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## RESEARCH ARTICLE

### A STUDY ON THE INDIAN RECORDS OF THE SPECIES UNDER GENUS *MEGOKRIS* PÉREZ FARFANTE & KENSLEY, 1997

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#### ABSTRACT

Burkenroad (1934) created two subgenus of the genus *Trachypenaeus* Alcock, 1901 viz., *Trachypenaeus (Trachypenaeus)* and *Trachypenaeus (Trachysalambria)*. These two subgenus were raised to the status of genus by Pérez Farfante and Kensley (1997). The genus *Trachypenaeus*, s. s. was further divided into two genus namely *Megokris* and *Rimapenaeus* by Perez-Farfante and Kensley (1997). Therefore, the original *Trachypenaeus* Alcock, 1901 is now divided into four established genus such as *Trachypenaeus* Alcock, 1901, *Trachysalambria* Burkenroad, 1934, *Megokris*, Pérez Farfante and Kensley, 1997 and *Rimapenaeus*, Pérez Farfante and Kensley (1997). Indian water represents two species under genus *Megokris*, Pérez Farfante and Kensley, 1997. Present study is an attempt to up-to-date the taxonomic status of the species recorded from Indian water under genus *Megokris*, Pérez Farfante and Kensley, 1997.

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#### 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, in spite 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 and expansion of prawn fisheries and industries near coast line is rightly being given the maximum encouragement in the development programme of each nation (Chanda, 2014). Shrimps and Prawns of various kinds have certainly been a source of protein for human consumptions from very early times. Within historical times reference is made to prawn in ancient Chinese and Japanese literature (Pérez Farfante & Kensley, 1997). In Indian literature, earliest known penaeid prawn was *Penaeus monodon*, described by Fabricius in 1798. In 1814 the *Penaeoidea* was recognized as a taxonomic group by Rafinesque – Schmaltz. Since then, the literature on many aspects of the systematics and biology of this group has grown enormously because of their commercial importance. Genus *Penaeus* is the actual mother genus of the present genus under study. Genus *Trachypenaeus* was established by Alcock,

1901 as a subgenus under genus *Penaeus*. Further, Alcock (1905) raised *Penaeus (Trachypenaeus)* into its generic status. Latter, the genus *Trachypenaeus*, Alcock, 1901 was divided into four genus. Indian water represents two of the said genus namely *Trachysalambria* Burkenroad, 1934 and *Megokris*, Pérez Farfante and Kensley, 1997. Present work reveals that out of three species Indian water represents two species under genus *Megokris*. *Trachypenaeus pescadorensis* Schmitt, 1931 is synonymised under *Trachypenaeus granulatus* (Haswell, 1879) by Carpenter & Niem (1998).

#### MATERIALS AND METHODS

The present study is mainly based on the specimens collected by the author from commercial trawler catch of different fish landing centers throughout Indian coast line. In addition to this penaeid prawns preserved in the National Collection of the Zoological Survey of India, Kolkata, India; Central Marine Fishery Research Institute, Cochin, Kerala and its regional stations at Mandapam, Tamil Nadu, India.

The materials preserved in rectified spirit (90%) and body parts of taxonomic importance have been dissected and studied under a stereoscopic binocular microscope. The illustrations have been drawn with the aid of line drawing and by camera Lucida. The detailed synonymies have been furnished to the genera and species and also their diagnosis, distribution, taxonomic remarks have been furnished. The genera and species are arranged alphabetically for convenience. In

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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.

## RESULTS AND DISCUSSION

### Genus *Megokris* Pérez Farfante and Kensley, 1997

The genus *Megokris* was established by Perez-Farfante and Kensley (1997) by breaking *Trachypenaeus* Alcock, 1901. Alcock (1901) reported the genus for the first time from India as a subgenus of genus *Penaeus*. A brief history with special reference to Indian contributions are given below.

