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Check list and occurrence of marine gastropoda along the palk bay region, southeast coast of India

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ABSTRACT

The marine biodiversity of the southeast coast of India is rich and much of the world's wealth of biodiversity is found in highly diverse coastal habitats. A present study was carried out on marine gastropod accessibility among Palk Bay region of Tamilnadu coastline to identify, quantify and assess the shell resources potential for development of a small-scale shell industry. A large collection of marine gastropod was made among the coastal line of Mallipattinam and Kottaipattinam found 61 species (25 families) of marine gastropods over a 12 months period from Aug- 2011 to July- 2012. A totally of 61 species belonging to 55 species of 40 genera were recorded at station 1 and 56 species belonging to 41 genera were identified at station 2. Most of the species were common in both landings centre with slight differences but some species like Turritella duplicate, Strombus canarium, Cyprae onyxadusta, Marginella angustata, and Harpa major were available in station 1 not available in station 2. The present study revealed that the occurrence of marine gastropods species along the Palk Bay region of Tamilnadu coastline.

INTRODUCTION

Though marine science has established much attention in Tamilnadu coastline in the recent years, marine mollusks studies are still overseen by many researchers. The lacks of basic information such as diversity data and species check list make it impossible to assess the rate of population lost among marine mollusks. In the region of intertidal and inshore waters are present the commercially important gastropod and these gastropods received extensive consideration in recent years due to greater demand for meet and ear-rings, bangles, table lamps, spoons cups and saucers etc., and it is also used in Aquarium. Molluscs in general had a tremendous impact on Indian tradition and economy and were popular among common man as ornaments and currency. This has the increasing global demand. The various taxonomic groups have received attention, resulting in a considerable growth of information [13, 4]. Not only was this the most widespread bioevent in the phaneroxzoic, with the extinction of 49% of marine families and over 90% of marine species [2, 3].

Molluscan species are efficient indicators taken as a whole ecosystem health and species diversity [7] and its making them ideal study of organism's conservation and biodiversity studies. Gastropods are of particular interest, not only due to their importance in human culture but also because they fill integral ecological roles, from grazers to scavengers and carnivores [12]. They inhabit a range of diverse habitats, from tropical to the deep sea [12, 11]. Hence the present study is documented the occurrence and distribution of marine gastropod among the Mallipattinam and Kottaipattinam coastal line of Palk Bay region, Southeast coast of India.

MATERIALS AND METHODS

The mollusks were collected from two stations namely Mallipattinam (10º16´36.93´´N 79º19´09.09´´E) and Kottaipattinam (9º58´50.39´´N 79º12´11.01´´E) coastal line of Palk Bay region, Southeast coast of India from Aug 2011 to July 2012. The sampling was done randomly from trash fish and intertidal region at both stations. The specimens were brought to the laboratory, cleaned with a brush and identified using appropriate literature [14, 15, 16]. Data were collected fortnightly, pooled seasonally and this was repeated throughout the period and the data on gastropods from both stations were combined together for the different seasons and subjected to various univariate methods such as species diversity, species richness and evenness.

RESULTS AND DISCUSSION

In the present study were documented 61 species of gastropods belonging to 42 genera out of 25 families from the Palkbay region of southeast coast of India. A totally 1417 individuals of 55 marine gastropods belonging to 40 genera from 24 families were recorded at Mallipattinam (Figure 1) and 400 individuals of 56 marine gastropods belonging to 41 genera from 23 families were documented at Kottaipattinam landing centre (Figure 2) (Table 1). The results of the present study are in accordance with the earlier reports, A totally 59 species belonging to 35 genera from 25 families were recorded Cuddalore and 57 species belonging to 32 genera from 24 families were identified at Mudasalodai [1]. The diversity of marine molluscs has been surveyed by many researchers from various coastal areas of southeast coast of India for Cuddalore [5, 6, 10], Pazhayar and Cuddalore [9], Mudasalodai [8].

