

Malacofauna of Tekkali Creek, Srikakulam District, Andhra Pradesh, India: Check list

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ABSTRACT

The molluscan fauna of Tekkali Creek of Srikakulam district, Andhra Pradesh, India was recorded. About 22 species of molluscs (16 gastropods and 6 bivalves) were recorded. Among them two species were marine, eighteen brackish water and two fresh water.

Key words: Molluscs, Tekkali Creek, Srikakulam

INTRODUCTION

Molluscs occupy second position among invertebrates and the number of species varies between 80,000 to 100,000. Gastropods and Bivalves constitute 98% of the total population inhabiting land and aquatic environments (fresh water, brackish water and marine) and the remaining are marine. Mangrove roots, trunks and branches attract rich epifaunal communities, including sponges, hydroids, anemones, polychaetes, bryozoans and ascidians, apart from the molluscs and crustaceans [1, 2]. These molluscs can be broadly grouped into three categories- epifauna (living on mud or surface area of the land), infauna (living in the mud), and arboreal (living on the vegetation) and some molluscs have habitat-overlap [3, 4, 5]. Molluscs are used as food, ornaments, poultry and fish feed, for lime etc and also in the pharmacological industry [6]. Thus molluscs have been highly valued aquatic resources since prehistoric times, for commercial, ornamental and medicinal purposes. Several contributions have been made on mangrove molluscs in India [7, 8, 9, 10, 11, 12, 13, 14], in Lakshadweep [15] and in Andhra Pradesh [16, 17].

MATERIALS AND METHODS

The Tekkali Creek was a back-water intrusion of the sea into the land starting from Bhavanapadu village and extending up to Kakarapalli village, (18°33'48.7"N, 84°21'19.6"E to 18°30'30 N, 84°15'30 E) covering a distance of 16 km (Fig.1). It was connected laterally on either side by various streams, channels, agricultural and aquaculture outlets. At the end the creek was connected by Desigedda and Garibulagedda streams at Kakarapalli village. Mangroves were found as patches on either side of the creek and also at the centre and the study area was mainly the mud flats and the mangroves.

The creek was surveyed in the first quarter of 2015 and the specimens were sampled from the concrete linings, rocky boulders, wooden piles, mud flats, mangroves, sand-mud swamps, etc. The gastropod molluscs were collected by hand picking from the stems, roots and other parts of the mangrove plants and the mussels, cockles and oysters by digging and scrapping [18]. The collected specimens were preserved in 4% formalin. The specimens were identified to species level following the field guide [19].

RESULTS AND DISCUSSION

About 22 molluscs were found in Tekkali Creek (Table 1). Among them two were marine (Fig. 2), eighteen were brackish water (Fig. 3a & 3b) and two fresh water (Fig. 4) The fresh water molluscs were recorded at the end of the

creek *i.e.*, nearer Kakarapalli and Kollipadu villages. The marine molluscs were found at creek mouth which was rocky with concrete pilings. The rest of the molluscs were distributed in between these two areas. Among them *Telescopium sp.*, *Littorina sp.*, and *Cerithidea sp.* were abundant among gastropods. Among the bivalves *Crassostrea sp.*, *Anadara granosa* was dominant and *Placuna placenta* was found submerged under the sediment.

Bivalves *Meretrix meretrix*, *A. granosa* were found in the soft muddy bottom creek and *Crassostrea madrasensis* and *Pinctada fucata* were noticed on rocks, concrete and cement substratum. *Cellana radiata*, *Neritina violacea* and *Thais haemostoma* were observed on rocky shore region of creek mouth. *Perna viridis* was attached by byssal threads to *C. madrasensis* and *Pinctada fucata* and also on walls of different hard substratum. The gastropods-*Assiminea nitida*, *Cerithidea cingulata* and *Onchidium verruculatum*, *Telescopium telescopium* were found in soft bottom of mangroves. The *Cassidula aurisfelis*, *C. nucleus*, *Cerithidea obtusa* were observed at the roots of mangrove plants. *Littorina conica*, *L. pallascens*, *L. scabra*, *L. melanostoma* were arboreal and found on mangrove plants of different parts like leaves, stem etc. The fresh water gastropods, *Pila globosa* and *Gyraulus laevis* were observed along the creek adjacent to paddy fields and grasses.