- 1879 *Penaeus granulosus* Haswell, *Proc. Linn. Soc.*, N.S.W., 4:38-44.  
 1926 *Trachypenaeus granulosus* Schmitt, *Zool., Res. Fish. Exp.* "Endeavour" 5:309-381.  
 1931 *Trachypenaeus pescadoreensis* Schmitt *Lingnan Science Journal*, 10(2/30):265-268.  
 1971 *Trachypenaeus granulosus* Muthu, *Indian J. Fish.*, 15: 145-154.  
 1997 *Megokris granulosus* Pérez Farfante and Kensley, *Mem. Mus. nat. d'Hist. nat.*, 175:1-233.  
 1998 *Trachypenaeus pescadoreensis* Carpenter & Niem *FAO Species identification guide for fishery purposes*. Vol.2:687-1396P.

**Type Species:** *Penaeus granulosus* Haswell, 1879, *Proc. Linn. Soc. N.S.W.*, 4:41.

**Type Locality:** Australia, Darney Island, Torres Strait.

#### Diagnosis of the genus

Body covered with thick setae, pubescent; rostrum short, never extend beyond antennular peduncle; armed with dorsal teeth only; epigastric tooth separated from penultimate tooth by a distinct gap. Orbital spine, antennal spine and hepatic spine prominent; pterygostomian spine and carina absent; cervical sulcus, hepatic sulcus prominent; postocular, orbitoantennal sulcus absent; antennal, gastroorbital, gastrofrontal, hepatic carina absent; hepatic sulcus anterior to hepatic spine; longitudinal suture and transverse suture present; cicatrix absent on sixth abdominal somite; antennal flagella shorter than carapace; basal spine present on first and second pereopod; telson armed with lateral movable spine; petasma symmetrical, semiclosed, variable in shape; appendix masculina subquadrangular with rounded corners; thelycum closed, with plate on sternite XIV deeply excavate anteriorly, median protuberance of the anterior thelycal plate broadly extend posteriorly.

#### Remarks

Present study reveals that *Megokris* is represented in India by two species.

#### Key to the species found in India

1. Telson armed with one pair of movable spine, epipod present only on pereopod third; distolateral projection of

petasma broad, tip curving forward; anterior plate of thelycum distally rounded .....*M. granulosus* (Haswell, 1879)

Telson armed with four pairs of movable spine; epipod present on pereopod first, second and third; distolateral projection of petasma narrow horn-like, curving laterally; anterior plate of thelycum distally pointed ...*M. sedili* (Hall, 1961)

### *Megokris granulosus* (Haswell, 1879)

The species *M. granulosus* was described by Haswell (1879) from Australian water as *Penaeus granulosus*. Schmitt (1926) transferred the species to genus *Trachypenaeus*. Recently Perez Farfante and Kensley (1997) established the genus *Megokris* regarding the species as type for the genus. Muthu (1971) recorded the species from Kakinada, Andhra Pradesh, East Coast of India for the first time from Indian water. A brief history of the species with special reference to Indian contributions are given below.

- 1879 *Penaeus granulosus* Haswell, *Proc. Linn. Soc.*, N.S.W., 4:38-44.  
 1926 *Trachypenaeus granulosus* Schmitt, *Zool., Res. Fish. Exp.* "Endeavour" 5:309-381;  
 1971 *Trachypenaeus granulosus* Muthu, *Indian J. Fish.*, 15: 145-154.  
 1997 *Megokris granulosus* Pérez Farfante and Kensley, *Mem. Mus. nat. d'Hist. nat.*, 175:1-233.

**Type Species:** *Penaeus granulosus* Haswell, 1879, *Proc. Linn. Soc. N.S.W.*, 4:38-44.

**Type Locality:** Australia, Darney Island, Torres Strait.

#### Material Examined

2 males (30-80 mm); Palk Bay, Mandapam, Tamil Nadu; ZSI. Reg. No. C4949/2; 07.08.1997, A. Chanda.

