensis*

Remarks

This is the first record of the species from Indian water. Material collected from India shows some differences in its thelycal structure. Anterior thelycal plate is anteriorly convex in the material collected from India in contrast to that of Australian material where it is spinus (Dall, 1957).

Distribution

India: Pulicot Lake and Bhimapattnam, Andhra Pradesh, East coast.

Elsewhere: Singapore; Malaysia; Thailand; Vietnam; Indonesia; Philippines; Taiwan; Japan; New Guinea; Western Australia; Darwin; Queensland; New South Wales; Australia.

(II) Metapenaeus eboracensis Dall, 1957

M. eboracensis was described by Dall (1957) from Australian water. Present observation is the first record of the species from Indian water. A brief history of records of the species is given below.

1957 *Metapenaeus eboracensis* Dall. Aust. J. Mar. Freshw. Res. 8(2):136-231; Racek, 1959, Res. Bull. State Fish. N.S.W., 6:1-56; Racek and Dall, 1956, Verh. K. Ned. Akad. Wet. Afd. Nat., 56 (2,3):1-119; Grey *et al.*, 1983, A Guide to the Australian Penaeid prawn, Department of Primary Production of the Northern Territory.

Type Species: *Metapenaeus eboracensis* Dall, 1957, Aust. J. Mar.

Freshw. Res., 8(2):136-231.

Type Locality: Mouth of Norman River, Gulf of Carpentaria, Australia.

Material Examined: 1 female (71 mm), ZSI. Reg. No. C4771/2, Muthukuru F.L.C., Nellore, Andhra Pradesh, 1.9.1995, T. Roy and Party.

Diagnosis of the species

Pubescence restricted to some parts of the body in patches; rostrum sigmoidal, armed with dorsal 7+1 dorsal teeth; epigastric tooth conspicuously separated from penultimate tooth, distal one-third portion toothless, upwardly tilted; adrostral carina and sulcus reaching little behind epigastric tooth; post-rostral carina ending near posterior margin of carapace; branchiocardiac carina and sulcus feeble carina not touching hepatic spine; postocular sulcus oblique, cervical and hepatic sulcus and carina distinct, hepatic sulcus horizontal posteriorly, anteriorly turning anteroventrally; antennal spine strong, hepatic spine weak, pterygostomial spine absent; antennular flagella subequal, ventral one longer, fifth pereopod slender, chela strong and slender, dorsal carina starts from fourth somite and ends in a short, straight spine at the mid posterior margin of sixth somite; telson straight with pointed tip and armed with lateral row of very small spine; thelycum with anterior plate on sternite XIII, a small flat, leaf-like structure, anterior part abruptly pointed, supported laterally by coxal plate from fourth pereopod; posterior plate on sternite XIV rounded in

shape but its anterior two third deeply cleft.

Remarks

The only material collected by author at first glance seems to be similar to *M. dobsoni*, but it could be easily distinguished from that by the posterior part of hepatic sulcus which is horizontal. Strong slender chela, strong antennal spine and leaf like anterior thelycal plate it is identified as *M. eboracensis*. This is the first record from Indian coast.

Distribution

India: Muthukuru, Nellore, Andhra Pradesh, east coast of India.
Elsewhere: New Guinea; Northern Territory; Queensland; Australia.

4. Conclusion

The genera *Metapenaeopsis* and *Metapenaeus* represent 12 species (each) from Indian water. *Metapenaeopsis palmensis* (Haswell, 1879) and *Metapenaeus eboracensis* Dall, 1957 have been recorded for the first time from India. During the study it seems to the author that the genus *Metapenaeopsis* is a heterogeneric group of prawns because several species possess diversified generic characters and require to be split into two or more genus or subgenus after thorough study .

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