

## Preliminary Observation and Status of Squat Lobster off Thoothukudi Coast of Gulf of Mannar, India (08° 22.871'N 78° 22.409'E - 08° 31.912'N 78° 25.327'E) (185 - 318 M)

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### Introduction

The squat lobsters include six recognized families (Chirostylidae, Eumunididae, Kiwaidae, Galatheidae, Munididae and Munidopsidae) in two super families (Chirostyloidea and Galatheoidea) of decapods crustaceans within the infraorder Anomura (Ahyong, *et al.* 2010; Schnabel and Ahyong, 2010). Most of Genus *Munida*, *Munidopsis*, *Eumunida* and *Agononida* are from shelf and slope depths. The approximately 930 described species of squat lobsters are known from a wide range of depths (littoral to abyssal) and exhibit a worldwide distribution (Macpherson, *et al.* 2010). The present investigations of squat lobster have recorded and report for the first time in Indian Coast of Gulf of Mannar, off Thoothukudi (Figures 1, 2), Southeast coast of India. The dataset for the two squat lobster super families Galatheoidea and Chirostyloidea (Taxonomy and Phylogeny) and highlights the utility of these groups to global diversity and diversification. Squat lobsters are sporadic, widespread and biological diverse, and, importantly, are well-resolved taxonomically, with recent documentation of all published records for all known genus and species (Family Chirostylidae (9 Species) and Galatheidae (43 species) (Table 1).

SL No	Family	Genus	Species	Distribution-India
	Chirostylidae Ortmann, 1892	9 species		
1.		<i>Gastroptychus</i>	<i>hendersoni</i>	off Travancore coast, Kerala, 787 m
2.		<i>Gastroptychus</i>	<i>investigatoris</i>	Andaman Sea, 741 m
3.		<i>Gastroptychus</i>	<i>valdiviae</i>	SW of Great Nicobar, 296 m
4.		<i>Uroptychus</i>	<i>bacillimanus</i>	off Travancore coast, Kerala
5.		<i>Uroptychus</i>	<i>cavirostris</i>	off E coast of N Andaman Island, 137-110 m
6.		<i>Uroptychus</i>	<i>fusimanus</i>	off Travancore coast, Kerala, 787 m

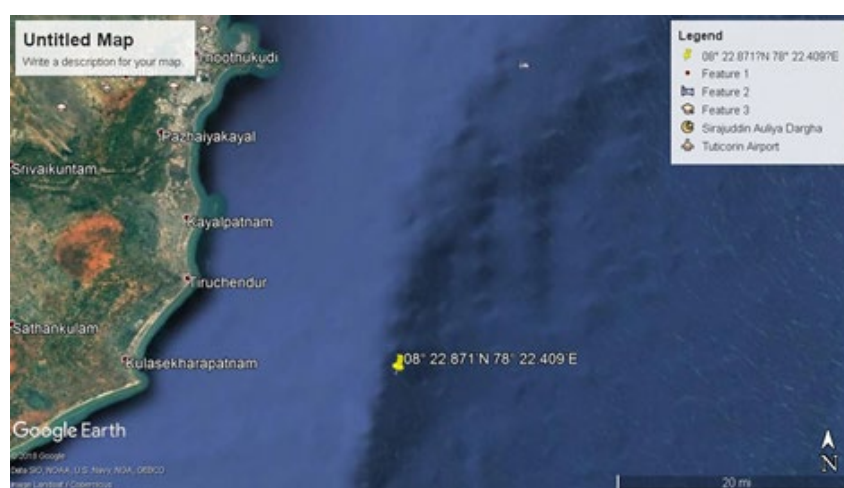
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7.		Uroptychus	indicus	Arabian Sea off Cape Comorin and Bay of Bengal
8.		Uroptychus	nigricapillis	Andaman Sea, 1224 m
9.		Uroptychus	nitidus	Laccadive Sea, 1160 m
	Galatheidae Samouelle, 1819	43 species		
10.		Agononida	prolixa	Andaman Sea, 344–403 m and Gulf of Mannar, 260–732 m, Arabian Sea, off Kollam, 220-360 m
11.		Agononida	eminens	Off Thoothukudi coast, 305-310 m.
12.		Eumunida	funambulus	Off Thoothukudi coast, 305-310 m.
13.		Fennerogalatea	chirostyloides	Bay of Bengal, 2417 m, off Visakhapatnam within EEZ of India
14.		Galacantha	bellis	Bay of Bengal and Arabian Sea, 1870–2782 m
15.		Galacantha	rostrata	Arabian Sea off Minikoy, 2196 m
16.		Galacantha	trachynotus	Arabian Sea, 1669–1733 m
17.		Galathea	bengala	S Andaman Islands, 66 m
18.		Munida	andamanica	Off Thoothukudi coast, 300 m, Andaman Sea and Arabian Sea in the neighborhood of the Laccadives and Maldives, 326–741 m,
19.		Munida	comorina	off Travancore coast Kerala, 787 m
20.		Munida	japonica	Arabian Sea, off Kollam, 350 m
21.		Munida	curvipes	Off Thoothukudi coast, 305-310 m
22.		Munida	heteracantha	Off Thoothukudi coast, 305-310 m
23.		Munida	microps	Andaman Sea, 878 -1027 m
24.		Munida	semoni	Off Thoothukudi coast, 305-310 m
25.		Munida	vigiliarum	Bay of Bengal off W coast of Andamans near Sentinel Islands, 317–531 m
26.		Munidopsis	andamanica	Off Thoothukudi coast, E of Andamans, 1041 m
27.		Munidopsis	arietina	Bay of Bengal, 2782 m
28.		Munidopsis	centrina	Bay of Bengal, 2782 m
29.		Munidopsis	ceratophthalma	Off Thoothukudi coast, Andaman Sea, 878 m
30.		Munidopsis	dasyopus	Andaman Sea and Arabian Sea, 344–723 m
31.		Munidopsis	dasyopus	Andaman Sea, 1027 m
32.		Munidopsis	edwardsii	Bay of Bengal, 1379 -2610 m
33.		Munidopsis	goodridgii	off Travancore coast Kerala, 787 m
34.		Munidopsis	granosa	Bay of Bengal, 2782 m

