

On the Rare Occurrence of Snapping Shrimp of *Alpheus Distinguendus* De Man 1909c (Decapoda-Alpheidae) Off Tuticorin Coast, India

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Introduction

The average 7.3 million tonnes of catch is estimated to be thrown away in global fisheries each year (Kelleher, 2005). Unwanted or non-mandated catch is thrown back into the sea, often dead, in a process known as “discarding” (Alverson and Hughes, 1996). Discards include the unwanted or un-mandated component of “bycatch”, or incidentally caught non-target catch, either using for poultry feed or fish powder to the industry from Thoothukudi region. Over the past few decades, increasing concern has been raised over biodiversity and the poor state of many global fisheries including Tamilnadu, Indian coastal region. According to Banner, *et al.* (1982) has been informed the genus *Alpheus* (Fabricius, 1798) the global specimen is almost 4,600 specimens were recorded. A total of 30 species of the genus *Alpheus* from the Indo-Pacific region, and only 23 of them from the Indian Ocean [Table 1].

Super Family	Alpheoidea Rafinesque, 1815		Distribution-India
Family	<i>Alpheidae</i> Rafinesque, 1815 4 genera, 23 species	Snapping Shrimps/(Pistol Shrimp)	
Genus	<i>Alpheus</i> Fabricius, J. C., 1798		
	<i>Alpheus acutofemoratus</i> Dana, 1852a		Andaman sea
	<i>Alpheus armatus</i> Rathbun, 1901		Chennai
	<i>Alpheus crockeri</i> (Armstrong,1941)		A& N Islands
	<i>Alpheus digitalis</i> de Haan, 1844	Forceps Snapping Shrimp	Gulf of Kachch, Gujarat
	<i>Alpheus distinguendus</i> de Man, 1909		Gulf of Mannar, TN
	<i>Alpheus edwardsii</i> (Audouin,1826)		West Bengal
	<i>Alpheus euprosyne</i> De Man, 1897	Nymph Snapping Shrimp	West Bengal & Gulf of Mannar, TN
	<i>Alpheus frontalis</i> H. Milne Edwards, 1837		A & N Island
	<i>Alpheus lobidens</i> De Haan,1849		

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	<i>Alpheus macroskeles</i> Alcock & Anderson, 1899		
	<i>Alpheus malabaricus</i> (Fabricius, J.C. 1775)		Kerala & Gulf of Mannar, TN
	<i>Alpheus miersi</i> Coutiere, 1898c		Lakshadweep
	<i>Alpheus paludicola</i> Kemp, 1915		Karnataka
	<i>Alpheus rapax</i> Fabricius, J.C., 1798		Palk Bay, Lakshadweep
	<i>Alpheus spongiarum</i> Coutiere, 1897a		Lakshadweep
	<i>Alpheus strenuus</i> Dana, 1852a		A & N Islands

Table 1: Checklist of Family Alpheidae from Indian waters.

Genus *Alpheus* has been covered 296 current species around globe (De Grave and Fransen, 2011; Anker, 2012; Anker and De Grave 2012; Almeida., *et al.* 2013; Anker and Pachel, 2013). Only one species, *Alpheus distinguendus* are on record from Tuticorin waters. Fifty seven percentage of global fish stocks are fully exploited whilst 30% are overexploited, and a key factor is the accidental capture and waste of non-target fish (Hall and Mainprize, 2005; Hilborn, 2007a). The Department New Drug Discovery of the RARBIO ENERGIES PRIVATE LIMITED, Chennai, India, has been engaged in a survey of the marine invertebrate on benthic studies, off Tuticorin region during 2014 -2015. During the survey, the extensive collection of deep sea fauna and flora or new crustacean was collected from the study area. The deep sea by-catch studies of animal fauna off Tuticorin coast of marine environment are very extensive, among the decapoda group from Indian waters are studied in the recent years (Jones and Mahadeven 1965; Jones and Sankaran Kutty, 1960; Ganapati., *et al.* 1972).

The Only one male specimen of *Alpheus distinguendus* was collected on 15 March 2015 from Tuticorin coast. The depth at 310 m at Gulf of Mannar and further attempts no more specimens could be collected at Tuticorin fishing harbor. The present investigation studies showed that the collection of by-catch specimen off Tuticorin coast of Gulf of Mannar, it was recorded the kind of shrimp belonging to the genus *Alpheus*.

Materials and Methods

Specimen was collected from the by-catches, off Tuticorin fishing harbor region at Gulf of Mannar, Southeast coast of India [Figure 1a]. It was during night time collection of this region, during March 2015. Specimens kept by 70-80% alcohol and taken to department of new drug discovery, RARBIO Energies Private Limited, Chennai, Tamil Nadu, India.



Figure 1a: *Alpheus distinguendus* De Man, Dorsal View.



Figure 1b: Anterior region, dorsal view.

Results and Discussion

Taxonomy

Class: Malacostraca

Order: Decapoda

Family: Alpheidae Rafinesque, 1815

Genus: *Alpheus* Fabricius, 1798

Alpheus distinguendus de Man, 1909a

Alpheus distinguendus de Man 1909c: 155, pl. 7, figures 9-14

Banner and Smalley, 1969; 47, figure 3

Alpheus rapax De Hann, 1850: 177, pl.45, figure 2

Bate, 1888: 552, pl. 99, figure 1

De Man, 1888b: 264; 1892: 404

Ortmann, 1890: 481

Nobili, 1903: 7

Alpheus brevirostris De Man 1907: 427, pl. 33, figures 51-52

Alpheus digitalis De Hann, 1850: 178, pl. 45, figure 4

Coutiere, 1898h: 249, figure 2

Material Examined

The species was collected off the coast of Tuticorin district, South India. The shrimp total length is 6.2 cm and a length of carapace 2.0 cm, along with the large chela 4.8 cm and width 0.8 cm, length of palm 3.1 cm and a length of finger 2.2 cm [Figure 1c]. Small chela 1.5 cm in length and length of width 0.4 cm [Figure 1d]. Ischium 0.4 cm in length [Figure 1e]. Telson 0.6 in length [Figure 1f].

Diagnosis

Larger chela with-out transverse groove near the base of the dactylus; dactylus of smaller chela of male not balaeniceps shaped. Palm of smaller chela of male not longer than high, without transverse groove; fingers in adult specimens 2.5 times as long as broad.

Colour

Ground colour cream to pale yellow, with black cross bands on the posterior margins of carapace and abdominal segments. Chela with violet patches on the depressions and tips. Antennal and antennular flagella also violet in colour; legs and setae whitish.

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Figure 1c: Large cheliped- lateral view.



Figure 1d: Small cheliped- lateral face.



Figure 1e: Maxilliped and ischium in median view.



Figure 1f: Telson and uropods.

Remarks

Alpheus distinguendus De Man, 1909c, was first identified as Johnson (1962) at Singapore. The single specimen agrees closely with the description given by (Banner, *et al.* 1982). Two hundred sixty four commercially trawled operating fishing vessel, a single specimen

constitute the first kind of report of this species, off Tuticorin coast, at a depth of 310m. Known from scattered locations throughout east-west coast of India, but not earlier recorded from the Tuticorin district.

Distribution

Alpheus distinguendus de Man, 1909 has been collected incidental by-catch, away 35 km from Tuticorin fishing harbor at a depth of 310m at Tuticorin. Indo-west Pacific: Japan, China, Korea, Vietnam, Singapore, India (East and West coast of India), and Israel.

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