Table 1: List of gastropod species along the Palk bay region, Southeast of India

Family	Species	Mm	Km	Habitat
Fissurellinae	*Clypidina notata*	+	+	S
	Lucapinella canalifera	+	+	S
Trochidae	*Trochus radiatus*	+	+	MS
	Umbanium vestiarium	+	+	MS
	Gibbula coeni	+	+	S
Littorinidae	*Nodilittorina trochoides*	+	+	S, MS
	Nodilittorina vidua	+	+	MS
Cerithiinae	*Cerithium balteatum*	+	+	S, MS
	Cerithium tenellum	+	+	S, MS
Turritellidae	*Turritella attenuate*	+	+	MS, S
	Turritella columnaris	+	+	MS, S
	Turritella duplicate	+	-	MS, S
Strombidae	*Strombus canarium*	+	-	S
	Tibia delicatula	+	+	S
	Strombus listeri	+	+	S, C
Xenophoridae	*Xenophora solarisn*	+	+	S
Cypracidae	*Cyprae onyxadusta*	+	-	S
Naticidae	*Natica lineate*	+	+	MS, S, C
	Natica vitellus	+	+	MS, S
Tonnidae	*Tonna tessellate*	+	+	S
	Tonna cepa	+	+	S
	Tonna dolium	+	+	MS
Ficidae	*Ficus gracilis*	+	+	MS
	Ficus variegatus	+	+	S
	Ficus ficoides	+	+	S
Cassidae	*Phalium glauca*	-	+	MS
	Phalium bandatum bandatum	-	+	S
Ranellidae	*Cymatium tripus*	+	+	S
	Bursa echinata	+	+	S
	Cymatium cutacea	+	+	S
	Bursa rana	+	+	S, MS
Muricidae	*Chicoreus ramosus*	+	+	MS
	Haustellum haustellum	+	+	S
	Murex carbonnieri	+	+	MS, C
	Muricanthus virgineus	+	+	MS
	Rapna rapiformis	+	+	S
	Pupura persica	+	+	S

Mm- Mallipattinam; Km- Kottaipattinam; MS- Muddy-sandy substrate; S- Sandy; C- Coral reefs; Present (+); Absent (-)

Table 1 (Condt): List of gastropod species found along the Palk bay region, Southeast of India

Family	Species	Mm	Km	Habitat
Buccinidae	*Babylonia spirata*	+	+	MS, S, C
	Babylonia zeylanica	+	+	MS, S, C
	Nasaria coromandelica	-	+	MS
	Nassaria laevior	-	+	S
	Cantharus tranquebaricus	+	+	MS, S
Columbellidae	*Mitrella blanda*	+	+	S
Nassariidae	*Bullia vittata*	+	+	S
	Bullia tranquebarica	+	+	S
	Nassarius livescens	+	+	S
Fasciolariidae	*Fusinus forceps*	+	+	MS
Vasidae	*Turbinella pyrum*	+	+	S
	Tudicula spirillus	+	+	MS, C
Olividae	*Oliva sidelia*	+	+	MS
	Oliva oliva	+	+	MS, S
	Amalda ampla	-	+	S
Marginellidae	*Marginella angustata*	+	-	S
Harpidae	*Harpa major*	+	-	S
Conidae	*Conus figulinus*	+	+	MS
	Conus betulinus	+	+	MS, S, C
	Conus amadis	+	+	MS
Turridae	*Turricula javana*	+	+	MS, S
	Lophiotoma indica	+	+	MS, S, C
	Gemmula sp	-	+	MS, S
Architectonicidae	*Architectonica perspectiva*	+	+	S, MS