Table 1: List of molluscs at Tekkali Creek

| Gastropods | Bivalves |
|--|---|
| Class : Gastropoda | Class : Bivalvia |
| Order : Littorinimorpha | Order : Arcoida |
| Family : Assimineidae | Family : Arcidae |
| Genus : Assiminea | Genus : Anadara |
| Species : [1] nitida (Pease, 1864) | Species : [17] granosa (Linnaeus, 1758) |
| Genus : Littorina | Order : Ostreoida |
| Species : [2] conica (Philippi, 1846) | Family : Ostreidae |
| [3] melanostoma (Gray, 1839) | Genus : Crassostrea |
| [4] pallascens (Philippi, 1846) | Species : [18] madrasensis (Preston, 1916) |
| [5] scabra (Linnaeus, 1758) | Order : Veneroida |
| Order : Pulmonata | Family : Veneridae |
| Family : Ellobiidae | Genus : Meretrix |
| Genus : Cassidula | Species : [19] meretrix (Linnaeus, 1758) |
| Species : [6] aurisfelis (Bruguiere, 1789) | Order : Mytiloida |
| [7] nucleus (Gmelin, 1791) | Family : Mytilidae |
| Order : Caenogastropoda | Genus : Perna |
| Family : Nacellidae | Species : [20] viridis (Linnaeus, 1758) |
| Genus : Cellana | Order : Pterioida |
| Species : [8] radiata (Born, 1778) (Marine) | Family : Pteriidae |
| Family : Potamididae | Genus : Pinctada |
| Genus : Cerithidea | Species : [21] fucata (Gould, 1850) |
| Species : [9] cingulata (Gmelin, 1791) | Order : Pectinoidea |
| [10] obtusa (Lamarck, 1822) | Family : Placunidae |
| Genus : Telescopium | Genus : Placuna |
| Species : [11] telescopium (Linnaeus, 1758) | Species : [22] placenta (Linnaeus, 1758) |
| Family : Neritidae | |
| Genus : Neritina | |
| Species : [12] violacea (Gmelin, 1791) | |
| Family : Onchidiidae | |
| Genus : Onchidium | |
| Species : [13] verruculatum (Cuvier, 1830) | |
| Family : Muricidae | |
| Genus : Thais | |
| Species : [14] haemastoma (Linnaeus, 1758) (Marine) | |
| Order : Hygrophila | |
| Family : Planorbidae | |
| Genus : Gyraulus | |
| Species : [15] laevis (Alder, 1838) (Fresh Water) | |
| Order : Architaenioglossa | |
| Family : Ampullariidae | |
| Genus : Pila | |
| Species : [16] globosa (Swainson, 1822) (Fresh Water) | |

In South China Sea, 130 species of extant muricidae gastropods have been recorded [20]. 3 are exotic (non-Mediterranean species), 5 rare, 2 new deep sea and 1 previously considered a fossil species totaling 13 species have been identified in Greece waters [21]. 35 species of bivalve molluscs have been reported in the shallow exposed and sheltered habitats of estuaries, creeks and back waters along the north east coast of Andhra Pradesh [22]. 14 species of molluscs including 9 gastropods and 5 bivalves have been recorded in Ariankuppam estuarine mangroves [23]. 1,264 species of molluscs were reported in Singapore consisting of 875 Gastropoda, 351 Bivalvia, 10 Scaphopoda, three Polyplacophora, and 25 Cephalopoda [24]. A total of 15 molluscs have been recorded in Nallavadu lagoon and among them nine species are gastropods and 6 are bivalves [25]. In the Karangad estuarine mangroves, South East

Coast of India, 25 species of molluscan fauna belonging to 14 genera, 10 families and 5 orders have been identified [26]. 12 genera of gastropods and four of bivalves have been recorded in Uttara Kannada district of Karnataka State [27].

In Minicoy lagoon of Lakshadweep, 70 species of molluscs (52 gastropods, 12 bivalves and 7 soft molluscs have been reported [28]. Of 286 molluscan species identified in Turkish Levantine coast eighteen species of new record have been observed [29]. In Punnakayal Mangroves of South East coast of India, 8 species of gastropods and 2 species of bivalves have been recorded [30]. In Bahuda estuary 8 species of gastropods and 8 species of bivalves have been found [31]. Off Saurashtra coast of Arabian sea, 28 species of molluscs belonging to 19 families representing with dominating species like *Cellana radiata*, *Nerita albicilla*, *Turbo coronatus*, *Turbo intercostalis*, *Trochus radiatus* and *Rhinoclavis sinensis* have been reported [32]. In Nuvvalarevu backwaters of the Northeast coast of Andhra Pradesh 6 species of gastropods and 3 bivalves have been recorded [33].