35.	Munidopsis	hemingi	off Travancore coast Kerala, 787 m
36.	Munidopsis	iridis	off Travancore coast Kerala, 787 m
37.	Munidopsis	levis	Andaman Sea, 485 m
38.	Munidopsis	moresbyi	off Travancore coast Kerala, 787 m
39.	Munidopsis	nitida	
40.	Munidopsis	ciliata	Bay of Bengal, 2397 m
41.	Munidopsis	orcina	Arabian Sea, 2105 m
42.	Munidopsis	pallida	Andaman Sea, 3299 m
43.	Munidopsis	poseidonia	Bay of Bengal, 384 m
44.	Munidopsis	regia	Gulf of Mannar, 260-732 m
45.	Munidopsis	scobina	Off Thoothukudi coast, 305-310 m, Chennai region, Bay of Bengal, 265-458 m, South Arabian coast, 1046 m, Arabian Sea, off Kollam, 180-400 m, Andaman Sea, 439 m
46.	Munidopsis	serricornis	off Travancore coast, Kerala, 787 m)
47.	Munidopsis	spinipes	Bay of Bengal, 1757 m
48.	Munidopsis	stylirostris	Laccadive Sea, 1354 m
49.	Munidopsis	trachypus	Laccadive Sea, 1164 m
50.	Munidopsis	trifida	Laccadive Sea, 1164 m
51.	Paramunida	tricarinata	Andaman Sea and Arabian Sea off N. Maldive Atoll, 205-384 m
52.	Munidopsis	unguifera	Bay of Bengal, 265-458 m

**Table 1:** Checklist of Families Chirostylidae, Eumunididae, Galatheidae, Munididae and Munidopsidae from Indian waters.



**Figure 1:** Overview map of the Gulf of Mannar coast, showing the sampling site of Pearl coast 08° 22.871'N 78° 22.409'E, 185m.



**Figure 2:** Overview map of the Gulf of Mannar coast, showing the sampling site of Pearl coast 08° 31.912'N 78° 25.327'E, 318 m.

### Status and Conservation

Crustacean taxonomical studies on the Chirostylid and Galatheid lobsters of India are dealt with by Alcock (1894 & 1901), Alcock & Anderson (1895), Doflein & Balss (1913a), George and Rao (1966), Rao (1974), Tirmizi & Javed (1993), Thirumilu, (2011), Vaitheeswaran and Venkataramani (2012); Vaitheeswaran, (2014; 2015; 2016, 2017, 2018). A total of 52 species (9 from Family Chirostylidae and 43 from Family Galatheididae) are recorded, mostly from the deeper waters of Lakshadweep Sea, Arabian Sea, Bay of Bengal and Andaman Sea, while a single galatheid lobster *Munidopsis regia* Alcock & Anderson, 1894, *Eumunida funambulus* (Gordon, 1930), *Agononida eminens* (Baba, 1988), *M. curvipes* (Benedict, 1902), *Munida heteracantha* (Ortmann, 1892), *M. semoni* (Ortmann, 1894), *Munidopsis cylindrophthalma* (Alcock, 1894), *M. scobina* (Alcock, 1894) and *Munida andamanica* (Alcock, 1894) has been reported from Gulf of Mannar by Vaitheeswaran and Venkataramani (2012); Vaitheeswaran, (2014; 2015; 2016, 2017, 2018). While examining the crustacean catches landed by larger trawlers (more than 400 horse power), which operated in deeper waters off Thoothukudi waters, the number of specimen of squat lobster was obtained from Southeast and west coast of India. Thus, the total number of squat lobsters from India now rose to 52. Ongoing collections continue to explore new offshore regions, between the longitude and latitude, off Thoothukudi region, South India (08° 22.871'N 78° 22.409'E - 08° 31.912'N 78° 25.327'E) at a depth of 185 to 318 M and habitats with the discovery of new species and genera continuing unabated. The average depth has calculated from minimum and maximum depth where two depths were available in straight line curve of southeast coast of India; otherwise the single depth record was used for only seasonal occurrence of this species. Depth classes were defined as follows: 0–199 m shelf; 200–899 m upper slope; 900–1999 m lower slope; 2000–3999 m continental rise; and > 4000 m abyssal (Macpherson., et al. 2010). In order to cover as much available information as possible, different sources were used to extract distributional information for squat lobsters. The crustacean of squat lobster study revealed that the further stressed that strict management measures need to be undertaken to conserve deep sea fauna and flora species from further to avoid exploitation and to restore or sea ranching and enhancement of population of stock assessment of the particular crustacean group, the biodiversity of squat lobster population of Gulf of Mannar in general and Thoothukudi coast in particular, India.

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