#### Diagnosis of the species

Body densely pubescent; rostrum dorsally armed with 9 to 11+1 teeth, reaching to distal part of antennular peduncle or little beyond; hepatic and cervical sulcus indistinct, longitudinal suture short; abdomen with a small dorsal tubercle on second segment and a middorsal carina on last four somites;

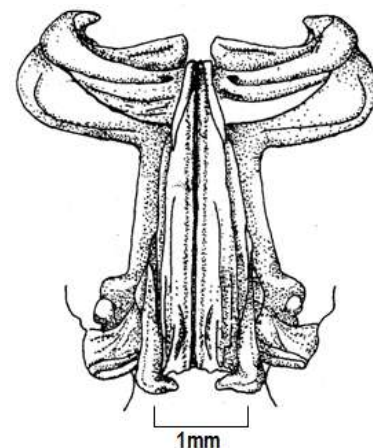


Figure 1. petasma of *Megokris granulosus* from Indian water

telson armed with a pair of movable lateral spine; epipod present on third pereopod only; petasma with very broad distolateral projections, tips curving forward; distomedian projections small, curving ventrally. In females, anterior plate of thelycum flat, rounded distally with a posterior rounded projection which can be very prominent and is often fused to posterior plate; posterior plate excavated on either side of median convexity (Racek and Dall, 1965).

### Remarks

Present material is in an agreement with the description and illustration of Pérez Farfante and Kensley (1997) except that the forwardly curved tip of dorsolateral projection of petasma which is not tapering, end is rather blunt.

### Distribution

India : Kakinada, Andhra Pradesh, Palk Bay, Mandapam, Tamil Nadu, East Coast of India.

Elsewhere : Saudi Arabia; Persian Gulf; Pakistan; Sri Lanka; Malaysia; Indonesia; Philippines; Taiwan; New Guinea; Queensland; Australia.

### *Megokris sedili* (Hall, 1961)

Hall (1961) described the species as *Trachypenaeus sedili* from Malayan water, De Bruin (1965) recorded it from Sri Lankan water extending the distribution westward to Indian Ocean. Thomas (1969) recorded the species from Coromandel Coast, east coast of India for the first time from Indian water. A brief history of the species with special reference to Indian contributions are given below.

1961 *Trachypenaeus sedili* Hall, Bull. Raffl. Mus., 26: 76-119.

1969 *Trachypenaeus sedili* Thomas; J. mar. biol. Ass. India, 11:191-197; Muthu, 1971, Indian J. Fish., 15: 145-154; George, 1979, Cont. Mar. Sci., dedicated to Dr. C.V. Kurian: 21-59.

1997 *Megokris sedili* Pérez Farfante and Kensley, Mem. Mus. nat. d'Hist. nat. 175:1-233.

**Type Species:** *Trachypenaeus sedili* Hall, 1961, Bull. Raffl. Mus., 26: 76-119.

**Type Locality:** Malaysian water.

### Material Examined

3 females (42-55 mm); ZSI. Reg. No. C4852/2, Mungergudi, Machelipattnam, Andhra Pradesh; 5.9.95, A. Chanda. 1 male (38 mm); off Trivandrum (Arabian Sea); Reg. No. CMFRI-AR-279 [date and name of collector is not mentioned].

### Diagnosis of the species

Body densely pubescent; rostrum armed with 8+1 dorsal teeth, strongly upcurved in female and straight in male; longitudinal suture short, hepatic and cervical sulcus indistinguishable; pterygostomial angle blunt, a small dorsal tubercle on second segment, a middorsal carina on last four segments; telson armed with 4 pairs of movable spine; first, second and third pereopods with epipod; distolateral projection of petasma narrow, horn-like and curving laterally; anterior plate of thelycum distally pointed and medially concave.

### Remarks

Materials collected & examined agreed with the description of Hall (1961) except in number of dorsal teeth which are 8+1 as reported by Thomas' (1969). George (1969), however, observed 9+1 dorsal teeth in his specimen as observed by Hall (1961). Therefore, the number of dorsal teeth of rostrum varies from 8-9+1.

### Distribution

**India:** Machelipattnam, Visakhapatnam, Andhra Pradesh to Trivandram (Arabian Sea), Kerala.

**Elsewhere:** Mozambique; Sri Lanka; Myanmar; Singapore; Strait of Malacca; Gulf of Thailand; Gulf of Tonkin; South China Sea.

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