Fig. 1 Study area



Fig. 2 Marine Molluscs

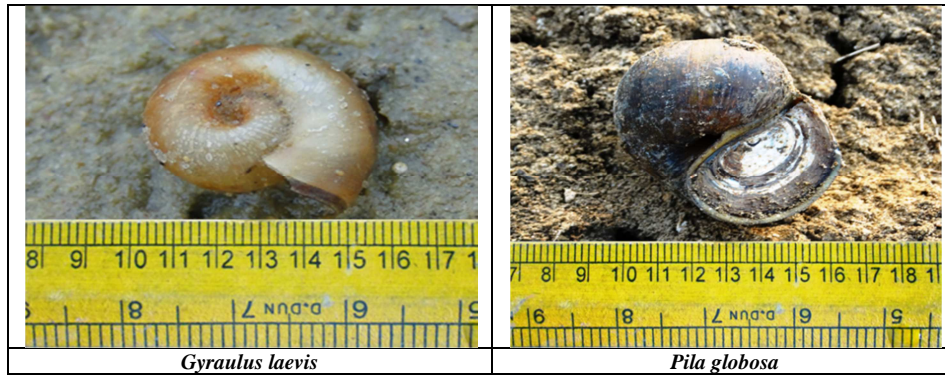


Fig. 3 Fresh water Molluscs

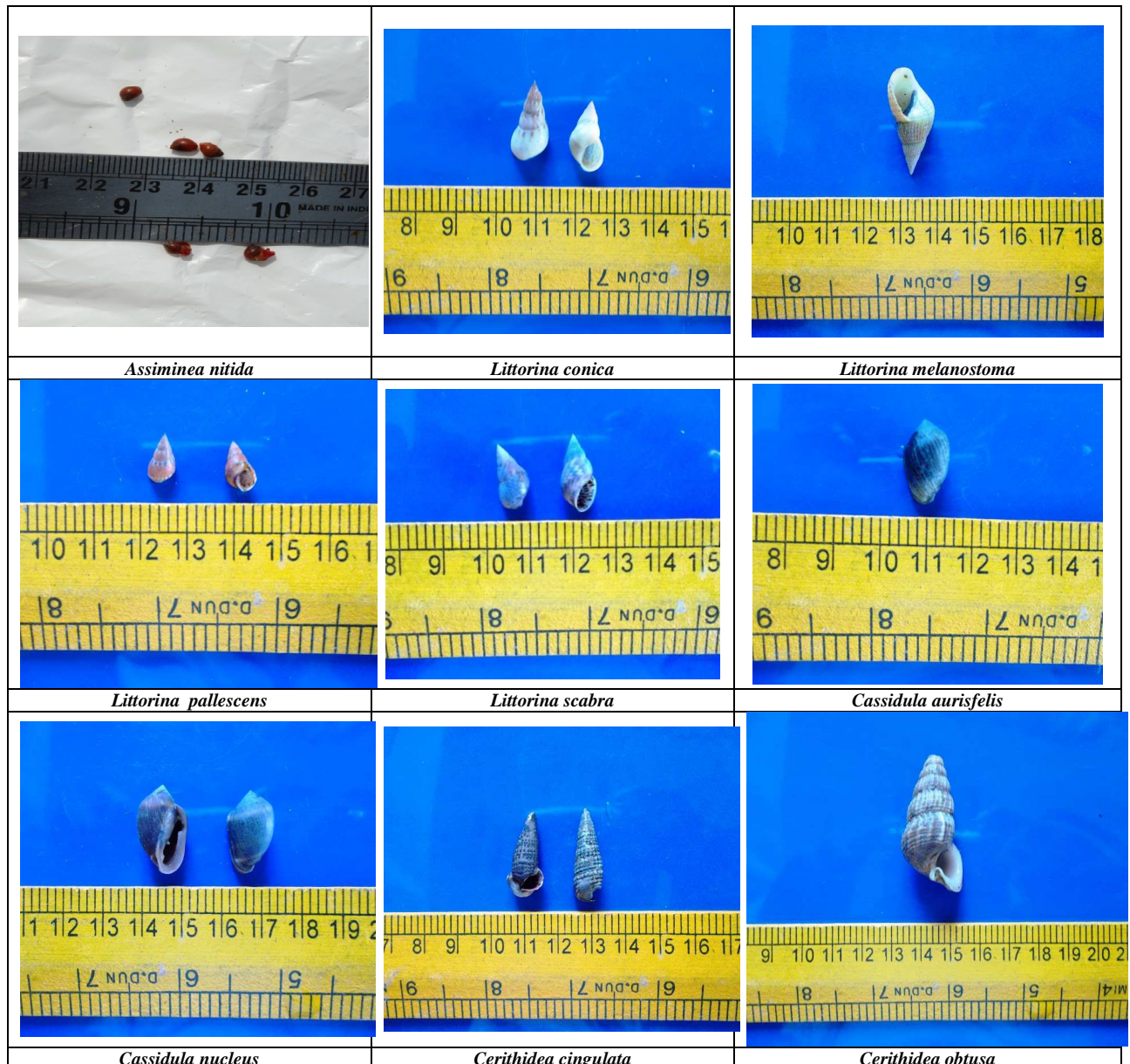


Fig.4 (a) Brackish water Molluscs



Fig. 4 (b) Brackish water Molluscs

CONCLUSION

Twenty two species of molluscs (16 gastropods and 6 bivalves) were recorded. Of them 2 were marine, 2 fresh water and 18 brackish water. Gastropods were the most dominant group. The assemblages of oysters were found mostly on the rocky boulders, mussels were seen attached to pneumatophores and prop roots of the mangroves and others in the mud and on the mangrove plants.

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