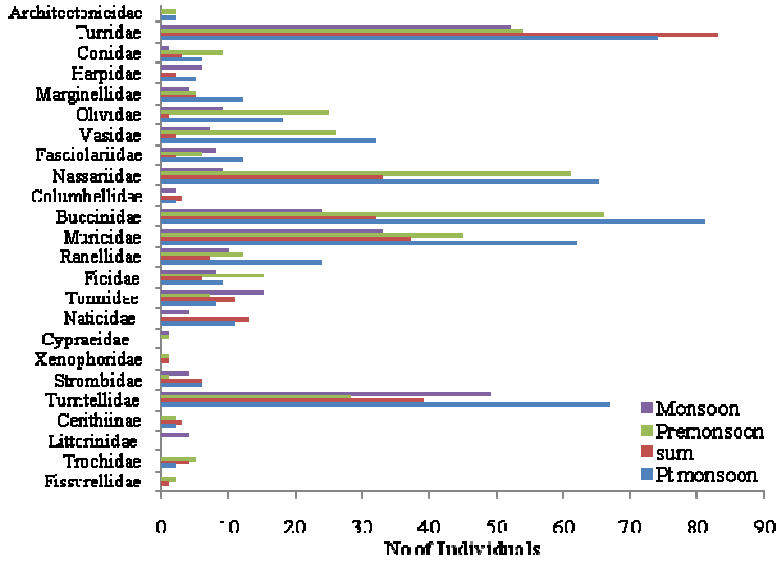

Figure 1: Numbers of individuals of gastropod families at Mallipattinam during various seasons

Among them gastropod diversity Nassarieus nivea, N. dorsata were the most abundant but in the present study *Turricula javana,Turritella attenuate, Turritella columnaris, Chicoreus ramosus, Haustellum haustellum, Murex carbonnieri, Muricanthus virgineus, Rapna rapiformis, Babylonia spirata, Cantharus tranquebaricus* and *N. dorsata* are distributed significantly at both stations. Maximum diversity was due to more fishing activity in the pre-monsoon season and the minimum fishing activity was in summer owing to the possible ban on fishing proposed by the government because of it being the breeding season of the marine organisms [1].

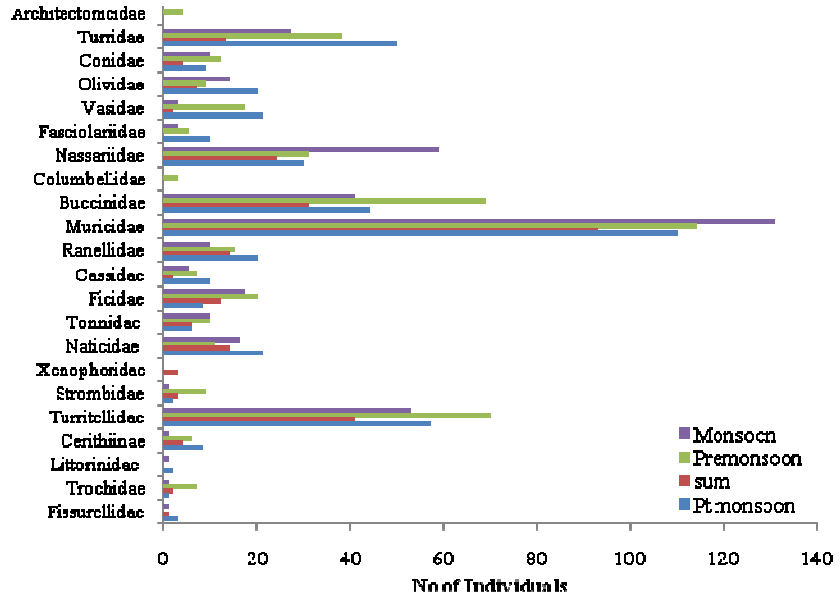

Figure 2: Numbers of individuals of gastropod families at Kottaipattinam during various seasons

CONCLUSION

It can be concluded from the present study that the Mallipattinam and Kottaipattinam coastal waters are also rich in molluscan diversity where the fishing activity is likely to grow and mollusks had a tremendous impact on Indian tradition and economy and were popular among common man as ornaments and currency.

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